2013 Unit Management Plan Amendment and Final Supplemental Environmental Impact Statement to the 2004 Unit Management Plan and Final Generic Environmental Impact Statement

July 2013

Prepared by:

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and
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In Cooperation with:
New York State Department of
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and in consultation with
The Adirondack Park Agency
Ray Brook, New York 12977

Lead Agency:
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Date of Acceptance of UMP/DGEIS: 23 April 2013
Date of Public Hearing: 13 May 2013
Close of Comment Period: 24 May 2013
Date of Acceptance: 25 May 2013

Submitted:

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ANDREW M. CUOMO
GOVERNOR

JOE MARTENS
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

M E M O R A N D U M

TO: The Record

SUBJECT: Whiteface Mountain Ski Center

DATE: JUL 2 9 2013

The Final Amendment to the Whiteface Mountain Ski Center Unit Management Plan has been completed.

The Final UMP Amendment is consistent with the State Constitution, Environmental Conservation Law, and Department Rules, Regulations and Policies and is hereby approved and adopted.

Joseph J. Martens

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NEW YORK STATE
Adirondack
parkagency

RESOLUTION AND SEQRA FINDINGS
ADOPTED BY THE ADIRONDACK PARK AGENCY
WITH RESPECT TO THE
WHITEFACE MOUNTAIN SKI CENTER INTENSIVE USE AREA
UNIT MANAGEMENT PLAN AMMENDMENT

June 13, 2013

WHEREAS, section 816 of the Adirondack Park Agency Act directs the Olympic Regional Development Authority (ORDA) and the Department of Environmental Conservation (DEC) to develop, in consultation with the Adirondack Park Agency, individual management plans for units of land classified in the Master Plan for Management of State Lands and requires such management plans to conform to the guidelines and criteria of the Master Plan; and

WHEREAS, in addition to such guidelines and criteria, the Adirondack Park State Land Master Plan prescribes the contents of unit management plans and provides that the Adirondack Park Agency will determine whether a proposed individual unit management plan complies with such guidelines and criteria; and

WHEREAS, the Olympic Regional Development Authority has prepared a unit management plan amendment for the Whiteface Mountain Ski Center Intensive Use Area, dated April 2013, which includes a proposal to replace the Ski Patrol Building on Little Whiteface Mountain; and

WHEREAS, the replacement Ski Patrol Building on Little Whiteface Mountain will house communications infrastructure for the Essex County and New York State Police public safety communications system and shared microwave network authorized by APA Project Order and Findings 2012-128 and APA Order 2012-128-5 Whiteface issued December 18, 2012; and

WHEREAS, this action is a Type I action pursuant to 6 NYCRR Part 617 and 9 NYCRR 586 for which the Olympic Regional Development Agency is the lead agency and the Department of Environmental Conservation and the Adirondack Park Agency are involved Agencies; and

WHEREAS, a notice of acceptance of a Draft Supplemental Environmental Impact Statement (DSEIS) was filed in the Environmental Notice Bulletin (ENB) on April 24, 2013 which established a public comment period ending on May 24, 2013; and

WHEREAS, the Agency established a public comment period on conformance of the draft unit management plan amendment with the Adirondack Park State Land Master Plan, which ran from May 15, 2013 through June 4, 2013; and

WHEREAS, neither the Agency nor ORDA received any written comments during the respective public comment periods; and

WHEREAS, ORDA, as lead agency, filed its acceptance of the Final Supplemental Environmental Impact Statement (FSEIS) in the ENB on June 12, 2013, 2013 and is expected to issue findings and a decision ten days thereafter; and

WHEREAS, the Adirondack Park Agency has reviewed the proposed Whiteface Ski Center Intensive Use Area Unit Management Plan Amendment for conformance with the SLMP;

NOW, THEREFORE, BE IT RESOLVED, that pursuant to Section 816 of the Adirondack Park Agency Act, the Adirondack Park Agency finds the Whiteface Mountain Ski Center Intensive Use Area Unit Management Plan Amendment/FSEIS, dated April 2013, conforms with the guidelines and criteria of the Adirondack State Land Master Plan; and

BE IT FURTHER RESOLVED, that the Adirondack Park Agency finds pursuant to 9 NYCRR 586.14 and 6 NYCRR Part 617.11, and based on the record provided by the FSEIS presented to the Agency, that the management actions contained therein are:

- Intended to protect the unit’s natural resources, character and recreational use according to the provisions of the Adirondack Park State Land Management Plan.

- Intended to protect rare, threatened and endangered species found within the Whiteface Mountain Ski Center Intensive Use Area, with particular attention to Bicknell’s Thrush and other high-elevation bird species in the vicinity of Little Whiteface Mountain, through continued scientific monitoring and avoiding the potential for habitat disturbance.

- Intended to increase public understanding about Bicknell's Thrush habitat, natural history and threats to its population dynamics in the Northeast and Caribbean wintering grounds through the development of public educational materials and promoting contributions to a Bicknell's Thrush habitat protection fund.

- Intended to protect species and ecological communities identified as rare, threatened or endangered.

- Intended to accommodate public recreational needs including skiing, snowboarding, biking and other activities permitted in the Whiteface Mountain Ski Center Intensive Use Area.

BE IT FURTHER RESOLVED, that consistent with the social, economic and other essential considerations, from among the reasonable alternatives, the action approved is one which minimizes or avoids adverse environmental effects to the maximum extent practicable, including the effects disclosed in the Final Supplemental Environmental Impact Statement and that any adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporation of the mitigation measures identified in the FSEIS; and

BE IT FINALLY RESOLVED, that the Adirondack Park Agency authorizes its Executive Director to advise the Commissioner of Environmental Conservation and the President and Chief Operating Officer of the Olympic Regional Development Authority of the Agency's determination in this matter upon the Olympic Regional Development Authority's issuance of findings and decision, provided that there are no substantive changes to the Final Supplemental Environmental Impact Statement.

Ayes:	R. Booth, S. Craig, A. Lussi, F. Mezzano, D. Scozzafava (DOS), R. Stegemann (DEC), W. Thomas, L. Ulrich, W. Valentino, C. Wray
Nays:	None
Abstentions:	None
Absent:	Designee, DED

/lhb

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Executive Summary

Facility Overview

Whiteface Mountain Ski Center (WFM) is a downhill ski center located on Forest Preserve land in New York State's Adirondack Park. WFM is owned by the State of New York; it is under the administrative jurisdiction of the New York State Department of Environmental Conservation (DEC) and is managed by the Olympic Regional Development Authority (ORDA) under a Memorandum of Understanding with the DEC.

Regulatory Framework

Section 816 of the Adirondack Park Agency Act directs the DEC to develop, in consultation with the Adirondack Park Agency (APA), Unit Management Plans (UMPs) for each unit of land under its jurisdiction classified in the Adirondack Park State Land Master Plan (SLMP). Concurrent with the development of the UMPs is the preparation of an Environmental Impact Statement (EIS), which analyzes the significant impacts and alternatives related to each UMP. ORDA, pursuant to its enabling law and agreement with the DEC for the management of WFM, and in compliance with Article XIV, Section I of the New York State Constitution, prepared the Unit's initial UMP in 1987, together with the EIS.

The most recent update to the UMP/EIS was approved and accepted on 04 July 2004, with an Amendment and Supplemental Environmental Impact Statement (SEIS) approved and accepted on 04 October 2006. The submission presented under this cover is identified as the 2013 Unit Management Plan Amendment and Draft Supplemental Environmental Impact Statement to the 2004 Unit Management Plan and Supplemental Environmental Impact Statement. As an Amendment, which incorporates by reference the 2004 Unit Management Plan and Final Generic Environmental Impact Statement, this document satisfies the requirements that UMP's contain an inventory of existing resources, facilities, systems and uses, and a discussion of management policy. Additionally, this document satisfies the other requirements of a UMP by including, within the text of this document, descriptions of proposed management actions, a discussion of the potential impact of such actions, a description of mitigating measures and a description of alternative actions.

The preparation, review and approval of this UMP Amendment requires compliance with New York State's State Environmental Quality Review Act (SEQRA). Many of the elements and requirements of the SEQRA process are similar to those of the UMP process. The combination of the elements of the UMP Amendment and the components of the EIS presented in this document fully satisfy SEQRA.

Submission, Review and Approval Framework

The 2013 Unit Management Plan Amendment and Draft Supplemental Environmental Impact Statement (UMP/DEIS) was accepted as complete for review by ORDA, Lead Agency, on 19 April 2013 and was submitted to DEC for executive review on 22 April 2013. DEC will submit notice to the Environmental Notice Bulletin (ENB) on and release for pubic review on 24 April 2013. The UMP/DEIS will be presented to the APA Board on 09 May 2013 for the first reading. The 30 day public review period will end on 24 May 2013 and ORDA/DEC will respond to public comments. The UMP/DEIS will be submitted and presented to the APA on 14 June 2013 for determination to the SLMP. Following this determination, Agency staff will transmit the Agency findings concerning the UMP's conformance to the DEC Commissioner. These and the findings of fact will form the basis for DEC's adoption of the UMP.

The 2013 Unit Management Plan Amendment and Draft Supplemental Environmental Impact Statement to the 2004 Unit Management Plan and Final Generic Environmental Impact Statement is available at the following locations:

Olympic Center, 2634 Main Street, Lake Placid, NY

Whiteface Mountain Ski Center, Administrative Offices, Wilmington, NY

DEC Region 5 Offices, Ray Brook, NY

Adirondack Park Agency, Ray Brook, NY

Overview of Unit Management Plan Amendment

The 2004 UMP/FGEIS set out a much needed program of modernization and improvement for WFM. Many of the targeted program modernizations and improvements have been completed, or are in progress. However, a request from Essex County, New York for the installation of a Public Safety Radio Communications System at the Little Whiteface Ski Patrol Building has required the development of an Amendment to the Whiteface Mountain Ski Center's Unit Management Plan.

The proposed Management Action, Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building) involves the redevelopment of the existing Ski Patrol Building and the installation of antenna systems for a public safety radio communication system and improved Ski Patrol Services.

ORDA is also considering other proposals requiring amendment to the Whiteface 2004 Unit Management Plan and Generic Environmental Impact Statement, specifically: construction of a Lookout Mountain emergency access road, modification and widening of the Burton's and Lower Thruway trails, and re-use of the Porcupine Lodge. Due to law enforcement's urgent need for the Public Safety Radio Communications Equipment in the Ski Patrol Building and the need for the other three proposed projects to receive additional internal review and development, ORDA has decided to immediately move forward with the Ski Patrol Building replacement as a separate UMP amendment. When the other three proposals move forward as a single subsequent UMP amendment, cumulative impacts, if any, of the four projects will then be considered. This will ensure that consideration of the environmental impacts of the four proposals in two separate amendments will be no less protective of the environment than if the four proposals were included in a single amendment. The three projects noted above which will be proposed in the future are not contingent upon the proposed Management Action, PSRCS/SP Building. The existing Little Whiteface Ski Patrol Building, which is the site for the proposed Management Action, PSRCS/SP Building, currently has an access road and is physically and functionally separate and distinct from all of the other potential management actions. Additionally, the other potential management actions are not functionally dependent on the PSRCS/SP Building.

The Management Action has been analyzed for potential impacts to both natural and human resources. These potential impacts have been reviewed for mitigation measures. Section 3 - Potential Impacts and Mitigation Measures, presents, reviews and addresses potential impacts and mitigation measures for both natural and human resources. These resources and the potential impacts and mitigation measures are summarized as follows:

Overview of Potential Impacts and Mitigation Measures

Vegetation

The construction of the Management Action PSRCS/SP Building will result in less than or equal to 0.03 acres of ground cover being impacted. No rare, threatened, or endangered species shall be impacted.

Geologic and Topographic

The construction of the Management Action has little to no potential to result in soil erosion at the project site because the geology is primarily rock. However, Best Management Practice for Erosion and Sediment Control shall be employed to ensure that any negative impacts to soil at and around the project site and on the access roads that service the project are fully mitigated.

Wetlands

Wetland resources are avoided by the proposed Management Action; therefore, there will be no impacts to such resources.

Surface Waters

Surface water resources are avoided by the proposed Management Action; therefore, there will be no impacts to such resources.

Visual Resources

The PSRCS/SP Building involves the redevelopment of the existing Ski Patrol Building. The PSRCS/SP Building's size will be slightly larger than the existing Ski Patrol Building but the PSRCS/SP Building's architectural features will be more consistent with an architecture which is visual pleasing.

Wildlife

No state or federal listed threatened or endangered species will be affected by the Management Action presented in this Amendment. The Bicknell's thrush, which is categorized as a Species of Special concern in New York State, is an important element in the management strategy at WFM. Significant efforts have been made and will continue to be made by ORDA to protect the Bicknell's thrush and its habitat.

Fish and Aquatic Life

There are no anticipated direct impacts to fish in any of the Management Actions presented in this Amendment. However, impacts from excavation and cuts to geologic and topographic resources could negatively impact fish and aquatic life, if mismanaged.

Critical Habitat – Adirondack Sub-Alpine Bird Conservation Area

The PSRCS/SP Building occurs at elevations which are delineated as an Adirondack Sub-Alpine Bird Conservation Area by the State of New York. In these areas exists the potential of a "Species of Special Concern" in New York, known as the Bicknell's thrush. While the PSRCS/SP Building will not include any cutting of vegetation which is suitable habitat for the Bicknell's thrush, it is the policy of Whiteface Mountain to include holistic mitigation measures with all activities which are within the Adirondack Sub-Alpine Bird Conservation Area.

Transportation

The traffic volumes estimated and presented in the 2004 UMP Update remain unaffected as related to the Management Actions presented in this Amendment.

Community Services
Community services such as firefighting, police rescue, emergency medical response, and health care will incur significant positive impacts under the PSRCS/SP Building.

Local Land Use Plan
The Management Actions presented in this Amendment are compatible with the Adirondack Park State Land Master Plan, particularly in that they involve the rehabilitation, modernization and expansion of facilities within an existing Intensive Use Area.

Economics
There are no economic impacts relevant to the Management Action.

Growth Inducing, Secondary and Cumulative Impacts
The Management Action is targeted at increasing visitor safety.

Overview of Alternative Solutions
In accordance with SEQRA, alternatives were developed and evaluated for the Management Action to determine if there could be reasonable and viable alternative solutions, with fewer environmental impacts. To fulfill this obligation, the Management Action was reviewed for the viability of alternative locations and alternative development parameters, and for a “No Action” alternative.

The PSRCS/SP Building’s alternative location, alternative development parameters and the “No Action” alternative solution were found not to be reasonable and viable alternative solutions.

Section 1 - Introduction

A. Facility Overview

Whiteface Mountain Ski Center (WFM) is located in the Town of Wilmington, Essex County, New York and is a New York State – owned facility. It operates under the administrative jurisdiction of the New York State Department of Environmental Conservation (DEC). WFM is managed by the Olympic Regional Development Authority (ORDA), through a Memorandum of Understanding agreement with the DEC. The facility is classified as an "Intensive Use Area" under the Adirondack Park State Land Master Plan (SLMP).

WFM operates as a downhill ski center, providing incidental year-round opportunities for public hiking, mountain biking, and summer scenic gondola rides. Whiteface Mountain derived its name from the white anorthositic bedrock exposed on the northern flank and summit of the mountain. The unique topography of Whiteface is unparalleled in the northeast ski industry, with the greatest vertical drop east of the Mississippi at 3,166 feet. The unique terrain accommodates all level of skiing abilities in this natural and scenic setting.

B. Unit Management Plan and SEQRA Regulatory Framework

WFM is unique as a designated Intensive Use Area within the Forest Preserve, which has received special authorization under Article XIV of the NYS Constitution. The planning and development process for WFM needs to honor and comply with the intent and conditions set forth under Article XIV of the NYS Constitution, and must work within the framework of the SLMP.

Section 816 of the Adirondack Park Agency Act directs the DEC to develop, in consultation with the Adirondack Park Agency (APA), Unit Management Plans (UMPs) for each unit of land under its jurisdiction classified in the SLMP. Pursuant to its enabling law and agreement with the DEC for the management of WFM, ORDA works with the DEC, under the consultation of the APA, to update and amend the WFM UMP. The most recent update occurred with the 2004 Unit Management Plan Update, which was an update to the 1996 Unit Management Plan Update, which updated and amended the original 1987 Unit Management Plan.

The preparation, review and approval of this UMP Amendment includes a Final Supplemental Environmental Impact Statement (FSEIS). The development of the FSEIS complies with Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQRA). As such, the FSEIS fulfills the requirements pertaining to the SEQRA process. The SEQRA Long Form is located in Appendix 1.B.

C. Overview of Unit Management Plan Amendment

ORDA is amending the WFM 2004 UMP/FSEIS. The 2004 update set out a much needed program of modernization and improvement for the facility, and many of the targeted program modernizations and improvements are either in progress or have been completed. However, a request from Essex County, New York for the installation of a Public Safety Radio Communications System at the Little Whiteface Ski Patrol Building has required the development of an Amendment to the Whiteface Mountain Ski Center's Unit Management Plan.

The proposed Management Action, Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building) involves the redevelopment of the existing

Ski Patrol Building and the installation of antenna systems for a public safety radio communication system and improved Ski Patrol Services.

ORDA is also considering other proposals requiring amendment to the Whiteface 2004 Unit Management Plan and Generic Environmental Impact Statement, specifically: construction of a Lookout Mountain emergency access road, modification and widening of the Burton's and Lower Thruway trails, and re-use of the Porcupine Lodge. Due to law enforcement's urgent need for the Public Safety Radio Communications Equipment in the Ski Patrol Building and the need for the other three proposed projects to receive additional internal review and development, ORDA has decided to immediately move forward with the Ski Patrol Building replacement as a separate UMP amendment. When the other three proposals move forward as a single subsequent UMP amendment, cumulative impacts, if any, of the four projects will then be considered. This will ensure that consideration of the environmental impacts of the four proposals in two separate amendments will be no less protective of the environment than if the four proposals were included in a single amendment. The three projects noted above which will be proposed in the future are not contingent upon the proposed Management Action, PSRCS/SP Building. The existing Little Whiteface Ski Patrol Building, which is the site for the proposed Management Action, PSRCS/SP Building, currently has an access road and is physically and functionally separate and distinct from all of the other potential management actions. Additionally, the other potential management actions are not functionally dependent on the PSRCS/SP Building.

Exhibit 1.C – Management Action Map, identifies the location of the proposed Management Action.

D. General Description of Management Action

The proposed Management Action Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building) involves the replacement of the antiquated existing Little Whiteface Ski Patrol Building, plus the addition of components needed for a public safety radio communications system. These improvements will better ensure the safety of WFM skiers and riders while on the mountain, and during emergency evacuations.

Section 2 – Proposed Management Action

A. Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building)

1. Statement of Need

The proposed Management Action Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building) involves the replacement of the antiquated existing Little Whiteface Ski Patrol Building, plus the addition of public safety radio communications system components. These improvements will better ensure the safety of WFM skiers and riders while on the mountain and during emergency evacuations. Exhibit 2.D1.a – Public Safety Radio Communications System – Little Whiteface Ski Patrol Building - Location Map, identifies the location of the PSRCS/SP Building.

2. Background Data

The PSRCS/SP Building is considered an "appurtenance" to the ski trail system; since 1987, Article XIV of the NYS Constitution has expressly extended authority of WFM to permit the construction of "appurtenances" to ski trails (lodges, lifts, parking lots, snowmaking facilities, etc.). Also, the introduction of public safety radio communication system components requires compliance with Article 27: Adirondack Park Agency – Section 814: State Agency Projects.

The Ski Patrol Building at Little Whiteface was built in the early 1970's. The original structure consisted of the existing building with a sheet metal roof and sheet metal siding. In the mid-1990's, in an attempt to improve the failing aesthetics of the building, the sheet metal siding was covered with wood siding. Otherwise, the original structure has not been improved, modified, or expanded since it was first constructed approximately forty years ago. A photograph of the existing structure is presented in Exhibit 2.D2.a – Existing Structure.

3. Development Parameters

The PSRCS/SP Building will replace the existing antiquated building with a new building with design elements which reflect the natural materials of the region. The introduction of public safety radio communication system components will include equipment and antennas to support the Essex County Public Safety System and the State Police's Law Enforcement Public Safety System.

The PSRCS/SP is classified as a group U - Utility occupancy under the Building Code of New York State. The building is separated into two sections; one section will house the Ski Patrol Station and the balance of the space shall house Essex County Public Safety System and the State Police's Law Enforcement Public Safety System. There are currently no permanent sanitation facilities at the existing Ski Patrol Building and the group U – Utility occupancy for the new PSRCS/SP requires no permanent sanitation facilities. Sanitary facilities exist at the mid-station lodge. Such existing sanitation facilities are currently employed by the ski patrol and will continue to be available.

The PSRCS/SP Building will be constructed slightly west of the current building's location, thereby increasing the recreational space available to visitors exiting the ski lift and gondola. This reconfiguration is illustrated in Exhibit 2.D3.a - Site Plan. The PSRCS/SP Building location is currently vacant land, and will not require the removal of any trees or other vegetation. In order to maintain the rugged character of the mountain environment, the natural terrain and

Section 3 - Potential Impacts and Mitigation Measures

A. Natural Resources

1. Vegetation

a. Impacts

The construction of the Management Action PSRCS/SP Building shall result in no tree cutting.

The construction of the Management Action PSRCS/SP Building will result in less than or equal to 0.03 acres of ground cover being impacted. No rare, threatened, or endangered species shall be impacted.

i. Clearing Regulatory Compliance

Impacts to rare, threatened or endangered species of plants are not identified to occur as a result of the proposed Action. Information provided by the New York Natural Heritage Program indicates that only one species occurs at low elevations on the Ski Center, but it is found along the West Branch of the AuSable River, remote from any proposed Action. All of the other known occurrences of such species on the Ski Center are limited to the uppermost parts of Whiteface Mountain, at an elevation above the proposed Management Action. The proposed Management Action is not closer than 1,000 feet to the location of any of the rare, threatened, or endangered species.

ii. Clearing Estimate

Clearing of vegetative ground cover will occur in areas targeted for excavation and grading. The areas that are impacted by excavation and grading which are outside of the footprint of the building will be restored. The estimated areas of impact, restoration and to receive the new building footprint is less than or equal to 0.03 acres.

b. Mitigation Measures

The following measures will be employed to mitigate the potential impacts on vegetation during the execution of the Management Action:

- Clearing or covering of vegetative ground cover will be limited to the areas of excavation and grading. All other areas will be maintained in a natural state.
- Best Management Practice shall be employed to protect vegetative ground cover within grading plan limits which need not be disturbed and outside the grading plan limits.
- Plants used in re-vegetated disturbed areas, as well as landscaping efforts, will be indigenous species.

2. Geologic and Topographic Resources

a. Impacts

Excavation and cuts to Geologic and Topographic Resources will occur during the construction of the Public Safety Radio Communications System – Little Whiteface Ski Patrol Building.

The majority of the geologic resources mapped on the mountain are shallow to very deep, coarse textured glacial till soils. Organic soils (folists) on steep uplands are generally in a complex pattern with the local deep or shallow glacial till soil. There will not be any extensive areas of folist soil impacted by the proposed Management Action.

Rock and rock outcroppings are the primary geology encountered at the location of the proposed Management Action.

Refer to Exhibit 3.A2.a - Slope Erodibility Map, and Exhibit 3.A2.b – Soils Map, for complete and comprehensive mapping of the Geologic and Topographic Resource areas.

b. Mitigation Measures

The following measures will be employed to mitigate the potential impacts to Geologic and Topographic Resources during the execution of the Management Action:

i. Construction Stormwater Pollution Prevention Planning and Administration

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater discharges from certain construction activities are unlawful unless they are authorized by a National Pollutant Discharge Elimination System ("NPDES") permit or by a state permit program. New York's State Pollutant Discharge Elimination System ("SPDES") is a NPDES-approved program with permits issued in accordance with the Environmental Conservation Law ("ECL"). This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An owner or operator may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. An owner or operator of a construction activity that is eligible for coverage under this permit must obtain coverage prior to the commencement of construction activity. Activities that fit the definition of "construction activity", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the owner or operator must have coverage under a SPDES permit prior to commencing construction activity. They cannot wait until there is an actual discharge from the construction site to obtain permit coverage.

The New York State, State Pollutant Discharge Elimination Systems-General Permit (SPDES-GP) for Stormwater Discharges from Construction Activity – GP-0-10-001, governs construction activities involving soil disturbance of one or more acres, including disturbance of less than one acre that is part of a larger common plan of development or scale that will ultimately disturb one or more acres of land. Excluded is routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility. The construction activities involved for the Management Action, Public Safety Radio Communications System – Little Whiteface Ski Patrol Building does not meet the thresholds for a SPDES-GP. However, as part of WFM's holistic approach to Construction Stormwater Pollution Prevention Planning, Best Management Practices shall be employed regardless if a construction project requires a SPDES-GP.

iii. Rock Cuts and Removal

Mitigation measures for impacts to rock and rock outcroppings (rock) include avoiding rock by adjusting the routing of liner construction (trails and roads), when possible, and adjusting the design topography to go over the rock, if possible. In the case of vertical construction (buildings and structures), where alternate routing is not an option because of the location of existing structures which are being expanded, or in the case when the vertical construction site has mandatory location requirements, the foundation system will be reviewed for the possibility of pinning the foundation to the rock in order to avoid excavation to the frost line. When these aforementioned mitigation measures can not be accomplished, rock will be excavated and cut to the minimum limits possible. The excavated rock, known as shot-rock, (shot-rock is rock which has been broken into smaller pieces via mechanical or non-mechanical means) will be recycled at WFM for use in Best Management Practices for Stormwater Pollution and Prevention Planning such as stone lined ditches and rip rap for culvert inlets and outlets.

Removal of rock via non-mechanical means will be done with expansive grout when practical. Expansive grout is delivered into the rock through holes drilled by rock-drills and then is poured into the rock in a plastic state. As the expansive grout sets, it expands and applies 7,000 tons of expansive stress to the rock, causing it to crack into manageable sizes. The process is limited to ¾ of the distance of the rock-drill length, and requires a tighter pattern of drill holes than rock blasting.

Rock blasting will be employed in instances where mechanical and other non-mechanical means are not practical. All of the potential impacts from blasting will be mitigated through proper blast design and best management practices. If it is determined that blasting will be required, a written blasting plan will be developed prior to the commencement of blasting. In general, the blast plan will contain information about the blasting methods to be employed, measures to be taken to protect the safety of the public, and how the applicable rules and regulations will be administered. If, during the project, there are significant changes in the blast design, then a new blast plan will be required.

3. Wetlands

To the greatest extent possible, impacts to wetlands in the Whiteface Mountain Ski Center Intensive Use Area are avoided in the planning and design of the proposed additions and expansions of facilities. Management Actions are typically targeted upland. Exhibit 3.A3.a – Wetlands Map, provides mapping of all currently located wetlands at WFM. Since this proposed Managet Action is not in the vicinity of the wetlands identified in Exhibit 3.A3.a, no further delineation is required.

4. Surface Waters

Surface water resources are avoided by the proposed Management Action; therefore, there will be no impacts to such resources.

5. Visual Resources

Pursuant to the issuance of an amendment to the Unit Management Plan, an analysis of the potential impacts to visual resources from the proposed Management Action has been prepared in accordance with NYSDEC Program Policy DEP-00-2 “Assessing and Mitigating Visual

Impacts" (NYSDEC, 2000). This analysis characterizes the visual and aesthetic resources of the area surrounding WFM and the visibility and visual character of the proposed Management Action, identifies the individuals and groups that may be affected by the Action, evaluates the impact of the Management Action on those resources, and recommends mitigation measures if necessary.

The visual assessment process includes the following components:

- Develop an inventory of local and regional significant aesthetic resources and describe the existing visual/aesthetic character of the landscape
- Characterize viewer groups
- Evaluate Management Action visibility using viewshed mapping
- Determine significance of the visual and aesthetic impact by evaluating Management Actions consistency/contrast with existing landscape components and effect on user groups
- Evaluate mitigation measures as suggested by DEC Policy

NYSDEC Guidance notes that a 5 mile radius provides a "safe" visual assessment study area, but also notes that greater distances should also be considered. This assessment provides an evaluation of visibility as far as 25 miles from WFM for specific resources, particularly those located on the east side of WFM. The view toward this side of Whiteface Mountain is where the Management Action is located. The assessment also provides an assessment of specific resources and general visual impacts within 5 miles of WFM.

a. Existing Conditions

i. WFM Manmade Development

WFM has been a downhill ski center since 1958. WFM rests on the northeast side of Little Whiteface Mountain, the east side of Whiteface Mountain, and the southeast side of Marble Mountain. WFM has 75 ski trails which total approximately 23 miles and covers approximately 260 acres, 11 ski lifts including one gondola and a high speed detachable quad lift, and several service roads. There are three separate lodges: Base Lodge, Mid-Station Lodge, and the Kids Kampus Lodge Complex. Additionally, there is a NYSEF Lodge, a maintenance complex, and the Town of Wilmington Water Storage Tank complex. On the top of Whiteface Mountain, but outside the limits of the WFM Intensive Use Area Unit, are the Whiteface Mountain Veterans Memorial Highway facilities. These include the Round House and the Castle, as well as the Highway itself that is approximately 5 miles long, rising 2,300 feet in elevation, as it climbs the northwest side of Whiteface Mountain.

ii. Visual Setting of the Existing Landscape

Whiteface Mountain is located in a setting dominated by the scenic quality and character of the natural environment. According to the SLMP, this State-owned land functions to preserve the unique ecologic, geologic, scenic and historic features of the area. In addition, all development has been restricted to comply with the relatively wild and undeveloped character of the Adirondack Park.

The character of the existing landscape varies somewhat within the 5 mile assessment area around WFM, but, overall, is best characterized as being a mountainous and heavily forested area. Existing roads play a large part in the variety and sequence of views in the area. NYS Route 86 is the major roadway within the study area running northeast from Lake Placid to Wilmington where it turns in a more easterly direction toward Jay. This section of NYS Route 86 is also a part of the larger Olympic Trail Scenic Byway, a 170 mile route that extends from Lake Champlain to Lake Ontario. In the western portion of the study

area, NYS Route 86 follows the valley of the West Branch AuSable River, a fairly narrow valley that runs through Forest Preserve lands. Views are of wooded lands and the nearby river. Northeast of WFM, the character of the viewshed becomes more developed with some residential development and tourist-related commercial establishments, becoming more concentrated when traveling into and through the hamlet of Wilmington. Traveling out of Wilmington toward Jay, the visual character of the corridor is somewhat less mountainous, development is primarily low density residential, and views also include some vestiges of agricultural lands. Traveling west toward Wilmington from Jay, there are locations that have outstanding views of Whiteface Mountain and the Sentinel Range.

Other major roads in the study area include Springfield Road that connects Upper Jay and Wilmington, and Fox Farm Road that connects Springfield Road and NYS Route 86 near WFM. The visual character along these roads is a mix of wooded and residential, with residential development being denser near the hamlets. There are views into Whiteface Mountain and WFM along both of these roads.

Other lands in the study area to the east of WFM are Forest Preserve lands in the Sentinel Range Wilderness Area. The character of the views from within this area is wooded with no long range views present along any of the hiking trails in the area. However, Stewart Mountain has a hiking trail with a peak less than three miles from WFM. One hiking website describes Stewart Mountain as “a veritable medieval fortress of impenetrable boreal conifer thickets near the top”.

iii. Viewer Groups

The following are the user groups identified as occurring in the study area:

- Permanent Residents and Commercial Establishments
- Seasonal Residents
- Other Residents of the Adirondack Park
- Tourists
    - Commercially oriented – commercial recreation, amusement and scenic areas
    - Skiers
    - Outdoor Enthusiasts – hikers, anglers, cross-country skiers, etc.

Since perceptions of visual quality are highly subjective and dependent on many variables, it is likely that perceptions will vary among different user groups, and possibly within individual user groups.

Recreation and tourism is the most significant economic factor in the Town of Wilmington. This factor probably causes a passive or positive attitude toward the visual aspect of WFM.

Seasonal residents are a significant component of the population of the Town of Wilmington. Reactions of seasonal residents to changes in views associated with WFM can vary from very negative (if a second homeowner built their home to “get away from it all”) to very positive (if a second homeowner chose to locate in Wilmington because of the presence of recreational opportunities, including WFM).

The diversity of residents in the Park precludes making any absolute statements of their aesthetic attitudes. Reaction to the visual aspects of WFM can vary from extremely negative to quite positive. Even the individual’s attitude can change depending on the context of observation.

Commercially-oriented tourists are attracted to commercial recreation, amusement and scenic areas to which there is easy access and which provide family entertainment. Local establishments meeting these requirements include Santa's Workshop, High Falls Gorge, Whiteface Mountain Veterans Memorial Highway and WFM, including its off-season gondola rides. It would be fairly safe to assume that changes in the visual context at WFM will not offend the aesthetic sensitivities of the average tourist who enters the area willingly and purposefully.

The reaction of downhill skiers to visual changes at WFM will be positive.

Outdoor enthusiasts as a group will probably have a negative reaction to increased visibility of manmade activities in a natural setting. The degree of reaction will vary according to the strength of the visual stimulus, dependent on angle, distance and / or the surrounding landscape (topography and vegetation).

iv. Visibility

Whiteface Mountain is a distinctive landform located in the relatively remote northeastern portion of the Adirondack Park. WFM is located on a portion of the eastern slopes of Whiteface Mountain. Due to the surrounding area's topography and largely forested character, views into Whiteface Mountain occur only at limited locations in the surrounding area, and views into WFM occur at even fewer locations. The limited views into WFM from surrounding areas occur mainly on some nearby State and local roads. Generally speaking, views into WFM from hiking trails in the Forest Preserve are blocked by vegetation and topography.

Whiteface Mountain, as a landform, is distinctive and visible from locations some distance away. The mountain has a somewhat distinctive shape in the context of its surroundings; the exposed anthracite bedrock on a number of its faces combine with its shape to make the mountain relatively easy to identify when viewed from a distance. Examples of such distant views are from the Big Tupper Ski Area in Tupper Lake and from the former Loon Lake golf course in the Town of Franklin. When viewed from these distant locations the mountain is a small portion of the view, and, other than the slides on the Lake Placid, or southwesterly, face of the mountain, no specific land features are evident. This is to be expected, because the ability to discern landscape and manmade feature detail decreases with distance.

WFM occupies only a portion of the eastern face of Whiteface Mountain, so WFM's visibility is much less than Whiteface Mountain's. Generally speaking, lands to the northeast and west of WFM have no potential for views into any part of the ski area.

This assessment analyzes the potential visual impacts of the specific Management Action that is proposed for a very small specific location within the already developed landscape context that is WFM. The very limited nature of this Management Action reduces its potential for being visible well below the potential visibility of WFM as a whole.

b. Inventory of Aesthetic Resources

i. Overview

An inventory of aesthetic resources was developed using a multi-step study process. Locations of visual resources were documented within a 25 mile radius, as described in the NYS Visual Assessment Policy. Refer to Exhibit 3.A5.a – WFM 2012 25 Mile Aesthetic

Resources Inventory Area, and Exhibit 3.A5.b – Inventory of Aesthetic Resources, for detailed information.

A total of 116 National or State Historic Register resources, one State Park resource, 53 Forest Preserve resources, one State/National Wildlife Refuges/Area resource, one National Natural Landmark resource, 16 Wild, Scenic, Recreational Rivers resources, eight Designated or Eligible Scenic Area resources, and 13 Adirondack Park Scenic Vista resources were identified within the 25 mile radius area.

iii. Considerations - Aesthetic Resources outside 5 mile radius but within 25 mile radius
As previously stated, NYSDEC Guidance notes that a 5 mile radius provides a "safe" visual assessment study area, but also notes that greater distances should also be considered. Given the importance of the Adirondack Park's Scenic Vistas, this Visual Assessment included consideration of this Aesthetic Resource, which may be impacted by actions at WFM.

Exhibit 3.A5.c – WFM 5 Mile Visual & 25 Mile Aesthetic Resources Inventory Area Map, identifies three Aesthetic Resources located outside the 5 mile radius but within the 25 mile radius that were identified for study and review because of their Adirondack Park Scenic Vista resource status. These are Adirondack Park Scenic Vista #16 - NYS Route 86 traveling east out of Lake Placid; Adirondack Park Scenic Vista #23 - Heart Lake Road, North Elba; and Adirondack Park Scenic Vista #24 – NYS Route 73 and 9N, Keene. Only Vista #23 has views of WFM and the areas of the Management Action, but the distance between this location and WFM, and the minor nature of the Management Action, allows that this Management Action would not be discernible from this location. For the other two scenic vistas, views from these locations are not in the direction of WFM.

iv. Future Visual Resources without Management Action
On clear days, WFM is visible from scattered vantage points along NYS Route 86 beginning near Bassett Mountain and ending by High Falls Gorge. WFM's lifts, ski trails, and supporting facilities are most visible from NYS Route 86 near the WFM entrance road. Views west of High Falls Gorge on NYS Route 86 begin to quickly diminish as vegetation dominates views from the roadway. Visibility to WFM east on NYS Route 86, however, is scattered due to vegetation and topography until it reaches the final vantage point at the former Paleface Mountain Ski Center located near Bassett Mountain. East of this point, visibility diminishes altogether.

From the West Branch AuSable River Bridge in Wilmington, which is on the Historic Register (Aesthetic Resource), only the upper part of Whiteface Mountain is visible and WFM is not. Similarly, Scenic Vista #13, located in the 5-mile study area on County Route 19 north of the main intersection in Wilmington, has views into upper Whiteface Mountain, but not WFM.

The upper section of Fairview Terrace, on Quaker Mountain, provides the most prominent vantage point to WFM. Although the mountain can be viewed from as far south as Route 73 near the Heart Lake Road, no ski facilities, lifts or trails are visible. This is also the situation to the west of Whiteface Mountain.

The Veterans Memorial Highway's Round House and Castle facilities can be seen as far away as Route 3 near the Norman Ridge Road in Franklin County. However, none of the ski center facilities are viewable, as they are on the opposite side of the mountain.

Exhibit 3.A5.d – 5 Mile Zone of Potential Visibility, identifies the areas within the 5 mile radius where there are potential for views of WFM. Exhibit 3.A5.e – Photo Location Map & Viewshed Photos, documents the views toward WFM from within the "Areas of Potential Visibility". Table 3A.1 lists those photographed locations where views into Whiteface Mountain and/or WFM occur.

Table 3A.1

Photo	Location	Looking Toward	View Into
1	Route 86 at former Paleface Ski Center near Basset Mountain	Southwest	Whiteface Mountain & WFM
2	Route 86 near Beaver Brook	Southwest	Whiteface Mountain & WFM
3	Route 86 of west branch of AuSable River Bridge (Wilmington Bridge)	South	Whiteface Mountain
4	Fairview Ave on Quaker Mountain	Southwest	Whiteface Mountain & WFM
5	Fox Farm Road	West	Whiteface Mountain & WFM
6	Route 86 at WFM Entrance	West	Whiteface Mountain & WFM
7	Route 86 south of Monument Falls	North	Whiteface Mountain
8	River Road by Lake Placid Skeet Range	North	Whiteface Mountain
9	Route 73 Lake Placid Horse Show Grounds	North	Whiteface Mountain
10	Copperas Pond	North	Neither
11	Whiteface Mountain Veterans Memorial Highway Historic Register Site	East	Whiteface Mountain & WFM

c. Potential Impacts to Visual Resources

Assessing the visibility of the Management Action requires the determination of the extent of the area where the Management Action may be visible. This is best demonstrated with Zone of Visual Impact maps produced from digital elevation modeling, also known as digital terrain modeling. In addition, the demonstration of the Management Action, or portions thereof, are visible and what it will look like from representative locations is provided through photo simulations. This assessment of visual resources was conducted through the use of digital information review, field investigation, photography, and computer simulation from a nearby aesthetic resource.

i. Management Action Description

The Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building) involves the replacement of the existing Ski Patrol Building with a new building with design elements which reflect the natural materials of the region, and installation of a public safety radio communication system. These improvements will improve Ski Patrol Services and improve the health, safety and general welfare of visitors to WFM, the region, and the community.

ii. Zone of Visual Influence (ZVI)
Exhibit 3.A5.f – Visual Assessment Management Action Map, identifies the location of the Management Action at the WFM facility. Using the Management Action location as a target point (control point), digital terrain modeling was utilized to create ZVI mapping. A single target point was used at the PSRCS/SP Building.

Throughout the region, most locations do not have a view of WFM because of topography and vegetation. Based on topography and vegetation cover on WFM and in the study area used in the digital elevation modeling, 99.5% of the region within 25 miles of the site will not have any potential for views of the proposed Management Action, and 98.3% of the region within 5 miles will not have any potential for views of the proposed Management Action.

In Exhibit 3.A5.d - 5 Mile Zone of Potential Visibility, yellow signifies those areas where the Management Action could be visible when only topography is taken into consideration. Red signifies those areas where the Management Action could be visible when both topography and vegetation are considered. Forest tree height of forty feet was used for the modeling that produced the potential visibility mapping.

Potential visibility does not necessarily translate directly into potential impacts. For example, the modeling shows that there is potential for views from much of the lake surface on Lake Placid. Views from the lake will be in the direction of PSRCS/SP Building. While there is potential for a view into this part of WFM, the change in view will not be discernible, as described in the following section.

Likewise, the potential visibility mapping shows potential for views to the Management Action from a fairly large area in the Town of Peru, nearly 25 miles distant. While Whiteface Mountain may indeed be visible from these locations under optimum visibility conditions, there is no way that a small building at WFM could be discernible at a distance of 25 miles.

iii. Evaluation of Visibility Within 5 Mile Visual Assessment Study Area
Evaluating the map of aesthetic resources with overlaid ZVI mapping, resources that potentially had views of the Management Action were identified. This is described in the following sections.

d. Public Safety Radio Communications System – Little Whiteface Ski Patrol Building

i. Impacts
The potential visual impacts for the PSRCS/SP Building include two whip antennas on the roof and the new architectural feature, the cupola, within which will be concealed two microwave antennas and one corner reflector antenna.

This Management Action is located beyond and downhill of the top lift terminal of the Cloudsplitter Gondola, starting down the “back side” of Little Whiteface. The existing ski patrol building is not visible in any of the photos in Exhibit 3.A5.e – Viewshed Photos.

The potential visual impact for this Management Action will be negligible. Each whip antenna is narrow. The whip antenna on the cupola only extends 19.8 feet above the cupola, and the whip antenna on the roof only extends 13.8 feet above the roof. The cupola will be a minor architectural addition to the building which has existed in the viewshed for approximately forty years. It will not increase viewpoints from which the existing building is

already visible, but it will improve the aesthetics of the building from existing viewpoints. In this regard, any potential visual impact arising from the building replacement will be positive.

ii. Mitigation Measures
No significant adverse impacts have been identified, so no mitigation measures are necessary.

6. Wildlife

a. Impacts
The development of the PSRCS/SP Building will involve short-term construction activity in an area which is subject to intensive use during the winter, summer and fall seasons. Additionally, the location of this Management Action is within the elevations which define the Adirondack Sub-Alpine Bird Conservation Area. These potential impacts are discussed in subpart A8, Critical Habitat - Adirondack Sub-Alpine Bird Conservation Area, of this section.

b. Mitigation Measures
The following measures will be employed to mitigate the potential impacts on Wildlife during the execution of the Management Action:

The construction activities for the PSRCS/SP Building will mitigate the noises from construction activities, which may disturb wildlife, by avoiding unnecessary idling of earthwork equipment and other heavy construction equipment. Noise generated by earthwork equipment will be considered in the selection of the most appropriate equipment to avoid disturbance. Exhibit 3.A6.a – Equipment Noise Level Controls, identifies the parameters targeted for equipment use at WFM. In addition to the controls on equipment, the selection of the most appropriate earthwork operations will be employed, as discussed in subpart A2, Geologic and Topographic Resources, of this section.

7. Fish and Aquatic Life

a. Impacts
There are no anticipated direct impacts to fish in any of the Management Action presented in this UMP Amendment. However, impacts from excavation and cuts, related to Geologic and Topographic Resources, could negatively impact Fish and Aquatic Life if mismanaged.

b. Mitigation Measures
The mitigation measures discussed in subpart A4 Geologic and Topographic Resources, of this section cite requirements for managing Geologic Resources. The practices presented for the management of these resources will ensure the mitigation of negative impacts to Fish and Aquatic Life related to said resources.

8. Critical Habitat – Adirondack Sub-Alpine Bird Conservation Area

Areas at the Whiteface Ski Center are identified by the State of New York as Adirondack Sub-Alpine Bird Conservation Areas. A “Species of Special Concern” in New York, Bicknell’s thrush, is known to inhabit areas of Whiteface. These two conditions motivated Whiteface to develop procedures and standards for mitigating impacts to Bicknell’s thrush habitat. This section discusses the potential impacts and mitigation measures of the proposed Management Action which may affect Bicknell’s thrush habitat.

a. Impacts

The Management Action, Public Safety Radio Communications System – Little Whiteface Ski Patrol Building, occurs at an elevation which may contain habitat conducive for Bicknell's thrush.

Among Neotropical migrant birds in the northeastern United States, Bicknell's thrush *(Catharus bicknelli)* is ranked as the species most at risk of extinction, and thus of highest conservation priority *(Pashley et al. 2000, Rimmer et al. 2001a, 2001b)*. Bicknell's thrush is also one of the least-known breeding species of eastern North America, a fact that has precluded its formal consideration for federal endangered or threatened status. At both ends of its migratory range, the species occupies a restricted, highly fragmented distribution and faces multiple habitat threats. One identified threat in the northeastern US breeding range of Bicknell's thrush is habitat loss and fragmentation from ski area development. Despite numerous ski area expansion projects in New England and New York during the past decade, no systematic evaluation of the effects of ski area development on Bicknell's thrush had been conducted until ORDA/Whiteface commissioned the Vermont Institute of Natural Science to perform an evaluation and provide recommendations.

b. Mitigation Measures

i. Introduction to Bicknell's Thrush Mitigation Measures

A careful assessment of existing information was performed to guide future ski area development in the region and to direct planning for site-specific and project-specific mitigation measures. Whiteface Mountain partnered with the Vermont Institute of Natural Science (VINS), the Wildlife Conservation Society (WCS), and the DEC to apply ecological data obtained from two ski centers in Vermont to develop mitigation measures for ski trail construction on Whiteface Mountain. In addition to the application of these mitigation measures, Whiteface commissioned WCS to perform an on-site survey for the presence or absence of the species at a number of control points at the ski center. The WCS, in administration of the WCS's Adirondack Communities and Conservation Program, has performed four seasons of Short Term Monitoring. Three seasons of the monitoring were done during the pre-construction phase (2004, 2005 and 2006), and one season of the monitoring was done post-construction (2008). Preliminary findings show no statistically significant effect of ski trails on the presence of Bicknell's thrush, although WCS cautions that sample sizes are small due to the nesting behavior of Bicknell's thrush.

ii. Holistic Bicknell's Thrush Mitigation Measures for WFM Adirondack Sub-Alpine Bird Conservation Areas

The primary resource for the development of the mitigation measures for trail construction above 2,800 feet is the VINS report titled, "Evaluating the Use of Vermont Ski Areas by Bicknell's Thrush: Applications for Whiteface Mountain, New York" (BTAWM). The Executive Summary of the BTAWM states that there was *"no evidence that nest predation rates differed between ski area and natural forest plots, or that nests in either plot type were more likely to be depredated"*, and that *"we (VINS) found no significant differences in adult survivorship, nest success, or breeding productivity of Bicknell's Thrushes between ski areas and natural forests."* These findings provide clear evidence that development of ski trails on Whiteface Mountain can continue in partnership with sound environmental stewardship. The BTAWM includes recommendations for minimization of project impacts, recommendations for post-construction habitat maintenance, recommendations for project mitigation, recommendations for population monitoring, and introduces suggestions for opportunities for conservation education. The design and construction practices presented in the BTAWM have been embraced by WFM and are the basis of the mitigation strategy for

the Management Action presented here within. Additionally, non-site specific efforts are included in the presentation of the mitigation measures to ensure a holistic presentation and description of Bicknell's thrush mitigation measures and program is communicated within this document.

iii. Construction Mitigation Measures

- Timing of Construction Activities
  - Tree cutting operations above 2,800 feet in terrain identified as suitable Bicknell's thrush habitat shall be prohibited between the dates of 15 May and 01 August.
  - Other construction activities above 2800 feet in terrain identified as suitable Bicknell's thrush habitat shall be reviewed for potential impact between the dates of 15 May and 01 August. Activities that may cause negative impact to Bicknell's thrush will be scheduled for other times.
- Avoid Construction within Suitable Bicknell's Thrush Habitat
  - During the planning phase for new construction, great sensitivity will be applied to avoid suitable habitat for Bicknell's thrush. These areas include west-facing slopes, ridgelines, fir waves and areas adjacent to fir waves that have been explored in the field with DEC staff and WCS staff. While it is impossible to completely avoid all the above referenced areas and develop a ski trail system and their support systems, all attempts have been made in the layout of the proposed Management Action to minimize negative impacts.

iv. Habitat Maintenance Measures

- Vegetation Management
  - Since the implementation of the Bicknell's Thrush Habitat Management Plan and Development Standards in 2007, ski trail vegetation management has included the feathering of trail edges. This technique is targeted at developing a space between the ski trail and trees greater than five meters to include woody vegetation of heights of 0.5-2 meters or more.
  - The technique of feathering of trail edges was originally identified for ski trails, however, this vegetation management technique shall now include all liner construction, such as service and access roads.
  - Regeneration cuts to keep the spruce-fir feathered edge as a dense thicket are performed as infrequently as possible to maximize Bicknell's thrush habitat availability and continuity.
- Glade Management
  - Cleared vegetation on existing Glade trails is not being expanded beyond the current limits, and existing Glade trails will be kept as narrow as possible.
  - Remaining patches of understory are being left in place when possible, and altered only minimally as required.
  - Annual maintenance will ensure that some young saplings are retained in order to allow continual recruitment for older trees.
  - Efforts to prevent all unauthorized Glade trail establishment and maintenance, or unauthorized habitat alteration, are ongoing.
- Timing of Vegetation Management
  - Vegetation management in areas of Bicknell's thrush breeding habitat is performed after 01 August.
- Bicknell's Thrush Habitat Management Plan
  - Trail areas that are appropriate for Bicknell's thrush habitat will be maintained by WFM staff.

- A Bicknell's Thrush Habitat Management Plan and Development Standards has been developed and incorporated into the "Whiteface Mountain Trails and Slopes Handbook for Summer Operations. Refer to Appendix 3.A8.a - Whiteface Mountain Trails and Slopes Handbook Summer Operations.

iv. General Mitigation Measures

- Mapping of Bicknell Thrush Habitat
  - Habitat for Bicknell's thrush is inherently patchy and dynamic. Because Bicknell's thrush respond to natural disturbances that are sometimes ephemeral in nature, it is difficult to accurately predict whether or not Bicknell's thrush will occupy a given area. Field monitoring by the WCS has allowed for a better understanding of occupied habitat. The WCS has provided census points from their survey work and these points are incorporated into the Post-Construction Gross Vegetation Survey program.
- No Net Loss Mitigation
  - No net loss of Bicknell's thrush habitat will be addressed by the creation of potential new habitat during the construction of new trail systems. Trail edges will be opened up and/or feathered to allow suitable habitat to grow. The planting of balsam fir seedlings will be targeted in areas that have potential for creating habitat.
  - Ski lift openings will be included in the Bicknell's Thrush Habitat Management Plan. Edges will be feathered to develop new habitat when allowed by NYS Department of Labor ski trail construction regulations.
  - Passive re-vegetation through natural succession will be embraced on existing trails that become obsolete. This process has begun at Trail #52 "Yellow Brick Road" which is at an elevation above 3,650 feet and has an area of 0.1 acres.
  - Restoration and new trail construction will include planting of balsam fir seedlings and saplings.
- Protection of Mitigation Sites
  - Through the use of barriers, sites which have been selected for forest regeneration are protected from skier traffic and accidental passes by mechanized equipment.
  - Protection barriers include signage which reads "NOTICE: All Maintenance and Construction above 2800' are Subject to Strict Guidelines – Consult with Whiteface Management or Trails Department Before Proceeding".
- Habitat Development Standards
  - The Bicknell's Thrush Habitat Management Plan and Development Standards has been developed and incorporated into the Whiteface Mountain Trails and Slopes Handbook for Summer Operations, included as Appendix 3.A8.a.
- Hispaniola Wintering Grounds
  - ORDA has and will continue to support our partners in the efforts to bring public sensitivity and awareness to the challenges facing the Bicknell's thrush on the island of Hispaniola.
  - ORDA will provide opportunities to non-for-profit groups to host informational and fund-raising events at ORDA venues.
  - In its conservation education programs, ORDA will continue to work to include information on the Bicknell's thrush wintering grounds on Hispaniola. Examples of this include the following:
    - Interpretative kiosks to promote conservation of Bicknell's thrush habitat have been placed at the Main Lodge, Kids Kampus, and at the Veterans Memorial Highway.
    - Public awareness posters have been included in the Gondola Wildlife Post Program.

- Informational brochures titled *"Whiteface Wildlife"* are being developed to include information on the challenges to the Hispaniola wintering grounds.
- Whiteface is engaged with the Natural History Museum of the Adirondacks, aka, The Wild Center for the implementation in 2013 an informational systems along the Whiteface Mountain Veterans Memorial Highway. Distinct language regarding efforts Whiteface utilizes to minimize impacts on the nesting locations of the Bicknell's Thrush will be highlighted.

○ In its commitment to work with groups to develop a mitigation fund for Bicknell's thrush wintering habitat on Hispaniola, ORDA has worked as a supporting partner for the development of "The Bicknell's Thrush Habitat Protection Fund". This is a Joint Project of the Adirondack Council, Adirondack Chapter of The Nature Conservancy, Vermont Center for Ecostudies, Audubon New York, and the Wildlife Conservation Society. The Fund, which is administered by the Adirondack Community Trust, announced on 22 October 2012 a grant award to Grupo Jaragua, whose biologists will study the thrush in forested mountains on the Dominican Republic's border with Haiti. ORDA will continue to work as a supporting partner, with its ongoing commitment to collect donations from visitors to ORDA facilities via drop-boxes.

○ As part of Whiteface Mountain's ongoing efforts to study and understand the habitat of the Bicknell's Thrush on the mountain as well as at its wintering grounds in Hispaniola, ORDA will organize several new initiatives to assist this process. ORDA through its concession contract has several retail outlets both at WFM and in Lake Placid. A Bicknell's logo will be created and used on shirts, hats, pins and other items with a portion of the proceeds going to the Adirondack Trust to help with the mitigation fund as well as a fund assisting with ongoing research on Whiteface Mountain. Whiteface will incorporate the logo where appropriate on staff uniforms and printed materials. The staff will receive continuing education as to the challenges faced by the Bicknell's Thrush so that they can speak with knowledge and authority to our visitors. Additionally, research is under way to potentially find ways to incorporate the message within the ORDA Museum programs, further educating the general public on this songbird and the challenges it faces.

v. Population Monitoring Measures

● Short Term Monitoring

A short term monitoring program was performed by WCS in 2004, 2005 and 2006. These three years of pre-construction monitoring allowed for a baseline that was used for the remaining short term monitoring and long term monitoring. The intent of the short term program was to obtain as many seasons of data collection as possible, before disturbance to the area targeted for ski trail development. Appendix 3.A8.b includes the WCS' 2004, 2005, 2006 and 2008 End of Season Reports: Use of Whiteface Mountain by Bicknell's Thrush and other Montane Forest Bird Species.

The observations from the conclusion of the Short Term monitoring are; "*the results* [monitoring data] *suggest that the trails had no discernible impact on boreal species* [Swainson's Thrush, Bicknell's Thrush, Blackpoll Warbler] *and may have had a positive effect on the other two* [White-Throated Sparrow, Winter Wren]*." (Wildlife Conservation Society Adirondack Program, Science from the Field, 2000-2010, Ski Development and Mountain Birds, pg 22-23.)* ORDA will continue to review the observations from WCS as part of the Population Monitoring Program. If any discernible impacts are noticed, ORDA will review these with their environmental stakeholders and discuss other mitigation strategies.

- Long Term Monitoring
  ORDA will engage in a Long Term Monitoring program with a schedule which is consistent to the Gross Vegetation Survey of every five (5) years. Coordination of these two (2) programs will help provide comparisons with habitat development and population. ORDA will work in cooperation with independent environmental specialists in the monitoring, data collection and reporting of findings. If any discernible impacts are noticed, ORDA will review these with their environmental stakeholders and discuss other mitigation strategies.

vi. Opportunities for Conservation Education Measures

- Development of Informational Displays
  WFM has developed informational displays to educate visitors about the Bicknell's thrush and other montane forest bird species. Displays are currently located at the WFM Base Lodge, Kids Kampus, and the Whiteface Memorial Highway Roundhouse.
- Public Programs
  The Whiteface Wildlife program was started in 2003 and provides visitors a brochure detailing wildlife, which includes the Bicknell's thrush, on WFM.
- Summer Field Trips
  WFM has expanded its weekly nature walks to a daily nature walk program for the summer operating season.
- Development of Booklets and Brochures Summarizing the Ecology of WFM
  A web page has been added to the WFM and ORDA web sites. The page details the Whiteface Wildlife program.

vii. Management Action Specific Mitigation Measures

- Public Safety Radio Communications System – Little Whiteface Ski Patrol Building
  Work on the PSRCS/SP Building is anticipated to have no specific impact to Bicknell's thrush habitat. No tree cutting will occur, and access to the project location will be via existing trails and the gondola. However, sensitivity to the paths of access which may have Bicknell's nesting in the vicinity must be applied, as presented in Section 8b, Construction Mitigation Measures, of this section. Additionally, the conditions of APA Project Order and Findings 2012, dated 18 December 2012, are conditions of the APA approval for the radio communication system components as required for compliance with Article 27: Adirondack Park Agency – Section 814: State Agency Projects, the conditions are as follows:

  "9. This condition applies to Gore Mountain, Blue Mountain, Little Whiteface Mountain, and Mount Morris (those project sites which are at an elevation exceeding 2,800 feet) : Unless an independent environmental specialist approved in advance by the Agency in consultation with Department of Environmental Conservation concludes in a written report that activities proposed will not have an impact on the Bicknell Thrush's breeding and/or nesting season, the use of heavy machinery, gas powered generators, air compressors, and pneumatic tools shall be prohibited form may 15 until August 1."

  In addition to the above the control of noise from equipment used to transport and construct the building will need to comply with Exhibit 3.A6.a – Equipment Noise Level Controls.

B. Human Resources

The Public Safety Radio Communications System – Little Whiteface Ski Patrol Building will improve public safety radio communications at Whiteface and in the area, thereby increasing visitor and community safety consistent with actions approved in past UMP Updates and Amendments.

1. Transportation

a. Impacts

The traffic volumes estimated and presented in the 2004 UMP Update remain unaffected as related to the proposed action items in this Amendment.

b. Mitigation Measures

The mitigation measures as presented in the 2004 UMP Update remain as presented.

2. Community Services

a. Impacts

Community services such as firefighting, police rescue, emergency medical response and health care will incur significant positive impact under the proposed Management Action. The PSRCS/SP Building will increase the effectiveness of firefighting, police, rescue, emergency medical response and health care by increasing reliable communications.

b. Mitigation Measures

No mitigation measures are planned.

3. Local Land Use Plan

a. Impacts

The actions presented in this Amendment are compatible with the Adirondack Park State Land Master Plan (SLMP), particularly in that they involve the rehabilitation, modernization and expansion of facilities within an existing Intensive Use Area. Directives of the SLMP include avoiding alteration of wetlands, minimizing topographic alterations and limiting clearing of vegetation.

b. Mitigation Measures

The vegetation clearing aspects of the proposed Management Action are compatible with the SLMP, no additional mitigation measures are proposed.

4. Economics

There are no economic impacts relevant to the Management Action.

5. Growth Inducing, Secondary and Cumulative Impacts

a. Impacts

The proposed Management Action is targeted at increasing visitor safety. Changes and impacts to lodging, housing, restaurant, and retail sectors presented in the 2004 UMP/FEIS remain unaffected as they relate to the Actions in this Amendment.

b. Mitigation Measures

The mitigation measures as presented in the 2004 UMP Update remain as presented.

Section 4 – Unavoidable Adverse Environmental Impacts

Some of the potential environmental impacts of the proposed Management Action can be neither prevented nor reasonably avoided. This section describes the unavoidable impacts that may occur as a result of the implementation of the Management Actions described in this UMP Amendment.

It should be noted that no wildlife will be significantly impacted due to either construction or operation of the proposed Management Action, nor will there be impacts to any critical habitats.

A. Construction Phase

The construction of the Management Action will involve some minor clearing of vegetative ground cover in an area that is currently subjective to intense public use which is less than or equal to 0.03 acres. The area is primarily rock and has very limited vegetative cover. At the completion of construction and restoration a maximum net increase in of the permanently impacted area is approximately 980 square feet.

Construction-related noise impacts cannot be entirely avoided; however, efforts will be employed to mitigate these impacts. Such measures are outlined in Section 3.A6.

B. Operational Phase

Critical habitat areas are being completely avoided; therefore, there will be no operational impacts to wildlife.

The Public Safety Radio Communications System – Little Whiteface Ski Patrol Building will be visible from several publicly accessible vantage points. However, there will be no significant adverse visual impact resulting from these modifications because they do not represent a significant change to the visual character of the mountainside.

Section 5 – Alternative Solutions

In accordance with SEQRA, Alternative Solutions were developed and evaluated to determine if they could meet WFM goals with fewer environmental impacts. This Section identifies these Alternative Solutions, and discusses the viability of each.

A. Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building)

1. Alternative Locations

Alternative locations were considered as part of the Alternative Solutions process. Essex County reviewed the existing structure at the Whiteface summit, to determine whether it can support equipment required to upgrade the County's public safety radio communications system. The existing structure is currently occupied with New York State Police antennas, and as such is physically unable to support the County's equipment.

Additionally, the existing structure at the summit is technologically unavailable. The Federal Communication Commission (FCC) will not grant the County a license to operate from the antenna at the Whiteface summit because communications signals from that location would travel into and cause interference with communication signals in Canada.

The proposed site, at the PSRCS/SP Building at Little Whiteface, uses the Whiteface summit as a shield to prevent interference with communication signals in Canada. As such, the FCC has granted Essex County an FCC License to operate its system at the proposed Little Whiteface site, a copy of which is attached as Exhibit 2.D6 – FCC License – Essex County Land Mobile Radio Communications.

Alternative locations would prohibit the addition of public safety radio communications system components; therefore, this is not considered a reasonable and viable Alternative Solution.

2. Alternative Development Parameters

Alternative development parameters were considered as part of the Alternative Solutions process. A review of the development parameters for the PSRCS/SP Building confirms that they are targeted to improve safety for skiers and riders through replacing the Ski Patrol building with a modern building, and to allow upgrades to Essex County's public safety radio communications system.

Alternative development parameters do not meet the goals of WFM; therefore, this is not considered a reasonable and viable Alternative Solution.

3. No Action

No Action was considered as part of the Alternative Solutions process. However, this would prohibit improvements to emergency communications, as outlined in Section 2 subpart D, particularly Statement of Need.

The No Action alternative would result in antiquated public safety radio communications that would be inefficient in light of current technology available for basic and emergency public safety radio communications. Such communications would also be incapable of integration with networks operated by other local, State, and federal agencies.

No Action would deprive the public of state-of-the-art public safety services, thereby negatively impacting the public's health, safety and general welfare. Therefore, it is not considered a reasonable and viable Alternative Solution.

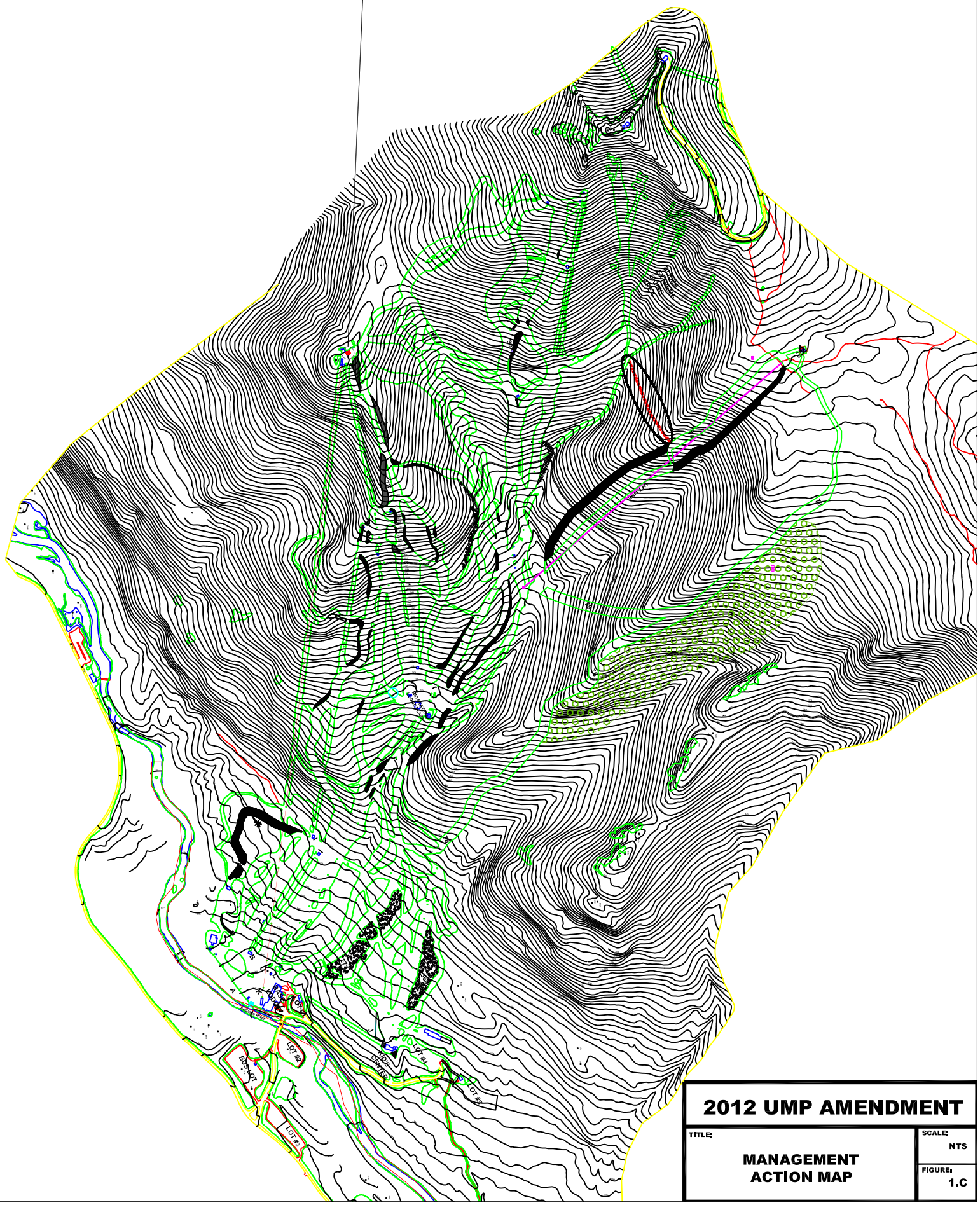
Section 6 – Irreversible and Irretrievable Commitments of Resources

The proposed Management, Public Safety Radio Communications System – Little Whiteface Ski Patrol Building (PSRCS/SP Building), involves a small commitment of land area for the building footprints. The proposed site work will include the removal of existing vegetation and will disturb onsite geology. Since no rare, threatened or endangered species are known to inhabit the site, the impact is not considered significant. The PSRCS/SP Building will also involve a commitment of raw materials for construction of the structures, including concrete, steel, gravel, and wood. Energy resources will be required for construction, operation and maintenance of the structures.

Exhibits

Exhibits – Section 1

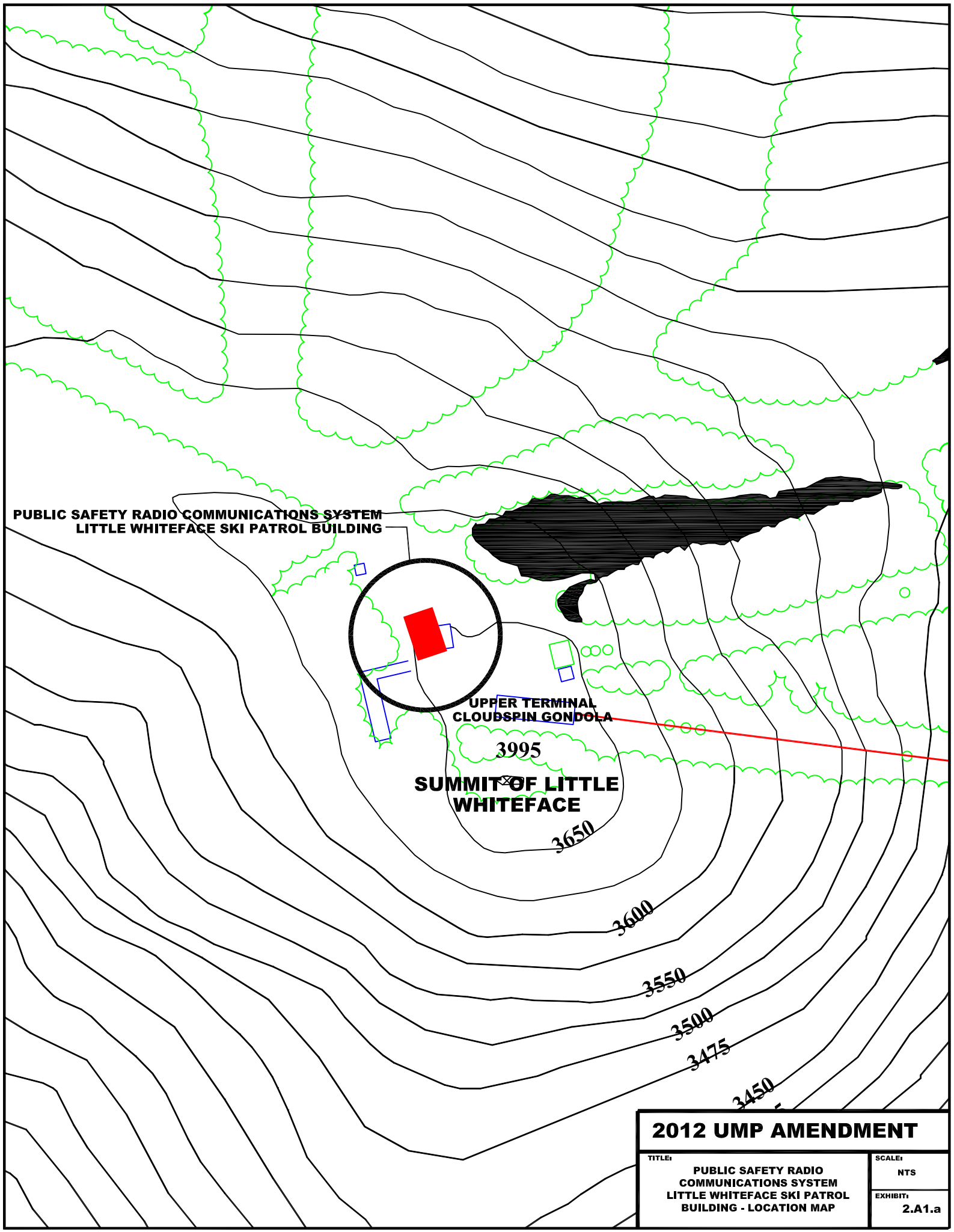
MANAGMENT ACTION
PUBLIC RADIO COMMUNICATIONS SYSTEM - LITTLE WHITEFACE SKI PATROL BUILDING



2012 UMP AMENDMENT

TITLE:	SCALE:
MANAGEMENT ACTION MAP	NTS
	FIGURE: 1.C

Exhibits – Section 2



2012 UMP AMENDMENT

TITLE:	SCALE:
PUBLIC SAFETY RADIO COMMUNICATIONS SYSTEM LITTLE WHITEFACE SKI PATROL BUILDING - LOCATION MAP	NTS
	EXHIBIT: 2.A1.a

Exhibit - 2.A2.a
Public Safety Radio Communications System
Little Whiteface Ski Patrol Building

<u>Existing Structure</u>

Exhibit – 2.A3.a
Public Safety Radio Communications System
Little Whiteface Ski Patrol Building

<u>Preliminary Site Plan</u>

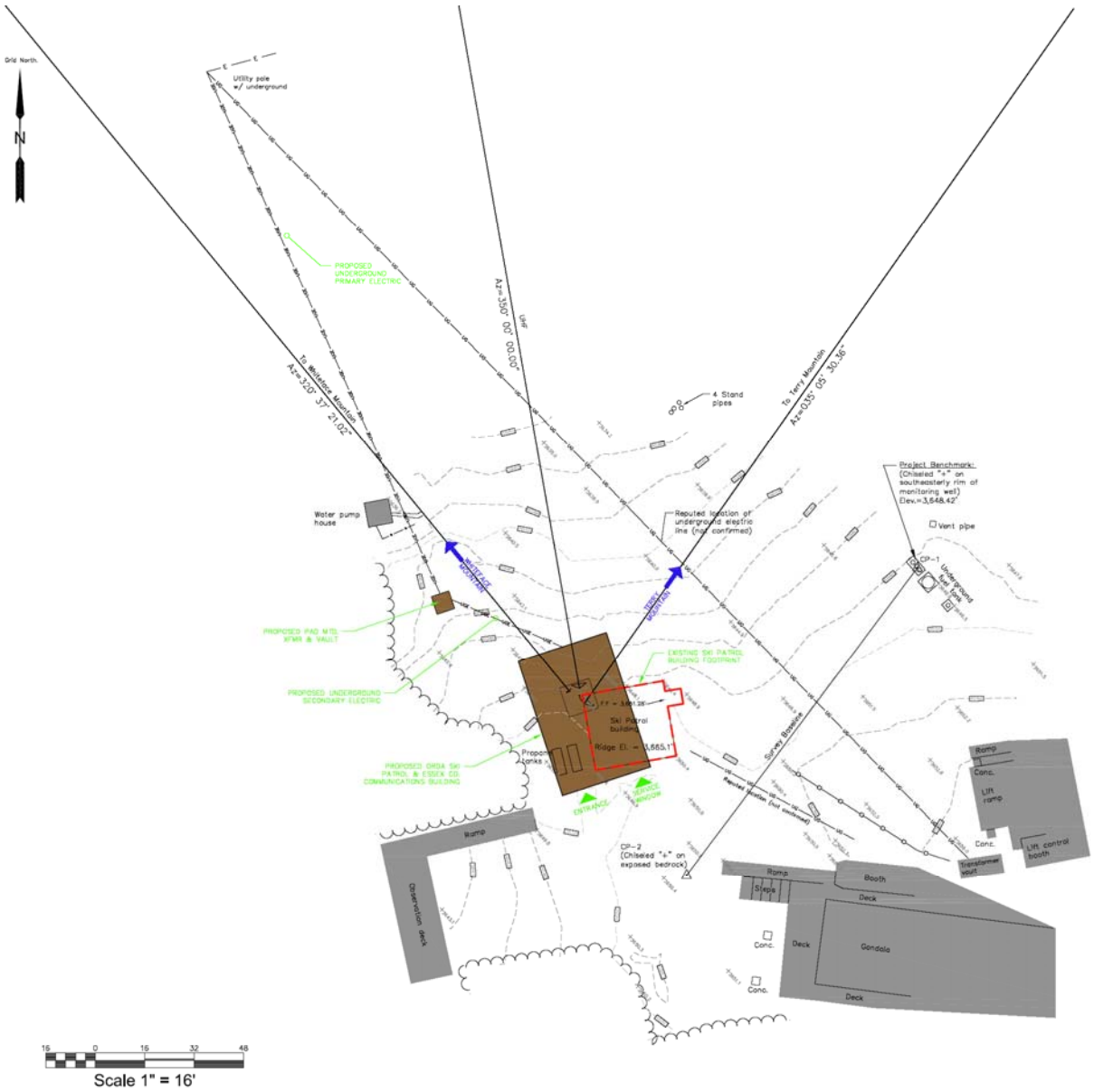
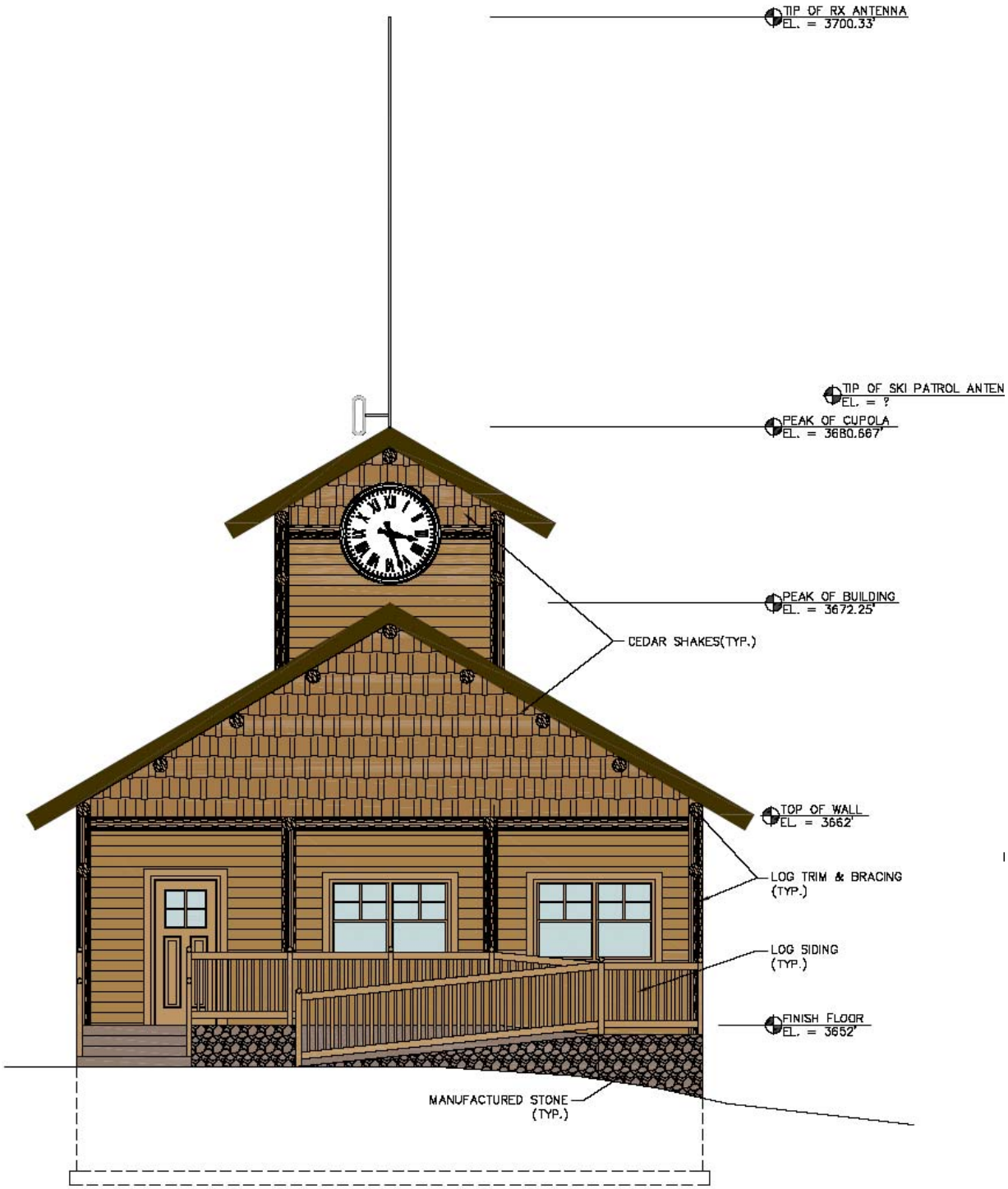


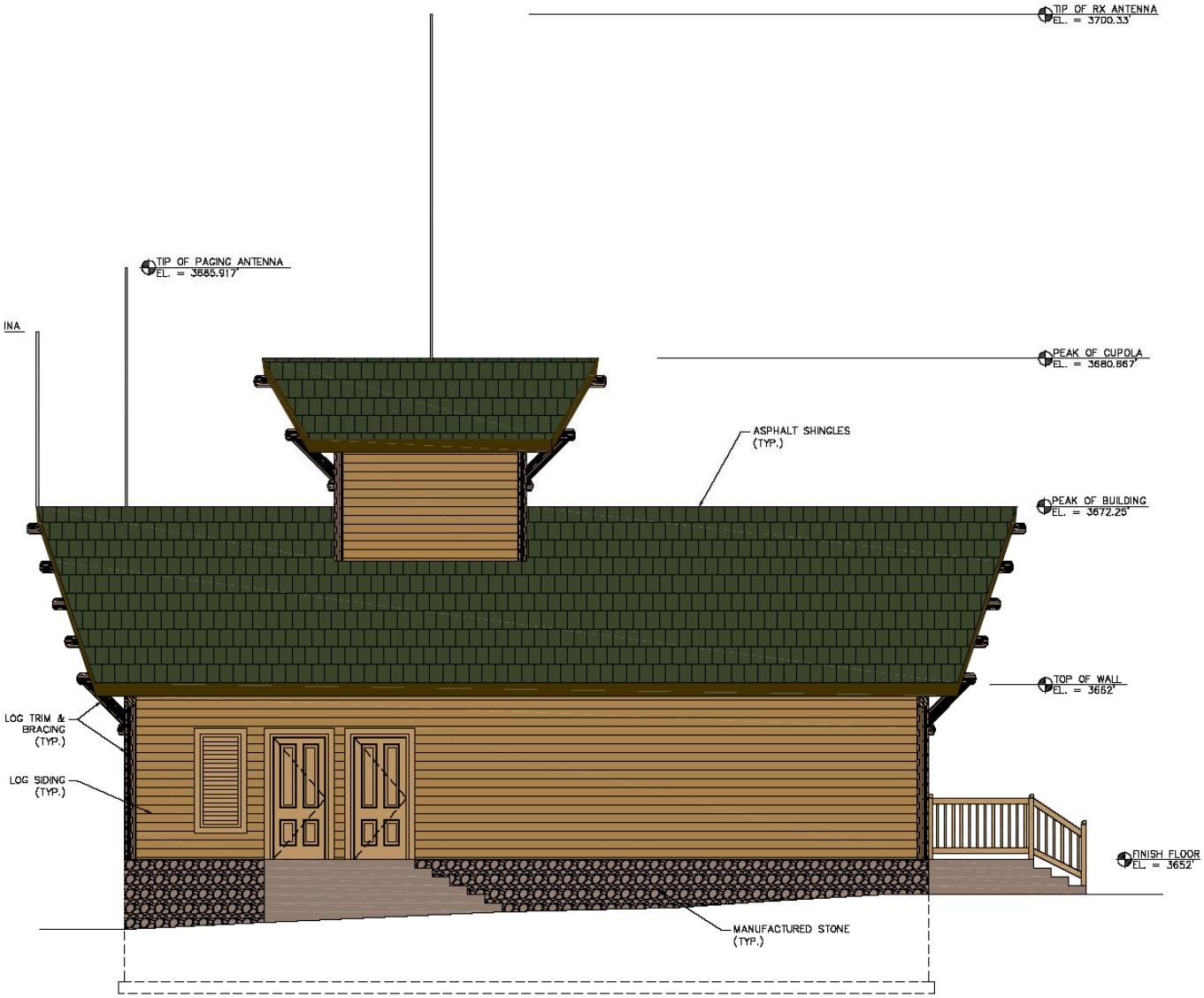
Exhibit – 2.A3.b
Public Safety Radio Communications System
Little Whiteface Ski Patrol Building

Building Elevations

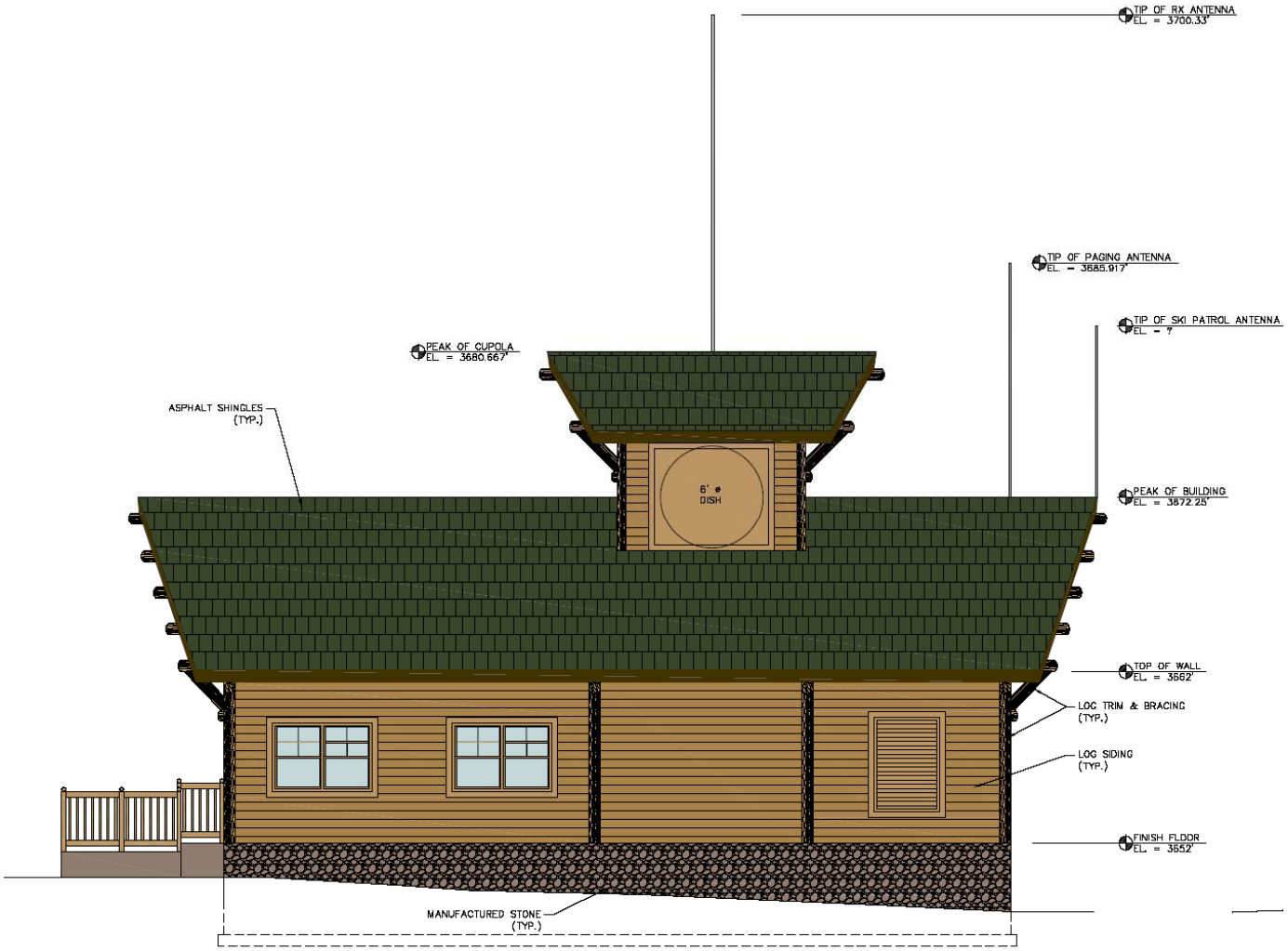
- South Elevation
- West Elevation
- East Elevation
- North Elevation



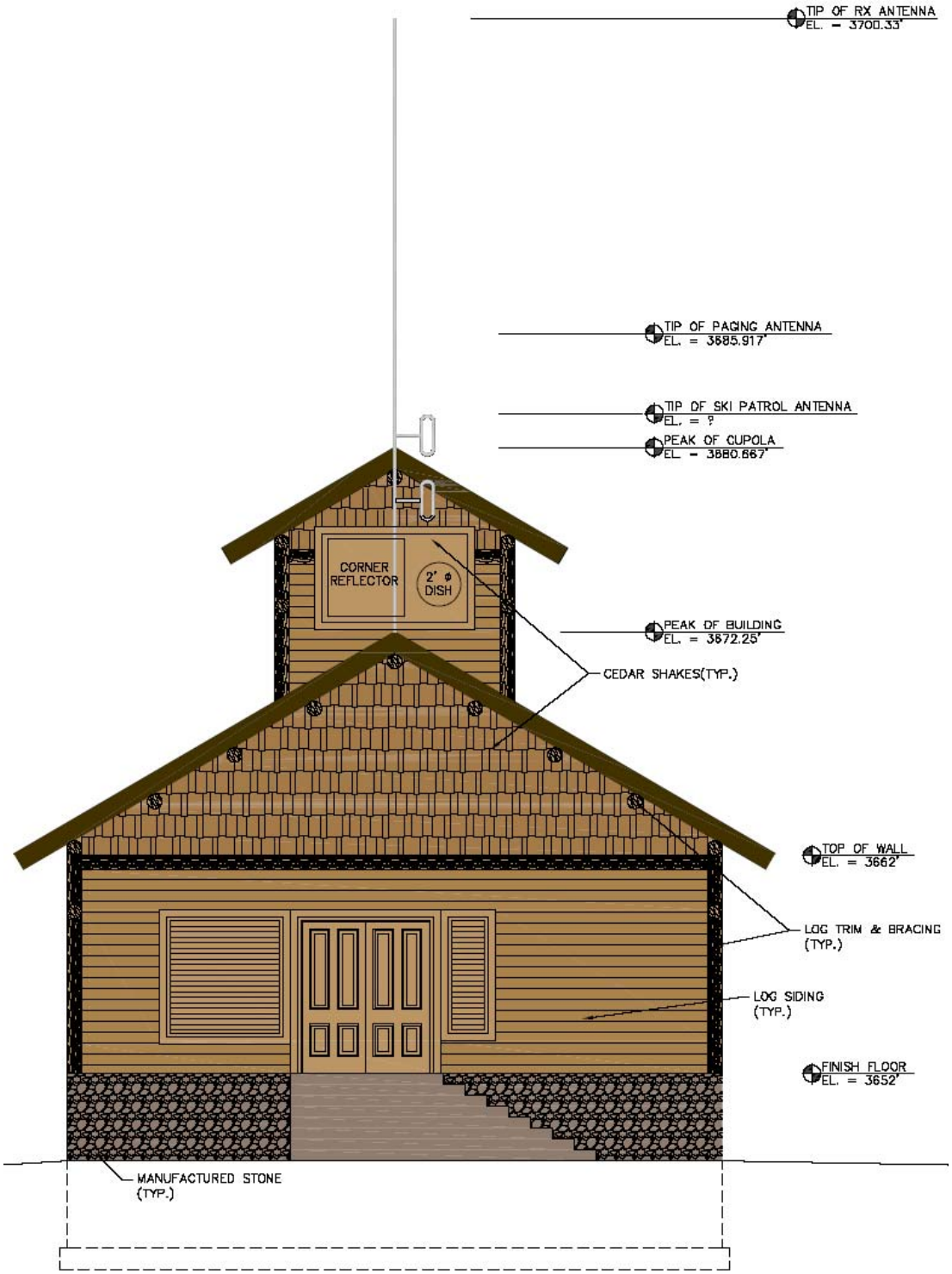
1
A-201 SOUTH EXTERIOR ELEVATION
Scale: 1/4" = 1'-0"



2
A-201 WEST EXTERIOR ELEVATION
Scale: 1/4" = 1'-0"



1 A-202 EAST EXTERIOR ELEVATION
Scale: 1/4" = 1'-0"



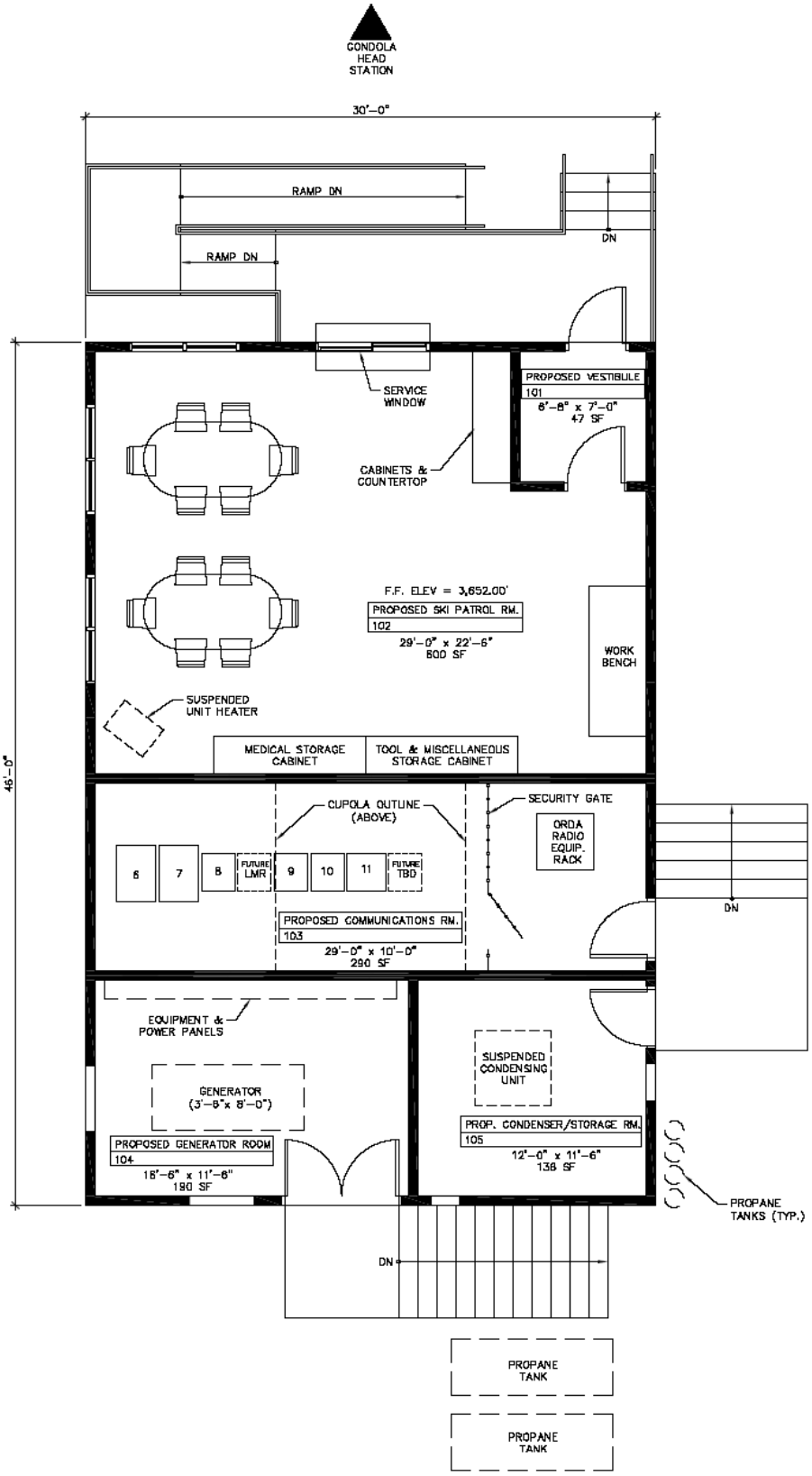
2 A-202 NORTH EXTERIOR ELEVATION

Scale: 1/4" = 1'-0"

Exhibit – 2A4.a
Public Safety Radio Communications System
Little Whiteface Ski Patrol Building

Interior Details

Interior Floor Plan
Interior Building Program
Interior Equipment List



North

1 A-101 PROPOSED SKI PATROL BUILDING

Scale: 1/4" = 1'-0"

GROSS AREA = 1360 SF

Building Program

January 25, 2011

Item	Description of Space		
A. Space Requirements		**Existing area**	**Proposed area**
1	Overall Ski Patrol Room	603 sf	600 sf
2	Storage space for toboggans during off season	114 sf	115 sf
3	Storage space for medical supplies	24 sf	24 sf
4	Open space in front of information window	30 sf	30 sf
5	Gathering space for Ski Patrol (10-12 people)	50 sf	180 sf
6	Mechanical/Electrical equipment space		
7	Communications Room		290 sf
8	Cupola space		100 sf
9	Vestibule	21 sf	47 sf
10	Kitchenette		
11	Generator Room		209 sf
12	Condenser Room		138 sf
	Gross Area	681 sf	1380 sf
B. Ski Patrol Space Features and Requirements			
1	Table/Chairs in gathering space		
2	Storage cabinets for medical supplies		
3	Open area for storage of toboggans		
4	Shelf and open area in front of information window		
5	Radio equipment rack		
6	Work bench for toboggans		
7	Kitchen cabinet & countertop		
C. Emergency Radio System Space Features and Requirements			
	See separate Equipment List		
D. Mechanical,Electrical Systems Space Features and Requirements			
1	Propane unit heaters		
2	Cooling system / Condenser		
3	Power / Lighting		
4	Generator / ATS equipment		

PRELIMINARY EQUIPMENT LIST

January 25, 2011

No.	Equipment Name	Quantity	Manufacturer	Dimensions	Weight	Frequency	Angle/Direction	Power Requirements	Heat/Cool Requirements	Space Requirements
1	Omnidirectional Antenna	(TBD)	Kathrein Inc., Scala Division	13.8'	9.9 lbs	146-174 MHz		(TBD)	(TBD)	(TBD)
2	Parabolic Antenna	(TBD)	Tessco	2' dia.	186 lbs	5.925-6.425 GHz		(TBD)	(TBD)	(TBD)
3	Super Stationmaster Omni Fiberglass Antenna	(TBD)	Radio Frequency Systems	19.8'	24 lbs	25-299.9 MHz		(TBD)	(TBD)	(TBD)
4	Expcsed Dipole Directive Antenna	(TBD)	Sinclair Technologies	190"	25 lbs	30-76 MHz		(TBD)	(TBD)	(TBD)
5	PAD6-65BC1S1R 6' Std, Single Pol. Ant., w. Radome	(TBD)	Radio Frequency Systems	6' (dia.)	186 or 225lbs w/Radome	(TBD)		(TBD)	(TBD)	(2) 19"w x 30"d x 7'h bays
6	UPS Cabinet	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	25"w x 26"d x 84"h
7	Combiner Rack	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	25"w x 26"d x 84"h
8	LMR Rack (GTR8000's)	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	21"w x 24"d x 84"h
9	Charger & Batteries	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	21"w x 24"d x 84"h
10	Microwave Rack (MHSB)	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	21"w x 24"d x 84"h
11	Daniels Fire Paging Cabinet	1	(TBD)	(TBD)	(TBD)	(TBD)		(TBD)	2 kw	25"w x 24"d x 36"h

Exhibit 2.A4.b

FCC License – Essex County Land Mobile Radio Communications

REFERENCE COPY
This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.

Federal Communications Commission
Public Safety and Homeland Security Bureau

RADIO STATION AUTHORIZATION

LICENSEE: ESSEX, COUNTY OF

ATTN: DONALD JAQUISH
ESSEX, COUNTY OF
702 STROWERSVILLE RD.
PO BOX 30
LEWIS, NY 12950

Call Sign	File Number
WQLI541	
Radio Service PW - Public Safety Pool, Conventional	
Regulatory Status PMRS	
Frequency Coordination Number	

FCC Registration Number (FRN): 0003439106

Grant Date	Effective Date	Expiration Date	Print Date
01-29-2010	02-04-2010	01-29-2020	12-07-2010

STATION TECHNICAL SPECIFICATIONS

Fixed Location Address or Mobile Area of Operation

Loc. 1 **Address:** SUMMITT OF BELFRY MTN
City: MORIAH **County:** ESSEX **State:** NY
Lat (NAD83): 44-06-05.2 N **Long (NAD83):** 073-32-53.0 W **ASR No.:** **Ground Elev:** 507.0

Loc. 2 **Address:** SUMMIT MT DEFIANCE
City: TICONDEROGA **County:** ESSEX **State:** NY
Lat (NAD83): 43-49-52.9 N **Long (NAD83):** 073-24-23.4 W **ASR No.:** **Ground Elev:** 256.9

Loc. 3 **Address:** WHITE FACE SKI CNTR LIFT STATION
City: WILMINGTON **County:** ESSEX **State:** NY
Lat (NAD83): 44-21-21.9 N **Long (NAD83):** 073-53-30.8 W **ASR No.:** **Ground Elev:** 1113.0

Loc. 4 **Address:** SUMMITT GORE MTN
City: NORTH CREEK **County:** WARREN **State:** NY
Lat (NAD83): 43-40-20.3 N **Long (NAD83):** 074-02-51.3 W **ASR No.:** **Ground Elev:** 1092.0

Loc. 5 **Address:** SUMMITT HOGBACK MT
City: EAS MONKTON **County:** ADDISON **State:** VT
Lat (NAD83): 44-13-25.3 N **Long (NAD83):** 073-07-26.2 W **ASR No.:** **Ground Elev:** 366.0

Loc. 6 **Area of operation**
Land Mobile Control Station meeting the 6.1 Meter Rule: NY

Loc. 7 **Area of operation**
Countywide: ESSEX, NY

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Reference Copy

Licensee Name: ESSEX, COUNTY OF

Call Sign: WQLI541 **File Number:** **Print Date:** 12-07-2010

Antennas

Loc No.	Ant No.	Frequencies (MHz)	Sta. Cls.	No. Units	No. Pagers	Emission Designator	Output Power (watts)	ERP (watts)	Ant. Ht./Tp meters	Ant. AAT meters	Construct Deadline Date
1	1	000151.08500000	FB2	1		11K2F1D	100.000	77.000	30.0	279.0	12-31-2011
		Frequency 000151.08500000 Special Condition									
		NHIA NOTHING OPERATIONS ON {151.085} MHZ IN THE {Cardinal, ON}AREA. OUR SERIAL(S) {0921134} REFERS.									
1	1	000154.14500000	FB2	1		11K2F1D	100.000	77.000	30.0	279.0	12-31-2011
		Frequency 000154.14500000 Special Condition									
		NHIA nothing operations on {154.145} MHz in the {Berthierville,QC} area Lat: {460502} N Long: {731038} W.									
2	1	000159.04500000	FB2	1		11K2F1D	100.000	65.000	12.9	113.3	12-31-2011
		Frequency 000159.04500000 Special Condition									
		Authorization on a secondary basis.									
2	1	000151.10000000	FB2	1		11K2F1D	100.000	65.000	12.9	113.3	12-31-2011
2	1	000151.30250000	FB2	1		11K2F1D	100.000	65.000	12.9	113.3	12-31-2011
2	1	000151.34000000	FB2	1		11K2F1D	100.000	65.000	12.9	113.3	12-31-2011
2	1	000151.35500000	FB2	1		11K2F1D	100.000	65.000	12.9	113.3	12-31-2011
		Frequency 000151.35500000 Special Condition									
		NHIA NOTHING OPERATIONS ON {151.355} MHZ IN THE {Laval, QC}AREA. OUR SERIAL(S) {930655} REFERS.									
3	1	000151.30250000	FB2	1		11K2F1D	50.000	19.000	3.0	555.0	12-31-2011
3	1	000159.04500000	FB2	1		11K2F1D	50.000	19.000	3.0	555.0	12-31-2011
		Frequency 000159.04500000 Special Condition									
		Authorization on a secondary basis.									
3	1	000154.10000000	FB2	1		11K2F1D	50.000	19.000	3.0	555.0	12-31-2011
4	1	000151.34000000	FB2	1		11K2F1D	100.000	24.000	30.0	497.0	12-31-2011
4	1	000159.04500000	FB2	1		11K2F1D	100.000	24.000	30.0	497.0	12-31-2011
		Frequency 000159.04500000 Special Condition									
		Authorization on a secondary basis.									
4	1	000156.21000000	FB2	1		11K2F1D	100.000	24.000	30.0	497.0	12-31-2011
5	1	000158.91000000	FB2	1		11K2F1D	100.000	110.000	30.0	193.0	12-31-2011
		Frequency 000158.91000000 Special Condition									
		Authorization on a secondary basis.									
5	1	000151.35500000	FB2	1		11K2F1D	100.000	55.000	30.0	193.0	12-31-2011
		Frequency 000151.35500000 Special Condition									
		NHIA NOTHING OPERATIONS ON {151.355} MHZ IN THE {Laval, QC}AREA. OUR SERIAL(S) {930655} REFERS.									
6	1	000151.34000000	FX1	6		11K2F1D	25.000	75.000			
6	1	000156.12000000	FX1	6		11K2F1D	25.000	75.000			

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Reference Copy

Exhibits – Section 3

Exhibit 3.A1.a
Forest Cover Types and Ecological Communities

(Extracted from the 2004 Whiteface Unit Management Plan, Section II)

(2) FOREST COVERTYPES AND ECOLOGICAL COMMUNITIES

The 2910-acre Whiteface Mountain Ski Center Intensive Use Area (IUA) is situated in the Adirondack High Peaks Ecozone, as identified by the New York Natural Heritage Program. The IUA is comprised primarily of terrestrial communities with a predominance of forested uplands, and to a lesser extent terrestrial cultural communities of the ski center and the riverine communities of the West Branch Ausable River and its tributaries. The dominant cultural feature in the IUA is the ski center, which utilizes approximately 211 acres or 7% of the IUA total area. Another major cultural feature consists of the summit facilities associated with the Whiteface Mountain Veterans Memorial Highway. However, this use is outside the Whiteface Mountain Ski Center IUA and is in the adjacent Veterans Memorial Highway IUA.

The terrestrial cultural features consisting of the ski center trails and facilities dominate the visual landscape of the IUA. As is shown in Exhibit II-8, the ski center stretches from the upper slopes of the mountain, about 400 feet below the summit of Whiteface Mountain, including the Little Whiteface Summit, down to the existing base lodge facilities adjacent to the West Branch Ausable River. The northern half of the IUA remains essentially wild, with no current ski center trails or facilities, however, the remnants of a former ski trail in an area about 4000 feet due east of the Whiteface Mountain summit are still discernible.

In general, the vegetation of the Ski Center area progresses from a hardwood forest dominated by sugar maple and beech, on the lower slopes of the mountain, to conifer forests with red spruce and balsam fir upwards toward the summit. This is a common progression found on most mountainous terrain throughout the Adirondacks. In previous unit management plans for the Ski Center, vegetation was described in terms of forest covertypes, which is a forestry-oriented approach. Exhibit II-8 - Vegetation Covertype Map, shows the forest covertypes identified by NYSDEC. The vegetation unit boundaries on this map have been altered from previous versions on the basis of in-field observations and interpretation of recent aerial photographs.

Following are descriptions of these covertypes:

a) Northern Hardwood

This forest covertype is composed primarily of sugar maple, American beech and yellow birch. Other associated species are red maple, white ash, black cherry, hemlock, red spruce, paper birch, and red oak. The northern hardwood forest type is a climax forest capable of reproducing itself under its own canopy. As the stand regenerates itself in the natural forest condition, yellow birch will tend to become less important due to its relative intolerance or inability to grow in the shade as compared to maple and beech.

b) Pioneer Hardwood

In the Adirondacks, this forest covertype is normally composed of aspen, paper birch, and pin cherry with occasional red maple and balsam fir. In the Ski Center area, the overstory of this forest type is almost entirely composed of mountain paper birch while the understory is composed of thick balsam fir.

Other associated species, as mentioned above, can be found in this forest covertype. However, the almost pure dominance of mountain paper birch overshadows the importance of the other hardwood species normally found. Pioneer hardwood is a successional forest covertype and over a period of time it will give way to climax forest covertypes due to the intolerance of the species involved. A few places mapped as this covertype are areas of thin soil and bedrock outcrops, and are not likely to progress quickly to climax forest.

c) Spruce-Fir

The species composition of this forest covertype normally consists of balsam fir, red spruce, and black spruce, which are sometimes associated with tamarack, hemlock and white cedar. The spruce-fir forest covertype on Whiteface Mountain is composed almost entirely of balsam fir and red spruce. Balsam fir is the more numerous of the two species. The presence of a heavy understory consisting of balsam fir and red spruce mixed with an overstory of the same species is evidence of a spruce-fir climax forest covertype. As shown on Exhibit II-8, the highly significant Alpine Krummholz Zone is found within the area mapped as spruce-fir forest covertype, and is dominated by stunted balsam fir and birch.

d) Pioneer Hardwood-Spruce-Fir

This combination of forest covertypes occupies an important transition niche on Whiteface Mountain, although pioneer hardwood-spruce-fir is not usually designated as a separate forest covertype. Species composition consist of mountain paper birch, balsam fir and red spruce overstory with a thick spruce-fir understory. There is a higher percentage of balsam fir in both the understory and overstory of this forest covertype than the associated red spruce. This type lies between the pioneer hardwood and spruce-fir types previously described and is a transition between the intermediate pioneer hardwood type and the climax spruce-fir type.

e) White Pine–Red Pine

This forest covertype is dominated by eastern white pine and red pine. Associated species are balsam fir, red spruce, hemlock, aspen, red maple and white birch.

f) Red Pine

A pure forest covertype of red pine exists in a small area on Whiteface Mountain. Pure natural red pine is considered a unique forest covertype due to the fact that red pine is almost always associated with white pine in unplanted situations. The red pine forest covertype is located on the rocky crest of a ridge, at an elevation of about 2400 feet.

g) Hemlock

This forest covertype occurs in the southern part of the Ski Center, immediately adjacent to the West Branch of the Ausable River. The Eastern hemlock stand is dense and very heavy with just a few associated species consisting of white birch, yellow birch, and American beech. Hemlock is a climax forest covertype capable of reproducing itself under its own shade.

This vegetation covertype classification is less useful when assessing the significance of the vegetation in the context of New York State as a whole. The New York Natural Heritage Program (NYNHP) of NYSDEC has defined and classified the ecological communities of New York State, and has ranked them in terms of their comparative rarity (Reschke, 1990). Table II-3 lists the forest covertypes identified at Whiteface Mountain, the corresponding

ecological communities defined by NYNHP, and the state element rank of each community.

In some cases, the forest covertype has more than one corresponding ecological community (See Table II-3). For instance, the spruce-fir covertype includes the mountain spruce-fir forest, mountain fir forest, and alpine krummholz ecological communities. The mountain spruce-fir forest occurs in the lower part of the area mapped as the spruce-fir covertype, and is dominated by red spruce and balsam fir, with lesser amounts of mountain paper birch, mountain ash, and pin cherry. Around 3500 feet elevation, this community grades upward into mountain fir forest, which has a tree layer composed almost entirely of balsam fir, with small amounts of mountain paper birch, and scattered individuals of red spruce. Above mountain fir forest, at elevations higher than about 4500 feet, to the summit of Whiteface Mountain, is the alpine krummholz community, a stunted woodland dominated by balsam fir. The extent of the alpine krummholz community is mapped on Exhibit II-8.

TABLE II-3
FOREST COVERTYPES AND CORRESPONDING ECOLOGICAL COMMUNITIES

Forest Covertype	Ecological Community
Northern Hardwood	Beech-Maple Mesic Forest Spruce–Northern Hardwood Forest
Pioneer Hardwood	Successional Northern Hardwoods
Spruce-Fir	Mountain Spruce-Fir Forest Mountain Fir Forest Alpine Krummholz
Pioneer Hardwood–Spruce-Fir	(successional stage leading towards Mountain Spruce-Fir Forest)
White Pine–Red Pine	Pine–Northern Hardwood Forest
Red Pine	
Hemlock	Hemlock–Northern Hardwood Forest

Mapping of the boundary of the "alpine krummholz ecozone" shown in Exhibit II-8 started with "Resource Composite Map B39" from the 1995 Whiteface Mountain Comprehensive Management and Planning Review and Unit Management Plan. A map of the location which was included with a

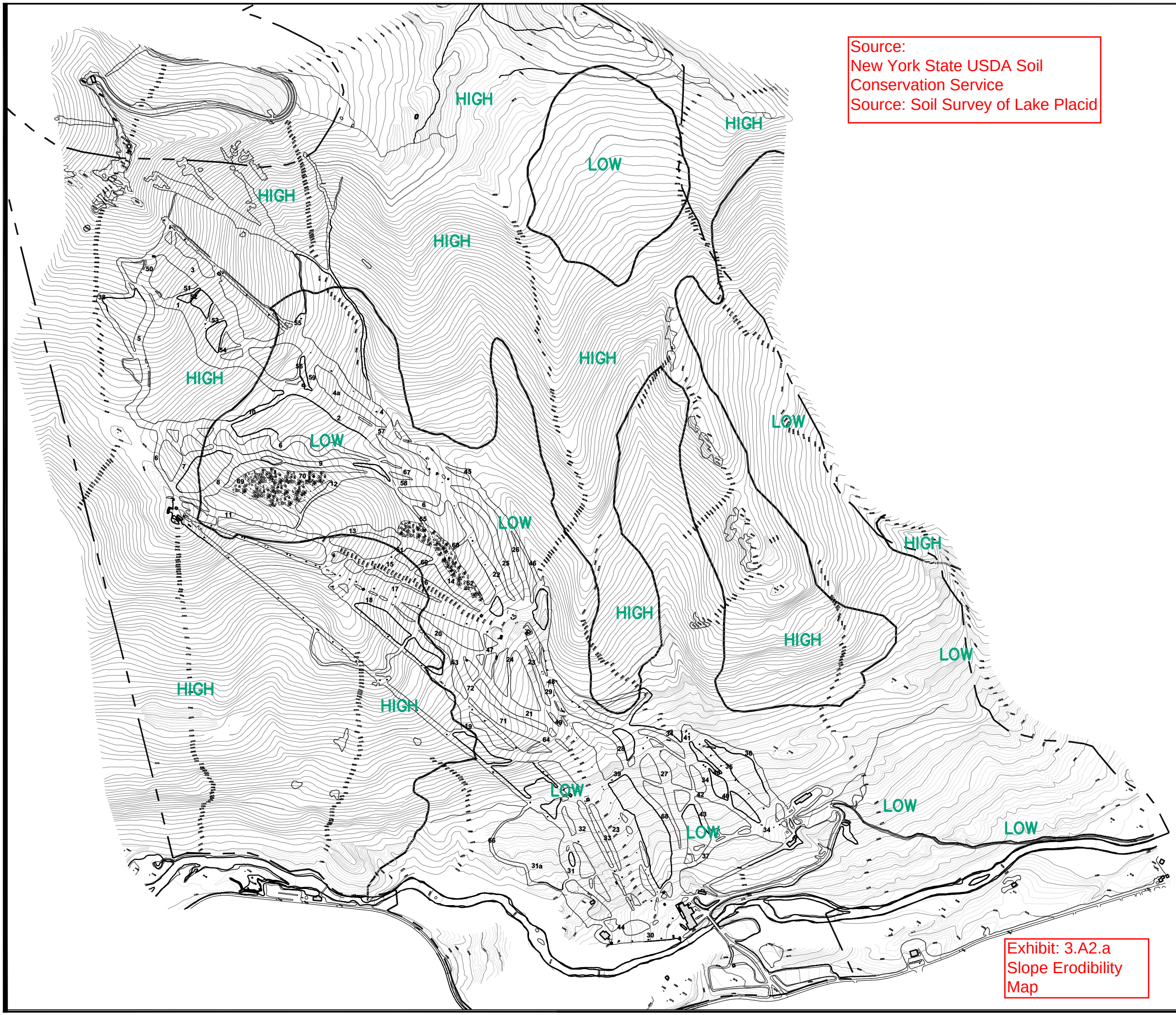
letter dated September 13, 2001, from Heidi J. Krahling of the NY Natural Heritage program showed essentially an identical boundary for this community. LA Group Biologists verified this boundary and refined it slightly through examination of aerial photographs supplemented by field investigations at the summit area of Whiteface Mountain on December 10, 2001. That slightly revised boundary is shown on the Vegetation Covertype Map, Exhibit II-8. On the basis of this boundary, the area of the alpine krummholz community within the UMP area is measured at 7.18 acres (see Table V-2).

The pioneer hardwoods and pioneer hardwoods–spruce–fir covertypes are successional vegetation units that appear to be trending towards the mountain spruce-fir forest community, or possibly towards the spruce–northern hardwood forest in their lower reaches, below about 2800 feet.

The northern hardwood forest covertype is also represented by two ecological communities. The beech-maple mesic forest community, which is dominated by sugar maple and beech, occupies the lower slopes. At higher elevations, red spruce becomes a more significant component among the hardwoods (mainly sugar maple, beech, yellow birch, and red maple), forming the spruce–northern hardwoods forest.

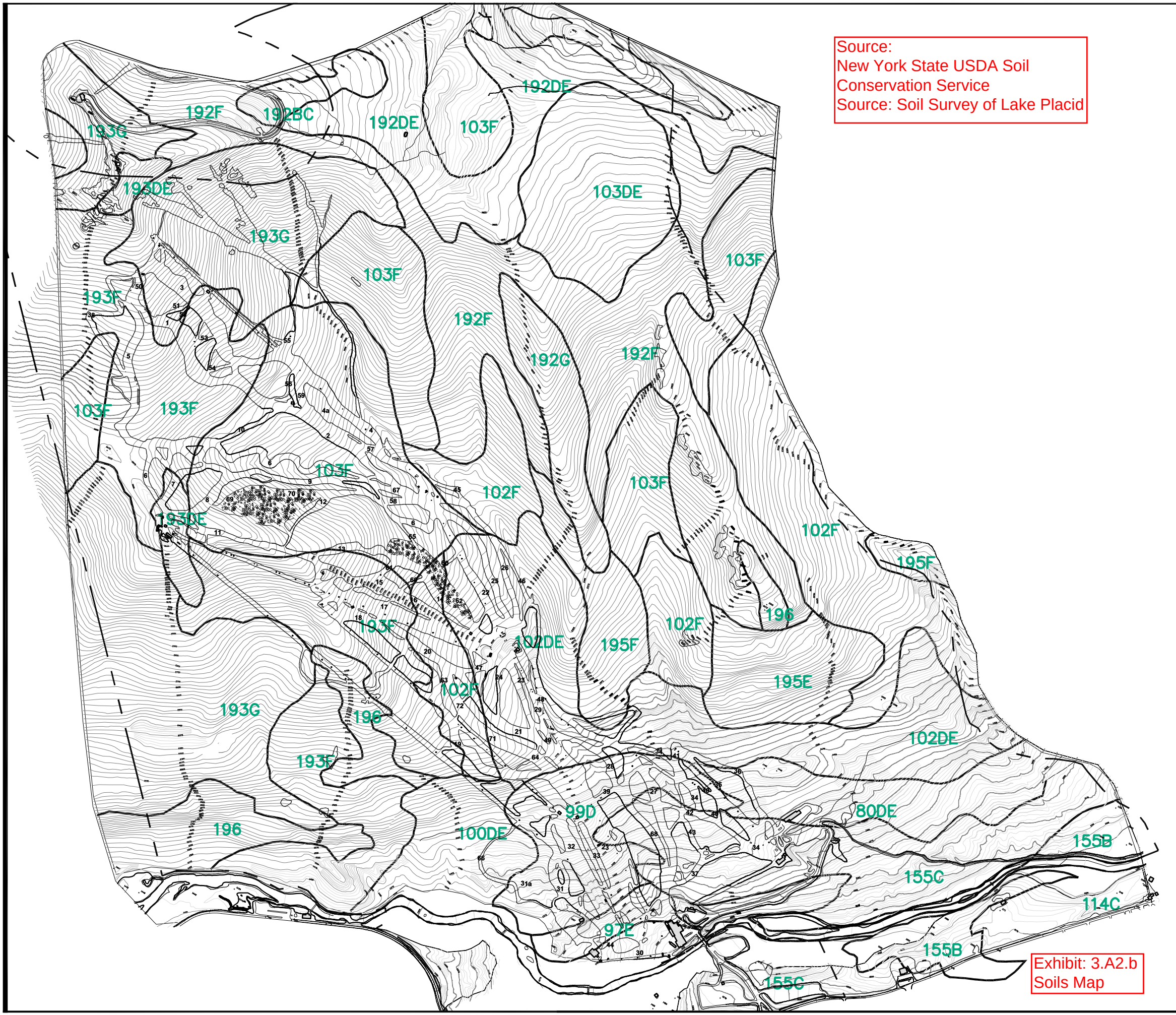
Hemlock forest covertype corresponds with the hemlock-northern hardwood forest community, which varies from nearly pure stands of hemlock to mixtures of hemlock, white pine, beech, sugar maple, red maple, red oak, and other hardwoods. The white pine–red pine covertype is equivalent to the pine–northern hardwoods community, which is dominated by white pine, usually with a significant amount of red pine, mixed with some paper birch, aspens, other hardwoods, red spruce, and balsam fir.

The one covertype for which there is no equivalent ecological community defined by NYNHP (Reschke, 1990) is red pine forest. This consists of one stand of about 5 acres on the top of a dry, rocky ridge. Red pine is by far the most abundant tree, with smaller numbers of red spruce, white cedar, white pine, and balsam fir. According to Greg Edinger, ecologist for NYNHP



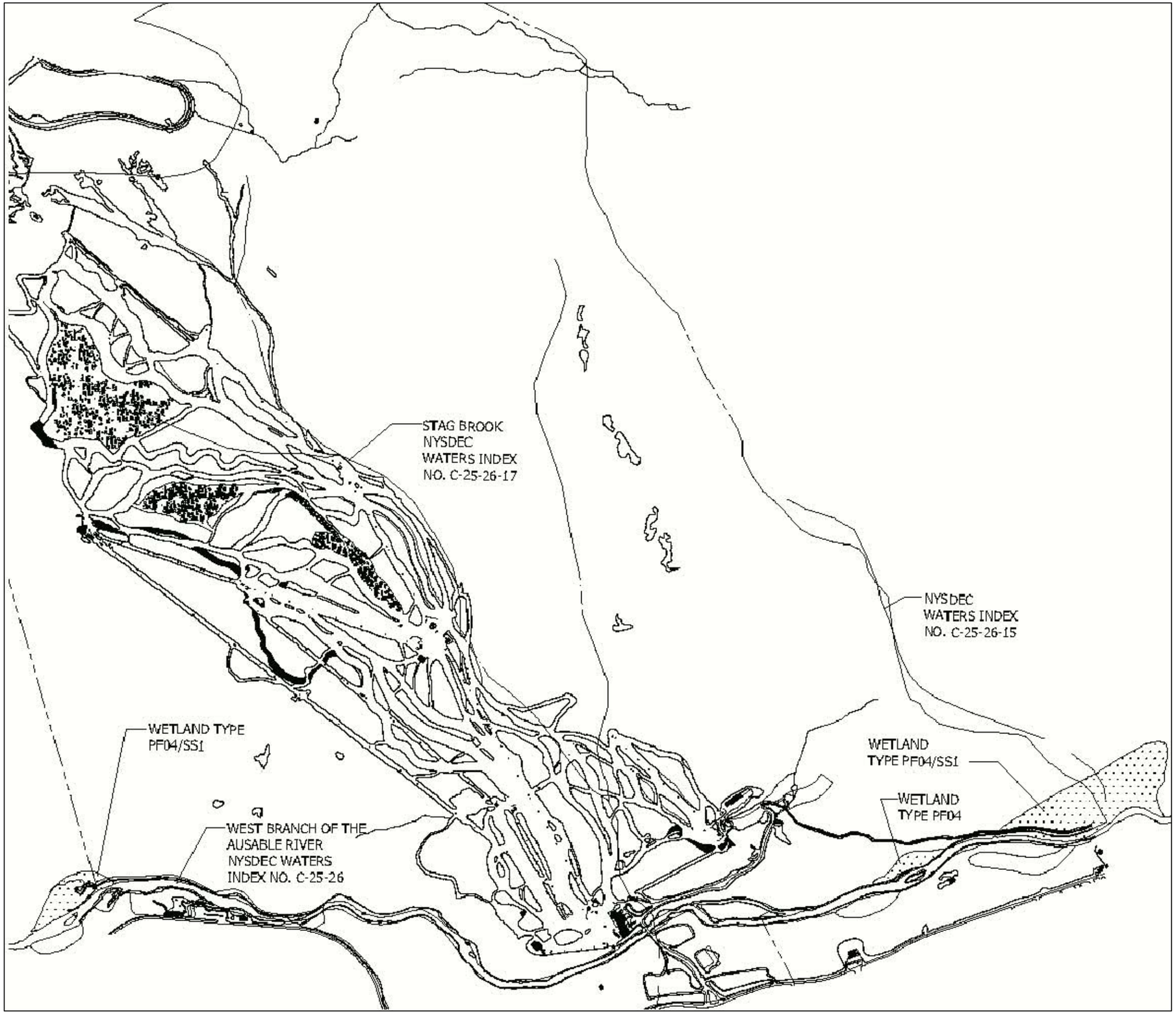
Source:
New York State USDA Soil Conservation Service
Source: Soil Survey of Lake Placid

Exhibit: 3.A2.a
Slope Erodibility Map



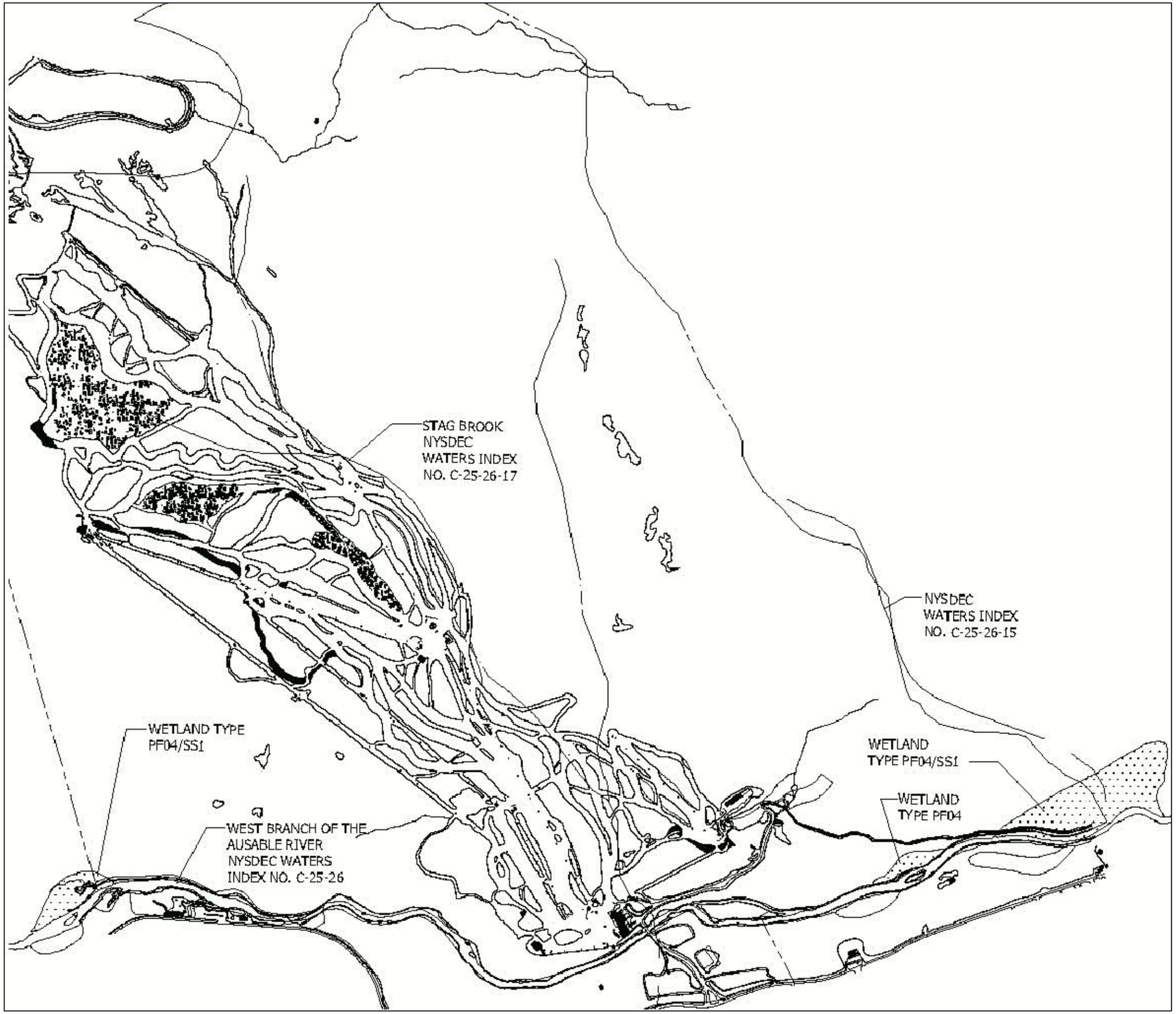
Source:
New York State USDA Soil Conservation Service
Source: Soil Survey of Lake Placid

Exhibit: 3.A2.b
Soils Map



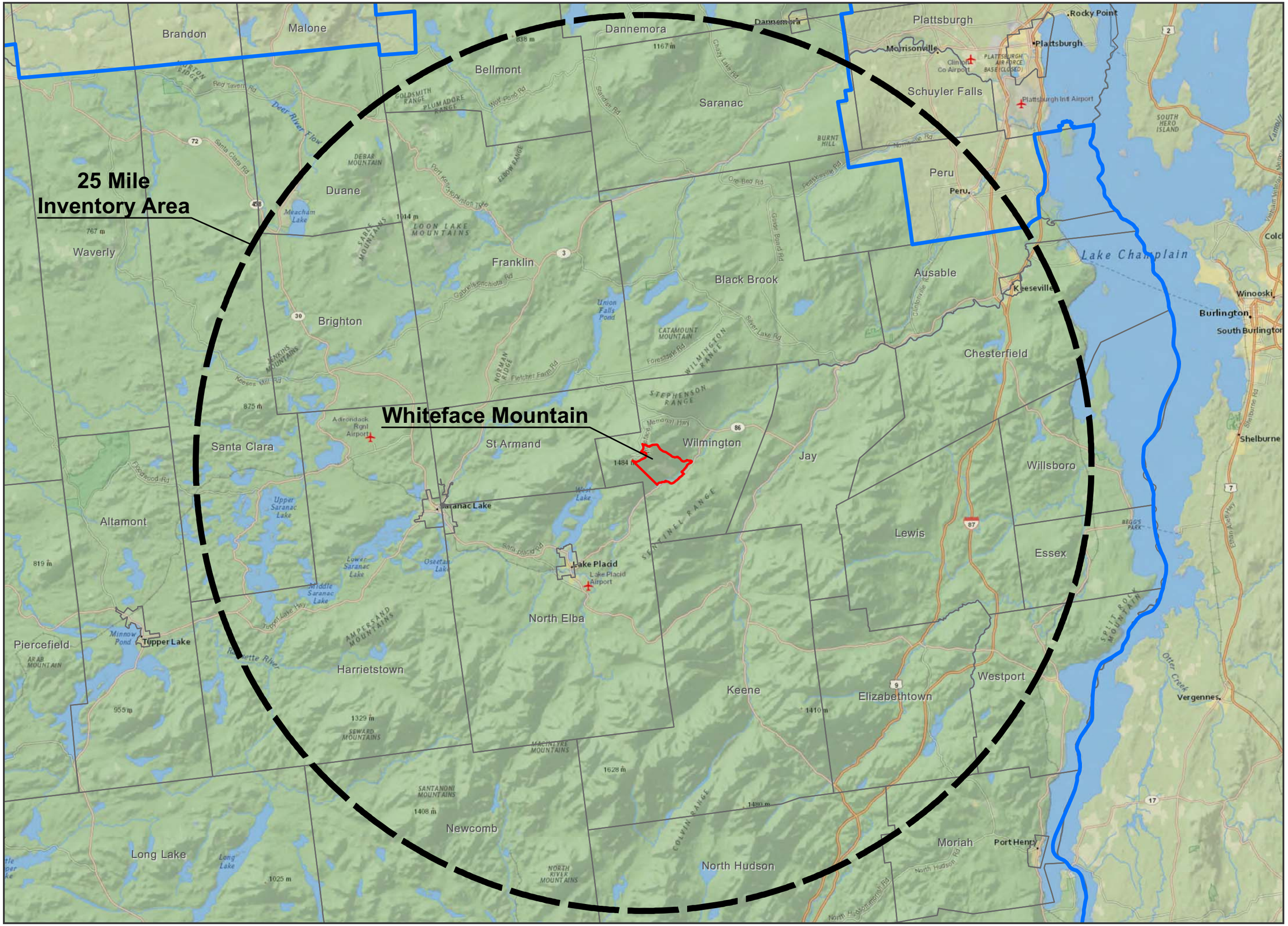
2013 UMP AMENDMENT

TITLE:	SCALE:
WETLANDS MAP	NTS
	EXHIBIT: 3.A3.a



2013 UMP AMENDMENT

TITLE:	SCALE:
HYDROLOGY MAP	NTS
	EXHIBIT: 3.A4.a



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Whiteface Mountain
Town of Wilmington, Essex County, New York

Title
Whiteface Mountain 2012 25 Mile Aesthetic Resources Inventory Area

0 2.5 5
Miles

Project: 201263
Date: 12/19/2012

Exhibit:
3.A5.a

Exhibit 3.A5.b
Inventory of Aesthetic Resources

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

	Category	Defining Regulation(s)	Data Source (website or other)
V.A(1)	National or State Historic Register	16 U.S.C 470a, OPRHP 14.07	NYS OPRHP, GIS Data, 2011
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Double-Span Metal Pratt Truss Bridge	AuSable St., Keeseville	22.5, NE
2	Brown, John, Farm	John Brown Rd., Lake Placid	8.7, S
3	Church Street Historic District	Roughly, Church St. from Main St. to St. Bernard St., Saranac Lake	11.7, W
4	Cottage Row Historic District	Roughly, Park Ave. N side from Rosemont Ave. to Catherine St., Saranac Lake	11.8, W
5	Highland Park Historic District	Roughly, Park Ave. from Military Rd. to 170 Park Ave., Saranac Lake	11.3, W
6	Sloan Cottage	21 View St., Saranac Lake	12.1, W
7	Camp Intermission	Northwest Bay Rd., Saranac Lake	12.4, W
8	Trudeau Sanitorium	Bloomingdale Road, Saranac Lake vicinity	11.2, W
9	Hand-Hale Historic District	River and Maple Sts., Elizabethtown	18.5, SE
10	Camp Wild Air	Upper St. Regis Lake, Upper St. Regis	18.9, W
11	Eagle Island Camp	Eagle Island, Upper Saranac Lake, Saranac Inn	22.4, W
12	Moss Ledge	Off NY 30, Upper Saranac Lake, Saranac Inn	22.3, W
13	Prospect Point Camp	E of NY 30, Saranac Inn	22.8, W
14	Camp Topridge	S of Keese Mills Rd., Upper St. Regis Lake, Keese Mill vicinity	20.4, W
15	Keeseville Historic District	Roughly bounded by Vine, Chesterfield, Clinton, Hill, Pleasant, Front and Beech Sts., Keeseville	22.8, NE
16	Smith's, Paul, Hotel Cottages	Paul Smiths College Campus, Paul Smiths	18.4, W
17	Miller Farm	664 Hallock Hill Road, Harkness	20.1, NE
18	Church of the Nazarene	W of Essex on NY 22, Essex	24.9, E
19	Octagonal Schoolhouse	On Rte. 22 in Bouquet, Essex	24.9, E
20	Rembrandt Hall	Clinton St., Keeseville	22.9, NE
21	Will Rogers Memorial Hospital	NY 86, Saranac Lake	11.3, W
22	Smith's, Paul, Electric Light and Power and Railroad Company Complex	2 Main St., Saranac Lake	11.9, W

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

23	US Post Office--Lake Placid	201 Main St., Lake Placid	6.9, SW
24	First Congregational and Presbyterian Society Church of Westport	Main St./CR 10, Wadhams	23.7, SE
25	Berkeley Square Historic District	30--84 Main St., 2--29 Broadway, Saranac Lake	11.8, W
26	Tomlinson House	Kent St., Keeseville	23, NE
27	Witherspoon Cottage	3 Kiwassa Rd., Saranac Lake	11.8, W
28	Distin Cottage	11 Kiwassa Rd., Saranac Lake	11.8, W
29	Freer Cottage	40 Kiwassa St., Saranac Lake	12, W
30	Homestead, The	3 Maple Hill, Saranac Lake	11.9, W
31	Jennings Cottage	16 Marshall St., Saranac Lake	11.7, W
32	Feisthamel--Edelberg Cottage	11 Neil St., Saranac Lake	12, W
33	Savage, Orin, Cottage	33 Olive St., Saranac Lake	12, W
34	Seeley Cottage	27 Olive St., Saranac Lake	12, W
35	Walker Cottage	67 Park Ave., Saranac Lake	11.8, W
36	McBean Cottage	89 Park Ave., Saranac Lake	11.7, W
37	Morgan Cottage	100 Park Ave., Saranac Lake	11.6, W
38	Barngalow	108 1/2 Park Ave., Saranac Lake	11.6, W
39	Larom Cottage	112 Park Ave., Saranac Lake	11.5, W
40	Hooey Cottage	24 Park Pl., Saranac Lake	11.6, W
41	Magill Cottage	37 Riverside Dr., Saranac Lake	11.7, W
42	Musselman Cottage	25 Riverside Dr., Saranac Lake	11.8, W
43	Schrader--Griswold Cottage	49 Riverside Dr., Saranac Lake	11.7, W
44	Colbath Cottage	30 River St., Saranac Lake	11.7, W
45	Lane Cottage	4 Rockledge Rd., Saranac Lake	11.3, W
46	Clark, Peyton, Cottage	9 Rockledge Rd., Saranac Lake	11.2, W
47	Johnson Cottage	6 1/2 St. Bernard St., Saranac Lake	11.8, W
48	Kennedy Cottage	26 Shepard St., Saranac Lake	11.6, W
49	Coulter Cottage	34 Shepard Ave., Saranac Lake	11.6, W
50	Marquay Cottage	6 Slater St., Saranac Lake	11.4, W
51	Partridge Cottage	15 South St., Saranac Lake	11.5, W
52	Stevenson Cottage	Stevenson Ln., Saranac Lake	11, W
53	Wilson Cottage	8 Williams St., Saranac Lake	12, W
54	Leis Cottage	26 Algonquin Ave., Saranac Lake	12.8, W
55	Ryan Cottage	62 Algonquin Ave., Saranac Lake	13, W

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

56	Little Red	Algonquin Ave., Saranac Lake	13.2, W
57	Leis Block	3--5 Bloomingdale Ave., Saranac Lake	11.8, W
58	Drury Cottage	29 Bloomingdale Ave., Saranac Lake	11.7, W
59	Sarbanes Cottage	72 Bloomingdale Ave., Saranac Lake	11.6, W
60	Denny Cottage	76 Bloomingdale Ave., Saranac Lake	11.5, W
61	Ellenberger Cottage	183 Broadway, Saranac Lake	12, W
62	Allen, Dr. A. H., Cottage	22 Catherine St., Saranac Lake	11.6, W
63	Feustmann Cottage	28 Catherine St., Saranac Lake	11.7, W
64	Radwell Cottage	2 Charles St., Saranac Lake	12.1, W
65	Hathaway Cottage	6 Charles St., Saranac Lake	12.1, W
66	Ames Cottage	43 Church St., Saranac Lake	11.7, W
67	Stuckman Cottage	6 Clinton Ave., Saranac Lake	11.5, W
68	Pittenger Cottage	14 Forest Hill Ave., Saranac Lake	11.3, W
69	Marvin Cottage	15 Franklin St., Saranac Lake	11.5, W
70	Lent Cottage	18 Franklin Ave., Saranac Lake	11.5, W
71	Fallon Cottage Annex	31 Franklin St., Saranac Lake	11.5, W
72	Bogie Cottage	59 Franklin St., Saranac Lake	11.5, W
73	Stonaker Cottage	Glenwood Rd., Saranac Lake	12.2, W
74	Baird Cottage	Glenwood Rd., Saranac Lake	12.2, W
75	Hillside Lodge	Harrietstown Rd., Saranac Lake	12.3, W
76	Noyes Cottage	16 Helen St., Saranac Lake	11.6, W
77	Gray, E. L., House	15 Helen St., Saranac Lake	11.6, W
78	Hill Cottage	36 Franklin Ave., Saranac Lake	11.5, W
79	Larom--Welles Cottage	110 Park Ave., Saranac Lake	11.6, W
80	Pomeroy Cottage	26 Baker St., Saranac Lake	11.8, W
81	Hopkins Cottage	5 Birch St., Saranac Lake	11.9, W
82	Smith Cottage	12 Jenkins St., Saranac Lake	12.3, W
83	Leetch, Dr. Henry, House	3 Johnson Rd., Saranac Lake	11.3, W
84	Merrillsville Cure Cottage	NY 99 at Cochran Road, Merrillsville	12.5, NW
85	Jay Covered Bridge	CR 22, Jay	8.6, E
86	Hubbard Hall	Court Street, Elizabethtown	18.3, SE
87	Ausable Chasm Bridge	US 9 over Ausable River, Ausable Chasm	24.3, NE
88	Old State Road Bridge	CR 17B (Old State Road) over Ausable River, Ausable Chasm	24.4, NE

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

89	Palmer Brook Bridge	Golf Course Road over Palmer Brook, Ausable Forks	12.4, NE
90	Beers Bridge	Private road off NY 73; East side, Keene Valley vicinity	14.6, SE
91	Ranney Bridge	Private road off NY 73; East side, Keene Valley vicinity	13.8, SE
92	Notman Bridge	Notman Road over Ausable River, Keene Valley	13.2, SE
93	Walton Bridge	Private road off Hulls Falls Road; West side, Keene vicinity	9.6, SE
94	Wilmington Bridge	NY 86, Wilmington	4.4, E
95	Slater Bridge	Private Road over Ausable River west of St. Huberts Road, Saint Huberts	15.4, SE
96	Stone Arch Bridge	Main Street over AuSable River, Keeseville	22.9, NE
97	New York Central Railroad Adirondack Division Historic District	NYCRR Right-of-Way, Remsen	7.5, W
98	Swing Bridge	Over Ausable River betw/ Clinton, South Ausable Streets, Keeseville	22.8, NE
99	Keene Valley Library	NY 73 (Main Street), Keene Valley	13.2, SE
100	Peru Community Church	Pleasant Street (NY 22B) at Elm Street, Peru	23.6, NE
101	Poke-o-Moonshine Fire Observation Tower	Near US 9; West side, Chesterfield vicinity	19.3, E
102	Adirondack Iron & Steel Co: Upper Works	Tahawus, Tahawus	21.5, S
103	Camp Santanoni	North of NY 28N, Newcomb	24.8, SW
104	Brighton Town Hall	12 CR 31, Paul Smiths	17.4, W
105	Wellscroft	158 NY 9N, Upper Jay vicinity	6.4, E
106	First Congregational Church and Cemetery	US 9, Lewis	17.5, SE
107	St. Regis Mountain Fire Observation Tower	St. Regis Mountain, Santa Clara vicinity	21, W
108	Ausable Club	137 Ausable Road, St. Huberts	15.7, SE
109	Mount Adams fire Observation Station	Mount Adams, Newcomb	20.9, S
110	Whiteface Veterans Memorial Highway Complex (Toll Road)	Wilmington vicinity	0, N
111	Hurricane Mountain Fire Observation Station	Hurricane Mountain summit, Keene vicinity	12.8, SE
112	Loon Lake Fire Observation Station	567363.485 E 4934226.782 N, Franklin	18.4, NW

113	Mt. Van Hoevenberg Olympic Bobsled Run	220 BobRun Ln., North Elba	10.6, S
114	Heyworth-Mason Industrial Building	Mason Hill Rd., Peru, NY 12972, Peru	23.7, NE
115	Wells Memorial Library	12230 NYS Route 9N Upper Jay NY 12987, Upper Jay	6.4, E
116	John Brown Farm State Historic Site	115 John Brown Rd, Lake Placid	8.3, SW
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(2)	State Parks	OPRHP 3.09	NYS OPRHP, GIS Data, 2010
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Macomb Reservation State Park	201 Campsite Rd, Schuyler Falls	22.4, NE
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(3)	Urban Cultural Parks	OPRHP 35.15	http://www.nyhistory.com/links/urban_cultural_parks.htm
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(4)	State Forest Preserve	NYS Constitution Article XIV	NYSDEC, GIS Data, March, 2012
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Adirondack Fish Hatchery	Santa Clara	18.9, W
2	Ampersand Primitive Area	Harrietstown	21.2, SW
3	Black River Wild Forest	Harrietstown	12.4, W
4	Boquet River Primitive Area	Elizabethtown	20.3, SE
5	Buck Pond Campground	Franklin	12.2, NW
6	Camp Gabriels	Brighton	13.8, NW
7	Chazy Highlands Wild Forest	Bellmont, Duane, Franklin, Saranac	10.1, N
8	Debar Mtn. Wild Forest	Franklin, Brighton, Duane	8.4, NW
9	Dix Mtn. Wildnerness	Keene, North Hudson	14.6, S
10	Fish Creek Pond Campground	Santa Clara	23, W
11	Giant Mtn. Wildnerness	Keene, Elizabethtown	11.1, SE
12	Hammond Pond Wild Forest	Keene, Elizabethtown, North Hudson, Moriah	7.8, SE
13	High Peaks Wildnerness	Keene, North Elba, Harrietstown, Newcomb, N Hudson	7.2, S, SW

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

14	Hurricane Mountain Fire Tower Historic Area	Keene	10.9, SE
15	Hurricane Mountain Primitive Area	Keene	6.3, SE
16	Hurricane Mountain Wildnerness	Keene, Jay, Lewis, Elizabethtown	6.3, SE
17	Jay Mtn. Wilderness	Jay, Lewis	7.1, SE
18	John Browns Farm Historic Site	North Elba	7.6, SW
19	Johns Brook Primitive Area	Keene	11.7, S
20	Lake Colby Environmental Educational Camp	Harrietstown	12.1, W
21	Lake Flower Boat Launch	Saranac Lake	11.3, W
22	Lincoln Pond Campground	Elizabethtown	19.7, SE
23	Lower Saranac Lake Boat Launch	Harrietstown	12.5, W
24	Madawaska Flow - Quebec Brook Primitive Area	Santa Clara	22.3, NW
25	McKenzie Mtn. Wildnerness	Wilmington, St Armand, North Elba	0, W
26	Meacham Lake Campground	Duane	21.4, NW
27	Meadowbrook Campground	North Elba	9.4, SW
28	Middle Saranac Lake Boat Launch	Harrietstown	19.6, SW
29	Mirror Lake Boat Launch	North Elba	5.6, SW
30	Mt. Van Hoevenberg Sports Facility	North Elba	8, S
31	Poke-)-Moonshine Campground	Chesterfield	16.7, E
32	Primitive Area	Keene, Jay	3.9, SE
33	Rollins Pond Campground	Santa Clara	24.5, W
34	Saint Regis Canoe Area	Santa Clara, Harrietstown, Brighton	17.7, W
35	Saint Regis Mountain Fire Tower Historic Area	Santa Clara	20.8, W
36	Saranac Lake Boat Launch	Santa Clara	20.5, W
37	Saranac Lake Islands Campground	Harrietstown	14.7, SW
38	Saranac Lakes Wild Forest	St Armand, N Elba, Harrietstown, Brighton, S Clara	2.6, W, S
39	Sentinel Range Wildnerness	Wilmington, Jay, Keene, North Elba	0.2, S, SE
40	Sharp Bridge Campground	North Hudson	23, SE
41	SUNY Atmospheric Sciences Research Center	Wilmington	0.8, NE
42	Tahawas Primitive Area	Newcomb	20, SW

43	Taylor Pond Campground	Black Brook	9, N
44	Taylor Pond Wild Forest	St Arm, Frank, B Brook, Jay, Chest, Lew, Eliz, Per	2.6, N, E
45	Whiteface Mtn. Ski Center	Wilmington	0, N/A
46	Whiteface Veterans Memorial Highway	Wilmington	0, NW
47	Wilmington Notch Campground	Wilmington	0, SE
48	Wilmington Wild Forest	Wilmington, St Armand, Black Brook, Jay, Keene	0, N, E
49	Unclassified	Keene	9.5, SE
50	Unclassified	Keene	5.7, SE
51	Unclassified	Keene	5.7, SE
52	Unclassified	North Elba	4.6, SW
53	Unclassified	North Elba	5.4, SW
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(5)	State/National Wildlife Refuges/Areas	16 U.S.C. 668dd	NYSDEC, GIS Data, March, 2012 and http://www.fws.gov/refuges/refugelocatormaps/NewYork.html
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Pauline Murdock WMA	Elizabeth-Whadams Rd, Elizabethtown	18.5, SE
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(6)	National Natural Landmarks	36 CFR Part 62	http://www.nature.nps.gov/nnl/state.cfm?State=NY#stateMap
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

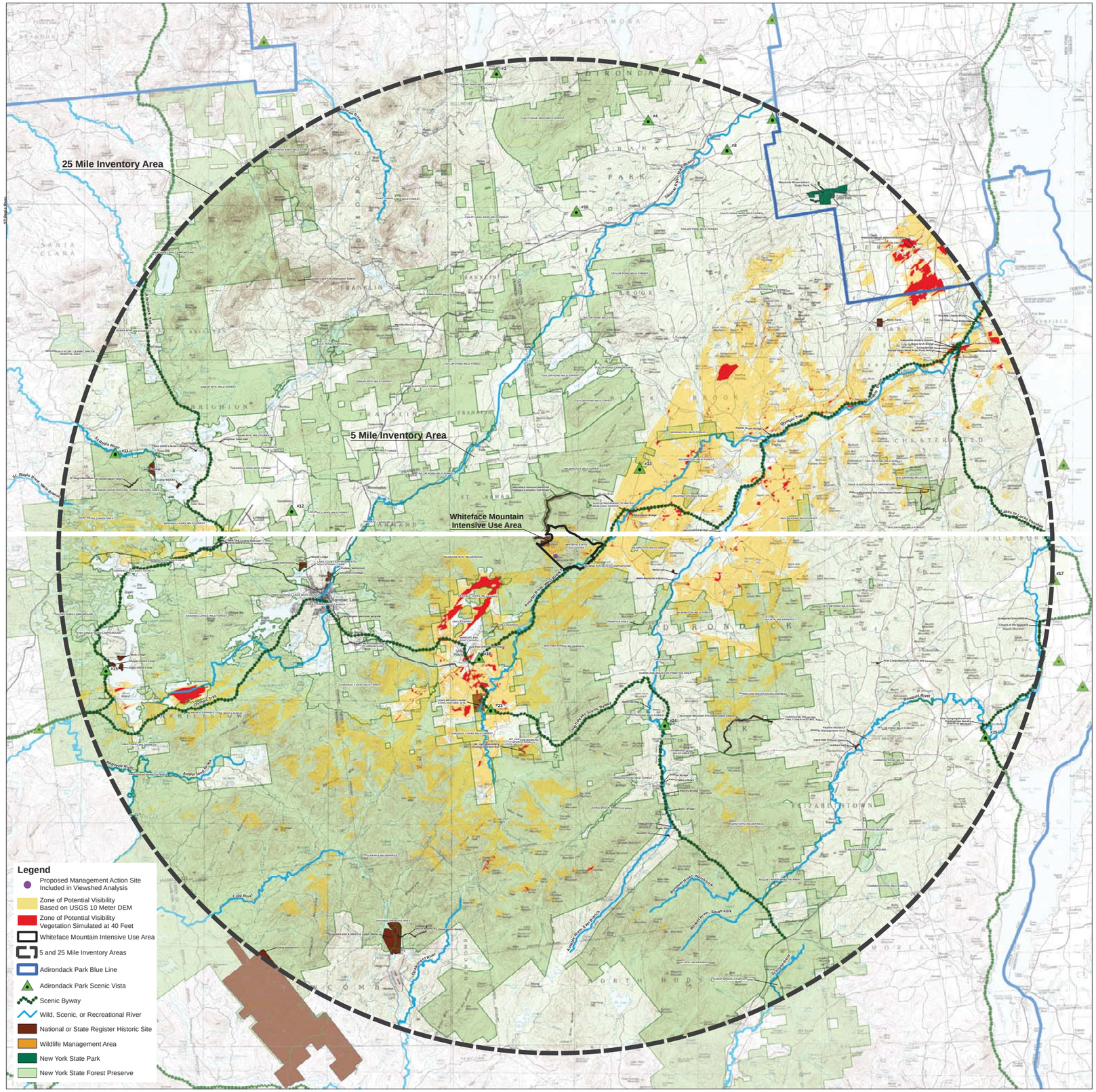
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(7)	National Park System	16 U.S.C. 1c	http://www.nps.gov/state/ny/index.htm?program=parks
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Source (website or other)**
V.A(8)	Wild, Scenic, Recreational Rivers	16 U.S.C. Ch 28, ECL 15-2701	NYSDEC Permits, GIS Data, January 2002 and http://www.dec.ny.gov/lands/32739.html
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Ampersand Brook	Harrietstown	18.5, SW
2	Ausable River	Black Brook, Chesterfield	12.2, NE
3	Ausable River, East Branch	Jay, Keene	4.0, E, SE, S
4	Ausable River, West Branch	Jay, North Elba, Wilmington	0, NE, E, SE, S
5	Bouquet River, South Fork	North Hudson, Keene	20.4, SE
6	Bouquet River	Elizabethtown, Lewis, Westport, Essex, Willsboro	18.6, SE, E
7	Bouquet River, North Fork	Keene	18.3, SE
8	Cold River	Harrietstown, Newcomb	18.6, SW
9	Opalescent River	Newcomb	18.2, SW
10	Raquette	Harrietstown	23.8, SW
11	Salmon River	Bellmont, Franklin	18.5, NW
12	Saranac River, Main Branch	Saranac, Black Brook, St Armand, Saranac Lake, Harrietstown	4.4, SW, W, NW, N, NE
13	Schroon River	North Hudson	24.0, SE
14	St Regis River, West Branch	Santa Clara	23.9, W
15	St Regis River	Brighton, Santa Clara	20.4, NW
16	St Regis River, East Branch	Duane	24.1, NW

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(9)	Designated or Eligible Scenic Area	ECL Article 49, DOT, APA	http://byways.org/explore/states/NY
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Adirondack Trail	NY 30, Duane, Brighton, Harrietstown, Santa Clara	16.6, W
2	Lakes to Locks Passage	NY 22, Chesterfield, Willsboro, Westport	21.3, E
3	Lakes to Locks Passage	US 9, Chesterfield, Ausable	23.0, NE
4	High Peaks Scenic Byway	NY 73, North Elba, Keene	8.3, S
5	High Peaks Scenic Byway	NY 3, Elizabethtown, North Hudson	20.8, SE
6	Olympic Trail	NY 3, Saranac Lake, Harrietstown	11.5, W
7	Olympic Trail	NY 86, Saranac Lake, North Elba, Wilmington, Jay	0.1, W, S, E
8	Olympic Trail	NY 9N, Jay, Ausable	8.4, NE
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(10)	Statewide Significant Scenic Area	Executive Law Article 42	NYS DOS, GIS Data, 1995
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(11)	State/Federal Designated Trail	16 U.S.C. Ch. 27 or equivalent	NYS DOT, NY State and Federal Trails GIS Data, 2000
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(12)	Adirondack Park Scenic Vista	Adirondack Park LUD Map	Adirondack Park Agency, GIS Data, 2003
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	Adirondack Park Scenic Vista #3	Standish Rd, Dannemora	24.0, N
2	Adirondack Park Scenic Vista #4	Chazy Lake Rd, Saranac	22.1, NE
3	Adirondack Park Scenic Vista #7	Hardscrabble Rd, Saranac	24.3, NE

INVENTORY OF AESTHETIC REOURCES
WHITEFACE MOUNTAIN - 25 MILES RADIUS

4	Adirondack Park Scenic Vista #8	Burnt Hill Rd, Saranac	21.8, NE
5	Adirondack Park Scenic Vista #10	Clayburg to Standish Rd, Saranac	16.7, N
6	Adirondack Park Scenic Vista #11	Keese Mill Rd, Santa Clara	22.3, W
7	Adirondack Park Scenic Vista #12	Rt 86, Harrietstown	12.9, W
8	Adirondack Park Scenic Vista #13	Bonnie View Rd, Wilmington	3.6, NE
9	Adirondack Park Scenic Vista #15	Rt 30, Santa Clara	22.9, SW
10	Adirondack Park Scenic Vista #16	Rt 86, North Elba	6.1, SW
11	Adirondack Park Scenic Vista #23	Heart Lake Rd, North Elba	7.9, SW
12	Adirondack Park Scenic Vista #24	Rt 73 and 9N, Keene	10.8, SE
13	Adirondack Park Scenic Vista #25	Rt 22, Westport	24.0, SE
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(13)	State Nature and Historic Preserves	Article XIV Section 4	NYSDEC Permits, GIS Data, 2001
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(14)	Palisades Park	Palisades Park Commission	NYSDEC Permits, GIS Data, 2001
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1	NONE PRESENT IN STUDY AREA		
	Category	**Defining Regulation(s)**	**Data Source (website or other)**
V.A(15)	Bond Act - Scenic Beauty/Open Space	N/A	http://www.dec.ny.gov/imsmaps/facilities/viewer.htm
	Resource Name	**Town, Road**	**Distance (miles), Direction**
1			
2			
3			
4			
5			



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Whiteface Mountain
Town of Wilmington, Essex County, New York

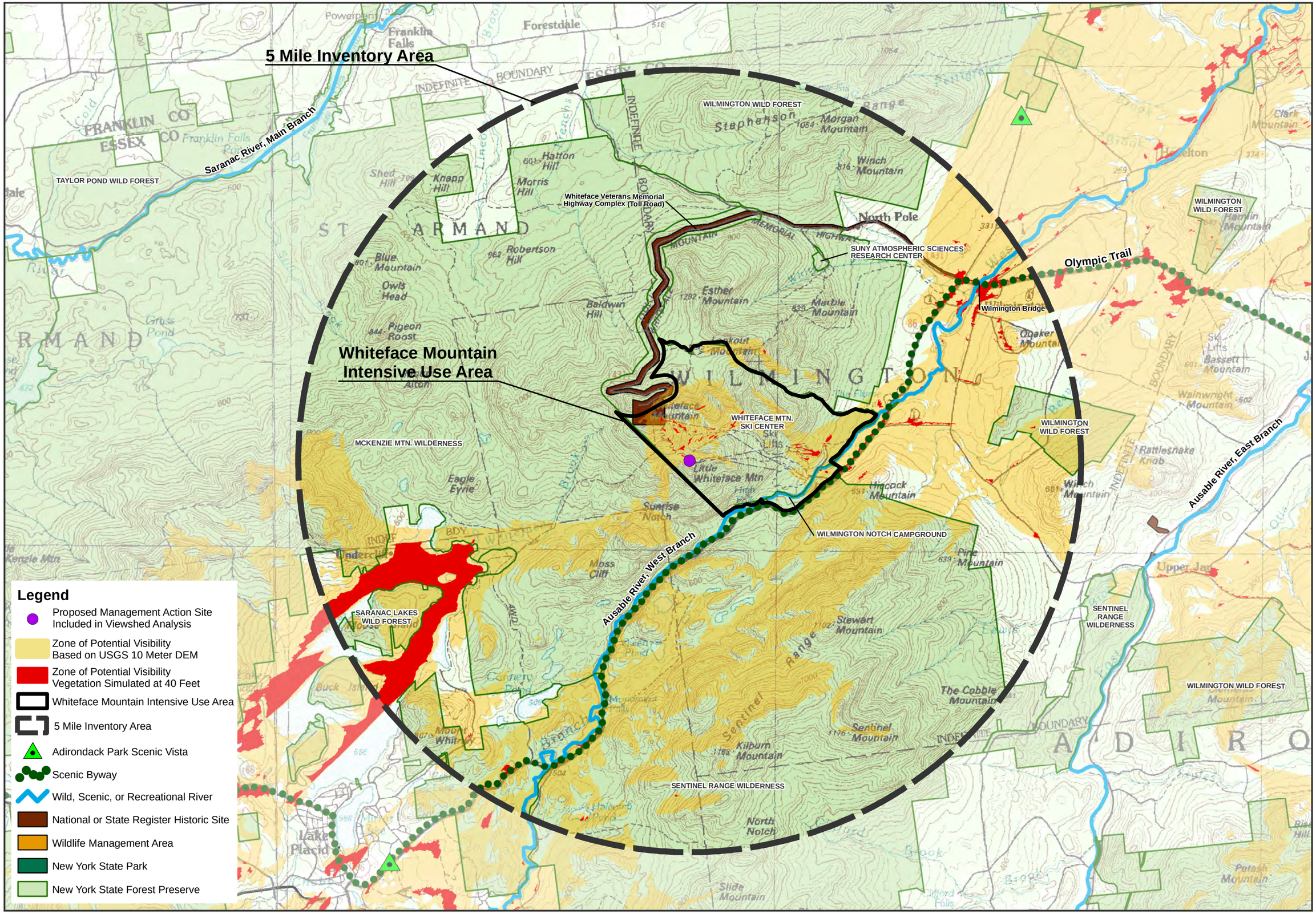
Title
Whiteface Mountain 5 Mile Visual & 25 Mile Aesthetic Resource Inventory Area Map

1:100,000

0 2 4
Miles

Project: 201263
Date: 04/19/2013

Exhibit:
3.A5.c



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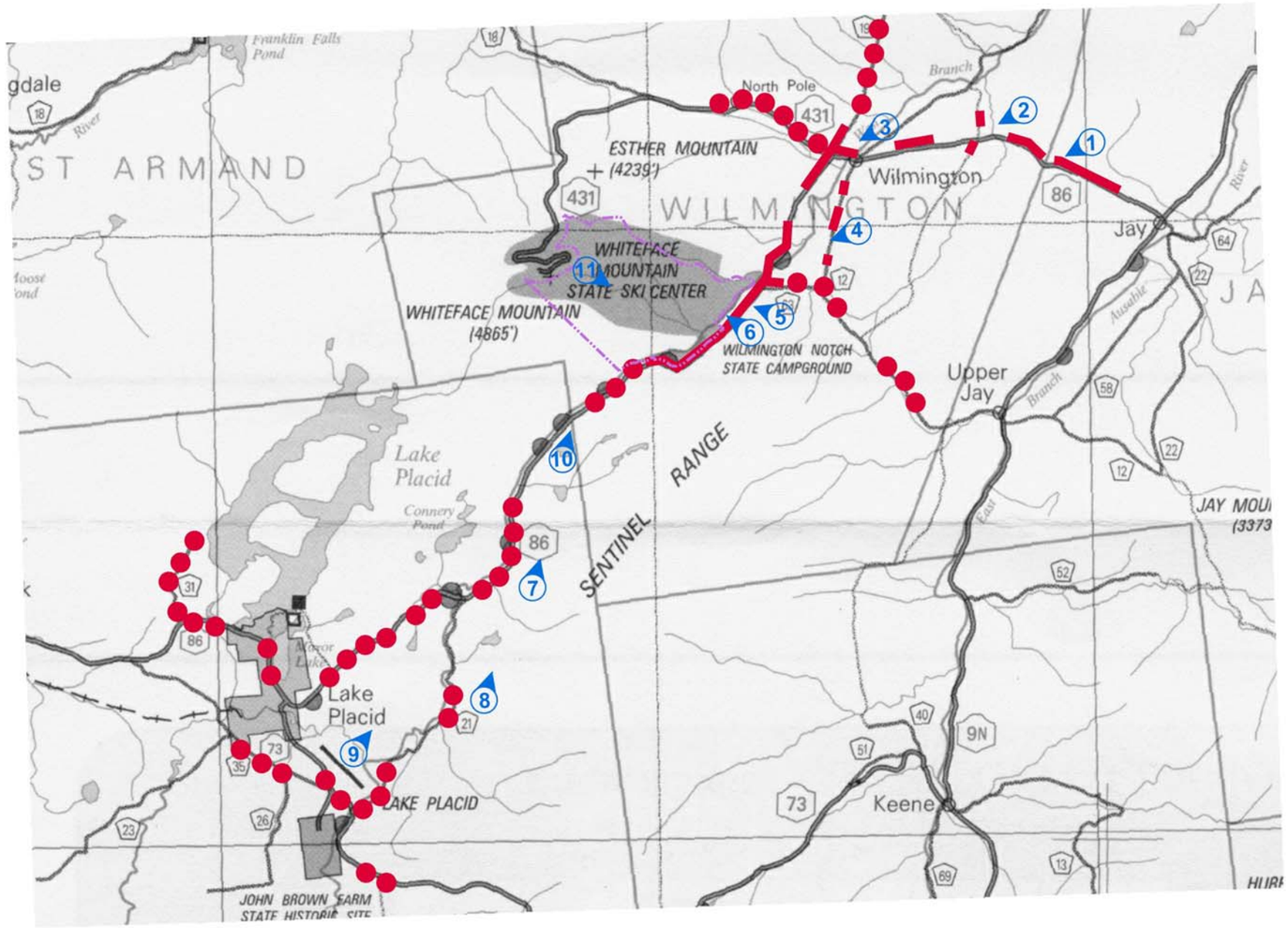
Whiteface Mountain
Town of Wilmington, Essex County, New York

Title
5 Mile Zone of Potential Visibility

0 0.5 1
Miles

Project: 201263
Date: 04/19/2013

Exhibit
3.A5.d



LEGEND

- PHOTO LOCATIONS
- WHITEFACE MOUNTAIN VISIBLE
- WHITEFACE MOUNTAIN SKI CENTER VISIBLE
- INTENSIVE USE AREA BOUNDARY

5,000' 0 5,000' 10,000' 20,000

Scale: 1" = 10,000'

NORTH

OCTOBER 19, 2012

the LA group

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Whiteface Mountain

Town of Wilmington, Essex County, New York

Title

Photo Location Map

Project: 201263

Date: 12/19/2012

Exhibit

3.A5.e

Plotted By: MARK TABER
Save Date: 10/19/2012 8:51 AM
File Name: \\lagvault\LA_Cad\Proj-2012\201263_ORDA_2012_Term_Contract\201263CAD\4Viewshed-Exhibit_II-4.dwg

1. View from Route 86 at the former Paleface Ski Center near Bassett Mountain looking southwest.

2. View from Route 86 near Beaver Brook looking southwest.

3. View from Route 86 on the west branch of the Ausable River bridge looking south in the hamlet of Wilmington.

WHITEFACE

Prepared For:
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

SE GROUP

Engineering & Planning

COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE:
VIEWSHED PHOTOS

DATE: March 2002

EXHIBIT: 3.A5.e

PROJECT NUMBER: 01102

FILE: [whiteface]

4. View from Fairview Avenue on Quaker Mountain looking southwest.

5. View from Fox Farm looking west.

6. View from Route 86 to the entrance of Whiteface Mountain Ski Center looking west.

WHITEFACE

Prepared For:
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

SE GROUP

IZA Engineering & Planning

Dean Edwards Associates, PLLC

COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE:
VIEWSHED PHOTOS

DATE: March 2002

EXHIBIT: 3.A5.e

PROJECT NUMBER: 01102

FILE: [whiteface]

7. View from Route 86 just south of Monument Falls looking north.

8. View from River Road at Lake Placid Skeet Range looking north.

9. View from Route 73 looking north.

WHITEFACE

Prepared For:
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

SE GROUP

IZA Engineering & Planning

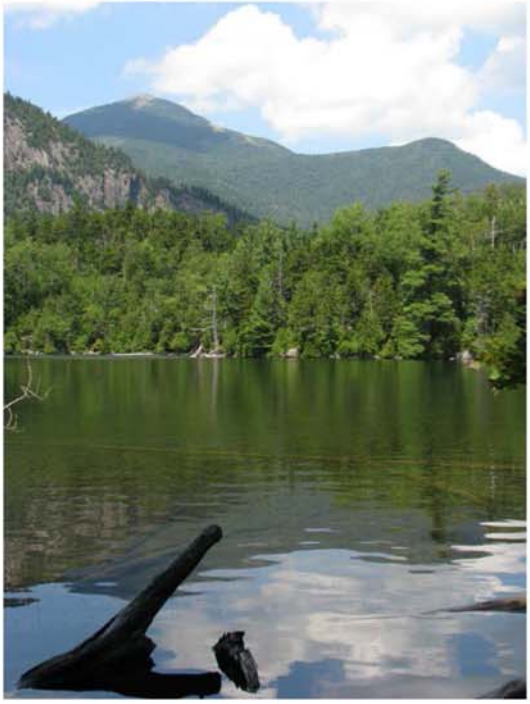
COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE: VIEWSHED PHOTOS

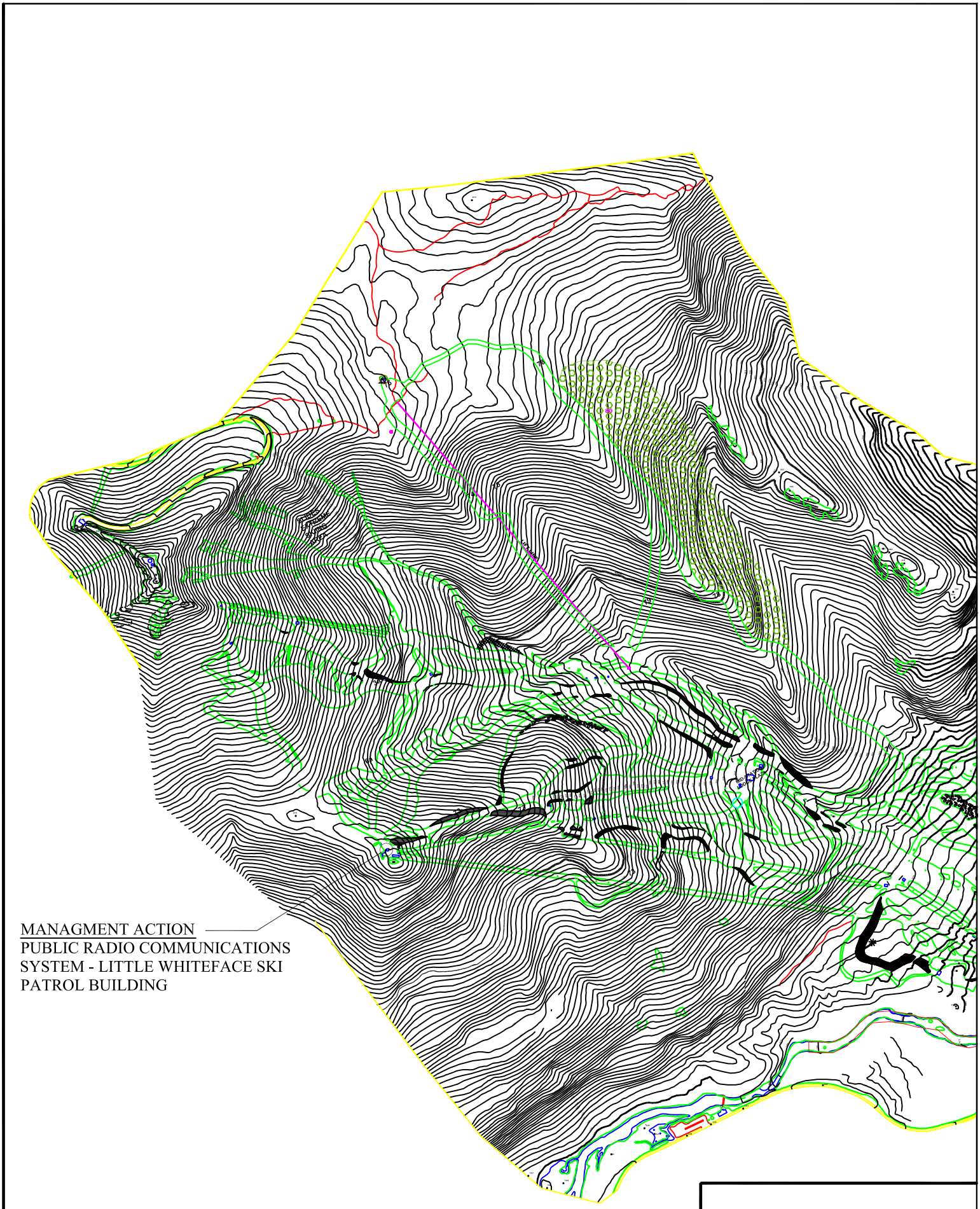
DATE: March 2002

EXHIBIT: 3.A5.e

10. View from Copperas Pond looking North.



11. View from Veteran's Memorial Highway Round House (Summit of Whiteface Mountain) looking East on to the Ski Center.



2012 UMP AMENDMENT

TITLE:	SCALE:
VISUAL ASSESSMENT MANAGEMENT ACTION MAP	NTS
	FIGURE: 3.A5F

Exhibit 3.A6.a - Equipment Noise Level Controls

Equipment	Typical Noise Levels (dBA, at 50 Feet)
Front Loaders	85
Backhoes, Excavators	80-85
Tractors, Dozers	83-89
Graders, Scrapers	85-89
Trucks	88
Concrete Pumps, Mixers	82-85
Cranes (movable-derrick)	83-88
Pile Driver (impact)	101
Forklifts	76-82
Pumps	76
Generators	81
Compressors	83
Pneumatic Tools	85
Jack Hammers, Rock Drills	98
Compactors	82
Drill Rigs	70-85

Appendixes

Appendix 1.B
State Environmental Quality Review Act
Long Form

617.20
Appendix A
State Environmental Quality Review
FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

THIS AREA FOR LEAD AGENCY USE ONLY

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☑ Part 1 ☑ Part 2 ☑ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which will not have a significant impact on the environment, therefore a negative declaration will be prepared.

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore a CONDITIONED negative declaration will be prepared.*

☒ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore a positive declaration will be prepared.

*A Conditioned Negative Declaration is only valid for Unlisted Actions

2012 Unit Management Plan Amendment

Name of Action

Olympic Regional Development Authority

Name of Lead Agency

Robert W. Hammond

Print or Type Name of Responsible Officer in Lead Agency

Director of Planning and Construction

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

12/26/12

Date

website

PART 1--PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action 2012 Unit Management Plan Amendment

Location of Action (include Street Address, Municipality and County)

Whiteface Mountain Ski Center, Rte. 86, Wilmington, NY, Essex County

Name of Applicant/Sponsor Olympic Regional Development Authority

Address 2634 Main Street

City / PO Lake Placid State NY Zip Code 12946

Business Telephone 518-302-5332

Name of Owner (if different)

Address

City / PO State Zip Code

Business Telephone

Description of Action:

Public Safety Radio Communications System – Little Whiteface Ski Patrol Building" (PSRCS/SP Building) involves the replacement of the antiquated existing Little Whiteface Ski Patrol Building, plus the addition of components needed for a public safety radio communications system.

Please Complete Each Question--Indicate N.A. if not applicable

A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: ☐ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
   ☑ Forest ☐ Agriculture ☐ Other _____

2. Total acreage of project area: 2910 acres.

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	261 acres	262 acres
Forested	2649 acres	2646 acres
Agricultural (Includes orchards, cropland, pasture, etc.)	_____ acres	_____ acres
Wetland (Freshwater or tidal as per Articles 24,25 of ECL)	_____ acres	_____ acres
Water Surface Area	_____ acres	_____ acres
Unvegetated (Rock, earth or fill)	_____ acres	_____ acres
Roads, buildings and other paved surfaces	_____ acres	_____ acres
Other (Indicate type) _____	_____ acres	_____ acres

3. What is predominant soil type(s) on project site? _____
   a. Soil drainage: ☑ Well drained 5 % of site ☑ Moderately well drained 5 % of site.
   ☑ Poorly drained 90 % of site
   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? _____ acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ■ Yes ☐ No
   a. What is depth to bedrock 0 (in feet)

5. Approximate percentage of proposed project site with slopes:
   ☑ 0-10% 2 % ☐ 10- 15% 8 % ☑ 15% or greater 90 %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? ☐ Yes ■ No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? ☐ Yes ■ No

8. What is the depth of the water table? NA (in feet)

9. Is site located over a primary, principal, or sole source aquifer? ☐ Yes ■ No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? ■ Yes ☐ No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered? ☐ Yes ☒ No

According to:

Identify each species:

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?

☐ Yes ☒ No

Describe:

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

☒ Yes ☐ No

If yes, explain:

Skiing, Hiking and Mt. Biking

14. Does the present site include scenic views known to be important to the community? ☒ Yes ☐ No

High Peaks

15. Streams within or contiguous to project area:

West Branch Au Sable River

a. Name of Stream and name of River to which it is tributary

Lake Champlain

16. Lakes, ponds, wetland areas within or contiguous to project area:

b. Size (in acres):

17. Is the site served by existing public utilities? ☒ Yes ☐ No

a. If YES, does sufficient capacity exist to allow connection? ☒ Yes ☐ No

b. If YES, will improvements be necessary to allow connection? ☐ Yes ☒ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☒ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? ☐ Yes ☒ No

20. Has the site ever been used for the disposal of solid or hazardous wastes? ☐ Yes ☒ No

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate).

a. Total contiguous acreage owned or controlled by project sponsor: 2910 acres.

b. Project acreage to be developed: 0.03 acres initially; 0.03 acres ultimately.

c. Project acreage to remain undeveloped: 2650 acres.

d. Length of project, in miles: NA (if appropriate)

e. If the project is an expansion, indicate percent of expansion proposed. _____ %

f. Number of off-street parking spaces existing _____; proposed _____

g. Maximum vehicular trips generated per hour: _____ (upon completion of project)?

h. If residential: Number and type of housing units:

	One Family	Two Family	Multiple Family	Condominium
Initially				
Ultimately				

i. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; _____ length.

j. Linear feet of frontage along a public thoroughfare project will occupy is? _____ ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site? 0 tons/cubic yards.

3. Will disturbed areas be reclaimed ☒ Yes ☐ No ☐ N/A

a. If yes, for what intended purpose is the site being reclaimed?

Sideslopes of Access Road Development

b. Will topsoil be stockpiled for reclamation? ☒ Yes ☐ No

c. Will upper subsoil be stockpiled for reclamation? ☒ Yes ☐ No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 0 acres.

5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?

☐ Yes ☒ No

6. If single phase project: Anticipated period of construction: _____ months, (including demolition)

7. If multi-phased:

   a. Total number of phases anticipated 1 (number)

   b. Anticipated date of commencement phase 1: 1 month _____ year, (including demolition)

   c. Approximate completion date of final phase: 3 month _____ year.

   d. Is phase 1 functionally dependent on subsequent phases? ☐ Yes ☒ No

8. Will blasting occur during construction? ☒ Yes ☐ No

9. Number of jobs generated: during construction 15; after project is complete 1

10. Number of jobs eliminated by this project 0 .

11. Will project require relocation of any projects or facilities? ☐ Yes ☒ No

    If yes, explain:

12. Is surface liquid waste disposal involved? ☐ Yes ☒ No

    a. If yes, indicate type of waste (sewage, industrial, etc) and amount _____

    b. Name of water body into which effluent will be discharged _____

13. Is subsurface liquid waste disposal involved? ☐ Yes ☒ No Type _____

14. Will surface area of an existing water body increase or decrease by proposal? ☐ Yes ☐ No

    If yes, explain:

15. Is project or any portion of project located in a 100 year flood plain? ☐ Yes ☒ No

16. Will the project generate solid waste? ☒ Yes ☐ No

    a. If yes, what is the amount per month? NA tons

    b. If yes, will an existing solid waste facility be used? ☒ Yes ☐ No

    c. If yes, give name Wilmington Landfill ; location Town of Wilmington

    d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? ☐ Yes ☒ No

e. If yes, explain:

17. Will the project involve the disposal of solid waste? ☐ Yes ☒ No

    a. If yes, what is the anticipated rate of disposal? _____ tons/month.

    b. If yes, what is the anticipated site life? _____ years.

18. Will project use herbicides or pesticides? ☐ Yes ☒ No

19. Will project routinely produce odors (more than one hour per day)? ☐ Yes ☒ No

20. Will project produce operating noise exceeding the local ambient noise levels? ☐ Yes ☒ No

21. Will project result in an increase in energy use? ☐ Yes ☒ No

    If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity _____ gallons/minute.

23. Total anticipated water usage per day _____ gallons/day.

24. Does project involve Local, State or Federal funding? ☒ Yes ☐ No

    If yes, explain:

New Communications System on Little Whiteface has Federal Funding secured by Essex County

25. Approvals Required:

			Type	Submittal Date
City, Town, Village Board	☐ Yes	☐ No		
City, Town, Village Planning Board	☐ Yes	☐ No		
City, Town Zoning Board	☐ Yes	☐ No		
City, County Health Department	☐ Yes	☒ No		
Other Local Agencies	☐ Yes	☐ No		
Other Regional Agencies	☐ Yes	☐ No		
State Agencies	☒ Yes	☐ No	NYS DEC	4/2013
			APA	4/2013
Federal Agencies	☐ Yes	☐ No		

C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? ☐ Yes ☒ No

If Yes, indicate decision required:

☐ Zoning amendment ☐ Zoning variance ☐ New/revision of master plan ☐ Subdivision

☐ Site plan ☐ Special use permit ☐ Resource management plan ☐ Other

2. What is the zoning classification(s) of the site?

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

4. What is the proposed zoning of the site?

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? ☐ Yes ☐ No

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile? ☒ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? _____

   a. What is the minimum lot size proposed? _____

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection?

☒ Yes ☐ No

a. If yes, is existing capacity sufficient to handle projected demand? ☒ Yes ☐ No

12. Will the proposed action result in the generation of traffic significantly above present levels? ☐ Yes ☒ No

a. If yes, is the existing road network adequate to handle the additional traffic. ☐ Yes ☐ No

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name Robert W. Hammond Date 4/19/2013

Signature

Title Director Planning and Construction

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.

PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

Responsibility of Lead Agency

General Information (Read Carefully)

! In completing the form the reviewer should be guided by the question: Have my responses and determinations been **reasonable?** The reviewer is not expected to be an expert environmental analyst.

! The **Examples** provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.

! The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.

! The number of examples per question does not indicate the importance of each question.

! In identifying impacts, consider long term, short term and cumulative effects.

Instructions (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer **Yes** if there will be **any** impact.

b. **Maybe** answers should be considered as **Yes** answers.

c. If answering **Yes** to a question then check the appropriate box(column 1 or 2)to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an Impact will be potentially large (column 2) does not mean that it is also necessarily **significant**. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the **Yes** box in column 3. A **No** response indicates that such a reduction is not possible. This must be explained in Part 3.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
Impact on Land			
1. Will the Proposed Action result in a physical change to the project site? NO ☐ YES ☒			
Examples that would apply to column 2			
• Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%.	☒	☐	☐ Yes ☒ No
• Construction on land where the depth to the water table is less than 3 feet.	☐	☐	☐ Yes ☐ No
• Construction of paved parking area for 1,000 or more vehicles.	☐	☐	☐ Yes ☐ No
• Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface.	☒	☐	☐ Yes ☒ No
• Construction that will continue for more than 1 year or involve more than one phase or stage.	☐	☐	☐ Yes ☐ No
• Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Construction or expansion of a santary landfill.	☐	☐	☐ Yes	☐ No
• Construction in a designated floodway.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)

☒ NO ☐ YES

• Specific land forms:	☐	☐	☐ Yes	☐ No

Impact on Water

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)

☒ NO ☐ YES

Examples that would apply to column 2

• Developable area of site contains a protected water body.	☐	☐	☐ Yes	☐ No
• Dredging more than 100 cubic yards of material from channel of a protected stream.	☐	☐	☐ Yes	☐ No
• Extension of utility distribution facilities through a protected water body.	☐	☐	☐ Yes	☐ No
• Construction in a designated freshwater or tidal wetland.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

4. Will Proposed Action affect any non-protected existing or new body of water?

☒ NO ☐ YES

Examples that would apply to column 2

• A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease.	☐	☐	☐ Yes	☐ No
• Construction of a body of water that exceeds 10 acres of surface area.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
5. Will Proposed Action affect surface or groundwater quality or quantity? ☒ NO ☐ YES				
Examples that would apply to column 2				
• Proposed Action will require a discharge permit.	☐	☐	☐ Yes	☐ No
• Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action.	☐	☐	☐ Yes	☐ No
• Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity.	☐	☐	☐ Yes	☐ No
• Construction or operation causing any contamination of a water supply system.	☐	☐	☐ Yes	☐ No
• Proposed Action will adversely affect groundwater.	☐	☐	☐ Yes	☐ No
• Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity.	☐	☐	☐ Yes	☐ No
• Proposed Action would use water in excess of 20,000 gallons per day.	☐	☐	☐ Yes	☐ No
• Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions.	☐	☐	☐ Yes	☐ No
• Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow residential uses in areas without water and/or sewer services.	☐	☐	☐ Yes	☐ No
• Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
   ■ NO ☐ YES

Examples that would apply to column 2

• Proposed Action would change flood water flows	☐	☐	☐ Yes	☐ No
• Proposed Action may cause substantial erosion.	☐	☐	☐ Yes	☐ No
• Proposed Action is incompatible with existing drainage patterns.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow development in a designated floodway.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON AIR

7. Will Proposed Action affect air quality?
   ■ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will induce 1,000 or more vehicle trips in any given hour.	☐	☐	☐ Yes	☐ No
• Proposed Action will result in the incineration of more than 1 ton of refuse per hour.	☐	☐	☐ Yes	☐ No
• Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow an increase in the amount of land committed to industrial use.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow an increase in the density of industrial development within existing industrial areas.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON PLANTS AND ANIMALS

8. Will Proposed Action affect any threatened or endangered species?
   ■ NO ☐ YES

Examples that would apply to column 2

• Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site.	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Removal of any portion of a critical or significant wildlife habitat.	☐	☐	☐ Yes	☐ No
• Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

9. Will Proposed Action substantially affect non-threatened or non-endangered species?

☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species.	☐	☐	☐ Yes	☐ No
• Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON AGRICULTURAL LAND RESOURCES

10. Will Proposed Action affect agricultural land resources?

☒ NO ☐ YES

Examples that would apply to column 2

• The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.)	☐	☐	☐ Yes	☐ No
• Construction activity would excavate or compact the soil profile of agricultural land.	☐	☐	☐ Yes	☐ No
• The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land.	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff).	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AESTHETIC RESOURCES

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural.	☐	☐	☐ Yes ☐ No
• Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource.	☐	☐	☐ Yes ☐ No
• Project components that will result in the elimination or significant screening of scenic views known to be important to the area.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places.	☐	☐	☐ Yes ☐ No
• Any impact to an archaeological site or fossil bed located within the project site.	☐	☐	☐ Yes ☐ No
• Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON OPEN SPACE AND RECREATION

13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?
☐ NO ☒ YES

Examples that would apply to column 2

• The permanent foreclosure of a future recreational opportunity.	☐	☐	☐ Yes	☐ No
• A major reduction of an open space important to the community.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON CRITICAL ENVIRONMENTAL AREAS

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?
☒ NO ☐ YES

List the environmental characteristics that caused the designation of the CEA.

Examples that would apply to column 2

• Proposed Action to locate within the CEA?	☐	☐	☐ Yes	☐ No
• Proposed Action will result in a reduction in the quantity of the resource?	☐	☐	☐ Yes	☐ No
• Proposed Action will result in a reduction in the quality of the resource?	☐	☐	☐ Yes	☐ No
• Proposed Action will impact the use, function or enjoyment of the resource?	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

IMPACT ON TRANSPORTATION

15. Will there be an effect to existing transportation systems?

☒ NO ☐ YES

Examples that would apply to column 2

• Alteration of present patterns of movement of people and/or goods.	☐	☐	☐ Yes	☐ No
• Proposed Action will result in major traffic problems.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON ENERGY

16. Will Proposed Action affect the community's sources of fuel or energy supply?

☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality.	☐	☐	☐ Yes	☐ No
• Proposed Action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two family residences or to serve a major commercial or industrial use.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

NOISE AND ODOR IMPACT

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

☒ NO ☐ YES

Examples that would apply to column 2

• Blasting within 1,500 feet of a hospital, school or other sensitive facility.	☐	☐	☐ Yes	☐ No
• Odors will occur routinely (more than one hour per day).	☐	☐	☐ Yes	☐ No
• Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures.	☐	☐	☐ Yes	☐ No
• Proposed Action will remove natural barriers that would act as a noise screen.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

IMPACT ON PUBLIC HEALTH

18. Will Proposed Action affect public health and safety?
☒ NO ☐ YES

• Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission.	☐	☐	☐ Yes	☐ No
• Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.)	☐	☐	☐ Yes	☐ No
• Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids.	☐	☐	☐ Yes	☐ No
• Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON GROWTH AND CHARACTER OF COMMUNITY OR NEIGHBORHOOD

19. Will Proposed Action affect the character of the existing community?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%.	☐	☐	☐ Yes	☐ No
• The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project.	☐	☐	☐ Yes	☐ No
• Proposed Action will conflict with officially adopted plans or goals.	☐	☐	☐ Yes	☐ No
• Proposed Action will cause a change in the density of land use.	☐	☐	☐ Yes	☐ No
• Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community.	☐	☐	☐ Yes	☐ No
• Development will create a demand for additional community services (e.g. schools, police and fire, etc.)	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Proposed Action will set an important precedent for future projects.	☐	☐	☐ Yes ☐ No
• Proposed Action will create or eliminate employment.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?

☒ NO ☐ YES

If Any Action in Part 2 Is Identified as a Potential Large Impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3

Part 3 - EVALUATION OF THE IMPORTANCE OF IMPACTS

Responsibility of Lead Agency

Part 3 must be prepared if one or more impact(s) is considered to be potentially large, even if the impact(s) may be mitigated.

Instructions (If you need more space, attach additional sheets)

Discuss the following for each impact identified in Column 2 of Part 2:

1. Briefly describe the impact.

2. Describe (if applicable) how the impact could be mitigated or reduced to a small to moderate impact by project change(s).

3. Based on the information available, decide if it is reasonable to conclude that this impact is **important**.

   To answer the question of importance, consider:

   - The probability of the impact occurring
   - The duration of the impact
   - Its irreversibility, including permanently lost resources of value
   - Whether the impact can or will be controlled
   - The regional consequence of the impact
   - Its potential divergence from local needs and goals
   - Whether known objections to the project relate to this impact.

An Environmental Impact Statement has been developed and is included as part of the UMP process.

Reset

Appendix 3.A8.a
Whiteface Mountain Trails and Slopes Handbook Summer Operations

WHITEFACE

Whiteface Mountain
Trails and Slopes Handbook
Summer Operations

List of Sections

Equipment Use and Training
Storm Water Erosion and Sediment Control
Trail Maintenance
Bicknell's Thrush Habitat Management Plan and Development Standards

Whiteface Mountain
Trails and Slopes Handbook
Summer Operations

Introduction: The Maintenance of trails and slopes is a multi-seasonal project. Our ability to make snow and groom the trails efficiently in the winter is directly related to our summer maintenance program, removal of rocks, stumps and high spots help us to cover the trails with snow more quickly, it also helps prevent tillers and tracks from damage on thin snow areas. The brushing of the trails, maintenance of fences and signs all aid in improving our snow surface product, which in the end will please our skiing guests. This booklet will help you understand principles and procedures in the Trail Maintenance Department.

Equipment Use and Training

Overview:
The Trail Maintenance department works with a variety of motorized equipment, ranging from chain saws to excavators and bull dozers. **Staff should never run any piece of equipment unless they have first read the operators manual, completed specific training for the equipment, and have been assigned that piece of equipment by their supervisor. All training must be documented through your department head and the training officer. Operating heavy equipment is only allowed by the Department head when training and title allows.**
All pieces of mechanical equipment require daily maintenance such as lubrication oil checks etc. Operators are responsible to complete these tasks.

Chainsaw:
All staff operating Chain saws must have completed an approved chainsaw training course. These courses are provided and coordinated through the department head and management.
Anyone operating a chain saw with out Personal Protective equipment will be disciplined.

Chipper:
All staff operating the chipper must have been through the chipper training and be familiar with all safety features on the machine.

ATV: Anyone operating an ATV is required to go through specific ATV training with your supervisor or training officer. DOT approved helmets are required at all times.

Heavy Equipment: Heavy Equipment to include trucks, bulldozers, excavator's backhoes etc., require specific training and authorization by your supervisor.

Storm Water Erosion and Sediment Control:

Overview:
All new trail construction and expansions projects will have a formal Storm Water Pollution Prevention Plan (SWPPP). While the work will be inspected by Management Staff for compliance it is the responsibility of everyone to ensure that SWPPP is executed. Since Maintenance Staff is constantly on the site, they are the key to the success of the SWPPP. After the completion of the new trail construction and expansion the SWPPP will remain in place until re-vegetation is complete. After re-vegetation is complete the temporary SWPPP devices will be removed, but the permanent devices and controls will remain in place. The following items focuses on the maintenance of the permanent devices.

1) Water bars are designed to collect runoff on ski trails and to divert the water to the side of trails to avoid erosion. Water bar maintenance involves inspecting and cleaning water bars, too ensure that water flows unhindered and does not jump the water bar and run down the trail. If a water bar is compromised, it must be cleaned and reestablished, if this cannot be done by hand, a machine must be used. Always leave the trail level after establishing a water bar.
2) All culvert ends must be maintained and inspected. Inspection involves looking for and removing obstructions such as logs dirt rocks etc. observing the integrity of the culvert header is also important.
3) Many areas have silt traps designed into the storm water system, Silt traps are cleaned monthly and after rain events of 0.5 inches or more. The department supervisor has forms to be filled out to document this process.
4) If a maintenance operation requires earth to be disturbed, proper erosion control methods must be used. Devices such as water bars, silt traps and silt fence must be used in accordance with the Best Management Practices. ORDA's Office of Planning and Construction must be notified it new temporary erosion and sediment control devices are needed. Anywhere that soil is disturbed revegetation must occur quickly. No more than 600 slope feet or one acre of trail can be exposed at one time. After trails are graded and smooth, Whiteface uses a special mix of grass seed (Adirondack Mix), once the seed is spread straw is spread on top at a coverage of about 75 to 80 percent. Do not spread the straw too thick. Whiteface uses only straw as mulch, hay SHALL NOT used to mulch ski trail.
5) All brooks are inspected annually and any fallen trees are bucked up and removed to prevent them from lodging in culvert heads. **If you observe erosion or see maintenance needed on water bars, culverts or silt traps, repair immediately or notify your supervisor immediately**

Trail Maintenance

Trail Grading: Grading of the trail is important in that it has an end result which helps us to save on snowmaking costs, prevents expensive damage to grooming machines, and keeps our guests happy with a good product.

Most trail grading is accomplished when the trail is built; blasting and machine work is designed to level the trail and to create a consistent "fall line". Occasionally in the maintenance process we will reshape trails and areas where dirt or rocks consistently come through the snow. Any work that is done on a trail must be cleaned up, leveled and re-vegetated. Always consider what will be left behind, which will make snowmaking and grooming more difficult.

Another key element of trail grading is rock picking, this is done by hand and sometimes by machine. There are always rocks to pick, whenever you see a rock in a ski trail it should be moved if you cannot move it call your supervisor

Mowing: Mowing on all ski trails is done at least annually; in areas where it allows machines are used; in all other areas trails are mowed by hand with scythes.

Brushing: Trails edges are brushed regularly, often this is done with a chainsaw and a pole saw. The object is to remove branches and trees which will interfere with skiers and snow cats in the winter. Whenever possible trees should be chipped, when cutting brush cut as low to the ground as possible, when limbing trees, branches should be cut tight to the trunk, do not leave protruding sticks. **Notice in areas above 2800' in elevation specific techniques are required, this is detailed in the environmental section of the booklet.**

Trenching: There are multiple types of underground utilities at Whiteface; always call to have utilities marked before any digging or grading.

Environmental: We are an outdoor industry the integrity and the beauty of the outdoors is a part of our product, we should always use practices that are environmentally friendly.
Whiteface is a part of the Adirondack Forest Preserve. All tree cutting must be accounted for, and approved through a permit process. **Do not cut any trees unless you have specific approval from your supervisor.**

Attached is a General Construction Plan which details some best practices in trail maintenance and construction. The plan addresses many environmental issues surrounding trail construction and work. Whenever more than 1/3rd acre of land is disturbed, we must develop a storm water plan specific to the project.

Bicknell's Thrush Habitat Management Plan and Development Standards:

Overview:

Whiteface is committed to the protection of the habitat of the Bicknell's Thrush. This effort requires the assistance of all Trail Maintenance Staff. In order to facilitate the Bicknell's Thrush Habitat Management Plan and Development Standards, Whiteface has identified the demark of the 2800 Feet elevation with signs which read:

"*NOTICE all maintenance and construction in areas above 2800' are subject to strict guidelines. Consult with Whiteface Management or Trails Department Head before proceeding.*"

It is important that the following standards be applied in these areas to ensure the program success. If you have questions about trail work above 2800' ask your supervisor for further clarification.

Objectives:

The objective for the Habitat Management Plan and Development Standards is to ensure that Bicknell's Thrush habitat is recreated in the most efficient and effective manner. Additionally, it is important that opportunities for new habitat are identified and developed.

Whiteface Mountain has established a Habitat Management Plan for all ski trails and lift lines above the 2800' elevation level. This plan is designed to preserve and create high elevation habitat for the Bicknell's Thrush.

Continued Field Surveys to Monitor Progress

Since there are no pre-existing standards to objectively determine success, the standards presented in this program are subject to change and modifications based on stakeholder observations and continuing recommendations, therefore, the opinions from WFM Operations Staff is very important to the success of the program. Please communicate to your supervisor any positive observations and thoughts on making this program a success.

The current recommended timeline and measures to objectively determine success are as follows:

- Pre-Construction Gross Vegetation Survey – This survey is completed and is on record at WFM Administrative Offices.
- Post-Construction Annual Visual Vegetation Survey Gross - This survey is done annually, it is an informal visual survey.
- Post-Construction Gross Vegetation Survey – This survey is done at five (5) year intervals and is performed with the same formal documentation as the Pre-Construction Gross Vegetation Survey.

Pre-Construction Survey

A Pre-Construction Gross Vegetation Survey (GVS) has been conducted in the region of the new trail development to identify species of trees and potential Bicknell's Thrush Habitat (BITH). In the specific areas of new construction, transects were established at existing BITH monitoring points. The GVS results were recorded on data sheets which include the BITH monitoring points. These data sheets shall be used as the Baseline for progress monitoring.

Post-Construction Surveys

Post-Construction Surveys include an Annual Visual Survey and a periodic Gross Vegetation Survey.

The Annual Visual Surveys are to be conducted during routine seasonal maintenance. These surveys should be an element of your daily activities and should include recommendations to the Trail Operations Supervisor for facilitating vegetation growth. Observations and efforts need to be included in the Daily Operations Report.

The Gross Vegetation Survey is targeted for five (5) year periods. This survey shall be a formal survey and shall include the support of the DEC. This survey will use the same practices as used in the Pre-Construction Gross Vegetation Survey. The results from this survey will be used to determine future survey schedules.

Timeline and Measures to Objectively Determine Success

At the conclusion of the Post-Construction Survey progress will be assessed. The conditions of the progress may require changes to the program. Please make sure that your Trails and Slopes Handbook is the most current version.

Construction and Maintenance Techniques

- Trails will be flagged before construction to the width of skiable terrain. After the initial cut to the flagging, areas will be marked where additional cutting (5'-8') will need to occur to provide for establishment of new habitat. This far edge of new habitat will be marked with a permanent type marker.
- We anticipate that balsam fir will grow quickly in the areas where construction takes place, but to ensure progress Whiteface will plant seedlings in the first year after construction. In the event that habitat creation is not successful, Whiteface will consult with interested groups to evaluate options to ensure that habitat is being created.
- No tree cutting or brushing can occur in these areas between May 15th and August 1st
- When trails are brushed, care must be made to leave a "feathered" edge of dense brush on the trail edges. See Diagram
- When cutting, or maintaining glades, efforts will be made to disturb existing under story as little as possible.

Gross Vegetation Survey Standards

The following text provides direction and guidance for the application of a Gross Vegetation Survey.

1. Locate a preselected BITH census point.
2. Run a tape measure from this point, following a distinct compass direction that These transects will be 10' wide and extend across the trail, to a distance of 20' into the woods past the trail edge on both sides. generally follows the contour of the slope, towards and into the nearest trail. At the trail edge, block off one 10 x 10 m plot in the trail and one 10 x 10 m plot in the woods adjacent the trail. Measure off additional 10 x 10 m plots 20 and 40 m into the forest from the trail edge (Figure 1). If the transect does not cross the trail edge perpendicularly, place the plots on the side of the transect that keeps the plot in the cover type intended.

3. In the 10 x 10 m plots, count all the trees over 1.4 meters, measure their height and diameter at 1.4 meters.
4. In the each 10 x 10 m plot, randomly place a total of 10 1 x 1 m sub-plots in this fashion. Consider the trail edge as zero meters along the transect (horizontal axis). At 0, 2, 4, 6, and 8 meters on this axis, place two plots randomly along a vertical axis traveling the 10 m up or down the plot. Thus there will be two plots each about 0, 2, 4, 6, and 8 meters from the trail edge, both towards the trail center and the forest interior. (Regression analysis can be used to analyze these data).
5. In each 1 x 1 m plot, count all large seedlings 10cm to 1.4 m high.
6. If time or effort permits, repeat with a similar schema for small seedlings (those under and equal to 10cm).
7. Repeat for each of the eight BITH Survey.

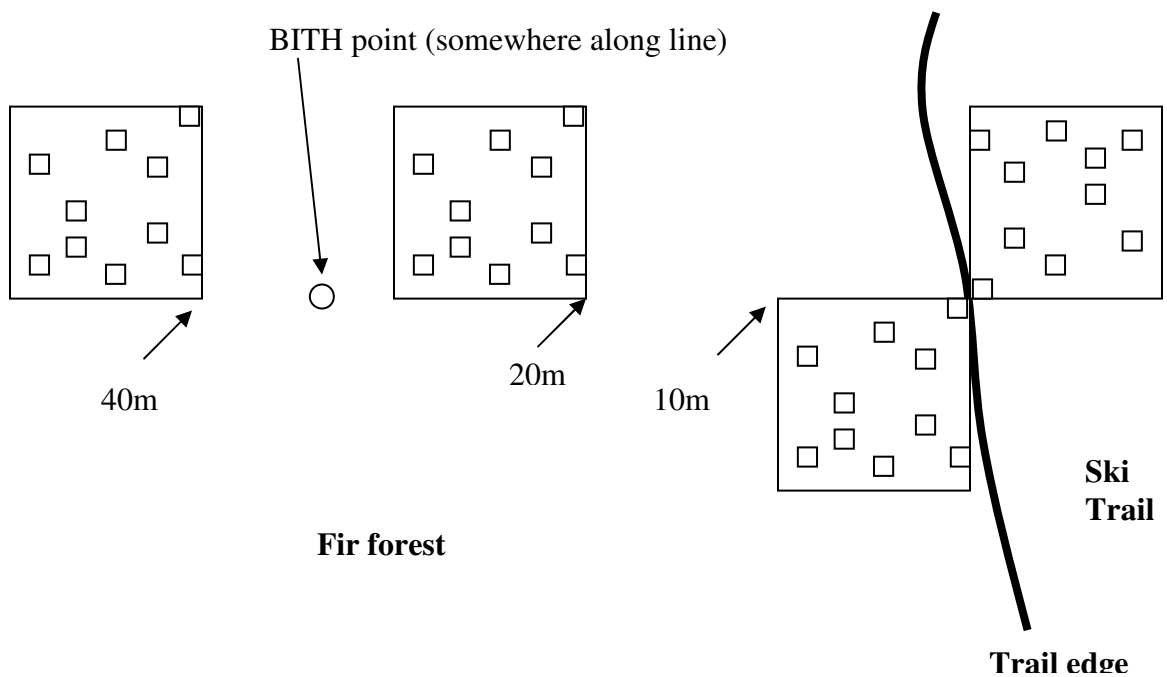


Figure #1

Figure# 1 - Proposed transect design includes a 60 meter transect with two 10 x 10 meter plots at the trail edge and two interior 10 x 10 m plots, one at 20 m one at 40 m from the trail edge.

Analysis will include:

1. Are forest edge densities different than interior densities?
   An analysis of variance, comparing the various BITH sites; furthest interior plots with the edge plots.
2. How far into the forest interior does the trail cut influence?

Regression analysis looking at seedling densities within1x1 subplots. Comparing the edge plots with the interior plots, or do an overall regression and see where no more change is detected

3. How far out into the trail are we getting "feathering" of the seedlings?
   Regression analysis of seedlings from trail edge towards center of trail.

Measurements will include:

1. Identity and number of woody stems growing in each plot
2. Canopy height in each plot.
3. Measure diameter and height of each stem.
4. Count seedlings under the cut-off

Appendix 3.A8.b
Use of Whiteface Mountain by Bicknells' Thrush and other Montane Forest Bird Species

2004 End-of-Season Report
2005 End-of-Season Report
2006 End-of-Season Report
2008 End-of-Season Report

Distribution

Jay Rand
Mike Pratt
Bob Hammond

ADIRONDACK COMMUNITIES & CONSERVATION PROGRAM

September 16, 2004

9/19/04

Mr. Ted Blazer
Olympic Regional Development Authority
218 Main St.
Lake Placid, NY 12946

Dear Mr. Blazer,

Enclosed please find our end-of-season report detailing the activities undertaken by WCS to assess Bicknell's thrush on Whiteface Mtn. Your support enabled us to survey a total of 27 locations on the mountain, in order to examine presence/absence and relative abundance of Bicknell's thrush in existing ski trails, existing glades, proposed ski trails, proposed glades, and control areas. We found Bicknell's thrush in existing ski trail and control sites, as well as a variety of other high elevation boreal species, indicating the importance of this mountain in providing habitat for this and other birds.

Bicknell's thrush is a species of special concern in New York State and has been identified as the nearctic Neotropical migrant of highest conservation priority in the Northeast. This work provides critical information for an important species and we greatly appreciate the contribution of ORDA to make this survey possible. Thank you very much for your financial and logistical support, as well as your participation in planning meetings and willingness to engage in this project. All are much appreciated and we look forward to continuing the survey next summer.

Sincerely,

Michele

Michale Glennon
Wildlife Conservation Society

7 Brandy Brook Avenue, Suite 204, Saranac Lake, NY 12983 tel 518.891.8872 fax 518.891.8875 web www.wcs.org/adirondacks

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ST. CATHERINES WILDLIFE SURVIVAL CENTER

Use of Whiteface Mountain by Bicknell's Thrush and other Montane Forest Bird Species

2004 End-of-season report submitted to:
Olympic Regional Development Authority
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September 16, 2004

Executive Summary: The Wildlife Conservation Society (WCS) was contracted by the Olympic Regional Development Authority (ORDA) to assess the use of Whiteface Mtn. by Bicknell's thrush (*Catharus bicknelli*), determining, at a minimum, the presence or absence of the species at a number of locations on the mountain. A species of special concern in New York State, Bicknell's thrush makes use of high elevation conifer forest such as that found on Whiteface and other Adirondack peaks for breeding and nesting habitat during the summer months. Proposed ski trail expansion on Whiteface has raised concerns about the potential for impacts of new trail development on Bicknell's thrush habitat. We surveyed a total of 27 sample points on the mountain in 5 categories: (1) existing glade, (2) proposed glade, (3) existing trail, (4) proposed trail, and (5) control areas. Study points were sampled using standard point count methods to monitor the presence of Bicknell's thrush (BITH) and 4 other high elevation bird species: blackpoll warbler (BLPW), Swainson's thrush (SWTH), winter wren (WIWR), and white-throated sparrow (WTSP). These 5 species are also monitored on an annual basis by Mtn. Birdwatch, a volunteer, long-term monitoring program for montane forest birds that are particularly susceptible to climate change and other stresses in the northeast. We found no significant differences in the total number of individuals, total number of species, total number of Mtn. Birdwatch species, or total number of Bicknell's thrush detected among existing ski trails, existing glades, proposed ski trails, proposed glades, and control areas. Our sample sizes for some forest types were small due to the configuration of habitat on the mountain itself, and so future monitoring will help to further elucidate patterns. We believe that our power to detect statistical differences was good for total birds and total species, but was not as good for individual species differences due to higher variability at the individual species level. Preliminary analyses of the first year's data show that existing ski trails and glades do not differ statistically in terms of abundance or species richness for montane forest birds including Bicknell's thrush. Some trends appeared in the data, however, showing that control areas may have higher total bird abundance and

higher diversity of bird species than existing ski trails and glades. Glading, in particular, may be detrimental to habitat quality for Bicknell's thrush.

Introduction

The Bicknell's thrush is a species of great interest in the northeastern United States, both for birders and scientists alike. The species breeds in high elevation conifer forests, primarily above 3000 ft., on mountaintops from the Catskills to northern Maine. It is among the most rare and probably most threatened species in North America, and is ranked as the nearctic Neotropical migrant of highest conservation priority in the Northeast (Rimmer *et al.* 2001).

Bicknell's thrush habitat in the U.S. consists of montane forests dominated by balsam fir (*Abies balsamea*), with lesser amounts of red (*Picea rubens*) and black spruce (*Picea mariana*), white birch (*Betula papyrifera*), mountain ash (*Sorbus americana*), and other hardwood species. It is adapted to naturally disturbed habitats and historically probably sought out patches of regenerating forest caused by fir waves, wind throw, ice and snow damage, fire, and insect outbreaks, as well as the chronically disturbed stunted conifer forests found at high elevations in the northeast (Rimmer *et al.* 2001). Highest densities of the species are often found in continually disturbed (high winds, heavy winter ice accumulation) stands of dense, stunted fir on exposed ridgelines or along edges of human-created openings, or in regenerating fir waves (Rimmer *et al.* 2001). More than 90% of birds are believed to breed in the U.S. (versus Canada), with the Adirondacks containing the largest area of its montane breeding habitat, followed by NH, ME, VT, and the Catskills.

Bicknell's thrush wintering habitat is even more restricted than its breeding habitat, with the species occurring regularly on only 5 islands in the Greater Antilles. It prefers mesic to wet broadleaf montane forests in the Dominican Republic, Haiti, Cuba, Jamaica, and Puerto Rico. Large-scale loss and degradation of wintering habitat pose the greatest threat to the long-term viability of this species (Rimmer *et al.* 2001).

Bicknell's thrush is not well-sampled by traditional bird monitoring methods due to its preference for high elevation habitat and its uncommon mating system. Both males and females mate with multiple partners, multiple paternity is common, and more than one male often feeds nestlings at a given nest. These characteristics make it poorly sampled by bird count methods that rely on more common territorial mating systems found in many bird species. Estimates of breeding densities for the species are unreliable at best (Rimmer *et al.* 2001). Though estimation of breeding densities are difficult to obtain, Bicknell's thrush is believed to be vulnerable to extinction and has been added to the Red List of Threatened Species by the World Conservation Union. As a habitat specialist of high elevation conifer forests, it is susceptible to a number of threats on the breeding grounds including pollution (acid rain, mercury), recreational development, cell tower construction, wind power development, and climate change.

This report details the first of three seasons of field work conducted by the Wildlife Conservation Society to examine the potential impacts of ski area development on breeding habitat for Bicknell's thrush and other montane forest species on Whiteface Mtn. in the Adirondacks of New York State.

Study Area

Whiteface Mtn. is located in the high peaks region of the Adirondacks and contains approximately 1,020 acres of suitable Bicknell's thrush breeding habitat, with approximately 27 acres of suitable habitat within the proposed Tree Island Pod expansion area. Elevations in the high peaks region range from 1,000 – 5,300 ft. The study site is characterized by spruce-fir forest at high elevations and transitions into a mix of softwood and hardwood species including paper birch and red maple (*Acer rubrum*) at low elevations.

Methods

We used standard point count methods to assess presence/absence and relative abundance of BITH and other high elevation bird species on Whiteface Mtn. (Ralph *et al.* 1995, Rosenstock *et al.* 2002, Thompson 2002). In a previous report to ORDA by the Vermont Institute of Natural Science, distance sampling methods were suggested as a means by which to obtain density estimates of BITH on Whiteface Mtn. However, authors of that report and several others discussed the limitations of the distance sampling approach in providing reliable density estimates, both because of the unique characteristics of the Bicknell's thrush mating system, and also due to the difficulty of meeting stringent assumptions of distance sampling methods (Farnsworth *et al.* 2002, Ralph *et al.* 1995, Rimmer *et al.* 2004, Rosenstock *et al.* 2002, Thompson 2002). Rimmer *et al.* (2004), in their draft report to ORDA, mention that these limitations, coupled with the single-site study design of the work on Whiteface, mean that distance sampling methods used in this study are unlikely to produce statistically defensible results. In an effort to make the best attempt possible, given these constraints, to obtain reliable information on BITH and other species, we adopted a point count method that allows for calculation of densities for individual species, if adequate detections are made. Standard distance sampling methods require that the distance to each bird detected be accurately estimated, a requirement that we felt was challenging given the conditions of the habitat we were working in and the known difficulties in meeting this and other assumptions of distance sampling. Farnsworth *et al.* (2002) describe a technique whereby densities of individual species may be calculated from standard point count data collected in a series of time intervals, given that researchers used a fixed radius for point counts (suggested radius = 50 m). We had more confidence in our ability to detect whether birds were within or outside of a 50 m radius, than in our ability to accurately estimate exact distances to all birds heard. Therefore, we used a standard 10 minute point count method that would allow for future calculations of density given adequate numbers, but required only that we determine whether birds were within or outside of 50 m. This point count method enables us to determine presence/absence, and relative abundance among different site on the mountain.

We conducted all sampling on Whiteface Mtn. between June 11th and June 16th, 2004. We established sampling points in 5 different treatment types: (1) existing glades (n=1), (2) proposed glades (n=3), (3) existing trails (n=4), (4) proposed Tree Island Pod trail area (n=5), and (5) control areas (n=14) for a total of 27 sample points (Figure 1). Configuration of habitat on the mountain limited us to small sample sizes within several of the treatment types (i.e., existing glades, proposed glades, existing trails). To ensure that individual birds are counted only once at each sample point, standard methods require that sample points be approximately 200-250 m apart. This distance precluded us from having more than a few points within some of our treatment types. Battles *et al.* (1992, 2003) have conducted prior work on Whiteface Mtn. to examine trends in red spruce decline and tree community dynamics. In anticipation that habitat data collected at these points may one day be useful to this study, we conducted point counts at two locations also used by Battles *et al.* (1992, 2003) in one of our control areas that overlapped with their study sites.

We sampled all points between the hours of 4:30 and 6:30 am, during the time in which Bicknell's thrush is believed to be most vocal. At each sample point, bird were recorded by species, time period of detection (i.e., 0-3 minutes, 3-5 minutes, 5-10 minutes), activity (i.e., singing, calling, individual seen), and whether or not they were within 50 m of the observer. In the interest of safety, two observers were present on each sampling route, but only one observer was responsible for data collection. Due to very cold temperatures on the morning of 6/11/04 and the probable effect on singing activity of BITH and other species, we resampled two of our point transects (proposed trail and one control area) on 6/16/04. Data from these two samples was averaged in all analyses. Standard point count methodology dictates that each point should be sampled only once each season (Ralph *et al.* 1995). Counts can be repeated, however, if a particular goal dictates good estimates of the bird community at specific locations (Ralph *et al.* 1995). We felt that because the determination of the presence of Bicknell's thrush was critical to this study, and because it is likely that the temperature on the morning of 6/11/04 is likely to have resulted in decreased singing activity, a second sample of the location on a warmer day was appropriate.

Results

Numbers of detections of all species were far below minimal standards required for calculating densities by distance sampling. In lieu of densities, we calculated relative abundances for Bicknell's thrush and the 4 other montane bird species. We used analysis of variance (ANOVA; Zar 1999) to test whether there were differences in the total number of individual birds, the total number of species, the total number of Mtn. Birdwatch species, and the abundance of individual species (BITH, BLPW, SWTH, WIWR, and WTSP) among the treatment types. One type, existing glades, could not be included in the analysis because we had only one sample point within an existing glade, and variance cannot be calculated from a single sample. We tested normality of variables and homogeneity of variances to ensure that we had not violated the assumptions of ANOVA. An analysis of variance allows for the test of whether there are differences in

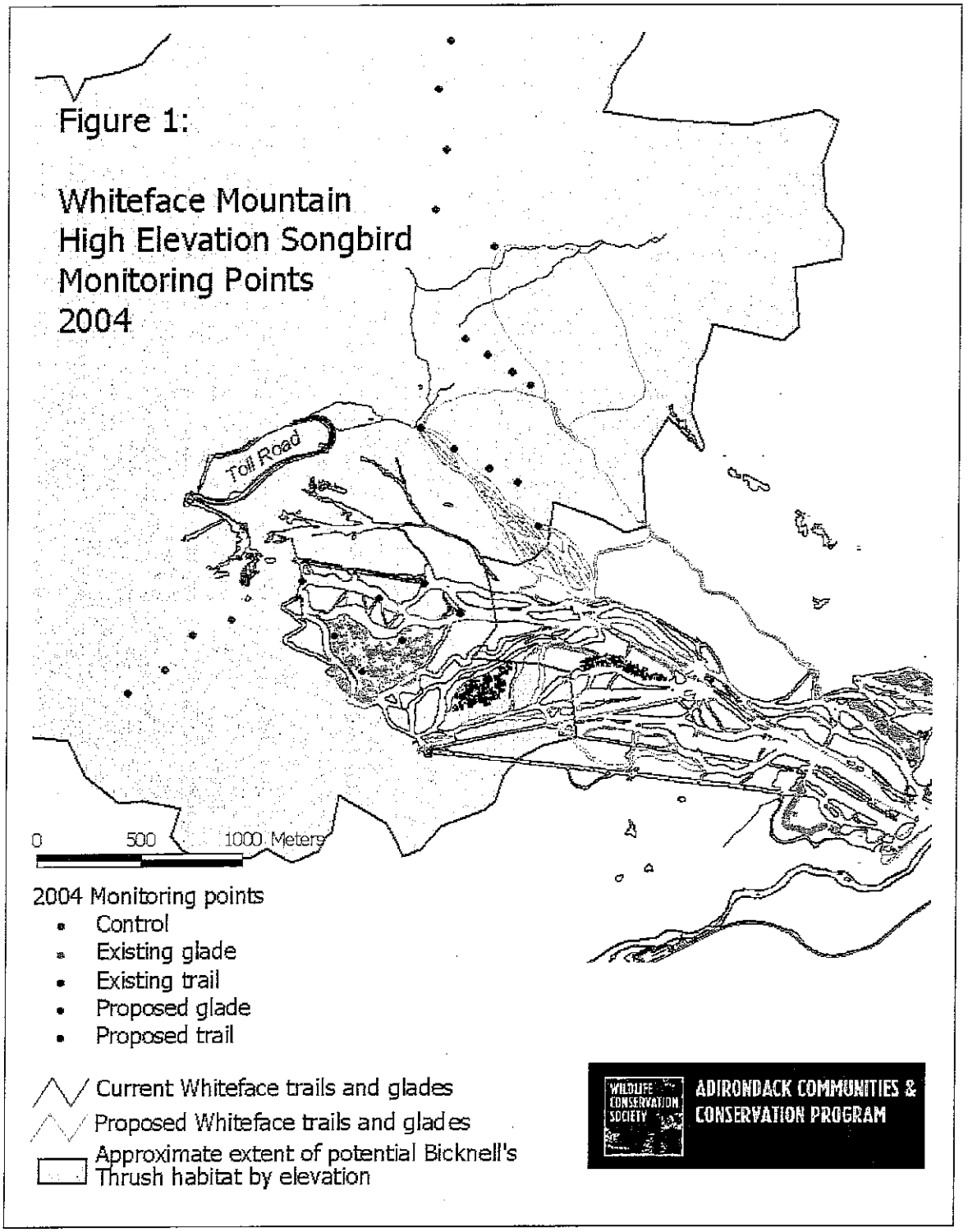
Figure 1:
Whiteface Mountain
High Elevation Songbird
Monitoring Points
2004
Toll Road
0
500
1000 Meters
2004 Monitoring points
Control
Existing glade
Existing trail
Proposed glade
Proposed trail
Current Whiteface trails and glades
Proposed Whiteface trails and glades
Approximate extent of potential Bicknell's Thrush habitat by elevation
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the means observed for more than 2 different treatment types. We used a commonly accepted *P* value of 0.05 to denote statistical significance; values ≤ 0.05 are considered statistically different. We found no statistical differences in the total number of birds observed, the total number of species observed, or the total number of Mtn. Birdwatch species observed (Table 1). The only individual species difference that was statistically significant was that for SWTH, which was higher in abundance in the proposed trail area than in the proposed glade.

Table 1. Mean and statistical difference observed for 9 response variables among areas of proposed glade, existing trail, proposed trail, and control areas on Whiteface Mtn. Superscripts denote statistical differences.

Response variable	Proposed glade	Existing trail	Proposed trail	Control	*P* value
Total birds	5.00	7.50	6.60	8.39	0.162
Total # species	4.00	6.00	4.80	5.75	0.439
Total # Mtn. Birdwatch species	2.00	3.00	3.20	3.68	0.098
Bicnkell's thrush (BITH)	0.00	0.25	0.80	0.68	0.430
Blackpoll warbler (BLPW)	0.67	0.50	0.40	1.21	0.183
Swainson's thrush (SWTH)	0.33^{a}	1.00	1.60^{b}	1.21	0.043
Winter wren (WIWR)	1.33	1.50	1.20	1.11	0.799
White-throated sparrow (WTSP)	0.67	1.00	1.00	1.25	0.844

In the interest of knowing whether there were differences in bird communities found in any kind of ski trail versus the undisturbed forested areas on the mountain, we also conducted an analysis in which we lumped the existing glade and trail data into one category (ski trails) and compared it against a second category comprising all of the areas which at this time are undeveloped including the proposed Tree Island Pod points, the proposed glade points, and the control points. When comparing existing trails to currently uncut forest areas, we again found no statistical differences in total number of birds, total number of species, total number of Mtn. Birdwatch species, or individual abundance of BITH, BLPW, SWTH, WIWR, and WTSP.

Though no statistical differences were detected among treatment types, control areas did demonstrate a trend of higher total abundance, higher Mtn. Birdwatch species richness (Figure 2), and higher abundances of blackpoll warbler and white-throated sparrow (Figure 3). Other species showed different patterns, with Bicknell's thrush and Swainson's thrush found in highest abundance in the proposed expansion area, and winter wren in highest abundance in existing trail areas (Figure 3).

Figure 2. Differences in Total Abundance, Species Richness, and Mt. Birdwatch Species Richness among Trail and Non-trail areas on Whiteface Mtn.

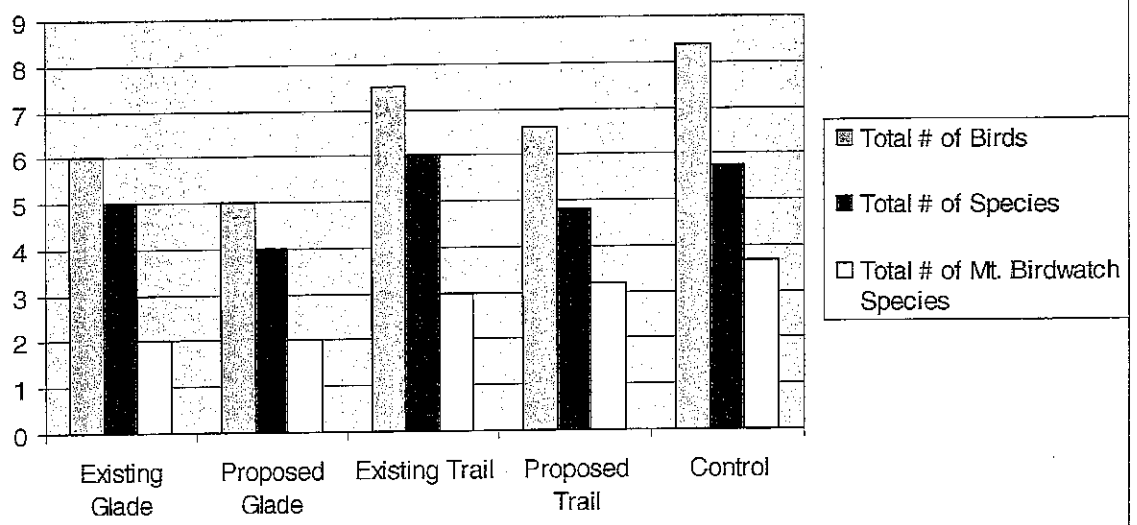
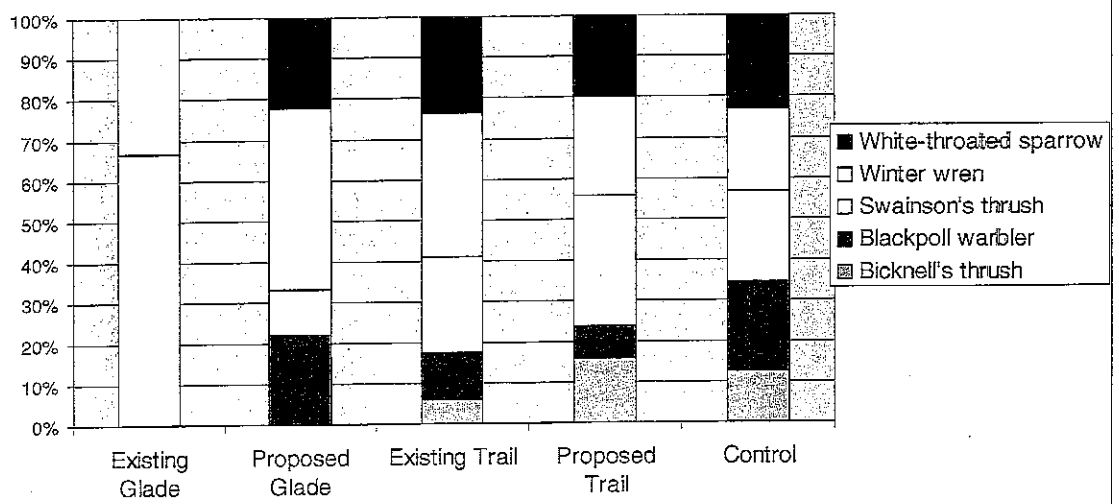


Figure 3. Proportional Representation of Bicknell's thrush, Blackpoll warbler, Swainson's thrush, Winter wren, and White-throated sparrow on Trail and Non-trail areas on Whiteface Mtn.



Visual examination of the community structure among different treatment types reveals that control areas appear to have a more even distribution of birds among species than do existing trails, proposed glades, and existing glades. An even distribution of species representation implies a more diverse community of birds in these areas. A statistical test of these patterns revealed that diversity and evenness are, in fact, highest in control areas but differ statistically only from proposed glades ($P < 0.009$ and $P < 011$, respectively).

Existing glades could not be included in that analysis because we had only one sample point.

Discussion

We have completed the field work for the first year of a three-year study to determine the potential impacts of ski area development on habitat for Bicknell's thrush and other montane forest birds. We sampled a total of 27 points on Whiteface Mtn. in June of 2004, though the configuration of Bicknell's thrush habitat on the study site, combined with the requirements of point count sampling, constrained us to small sample sizes for some treatment types. In particular, the amount of existing gladed area on the mountain at elevations high enough to provide potential Bicknell's thrush habitat was small and allowed for only one point within this type. Similarly, we were able to sample only 3 points in the proposed glade and 4 points in the existing trail due to constraints of the habitat and the time required to reach these points, even when camping overnight on the mountain. Our primary concern, however, was to address the potential impacts of ski development within the proposed expansion area, or Tree Island Pod, and to establish a series of sample points within this area that can be compared to control areas on the mountain not open to development. We were able to sample 5 points within the Tree Island Pod itself, and a total of 14 points within 3 different control areas on the mountain. Getting to more than 5 points on a transect within the Tree Island Pod would be difficult within the 2 hour time window of 4:30 to 6:30 am that is generally used for observations of Bicknell's thrush. Likewise, the area of the Tree Island Pod itself is not large, and placing more points within it would be challenging without resulting in points closer than the recommended 200 m minimum between sample points on a transect to avoid double counting of individuals.

One of the potential results of low sample sizes in any statistical analysis is a low power to detect differences. Statistical power is defined as the ability to detect a statistical difference, if one is present. Our power was good for detecting differences in the total number of birds, the number of total species, and the number of Mtn. Birdwatch species observed. Our power was lower, however, for detecting individual species differences because the variability at the individual species level is much higher. Therefore, the conclusions drawn from this initial year must be taken with some caution. It is our hope that future sampling in the summers of 2005 and 2006 will allow us to reduce some of the variability in observed species differences and thereby increase our statistical power to detect differences between types.

Given the caveats mentioned, there are interesting patterns in the data obtained from year 1 of this study. We found no statistical differences in the total number of birds, total species richness, or Mtn. Birdwatch species richness among existing glades, proposed glades, existing trails, proposed trails, and control areas. Likewise, we found few differences in the abundances of Bicknell's thrush, blackpoll warbler, Swainson's thrush, winter wren, and white-throated sparrow among these treatment types. The Vermont Institute of Natural Science has been studying the impacts of ski area development on Bicknell's thrush on Stratton and Mansfield mountains for a number of years (Rimmer *et*

al. 2004). Preliminary results from their analyses indicate that there are few differences in population and reproductive parameters for Bicknell's thrush between existing ski areas and control areas on those 2 mountains. This study, much more extensive than our own, has examined differences in reproductive success, survivorship, and nest predation for Bicknell's nesting near or along existing ski trails versus those nesting in uncut controls and found very few differences among observed parameters between ski areas and controls. It appears that ski areas are not negatively impacting Bicknell's thrush survival or nest success on these 2 mountains. Whether these same results would be obtained for other montane forest species is unknown. Our preliminary data, however, appear to show that relative abundances of the montane species we studied are similar in existing trail and control areas on Whiteface Mtn.

It is important to note that most of the human-related activity occurring on Whiteface and other ski areas occurs during the winter months when most bird species are absent. It may be that direct effects of humans are minimal during the summer months when breeding activity is occurring, and that loss of habitat and other human impacts on the wintering grounds may be much more critical to the long-term survival of Bicknell's thrush. One of the most common results of habitat fragmentation, such as that created by ski trails, is increased predation created by better access for predators along habitat edges. Rimmer *et al.* (2004) have not detected this pattern on Stratton and Mansfield mountains, however. Nest success and predation rates appear similar in ski trail areas and in controls (Rimmer *et al.* 2004). This may be due to the fact that the generalist predators such as raccoons or coyotes that are more common in fragmented habitats at low elevations are less prevalent at high elevations where Bicknell's thrush commonly nests. Red squirrels are the most significant nest predator for Bicknell's thrush, and squirrels appear to be more evenly disbursed throughout the landscape than are more generalist predators which concentrate along and use edges as travel corridors.

Though we did not detect statistical differences among the ski trail and control types examined, there were some apparent trends of higher species diversity and higher overall numbers of birds in control areas than in existing trails. This may be due to the fact that the control areas have larger expanses of continuous habitat, allowing a larger number of birds to find suitable nesting habitat within them. Some bird species are sensitive to forest edges, and though we did not observe strong patterns in individual species differences in this study, it is possible that species such as blackpoll warbler or Swainson's thrush will make use of edges but nest preferentially in unfragmented habitat.

It is worth noting that we detected no Bicknell's thrush in the existing glade area, and that we detected highest abundance of Bicknell's thrush in the proposed Tree Island Pod area. Rimmer *et al.* (2004) stress that glade creation may effectively eliminate suitable Bicknell's thrush habitat by removing the dense subcanopy structure favored by this species. The Tree Island Pod area, in contrast, is in an area of the mountain that has a very dense subcanopy, a habitat characteristic favored by Bicknell's thrush. We look forward to continuing this work and further elucidating these patterns during the next two summers.

Acknowledgements

The Wildlife Conservation Society acknowledges the generous financial support of the Olympic Regional Development Authority in allowing us to conduct this important work. We also acknowledge the in kind support provided by the Adirondack Park Agency, the New York State Department of Environmental Conservation, and the Vermont Institute of Natural Science.

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again did not find Bicknell's thrush in areas of existing glades on Whiteface Mt. Glading, in particular, may be detrimental to habitat quality for Bicknell's thrush.

Introduction

The Bicknell's thrush is a species of great interest in the northeastern United States, both for birders and scientists alike. The species breeds in high elevation conifer forests, primarily above 3000 ft., on mountaintops from the Catskills to northern Maine. It is among the most rare and probably most threatened species in North America, and is ranked as the nearctic Neotropical migrant of highest conservation priority in the Northeast (Rimmer *et al.* 2001).

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This report details the second of three seasons of field work conducted by the Wildlife Conservation Society to examine the potential impacts of ski area development on breeding habitat for Bicknell's thrush and other montane forest species on Whiteface Mtn. in the Adirondacks of New York State.

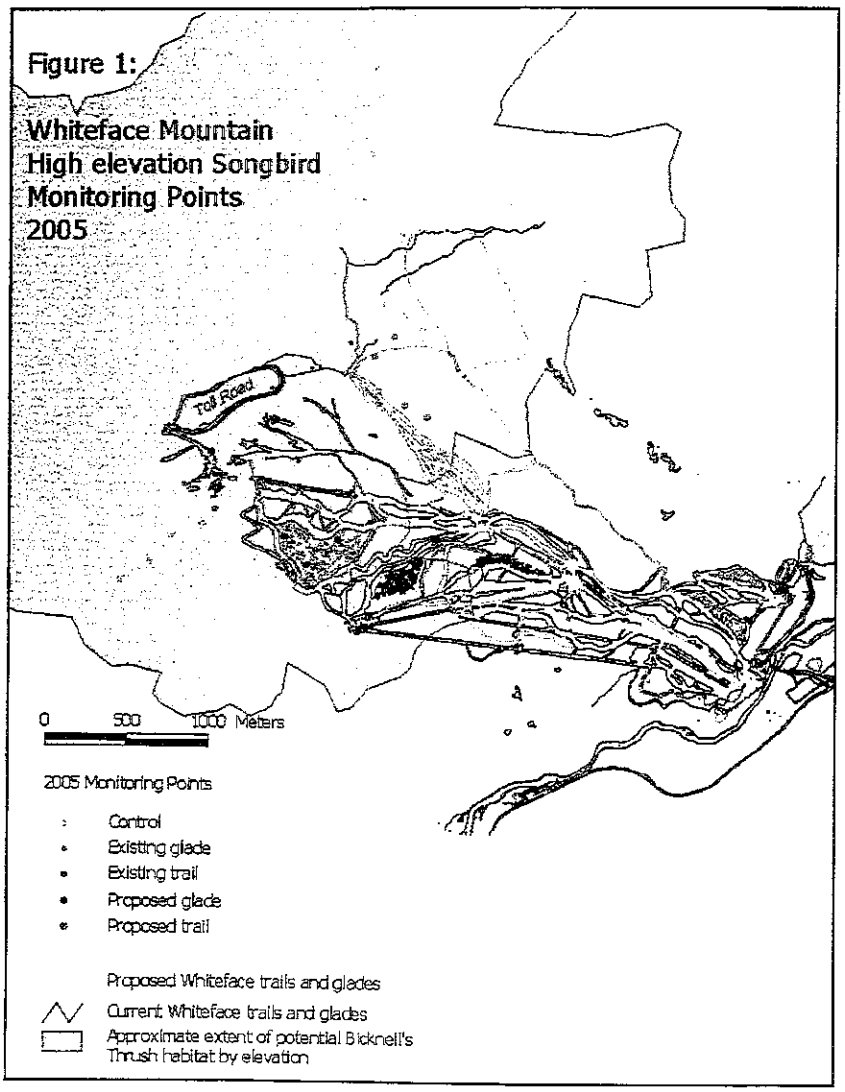
Study Area

Whiteface Mtn. is located in the high peaks region of the Adirondacks and contains approximately 1,020 acres of suitable Bicknell's thrush breeding habitat, with approximately 27 acres of suitable habitat within the proposed Tree Island Pod expansion area. Elevations in the high peaks region range from 1,000 – 5,300 ft. The study site is characterized by spruce-fir forest at high elevations and transitions into a mix of softwood and hardwood species including paper birch and red maple (*Acer rubrum*) at low elevations.

Methods

We used standard point count methods to assess presence/absence and relative abundance of BITH and other high elevation bird species on Whiteface Mtn. (Ralph *et al.* 1995, Rosenstock *et al.* 2002, Thompson 2002). In a previous report to ORDA by the Vermont Institute of Natural Science, distance sampling methods were suggested as a means by which to obtain density estimates of BITH on Whiteface Mtn. However, authors of that report and several others discussed the limitations of the distance sampling approach in providing reliable density estimates, both because of the unique characteristics of the Bicknell's thrush mating system, and also due to the difficulty of meeting stringent assumptions of distance sampling methods (Farnsworth *et al.* 2002, Ralph *et al.* 1995, Rimmer *et al.* 2004, Rosenstock *et al.* 2002, Thompson 2002). Rimmer *et al.* (2004), in their report to ORDA, mention that these limitations, coupled with the single-site study design of the work on Whiteface, mean that distance sampling methods used in this study are unlikely to produce statistically defensible results. In an effort to make the best attempt possible, given these constraints, to obtain reliable information on BITH and other species, we adopted a point count method that allows for calculation of densities for individual species, if adequate detections are made. Standard distance sampling methods require that the distance to each bird detected be accurately estimated, a requirement that we felt was challenging given the conditions of the habitat we were working in and the known difficulties in meeting this and other assumptions of distance sampling. Farnsworth *et al.* (2002) describe a technique whereby densities of individual species may be calculated from standard point count data collected in a series of time intervals, given that researchers used a fixed radius for point counts (suggested radius = 50 m). We had more confidence in our ability to detect whether birds were within or outside of a 50 m radius, than in our ability to accurately estimate exact distances to all birds heard. Therefore, we used a standard 10 minute point count method that would allow for future calculations of density given adequate numbers, but required only that we determine whether birds were within or outside of 50 m. This point count method enables us to determine presence/absence, and relative abundance among different site on the mountain.

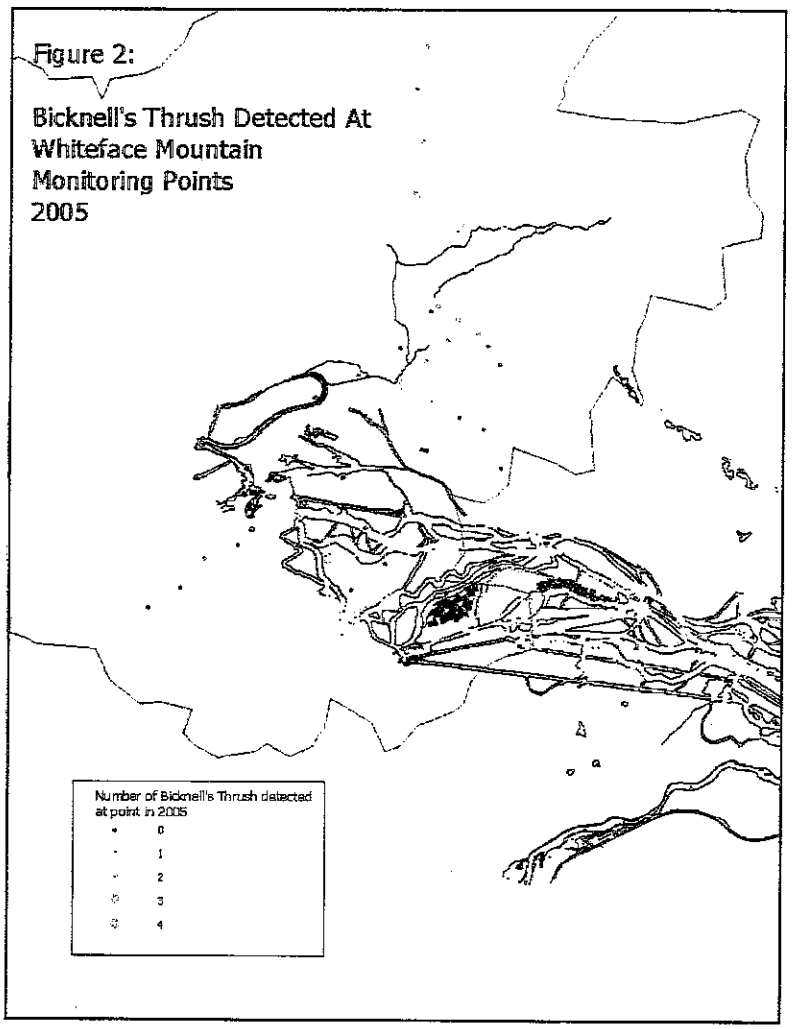
We conducted all sampling on Whiteface Mtn. between June 6th and June 10th of this year. We returned to established sampling points in 5 different treatment types: (1) existing glades (n=1), (2) proposed glades (n=3), (3) existing trails (n=4), (4) proposed Tree Island Pod trail area (n=7), and (5) control areas (n=14), adding 2 additional points within the proposed expansion area for a total of 29 sample points (Figure 1). Configuration of habitat on the mountain limited us to small sample sizes within several of the treatment types (i.e., existing glades, proposed glades, existing trails). To ensure that individual birds are counted only once at each sample point, standard methods require that sample points be approximately 200-250 m apart. This distance precluded us from having more than a few points within some of our treatment types. Battles *et al.* (1992, 2003) have conducted prior work on Whiteface Mtn. to examine trends in red spruce decline and tree community dynamics. In anticipation that habitat data collected at these points may one day be useful to this study, we conducted point counts at two locations also used by Battles *et al.* (1992, 2003) in one of our control areas that overlapped with their study sites.



We sampled all points between the hours of 4:20 and 6:30 am, during the time in which Bicknell's thrush is believed to be most vocal. At each sample point, bird were recorded by species, time period of detection (i.e., 0-3 minutes, 3-5 minutes, 5-10 minutes), activity (i.e., singing, calling, individual seen), and whether or not they were within 50 m of the observer. In the interest of safety, two observers were present on each sampling route, but only one observer was responsible for data collection.

Results

Numbers of detections of all species were far below minimal standards required for calculating densities by distance sampling. In lieu of densities, we calculated relative abundances for Bicknell's thrush and the 4 other montane bird species. We used analysis of variance (ANOVA; Zar 1999) to test whether there were differences in the number, diversity, and evenness of Mtn. Birdwatch species, and the abundance of individual species (BITH, BLPW, SWTH, WIWR, and WTSP) among the treatment types. One type, existing glades, could not be included in the analysis because we had only one sample point within an existing glade, and variance cannot be calculated from a single sample. We tested normality of variables and homogeneity of variances to ensure that we had not violated the assumptions of ANOVA. An analysis of variance allows for the test of whether there are differences in the means observed for more than 2 different treatment types. We used a commonly accepted *P* value of 0.05 to denote statistical significance; values $\leq$ 0.05 are considered statistically different. We found no statistical differences in the abundance, richness, diversity, or evenness of Mtn. Birdwatch species observed (Table 1). The only individual species difference that was statistically significant was that for SWTH, which was higher in abundance in the proposed trail area than in the control area. Figure 2 depicts the locations on Whiteface Mt. at which Bicknell's thrush was detected.



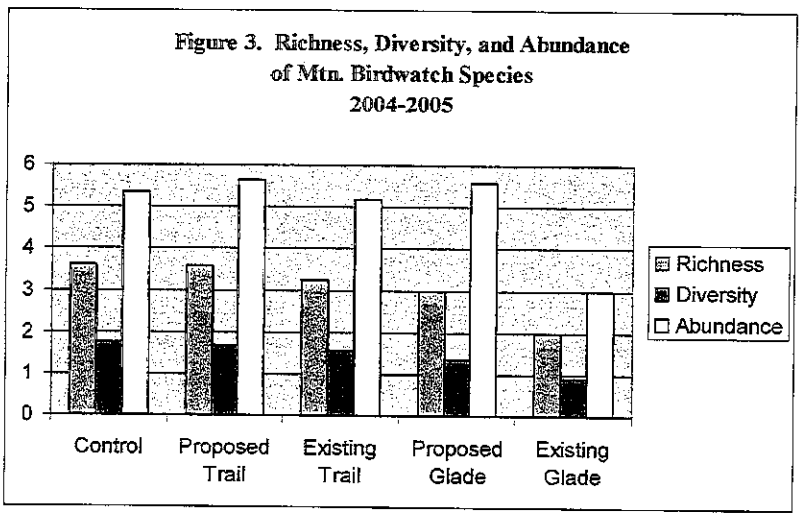
In the interest of knowing whether there were differences in bird communities found in any kind of ski trail versus the undisturbed forested areas on the mountain, we again conducted an analysis in which we lumped the existing trail data into one category (ski

trails) and compared it against a second category comprising all of the areas which at this time are undeveloped including the proposed Tree Island Pod points, the proposed glade points, and the control points (no trails). When comparing existing trails to currently uncut forest areas, we again found no statistical differences in total abundance, richness, diversity, or evenness of Mtn. Birdwatch species, or individual abundance of BITH, BLPW, SWTH, WIWR, and WTSP.

Table 1. Mean and statistical difference observed for 9 response variables among areas of proposed glade, existing trail, proposed trail, and control areas on Whiteface Mtn. Superscripts denote statistical differences.

Response variable	Proposed glade	Existing trail	Proposed trail	Control	*P* value
Total # individuals	5.167	5.625	5.583	5.339	0.972
Richness of Mtn. Birdwatch species	3.00	3.25	3.58	3.63	0.559
Diversity of Mtn. Birdwatch species	1.37	1.57	1.67	1.76	0.341
Evenness of Mtn. Birdwatch species	59.12	66.98	70.98	76.04	0.388
Bicnkell's thrush (BITH)	0.50	0.63	0.83	0.73	0.909
Blackpoll warbler (BLPW)	0.83	0.75	0.92	1.14	0.628
Swainson's thrush (SWTH)	0.83	1.13	1.50[a]	0.86[b]	0.040
Winter wren (WIWR)	1.67	1.50	1.58	1.30	0.581
White-throated sparrow (WTSP)	1.33	1.63	0.75	1.30	0.252

Though no statistical differences were detected among treatment types, control areas and as-yet-uncut trail areas demonstrated a trend of slightly higher abundance, richness, and diversity than existing trails and glades (Figure 3). Examining species representation amongst types showed, similar to 2004, that existing glades appear to be somewhat lower in species richness than the other types (Figure 4).



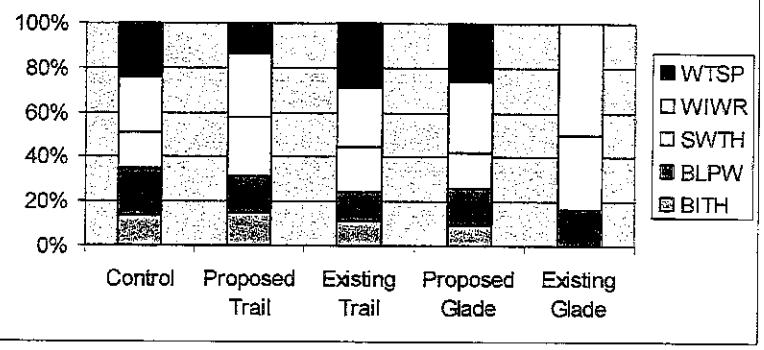
Control areas, along with proposed and existing trails and proposed glades appear to have a more even distribution of birds among species than do existing glades. An even distribution of species representation implies a more diverse community of birds in these areas.

Discussion

We have completed a second year of field work as part of a three-year study to determine the potential impacts of ski area development on habitat for Bicknell's thrush and other

montane forest birds. This year, we sampled a total of 29 points on Whiteface Mtn., though the configuration of Bicknell's thrush habitat on the study site, combined with the requirements of point count sampling, constrained us to small sample sizes for some treatment types. In particular, the amount of existing gladed area on the mountain at elevations high enough to provide potential Bicknell's thrush habitat was small and allowed for only one point within this type. Similarly, we were able to sample only 3 points in the proposed glade and 4 points in the existing trail due to constraints of the habitat, geographical constraints related to our need to space the points more than 200 meters apart from one another, and the time required to reach these points, even when camping overnight on the mountain. Our primary concern, however, was to address the potential impacts of ski development within the proposed expansion area, or Tree Island Pod, and to establish a series of sample points within this area that can be compared to control areas on the mountain not open to development.

Figure 4. Species Composition 2004-2005



One of the potential results of low sample sizes in any statistical analysis and an issue we raised subsequent to last year's field season is a low power to detect differences. Statistical power is defined as the ability to detect a statistical difference, if one is present. Our power was generally good for detecting differences in the total number, diversity, and evenness of Mtn. Birdwatch species observed. Our power was lower, however, for detecting individual species differences because the variability at the individual species level is much higher. Therefore, the conclusions drawn from these data must again be taken with some caution. Because we have sampled for 2 years, however, and because our primary interest is in the differences among the different types of trail and non-trail areas on the mountain, we were able to pool the data from 2004 and 2005 and therefore increase our statistical power to some degree.

Given the caveats mentioned, there are interesting patterns in the data obtained from years 1 and 2 of this study. We found no statistical differences in the total number, diversity, and evenness of Mtn. Birdwatch species among existing glades, proposed glades, existing trails, proposed trails, and control areas. Likewise, we found few differences in the abundances of Bicknell's thrush, blackpoll warbler, Swainson's thrush, winter wren, and white-throated sparrow among these treatment types. As we discussed last year, the Vermont Institute of Natural Science has been studying the impacts of ski area development on Bicknell's thrush on Stratton and Mansfield mountains for a number of years (Rimmer *et al.* 2004). Results from their analyses indicate that there are few differences in population and reproductive parameters for Bicknell's thrush between

existing ski areas and control areas on those 2 mountains. This study, much more extensive than our own, has examined differences in reproductive success, survivorship, and nest predation for Bicknell's nesting near or along existing ski trails versus those nesting in uncut controls and found very few differences among observed parameters between ski areas and controls. It appears that ski areas are not negatively impacting Bicknell's thrush survival or nest success on these 2 mountains. Whether these same results would be obtained for other montane forest species is unknown. Our preliminary data, however, appear to show that relative abundances of the montane species we studied are similar in existing trail and control areas on Whiteface Mtn.

It is important to note that most of the human-related activity occurring on Whiteface and other ski areas occurs during the winter months when most bird species are absent. It may be that direct effects of humans are minimal during the summer months when breeding activity is occurring, and that loss of habitat and other human impacts on the wintering grounds may be much more critical to the long-term survival of Bicknell's thrush. One of the most common results of habitat fragmentation, such as that created by ski trails, is increased predation created by better access for predators along habitat edges. Rimmer *et al.* (2004) have not detected this pattern on Stratton and Mansfield mountains, however. Nest success and predation rates appear similar in ski trail areas and in controls (Rimmer *et al.* 2004). This may be due to the fact that the generalist predators such as raccoons or coyotes that are more common in fragmented habitats at low elevations are less prevalent at high elevations where Bicknell's thrush commonly nests. Red squirrels are the most significant nest predator for Bicknell's thrush, and squirrels appear to be more evenly disbursed throughout the landscape than are more generalist predators which concentrate along and use edges as travel corridors.

It is worth noting that we again detected no Bicknell's thrush in the existing glade area, and again detected highest abundance of Bicknell's thrush in the proposed Tree Island Pod area. Rimmer *et al.* (2004) stress that glade creation may effectively eliminate suitable Bicknell's thrush habitat by removing the dense subcanopy structure favored by this species. The Tree Island Pod area, in contrast, is in an area of the mountain that has a very dense subcanopy, a habitat characteristic favored by Bicknell's thrush. We are anxious to continue this work and to determine what the effects of the trail construction will be in this area.

Acknowledgements

The Wildlife Conservation Society acknowledges the generous financial support of the Olympic Regional Development Authority in allowing us to conduct this important work. We also acknowledge the in kind support provided by the Adirondack Park Agency, the New York State Department of Environmental Conservation, and the Vermont Institute of Natural Science.

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Use of Whiteface Mountain by Bicknell's Thrush and other Montane Forest Bird Species

2006 End-of-season report submitted to:
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September, 2005

Executive Summary: The Wildlife Conservation Society (WCS) was contracted by the Olympic Regional Development Authority (ORDA) to assess the use of Whiteface Mtn. by Bicknell's thrush (*Catharus bicknelli*), determining, at a minimum, the presence or absence of the species at a number of locations on the mountain. A species of special concern in New York State, Bicknell's thrush makes use of high elevation conifer forest such as that found on Whiteface and other Adirondack peaks for breeding and nesting habitat during the summer months. Proposed ski trail expansion on Whiteface has raised concerns about the potential for impacts of new trail development on Bicknell's thrush habitat. In the summer of 2004, we surveyed a total of 27 sample points on the mountain in 5 categories: (1) existing glade, (2) proposed glade, (3) existing trail, (4) proposed trail, and (5) control areas. During the summer of 2005, 2 additional survey locations were added to improve sample sizes within the proposed construction area for a total of 29 sample points. All points were resampled during summer 2006. Study points were sampled using standard point count methods to monitor the presence of Bicknell's thrush (BITH) and 4 other high elevation bird species: blackpoll warbler (BLPW), Swainson's thrush (SWTH), winter wren (WIWR), and white-throated sparrow (WTSP). Similar to 2004 and 2005, we found no significant differences in species richness, diversity, or evenness of Mt. Birdwatch species, or in the total number of Bicknell's thrush detected among existing ski trails, existing glades, proposed ski trails, proposed glades, and control areas. As stated previously, we believe that our power to detect statistical differences was good for richness, diversity, and evenness, but was not as good for individual species differences due to higher variability at the individual species level. Analysis of our third year of data shows that existing ski trails and glades do not differ statistically in terms of abundance or species richness for montane forest birds including Bicknell's thrush. For the third year in a row, we did not detect Bicknell's thrush in areas of existing glades on Whiteface Mt. Glading, in particular, may be detrimental to habitat quality for Bicknell's thrush.

Introduction

The Bicknell's thrush is a species of great interest in the northeastern United States, both for birders and scientists alike. The species breeds in high elevation conifer forests, primarily above 3000 ft., on mountaintops from the Catskills to northern Maine. It is among the most rare and probably most threatened species in North America, and is ranked as the nearctic Neotropical migrant of highest conservation priority in the Northeast (Rimmer *et al.* 2001).

Bicknell's thrush habitat in the U.S. consists of montane forests dominated by balsam fir (*Abies balsamea*), with lesser amounts of red (*Picea rubens*) and black spruce (*Picea mariana*), white birch (*Betula papyrifera*), mountain ash (*Sorbus americana*), and other hardwood species. It is adapted to naturally disturbed habitats and historically probably sought out patches of regenerating forest caused by fir waves, wind throw, ice and snow damage, fire, and insect outbreaks, as well as the chronically disturbed stunted conifer forests found at high elevations in the northeast (Rimmer *et al.* 2001). Highest densities of the species are often found in continually disturbed (high winds, heavy winter ice accumulation) stands of dense, stunted fir on exposed ridgelines or along edges of human-created openings, or in regenerating fir waves (Rimmer *et al.* 2001). More than 90% of birds are believed to breed in the U.S. (versus Canada), with the Adirondacks containing the largest area of its montane breeding habitat, followed by NH, ME, VT, and the Catskills.

Bicknell's thrush wintering habitat is even more restricted than its breeding habitat, with the species occurring regularly on only 5 islands in the Greater Antilles. It prefers mesic to wet broadleaf montane forests in the Dominican Republic, Haiti, Cuba, Jamaica, and Puerto Rico. Large-scale loss and degradation of wintering habitat pose the greatest threat to the long-term viability of this species (Rimmer *et al.* 2001).

Bicknell's thrush is not well-sampled by traditional bird monitoring methods due to its preference for high elevation habitat and its uncommon mating system. Both males and females mate with multiple partners, multiple paternity is common, and more than one male often feeds nestlings at a given nest. These characteristics make it poorly sampled by bird count methods that rely on more common territorial mating systems found in many bird species. Estimates of breeding densities for the species are unreliable at best (Rimmer *et al.* 2001). Though estimation of breeding densities are difficult to obtain, Bicknell's thrush is believed to be vulnerable to extinction and has been added to the Red List of Threatened Species by the World Conservation Union. As a habitat specialist of high elevation conifer forests, it is susceptible to a number of threats on the breeding grounds including pollution (acid rain, mercury), recreational development, cell tower construction, wind power development, and climate change.

This report details the third season of field work conducted by the Wildlife Conservation Society to examine the potential impacts of ski area development on breeding habitat for Bicknell's thrush and other montane forest species on Whiteface Mtn. in the Adirondacks of New York State.

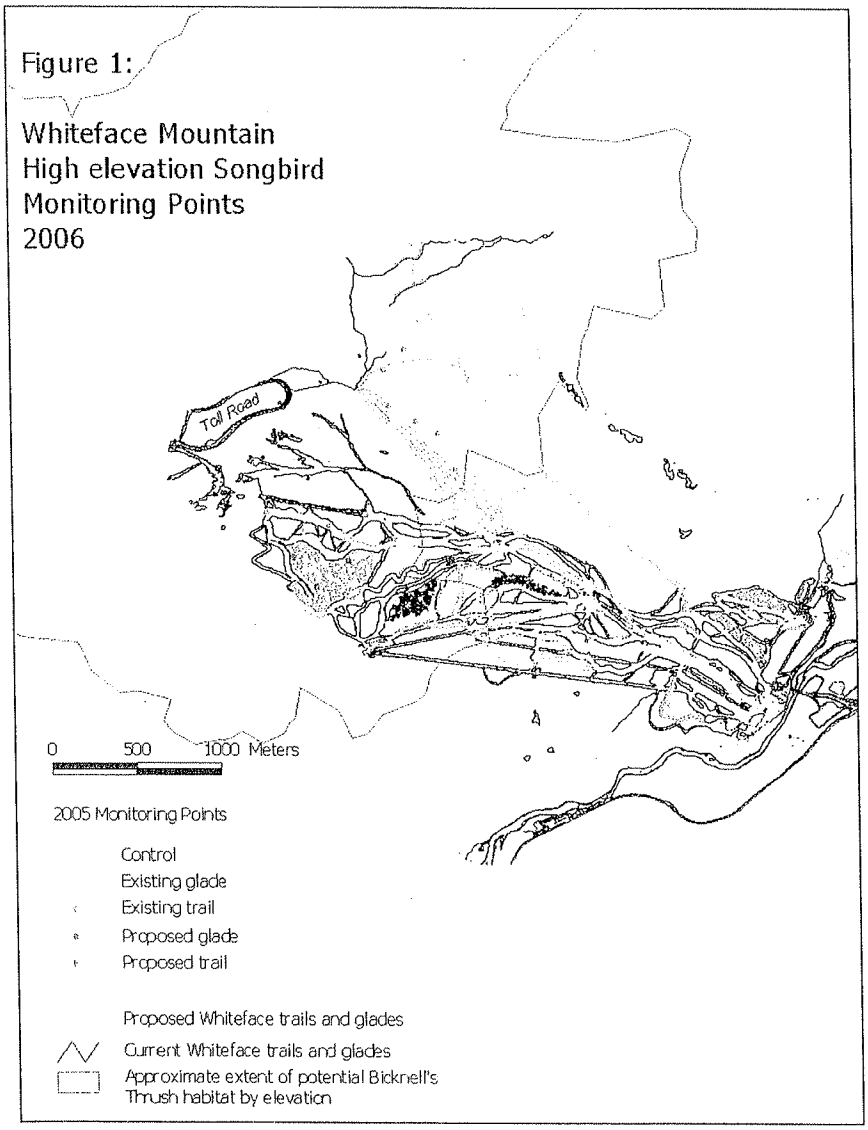
Study Area

Whiteface Mtn. is located in the high peaks region of the Adirondacks and contains approximately 1,020 acres of suitable Bicknell's thrush breeding habitat, with approximately 27 acres of potential habitat within the proposed Tree Island Pod expansion area. Elevations in the high peaks region range from 1,000 – 5,300 ft. The study site is characterized by spruce-fir forest at high elevations and transitions into a mix of softwood and hardwood species including paper birch and red maple (*Acer rubrum*) at low elevations. It is important to note that delineation of habitat for Bicknell's thrush is difficult, even when conducted by experts in the field. For that reason, any estimate of the area that may be used by Bicknell's thrush on Whiteface Mt. is by no means meant to be absolute and represents an estimate of potential habitat only.

Methods

We used standard point count methods to assess presence/absence and relative abundance of BITH and other high elevation bird species on Whiteface Mtn. (Ralph *et al.* 1995, Rosenstock *et al.* 2002, Thompson 2002). In a previous report to ORDA by the Vermont Institute of Natural Science, distance sampling methods were suggested as a means by which to obtain density estimates of BITH on Whiteface Mtn. However, authors of that report and several others discussed the limitations of the distance sampling approach in providing reliable density estimates, both because of the unique characteristics of the Bicknell's thrush mating system, and also due to the difficulty of meeting stringent assumptions of distance sampling methods (Farnsworth *et al.* 2002, Ralph *et al.* 1995, Rimmer *et al.* 2004, Rosenstock *et al.* 2002, Thompson 2002). Rimmer *et al.* (2004), in their report to ORDA, mention that these limitations, coupled with the single-site study design of the work on Whiteface, mean that distance sampling methods used in this study are unlikely to produce statistically defensible results. In an effort to make the best attempt possible, given these constraints, to obtain reliable information on BITH and other species, we adopted a point count method that allows for calculation of densities for individual species, if adequate detections are made. Standard distance sampling methods require that the distance to each bird detected be accurately estimated, a requirement that we felt was challenging given the conditions of the habitat we were working in and the known difficulties in meeting this and other assumptions of distance sampling. Farnsworth *et al.* (2002) describe a technique whereby densities of individual species may be calculated from standard point count data collected in a series of time intervals, given that researchers used a fixed radius for point counts (suggested radius = 50 m). We had more confidence in our ability to detect whether birds were within or outside of a 50 m radius, than in our ability to accurately estimate exact distances to all birds heard. Therefore, we used a standard 10 minute point count method that would allow for future calculations of density given adequate numbers, but required only that we determine whether birds were within or outside of 50 m. This point count method enables us to determine presence/absence, and relative abundance among different site on the mountain.

We conducted all sampling on Whiteface Mtn. between June 5th and June 14th of this year. We returned to established sampling points in 5 different treatment types: (1) existing glades (n=1), (2) proposed glades[1] (n=3), (3) existing trails (n=4), (4) proposed Tree Island Pod trail area (n=9), and (5) control areas (n=14; Figure 1). Configuration of habitat on the mountain limited us to small sample sizes within several of the treatment types (i.e., existing glades, proposed glades, existing trails). To ensure that individual birds are counted only once at each sample point, standard methods require that sample points be approximately 200-250 m apart. This distance precluded us from having more than a few points within some of our treatment types. Battles *et al.* (1992, 2003) have conducted prior work on Whiteface Mtn. to examine trends in red spruce decline and tree community dynamics. In anticipation that habitat data collected at these points may one day be useful to this study, we conducted point counts at two locations also used by Battles *et al.* (1992, 2003) in one of our control areas that overlapped with their study sites.



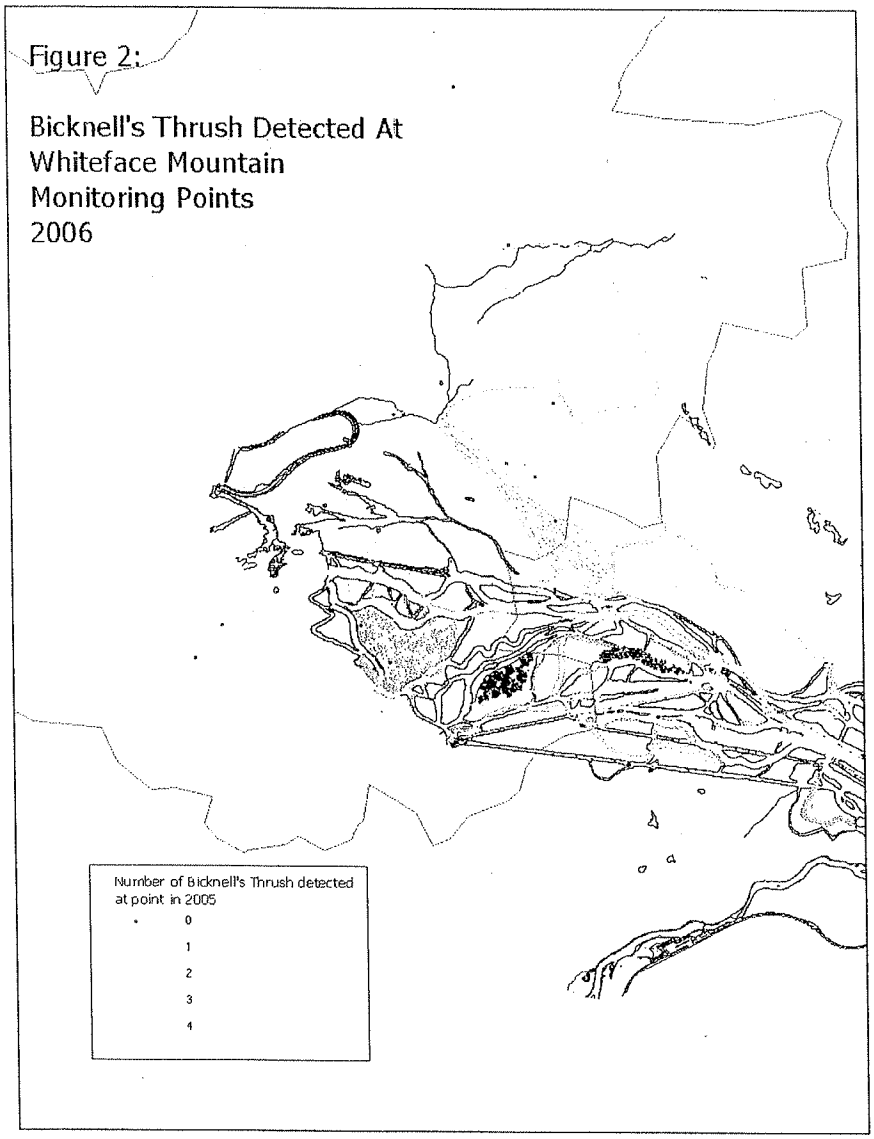
We sampled all points between the hours of 4:30 and 6:30 am, during the time in which Bicknell's thrush is believed to be most vocal. At each sample point, birds were recorded by species, time period of detection (i.e., 0-3 minutes, 3-5 minutes, 5-10 minutes), activity (i.e., singing, calling, individual seen), and whether or not they were within 50 m of the observer. In the interest of safety, two observers

[1] In order to maintain consistency with the 2004 and 2005 methods, we have kept the proposed glade area as part of the analysis. However, during the course of the past year the area proposed for new glades was moved from our sampling location to another location on the mountain. Therefore, our proposed glade area will not actually be gladed. We do not have any sample points in the newly proposed glade area.

were present on each sampling route, but only one observer was responsible for data collection.

Results

Numbers of detections of all species were far below minimal standards required for calculating densities by distance sampling. In lieu of densities, we calculated relative abundances for Bicknell's thrush and the 4 other montane bird species. We used analysis of variance (ANOVA; Zar 1999) to test whether there were differences in the number, diversity, and evenness of Mtn. Birdwatch species, and the abundance of individual species (BITH, BLPW, SWTH, WIWR, and WTSP) among the treatment types. One type, existing glades, could not be included in the analysis because we had only one sample point within an existing glade, and variance cannot be calculated from a single sample. We tested normality of variables and homogeneity of variances to ensure that we had not violated the assumptions of ANOVA. An analysis of variance allows for the test of whether there are differences in the means observed for more than 2 different treatment types. We used a commonly accepted *P* value of 0.05 to denote statistical significance; values ≤ 0.05 are considered statistically different. We tested for differences among years because this was the third year of the survey. Finding no significant differences between 2004, 2005, and 2006, we averaged the data from the three years to conduct ANOVAs; results and figures are based on these average values. We found no statistical differences in the abundance,



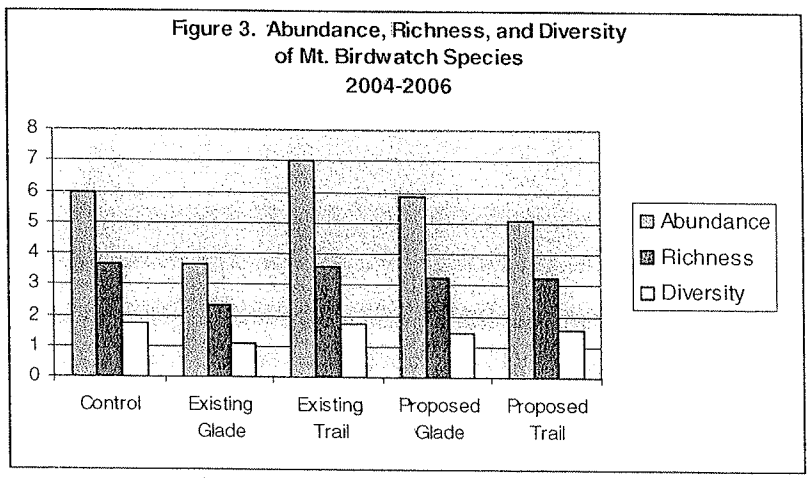
richness, diversity, or evenness of Mtn. Birdwatch species observed (Table 1). Figure 2 depicts the locations on Whiteface Mt. at which Bicknell's thrush was detected.

In the interest of knowing whether there were differences in bird communities found in any kind of ski trail versus the undisturbed forested areas on the mountain, we again conducted an analysis in which we lumped the existing trail data into one category (ski trails) and compared it against a second category comprising all of the areas which at this time are undeveloped including the proposed Tree Island Pod points, the proposed glade points, and the control points (no trails). When comparing existing trails to currently uncut forest areas, we again found no statistical differences in total abundance, richness, diversity, or evenness of Mtn. Birdwatch species, or individual abundance of BITH, BLPW, SWTH, WIWR, and WTSP.

Table 1. Means and *P* values observed for 9 response variables among areas of proposed glade, existing trail, proposed trail, and control areas on Whiteface Mtn, 2004-2006. There were no significant differences among types.

Response variable	Proposed glade	Existing trail	Proposed trail	Control	*P* value
Abundance of Mtn. Birdwatch species	5.444	6.083	4.929	5.292	0.755
Richness of Mtn. Birdwatch species	3.222	3.583	3.333	3.625	0.839
Diversity of Mtn. Birdwatch species	1.478	1.716	1.571	1.740	0.679
Evenness of Mtn. Birdwatch species	63.656	73.481	67.183	74.989	0.667
Bicknell's thrush (BITH)	0.444	0.750	0.810	0.821	0.861
Blackpoll warbler (BLPW)	0.778	0.917	0.905	1.107	0.797
Swainson's thrush (SWTH)	1.000	1.333	1.071	0.911	0.399
Winter wren (WIWR)	1.444	1.500	1.381	1.244	0.817
White-throated sparrow (WTSP)	1.778	1.583	0.762	1.208	0.207

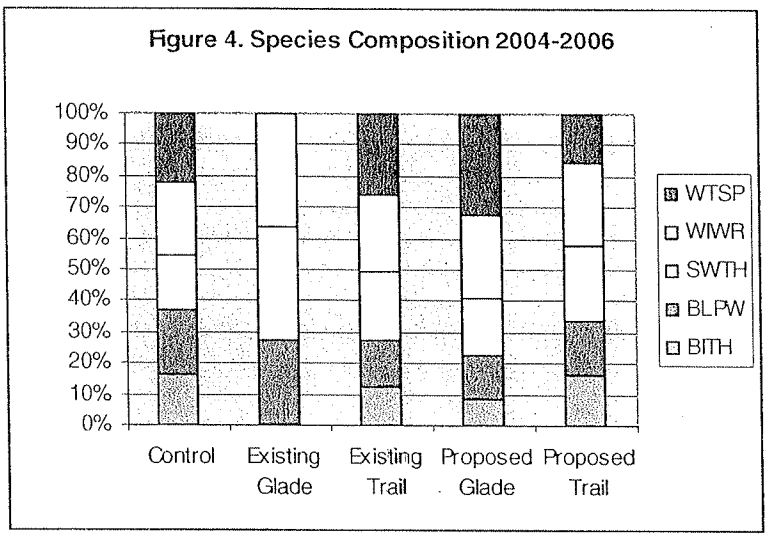
Though no statistical differences were detected among treatment types, control areas, as-yet-uncut trail areas, and existing trails demonstrated a trend of higher abundance, richness, and diversity than existing glades (Figure 3). Examining species representation among types showed, similar to 2004 and 2005, that existing glades appear to be somewhat lower in species richness than the other types (Figure 4).



Control areas, along with proposed and existing trails and proposed glades appear to have a more even distribution of birds among species than do existing glades. An even distribution of species representation implies a more diverse community of birds in these areas.

Discussion

We have completed a third year of field work as part of a multiple-year study to determine the potential impacts of ski area development on habitat for Bicknell's thrush and other montane forest birds. This year, we again sampled a total of 29 points on Whiteface Mtn., though the configuration of Bicknell's thrush habitat on the study site, combined with the requirements of point count sampling, constrained us to small sample sizes for some treatment types. In particular, the amount of existing gladed area on the mountain at elevations high enough to provide potential Bicknell's thrush habitat was small and allowed for only one point within this type. Similarly, we were able to sample only 3 points in the proposed glade and 4 points in the existing trail due to constraints of the habitat, geographical constraints related to our need to space the points more than 200 meters apart from one another, and the time required to reach these points, even when camping overnight on the mountain. Our primary concern, however, was to address the potential impacts of ski development within the proposed expansion area, or Tree Island Pod, and to establish a series of sample points within this area that can be compared to control areas on the mountain not open to development.



One of the potential results of low sample sizes in any statistical analysis and an issue we raised subsequent to our first two field seasons is a low power to detect differences. Statistical power is defined as the ability to detect a statistical difference, if one is present. Our power was generally good for detecting differences in the total number, diversity, and evenness of Mtn. Birdwatch species observed. Our power was lower, however, for detecting individual species differences because the variability at the individual species level is much higher. Therefore, the conclusions drawn from these data must again be taken with some caution. Because we have sampled for 3 years, however, and because our primary interest is in the differences among the different types of trail and non-trail areas on the mountain, we were able to average data from 2004, 2005, and 2006 and therefore likely yield more reliable estimates of abundance for each species.

Given the caveats mentioned, there are interesting patterns in the data obtained from years 1-3 of this study. We found no statistical differences in the total number, diversity, and evenness of Mtn. Birdwatch species among existing glades, proposed glades, existing trails, proposed trails, and control areas. Likewise, we found few differences in the

abundances of Bicknell's thrush, blackpoll warbler, Swainson's thrush, winter wren, and white-throated sparrow among these treatment types. As we discussed previously, the Vermont Institute of Natural Science has been studying the impacts of ski area development on Bicknell's thrush on Stratton and Mansfield mountains for a number of years (Rimmer *et al.* 2004). Results from their analyses indicate that there are few differences in population and reproductive parameters for Bicknell's thrush between existing ski areas and control areas on those 2 mountains. This study, much more extensive than our own, has examined differences in reproductive success, survivorship, and nest predation for Bicknell's nesting near or along existing ski trails versus those nesting in uncut controls and found very few differences among observed parameters between ski areas and controls. It appears that ski areas are not negatively impacting Bicknell's thrush survival or nest success on these 2 mountains. Whether these same results would be obtained for other montane forest species is unknown. Our preliminary data, however, appear to show that relative abundances of the montane species we studied are similar in existing trail and control areas on Whiteface Mtn.

It is important to note that most of the human-related activity occurring on Whiteface and other ski areas occurs during the winter months when most bird species are absent. It may be that direct effects of humans are minimal during the summer months when breeding activity is occurring, and that loss of habitat and other human impacts on the wintering grounds may be much more critical to the long-term survival of Bicknell's thrush. One of the most common results of habitat fragmentation, such as that created by ski trails, is increased predation created by better access for predators along habitat edges. Rimmer *et al.* (2004) have not detected this pattern on Stratton and Mansfield mountains, however. Nest success and predation rates appear similar in ski trail areas and in controls (Rimmer *et al.* 2004). This may be due to the fact that the generalist predators such as raccoons or coyotes that are more common in fragmented habitats at low elevations are less prevalent at high elevations where Bicknell's thrush commonly nests. Red squirrels are the most significant nest predator for Bicknell's thrush, and squirrels appear to be more evenly disbursed throughout the landscape than are more generalist predators which concentrate along and use edges as travel corridors.

It is worth noting that we again detected no Bicknell's thrush in the existing glade area. Rimmer *et al.* (2004) stress that glade creation may effectively eliminate suitable Bicknell's thrush habitat by removing the dense subcanopy structure favored by this species. The Tree Island Pod area, in contrast, is in an area of the mountain that has a very dense subcanopy, a habitat characteristic favored by Bicknell's thrush. We are anxious to continue this work and to determine what the effects of the trail construction will be in this area.

Acknowledgements

The Wildlife Conservation Society acknowledges the generous financial support of the Olympic Regional Development Authority in allowing us to conduct this important work. We also acknowledge the in kind support provided by the Adirondack Park Agency, the

New York State Department of Environmental Conservation, and the Vermont Institute of Natural Science.

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Use of Whiteface Mountain by Bicknell's Thrush and other Montane Forest Bird Species

2008 End-of-season report submitted to:
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Executive Summary: The Wildlife Conservation Society (WCS) was contracted by the Olympic Regional Development Authority (ORDA) to assess the use of Whiteface Mtn. by Bicknell's thrush (*Catharus bicknelli*), determining, at a minimum, the presence or absence of the species at a number of locations on the mountain. A species of special concern in New York State, Bicknell's thrush makes use of high elevation conifer forest such as that found on Whiteface and other Adirondack peaks for breeding and nesting habitat during the summer months. A proposed and now executed ski trail expansion on Whiteface raised concerns about the potential for impacts of new trail development on Bicknell's thrush habitat. In the summer of 2004, we surveyed a total of 27 sample points on the mountain in 5 categories: (1) existing glade, (2) proposed glade, (3) existing trail, (4) proposed trail, and (5) control areas. During the summer of 2005, 2 additional survey locations were added to improve sample sizes within the proposed construction area for a total of 29 sample points. All points were resampled during summer 2006, 2007, and 2008, the first year of post-construction sampling. Study points were sampled using standard point count methods to monitor the presence of Bicknell's thrush (BITH) and 4 other high elevation bird species: blackpoll warbler (BLPW), Swainson's thrush (SWTH), winter wren (WIWR), and white-throated sparrow (WTSP). Throughout the study period, we found no significant differences in species richness, diversity, or evenness of Mt. Birdwatch species, or in the total number of Bicknell's thrush detected among existing ski trails, existing glades, proposed ski trails, proposed glades, and control areas. As stated previously, we believe that our power to detect statistical differences was good for richness, diversity, and evenness, but was not as good for individual species differences due to higher variability at the individual species level. Analysis of our fifth year of data shows that existing ski trails and control areas do not differ statistically in terms of abundance or species richness for montane forest birds including Bicknell's thrush. Across all years, we did not detect Bicknell's thrush in areas of existing glades on Whiteface Mt. Glading, in particular, may be detrimental to habitat quality for Bicknell's thrush. In the first year of post-construction sampling, we detected

a significant decline in the number of birds post-construction for Bicknell's thrush only among the target species.

Introduction

The Bicknell's thrush is a species of great interest in the northeastern United States, both for birders and scientists alike. The species breeds in high elevation conifer forests, primarily above 3000 ft., on mountaintops from the Catskills to northern Maine. It is among the most rare and probably most threatened species in North America, and is ranked as the nearctic Neotropical migrant of highest conservation priority in the Northeast (Rimmer *et al.* 2001).

Bicknell's thrush habitat in the U.S. consists of montane forests dominated by balsam fir (*Abies balsamea*), with lesser amounts of red (*Picea rubens*) and black spruce (*Picea mariana*), white birch (*Betula papyrifera*), mountain ash (*Sorbus americana*), and other hardwood species. It is adapted to naturally disturbed habitats and historically probably sought out patches of regenerating forest caused by fir waves, wind throw, ice and snow damage, fire, and insect outbreaks, as well as the chronically disturbed stunted conifer forests found at high elevations in the northeast (Rimmer *et al.* 2001). Highest densities of the species are often found in continually disturbed (high winds, heavy winter ice accumulation) stands of dense, stunted fir on exposed ridgelines or along edges of human-created openings, or in regenerating fir waves (Rimmer *et al.* 2001). More than 90% of birds are believed to breed in the U.S. (versus Canada), with the Adirondacks containing the largest area of its montane breeding habitat, followed by NH, ME, VT, and the Catskills.

Bicknell's thrush wintering habitat is even more restricted than its breeding habitat, with the species occurring regularly on only 5 islands in the Greater Antilles. It prefers mesic to wet broadleaf montane forests in the Dominican Republic, Haiti, Cuba, Jamaica, and Puerto Rico. Large-scale loss and degradation of wintering habitat pose the greatest threat to the long-term viability of this species (Rimmer *et al.* 2001).

Bicknell's thrush is not well-sampled by traditional bird monitoring methods due to its preference for high elevation habitat and its uncommon mating system. Both males and females mate with multiple partners, multiple paternity is common, and more than one male often feeds nestlings at a given nest. These characteristics make it poorly sampled by bird count methods that rely on more common territorial mating systems found in many bird species. Estimates of breeding densities for the species are unreliable at best (Rimmer *et al.* 2001). Though estimation of breeding densities are difficult to obtain, Bicknell's thrush is believed to be vulnerable to extinction and has been added to the Red List of Threatened Species by the World Conservation Union. As a habitat specialist of high elevation conifer forests, it is susceptible to a number of threats on the breeding grounds including pollution (acid rain, mercury), recreational development, cell tower construction, wind power development, and climate change.

This report details the fifth season of field work conducted by the Wildlife Conservation Society to examine the potential impacts of ski area development on breeding habitat for Bicknell's thrush and other montane forest species on Whiteface Mtn. and the first year of post ski trail expansion sampling.

Study Area

Whiteface Mtn. is located in the high peaks region of the Adirondacks and contains approximately 1,020 acres of suitable Bicknell's thrush breeding habitat, with approximately 27 acres of potential habitat within the proposed Tree Island Pod expansion area. Elevations in the high peaks region range from 1,000 – 5,300 ft. The study site is characterized by spruce-fir forest at high elevations and transitions into a mix of softwood and hardwood species including paper birch and red maple (*Acer rubrum*) at low elevations. It is important to note that delineation of habitat for Bicknell's thrush is difficult, even when conducted by experts in the field. For that reason, any estimate of the area that may be used by Bicknell's thrush on Whiteface Mt. is by no means meant to be absolute and represents an estimate of potential habitat only.

Methods

We used standard point count methods to assess presence/absence and relative abundance of BITH and other high elevation bird species on Whiteface Mtn. (Ralph *et al.* 1995, Rosenstock *et al.* 2002, Thompson 2002). In a previous report to ORDA by the Vermont Institute of Natural Science, distance sampling methods were suggested as a means by which to obtain density estimates of BITH on Whiteface Mtn. However, authors of that report and several others discussed the limitations of the distance sampling approach in providing reliable density estimates, both because of the unique characteristics of the Bicknell's thrush mating system, and also due to the difficulty of meeting stringent assumptions of distance sampling methods (Farnsworth *et al.* 2002, Ralph *et al.* 1995, Rimmer *et al.* 2004, Rosenstock *et al.* 2002, Thompson 2002). Rimmer *et al.* (2004), in their report to ORDA, mention that these limitations, coupled with the single-site study design of the work on Whiteface, mean that distance sampling methods used in this study are unlikely to produce statistically defensible results. In an effort to make the best attempt possible, given these constraints, to obtain reliable information on BITH and other species, we adopted a point count method that allows for calculation of densities for individual species, if adequate detections are made. Standard distance sampling methods require that the distance to each bird detected be accurately estimated, a requirement that we felt was challenging given the conditions of the habitat we were working in and the known difficulties in meeting this and other assumptions of distance sampling. Farnsworth *et al.* (2002) describe a technique whereby densities of individual species may be calculated from standard point count data collected in a series of time intervals, given that researchers used a fixed radius for point counts (suggested radius = 50 m). We had more confidence in our ability to detect whether birds were within or outside of a 50 m radius, than in our ability to accurately estimate exact distances to all birds heard. Therefore, we used a standard 10 minute point count method that would allow for future calculations of density given adequate numbers, but required only that we determine

whether birds were within or outside of 50 m. This point count method enables us to determine presence/absence, and relative abundance among different site on the mountain.

We conducted all sampling on Whiteface Mtn. between June 5th and June 15th of each year. We returned to established sampling points in 5 different treatment types: (1) existing glades (*n*=1), (2) proposed glades[1] (*n*=3), (3) existing trails (*n*=4), (4) proposed Tree Island Pod trail area (*n*=9), and (5) control areas (*n*=14; Figure 1). Configuration of habitat on the mountain limited us to small sample sizes within several of the treatment types (i.e., existing glades, proposed glades, existing trails). To ensure that individual birds are counted only once at each sample point, standard methods require that sample points be approximately 200-250 m apart. This distance precluded us from having more than a few points within some of our treatment types. Battles *et al*. (1992, 2003) have conducted prior work on Whiteface Mtn. to examine trends in red spruce decline and tree community dynamics. In anticipation that habitat data collected at these points may one day be useful to this study, we conducted point counts at two locations also used by Battles *et al*. (1992, 2003) in one of our control areas that overlapped with their study sites.

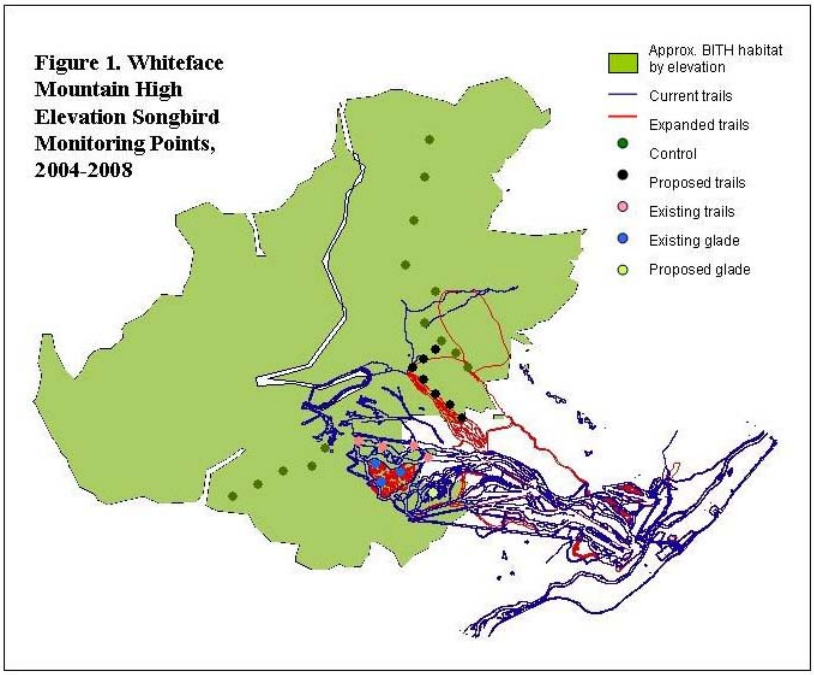

Figure 1. Whiteface Mountain High Elevation Songbird Monitoring Points, 2004-2008

We sampled all points between the hours of 4:30 and 6:30 am, during the time in which Bicknell's thrush is believed to be most vocal. At each sample point, birds were recorded by species, time period of detection (i.e., 0-3 minutes, 3-5 minutes, 5-10 minutes), activity (i.e., singing, calling, individual seen), and whether or not they were within 50 m of the observer. In the interest of safety, two observers were present on each sampling route, but only one observer was responsible for data collection. Trails were constructed during the winter months of 2007-2008 and therefore, 2008 represented the first year of post-construction sampling.

[1] In order to maintain consistency with the 2004 - 2007 methods, we have kept the proposed glade area as part of the analysis. However, during the course of the study the area proposed for new glades was moved from our sampling location to another location on the mountain. Therefore, our proposed glade area will not actually be gladed. We do not have any sample points in the newly proposed glade area.

Results

Numbers of detections of all species were far below minimal standards required for calculating densities by distance sampling. In lieu of densities, we calculated relative abundances for Bicknell's thrush and the 4 other montane bird species. We used analysis of variance (ANOVA; Zar 1999) to test whether there were differences in the number, diversity, and evenness of Mtn. Birdwatch species, and the abundance of individual species (BITH, BLPW, SWTH, WIWR, and WTSP) among the treatment types. Because this was the first year of post-construction data, our past treatment type of proposed trail has now become existing trail. Therefore, our anovas were run on only two treatment types: controls and existing trails. We found no statistical differences in the abundance, richness, diversity, or evenness of Mtn. Birdwatch species observed between control sites and existing trails, both old and newly constructed.

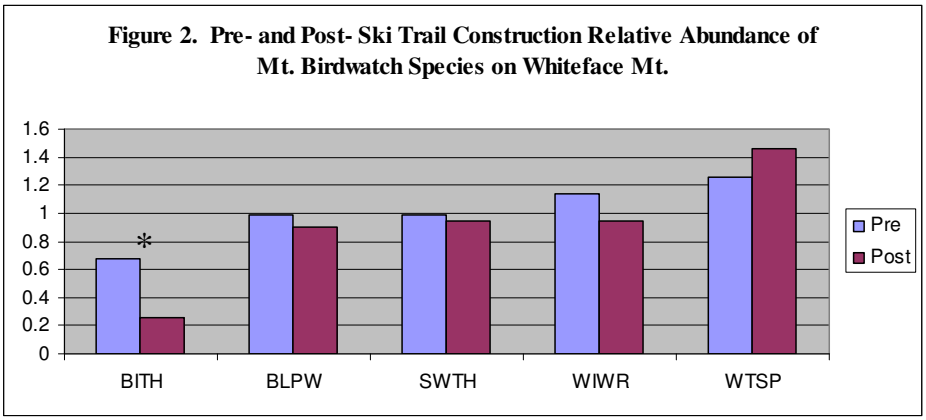

Figure 2. Pre- and Post- Ski Trail Construction Relative Abundance of Mt. Birdwatch Species on Whiteface Mt.

This was the first year in which we were able to test the differences in pre- and post-construction relative abundance of BITH and other species. To do so, we averaged the data from 2004-2007 because no significant year-to-year differences had been detected in any target species previously. We compared the averaged data from 2004-2007 (pre-construction) to the single year of post-construction data from 2008. We found a significant decline in the number of BITH ($F = 6.140$, $P < 0.029$), but no differences for any other species or community level metric (Figure 2).

Discussion

We have completed a fifth year of field work as part of a multiple-year study to determine the potential impacts of ski area development on habitat for Bicknell's thrush and other montane forest birds. This year, we again sampled a total of 29 points on Whiteface Mtn., though the configuration of Bicknell's thrush habitat on the study site, combined with the requirements of point count sampling, constrained us to small sample sizes for some treatment types. In particular, the amount of existing gladed area on the mountain at elevations high enough to provide potential Bicknell's thrush habitat was small and allowed for only one point within this type. Similarly, we were able to sample only 3 points in the proposed glade and 4 points in the existing trail due to constraints of the habitat, geographical constraints related to our need to space the points more than 200 meters apart from one another, and the time required to reach these points, even when camping overnight on the mountain. Our primary concern, however, was to address the

potential impacts of ski development within the proposed expansion area, or Tree Island Pod, and to establish a series of sample points within this area that can be compared to control areas on the mountain not open to development.

One of the potential results of low sample sizes in any statistical analysis and an issue we raised subsequent to our first two field seasons is a low power to detect differences. Statistical power is defined as the ability to detect a statistical difference, if one is present. Our power was generally good for detecting differences in the total number, diversity, and evenness of Mtn. Birdwatch species observed. Our power was lower, however, for detecting individual species differences because the variability at the individual species level is much higher. Therefore, the conclusions drawn from these data must again be taken with some caution. Because we have sampled for 5 years, however, and because our primary interest is in the differences among the different types of trail and non-trail areas on the mountain, we were able to average data across the study period and therefore likely yield more reliable estimates of abundance for each species.

Given the caveats mentioned, there are interesting patterns in the data obtained from this study. We found no statistical differences in the total number, diversity, and evenness of Mtn. Birdwatch species among existing glades, proposed glades, existing trails, proposed trails, and control areas between 2004 and 2007. In 2008, post-construction, we similarly found no differences in community characterisitcs of birds between control areas and existing trails. Likewise, we found few differences in the abundances of Bicknell's thrush, blackpoll warbler, Swainson's thrush, winter wren, and white-throated sparrow among these treatment types. As we have discussed previously, the Vermont Center for Ecostudies (VCE; formerly the Vermont Institute of Natural Science) has been studying the impacts of ski area development on Bicknell's thrush on Stratton and Mansfield mountains for a number of years (Rimmer *et al.* 2004). Results from their analyses indicate that there are few differences in population and reproductive parameters for Bicknell's thrush between existing ski areas and control areas on those 2 mountains. This study, much more extensive than our own, has examined differences in reproductive success, survivorship, and nest predation for Bicknell's nesting near or along existing ski trails versus those nesting in uncut controls and found very few differences among observed parameters between ski areas and controls. It appears that ski areas are not negatively impacting Bicknell's thrush survival or nest success on these 2 mountains. Whether these same results would be obtained for other montane forest species is unknown. Our data, however, appear to show that relative abundances of the montane species we studied are similar in existing trail and control areas on Whiteface Mtn.

It is important to note that most of the human-related activity occurring on Whiteface and other ski areas occurs during the winter months when most bird species are absent. It may be that direct effects of humans are minimal during the summer months when breeding activity is occurring, and that loss of habitat and other human impacts on the wintering grounds may be much more critical to the long-term survival of Bicknell's thrush. One of the most common results of habitat fragmentation, such as that created by ski trails, is increased predation created by better access for predators along habitat edges. Rimmer *et al.* (2004) have not detected this pattern on Stratton and Mansfield mountains,

however. Nest success and predation rates appear similar in ski trail areas and in controls (Rimmer *et al.* 2004). This may be due to the fact that the generalist predators such as raccoons or coyotes that are more common in fragmented habitats at low elevations are less prevalent at high elevations where Bicknell's thrush commonly nests. Red squirrels are the most significant nest predator for Bicknell's thrush, and squirrels appear to be more evenly disbursed throughout the landscape than are more generalist predators which concentrate along and use edges as travel corridors.

Though extensive work has been conducted by VCE and others on Bicknell's thrush on areas with existing ski trails, our study represented the first opportunity to examine changes in abundance of Bicknell's thrush and other species before and after ski trail construction occurred. We found significantly fewer BITH in those areas that were cut as new trails in 2008, though no other species demonstrated a difference between pre- and post-construction relative abundance. It is difficult to assess the significance of these findings because we have only one year of post-construction data to date. While Bicknell's thrush is a species of concern and any impacts resulting in a decline in abundance of the species should be monitored, it is impossible to know at this point whether this pattern of decreased abundance in the new trails will continue. Much of our other data from this study suggest that BITH and the other montane forest species are not negatively impacted by existing trails, and so it is possible that abundances will return to pre-construction levels after a couple of years. Additional sampling will be needed to determine what the long-term impacts of the new trails may be on this population. In the meantime, it will be important to manage trail cutting and maintenance activities so that they occur outside of the breeding season when impacts to BITH would be minimized.

Acknowledgements

The Wildlife Conservation Society acknowledges the generous financial support of the Olympic Regional Development Authority in allowing us to conduct this important work. We also acknowledge the in kind support provided by the Adirondack Park Agency, the New York State Department of Environmental Conservation, and the Vermont Institute of Natural Science.

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