WHITEFACE

FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT
VOLUME 2 - APPENDICES

MARCH 2004

Prepared For:

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

PREPARED BY:
SE GROUP®
USA
BELLEVUE, WA
BURLINGTON, VT
FRISCO, CO
GREENWICH, CT
HANOVER, NH
PARK CITY, UT
JAPAN
TOKYO

Sno.matic Controls & Engineering Inc.
SNO.MATIC
Eastern Office
Western Office
Tokyo Office
Seoul Office

IZA Engineering & Planning
Ivan Zdrahal Associates, PLLC

the LA group
Landscape Architecture and Engineering, P.C.
40 Long Alley
Saratoga Springs
New York 12866
518/587-8100
Telefax 518/587-0180

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ORDA - DEC
Date: 03/08/91

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MEMORANDUM OF UNDERSTANDING

BETWEEN

THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AND

THE OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ("DEC") and THE OLYMPIC REGIONAL DEVELOPMENT AUTHORITY ("ORDA") entered into the following agreements in connection with the transfer of the management of certain winter recreational facilities under DEC's care and custody, to ORDA:

1. Agreement dated October 4, 1982, amended November 10, 1982 and amended April 1, 1984, in relation to Whiteface Mountain Ski Center and Memorial Highway, and Mt. Van Hoevenberg Recreation Area, and
2. Agreement dated April 1, 1984, in relation to Gore Mountain Ski Center.

There are a number of provisions in the aforesaid agreements requiring that certain specific actions be taken from time-to-time by the parties, including compliance by ORDA with all applicable laws and implementing regulations, whether federal, state or local, in all its activities relating to the facilities subject to the aforesaid agreements. The purpose of this memorandum is to establish mutually agreeable methods and procedures by which certain managerial requirements contained in the aforesaid agreements can be fulfilled in an orderly and efficient manner. It is the further purpose of this memorandum to establish the means for the implementation of the Unit Management Plans described in Section VII. hereof.

It shall be the responsibility of the signatories or their designees to generally administer the provisions of this Memorandum of Understanding. This memorandum amends and supersedes that certain existing Memorandum of Understanding between DEC and ORDA effective December 15, 1984, which established mutually agreeable methods and procedures for implementation of the aforesaid agreements between DEC and ORDA relating to Whiteface Mountain Ski Center and Memorial Highway, Mt. Van Hoevenberg Recreation Area and Gore Mountain Ski Center.

The aforesaid requirements contained in the aforesaid agreements are set forth below, together with the methods and procedures to be followed for their implementation. Compliance with this memorandum and the individual Unit Management Plans for the above facilities shall occur immediately.

I. <u>Inspections:</u>

ORDA agrees to conduct a joint inspection of all facilities at least annually with the DEC. The ORDA also agrees that the DEC may conduct unannounced inspections of the facilities at any time in a reasonable manner.

Implementation:

Annually, during the month of July, joint inspections will be held at each of the facilities covered by the aforesaid agreements. The purpose of inspections shall be to document, in writing, compliance with all aspects of the agreements and with the aforesaid unit management plans. While the agreements allow for unannounced inspections, the parties shall enter into this agreement in the spirit of cooperation. DEC shall contact the ORDA Environmental Monitor and the Facility Manager to accompany the DEC staff only in connection with any non-regulatory or non-enforcement inspections of the facilities other than the annual inspection. Such non-regulatory or non-enforcement inspections, however, shall not be delayed due to the unavailability of said ORDA individuals. In the event of an emergency situation involving a non-regulatory or non-enforcement matter, said ORDA personnel shall also be contacted to the extent practicable. In ORDA's case, the annual inspection and non-regulatory or non-enforcement inspections will be conducted by the Facility Manager and ORDA's Environmental Monitor. In DEC's case, all annual joint inspections will be coordinated by the Region 5 Supervisor of Natural Resources; all non-regulatory or non-enforcement inspections shall be coordinated by the appropriate DEC program supervisor.

II. <u>Maintenance:</u>

ORDA agrees to maintain and keep the facilities, personal property and equipment in good repair. All mechanical equipment shall be maintained and operated in accordance with manufacturers' recommendations and applicable industrial code rules.

<u>Implementation:</u>

This will be discussed during the annual inspection trips. A paragraph in the inspection letter will reference compliance with this section. In the case of personal property and equipment, this provision means such personal property and equipment owned by DEC, and not such personal property and equipment independently acquired by ORDA.

III. <u>Repairs:</u>

ORDA also agrees to undertake any repairs or manner of repairs to the facilities, personal property and equipment which the DEC specifically requests, so long as the funds therefor are made available to ORDA.

Implementation:

Any requests from DEC to ORDA shall be in writing at the time of request. During the annual inspection trip, if there are projects that were requested during the previous year, their completion should be referenced in the inspection letter.

IV. Public Recreation:

ORDA agrees to continue providing the space, facilities and level of public recreation, including youth sports, training, promotion and programming, which were provided by DEC at each facility during calendar year 1981.

Implementation:

The Appendix/Exhibit listing the Recreation Program (See Appendix B of the aforesaid Whiteface Mountain Ski Center/Mt. Van Hoevenberg Recreation Area agreement, and Exhibit 3 of the aforesaid Gore Mountain Ski Center agreement.) will be reviewed during the annual inspection trip and a note of compliance will be placed in the inspection letter.

V. Existing Agreements:

ORDA agrees to comply with all agreements to which DEC is a party concerning the facilities which were in existence on the date on which this Agreement was executed.

Implementation:

Each agreement listed in the Appendix/Exhibit (See Appendix C of the aforesaid Whiteface Mountain Ski Center/Mt. Van Hoevenberg Recreation Area agreement, and Exhibit 4 of the aforesaid Gore Mountain Ski Center agreement.) will be reviewed during the annual inspection trip and will be referenced in the inspection letter.

VI. Capital Improvements:

The DEC agrees that ORDA may undertake capital improvements to the facilities. ORDA agrees to obtain the prior written approval of DEC before undertaking any such improvements, and further agrees, if federal funds are to be sought for such improvement, to obtain the prior written approval of DEC of any application for such funds.

Implementation:

The Commissioner or his designee shall give written approval to each year's capital projects affecting

DEC's facilities before Board approval is obtained. Such action constitutes approval, within budget, to commence the project development process, including planning and design, Unit Management Plan planning, State Environmental Quality Review Act (SEQR) review, obtaining applicable regulatory approvals, and public bidding, etc., as necessary. ORDA shall also request prior written approval from the Commissioner or his designee for any federal funds sought to undertake such capital improvements. During the annual inspection trip, each capital improvement completed shall be listed in the inspection letter.

VII. Unit Management Plans:

Unit Management Plans, together with Final Environmental Impact Statements, were prepared by ORDA and DEC, in consultation with the APA, and adopted by the Commissioner of Environmental Conservation for the Mount Van Hoevenberg Recreation Area on December 2, 1986; the Whiteface Mountain Ski Center on May 19, 1987; and the Gore Mountain Ski Center on November 18, 1987.

Implementation:

A. ORDA will provide DEC with specific notice prior to undertaking any management actions described in a

Unit Management Plan or in an amendment thereto for determination of consistency with the applicable Unit Management Plan. (See Appendix I for Unit Management Plan amendment process). Such notice shall be given at least 30 days prior to the actual undertaking of construction of the management action. Such notice will include a project plan, the appropriate environmental assessment as may be required under SEQR, an erosion control plan for any projects that may result in disturbance of soils, together with the declaration of significance. It is understood that DEC will be an "involved agency" concerning these actions throughout the SEQR process.

B. ORDA shall comply with all formal DEC policies or delegations affecting Unit Management Plan compliance by DEC.

C. The Unit Management Plans provide that the cutting of trees associated with the implementation of management actions will be in accordance with the established policies and procedures of the Commissioner of Environmental Conservation (See Appendix II - Organization and Delegation Memorandum #84-06, as amended). The DEC procedures will be initiated by the Regional Forestry Manager for DEC upon notice by the ORDA facility manager that tree cutting is contemplated in conjunction with a management action. The Regional Forestry Manager will inform the ORDA facility manager within five working days, in writing, as to whether the cutting may proceed or that notice will be required in the Environmental Notice Bulletin ("ENB") and that the cutting will be reviewed pursuant to the DEC tree cutting policy. Should notice be required, ORDA will provide DEC with the appropriate ENB notice including the designated contact person. The DEC will then complete the notice requirements and inform ORDA as to the decision in writing upon completion of the review process. It is agreed that Environmental Notice Bulletin publication and DEC review will not be required in cases where the tree cutting was specifically described in the detail required by the DEC policy in the Unit Management Plan and noticed in the ENB in the process of adoption of the Unit Management Plan or an amendment thereto. Such notice must include a count of the number of trees to be removed which exceed three inches in diameter and the acreage of land involved. Nor will such notice and review be required where a tree cut could constitute a "Type II Action" under the DEC rules and regulations governing the implementation of SEQR (6 NYCRR 618.2). Any trees cut in accordance with this section can be removed from the premises in any manner deemed feasible by ORDA so long as such method is consistent with the guidelines of the State Land Master Plan, the Unit Management Plan, Article 8 of the ECL, and Division Direction Memorandum LF-84-2 dated May 31, 1984 and LF-84-2 Supplement dated July 3, 1986. (See Appendix III).

D. A new structure or improvement not described in a Unit Management Plan, or in an amendment to a Unit Management Plan, cannot be undertaken or constructed. This provision, however, does not prevent ORDA from undertaking the construction of the following activities, provided that all conditions in Items A, B, and C above are fully complied with and implemented.

1. Ordinary maintenance, rehabilitation and minor relocation of conforming structures or improvements as defined and interpreted in the DEC-APA Memorandum of Understanding governing implementation of the State Land Master Plan (SLMP), as last amended on April 3, 1985.

2. A change in the use of a structure or improvement as described in a Unit Management Plan that is not inconsistent with the guidelines and criteria of the SLMP for intensive use areas,

3. Any facility or structure that is listed as a Type II Action in the DEC rules and regulations governing the implementation of SEQR (6 NYCRR 618.2) and, in particular, the construction and location of single, small, new or existing facilities or structures where the total area of the structure or expansion does not exceed 400 square feet and the surroundings are returned to their original condition after the construction/installation of the structure or facility.

4. Any project consisting solely of the cutting of not more than ten (10) trees more than 3 inches in diameter at breast height.

5. Any action deemed immediately necessary to insure public health or safety. In such cases DEC will be immediately notified of the situation and what the proposed or ongoing action consists of.

E. The Unit Management Plans will be administered on a day-to-day basis by the Environmental Monitor for ORDA and the Region 5 Supervisor of Natural Resources for DEC. Notification of project implementation, concerns dealing with potential environmental problems, requests for change in preapproved action plans, need for Unit Management Plan amendment and other similar communication will all take place between the Environmental Monitor for ORDA and the Region 5 Supervisor of Natural Resources for DEC. Agreements made by these individuals will be binding on both agencies. If agreement cannot be reached on a specific issue, the issue will be elevated in the respective agencies for resolution.

VIII. <u>Removal of Property and Equipment:</u>

No part of any facility, nor personal property or equipment of DEC used in connection therewith, shall be sold or removed from the facility without the prior written approval of DEC.

<u>Implementation:</u>

DEC currently maintains a computer program for the inventory of property. All DEC equipment transferred to ORDA is part of that inventory. DEC shall supply appropriate forms to ORDA and ORDA will advise DEC via the forms when equipment is surplused, destroyed or when new DEC equipment is acquired. DEC shall maintain the inventory and shall annually certify with ORDA that the list is correct. Lead role in DEC for the above items is vested in the Division of Operations Central Office.

This Memorandum of Understanding will become effective upon its execution by each of the parties hereto.

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

BY: Thomas C Jorling

Thomas C. Jorling, Commissioner

Date March 11, 1991

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

BY: Ned Harkness

Ned Harkness, President, C.E.O.

Date March 8, 1991

APPENDIX I

REVISION/AMENDMENT TO UNIT MANAGEMENT PLANS

1. Any material modification or amendment to the unit management plans is to conform to the guidelines and criteria of the SLMP, and will be made following the same procedure prescribed in the master plan for original unit management plan preparation.

2. A proposed amendment will be presented in its complete form and content, including indication of the specific sections of the existing management plan being amended, and be accompanied by:

   (A) An evaluation of whether or not the proposed amendment will require a reexamination of the inventory and assessment section of the plan.

   (B) If the amendment represents a departure from the goals and objectives stated in the plan, a discussion of impacts of the new objectives on facilities, public use and resources of the unit.

   (C) An assessment of whether or not the proposed amendment is consistent with carrying capacity of the area.

   (D) A schedule for the implementation of proposed management actions.

Any action to amend a unit management plan in connection with a proposed management action is to be initiated no later than the required site-specific environmental assessment pursuant to SEQR.

3. Consistent with the DEC-ORDA management agreements, ORDA and DEC will cooperate and provide such staff assistance as may be necessary in the preparation of amendments to the unit management plans. Both agencies will designate an appropriate representative to be the lead contact person in the matter. Division of Responsibility shall be as follows.

ORDA -

Develop and make appropriate revisions, in response to comments, to all documents. These will include the actual plan and accompanying SEQR.

Provide for public comment including hearings/ meetings. Make a record of comments and responses.

Print and distribute all draft and final documents.

Present draft documents to designated DEC contact for DEC review, including the SEQR committee, posting in the Environmental Notice Bulletin, APA review and DEC Commission's final approval.

DEC -

Provide assistance to designated ORDA representative on format and procedure.

Coordinate APA review and comments.

Coordinate DEC review, comments and final approval.

Coordinate all notices in the ENB.

MEMORANDUM FROM
HENRY G. WILLIAMS, Commissioner

New York State
Department of Environmental Conservation

APPENDIX II

File Ref. 1620

RECEIVED

FEB 2[illegible] 1984

Environmental Conservation
Regional Director - Region 5
RAY BROOK, NEW YORK

February 16, 1984

TO: Executive Staff, Division and Regional Directors

FROM: Hank Williams

RE: ORGANIZATION AND DELEGATION MEMORANDUM #84-06

Purpose:

To establish a policy regarding the prohibition of cutting, removal or destruction of trees and other vegetation on all Forest Preserve lands pursuant to Article XIV of the Constitution of New York State.

Background:

Article XIV of the Constitution specifically states that the timber on the Forest Preserve shall not "...be sold, removed or destroyed." Over the years it has been necessary to occasionally cut trees in the interest of public safety, overall protection of the Preserve and for the development of facilities. Such cutting has been sanctioned through Consitutional Amendment or by Opinion of the Attorney General, who has interpreted the Constitution as allowing such cutting.

Policy:

Section 9-0105 of the Environmental Conservation Law provides that the Division of Lands and Forests has responsibility for the "care, custody and control" of the Adirondack and the Catskill Forest Preserve. In accordance with this responsibility, all construction of new facilities, expansion or modification of existing facilities and maintenance of facilities, that will result in the cutting, removal or destruction of vegetation on any of the lands constituting the Forest Preserve shall require approval of the Director of the Division of Lands and Forests in accordance with the following Procedure. However, under no circumstances will approval be granted for the cutting of trees for firewood, timber or other forest products purposes.

Procedure:

A. Construction of New Facilities and the Expansion or Modification of Existing Facilities

All projects that involve the cutting, removal or destruction of trees or other vegetation in the Forest Preserve must have approval from the Director of the Division of Lands and Forests to be applied for in the following manner:

1. Regional Facilities

Requests for approval will be submitted by the Regional Director to the Director of the Division of Lands and Forests

2. Non-Regionalized Facilities

Requests for approval will be submitted by the Director of the Division responsible for the facility to the Director of the Division of Lands and Forests

Requests for approval to cut, remove or destroy trees for the purpose of new construction, expansion or modification projects must be submitted in writing and include the following information:

- The location of the project including a map delineating the project
- A description of the project and its purpose
- A count, by species, of all trees to be cut, removed or destroyed
- A delineation of areas where vegetation, in addition to trees three inches or more in diameter, is to be disturbed
- A listing of any protected species of vegetation located within three hundred feet of the area to be disturbed during the project
- A description of measures to be taken to mitigate the impact on and restoration of vegetation, if appropriate, to the area impacted

All decisions to approve any cutting, removal or destruction of trees will be subject to individual SEQR determinations.

B. Routine Maintenance

Responsibility for approval of all routine maintenance projects involving the cutting, removal or destruction of trees or other vegetation is delegated to the Regional Forester for the region in which the project is to occur.

Routine maintenance projects include the following activities:

- Maintenance of foot trails, cross-country ski trails, etc., including "the cutting of the few trees necessary...." (1934 A.G. 268 January 18, 1934.)
- Boundary line surveys and the maintenance of such boundary lines as "an aid to the conservation work of the State...where the number of small trees utilized or removed...appear immaterial (1934 A.G. 309 September 20, 1934.)
- Removal of "dead timber, either standing or fallen...for fuel at the public camp sites...." (1934 A.G. 315 October 30, 1934.)
- Maintenance of scenic vistas along trails when "tree removal may not be sufficient to pass the point of immateriality." (1935 A.G. 27[illegible] January 17, 1935.)
- Removal of dead and hazardous trees in developed areas such as campgrounds and ski centers "that endanger people." (1935 A.G. 3[illegible] June 26, 1985.)
- Salvage of windfall timber when "such blowdown timber constitutes a fire hazard." (1950 A.G. 154 December 28, 1950.)

1. Regional Facilities

   Requests for approval of routine maintenance projects will be made to the Regional Supervisor for Natural Resources who will direct them to the Regional Forester.

2. Non-Regionalized Facilities

   Requests for approval of routine maintenance projects will be made by the facility manager to the Regional Director of the Region in which the facility is located, who will direct them to the Regional Forester.

Requests for approval of routine maintenance projects should be submitted in writing as soon in advance of the date of beginning of the maintenance work as possible and include a description of the project and its location. If prior written or verbal approval cannot be obtained, hazardous trees involving imminent danger to human safety or damage to facilities may be removed without prior approval. However, such action must be reported within 24 hours following removal of the tree(s).

File Ref. 1620

[illegible]
HENRY G. WILLIAMS, [illegible]

[illegible]
[illegible]

July 29, 1986

TO: Executive Staff, Division and Regional Directors

FROM: Hank Williams

SUBJECT: Organization and Delegation Memorandum #84-06: Addendum

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Background:

The above memorandum was promulgated on February 16, 1984 "To establish a policy regarding the prohibition of cutting, removal or destruction of trees and other vegetation on all Forest Preserve lands pursuant to Article XIV of the Constitution of New York State."

Since that time it has come to our attention that the procedures established in the memorandum do not include provision for adequate notice to the public as to the number of trees proposed to be cut and the size of the land area involved on specific projects.

Amendment:

Therefore, Part A. under Procedure of Memorandum #84-06 is amended and expanded by the addition of the following paragraph at the end of such Part A. on page 2. of such Memorandum.

> Any construction or reconstruction activity involving land under the jurisdiction of the Department of Environmental Conservation within the Adirondack or the Catskill Park--regardless of the classification of such land--that is a Type I action or otherwise requires notice in the Environmental Notice Bulletin will include information in such notice as to the (1) acreage or extent of the land area proposed to be involved and (2) number of trees in excess of three inches stump diameter proposed to be cut, removed or destroyed. A copy of such notice as it appeared in such Bulletin (with the date of the Bulletin noted) will be included and made a part of the information constituting the "request for approval" just above described.

APPENDIX III

MEMORANDUM

July 3, 1986

TO: Chief, Bureau of Preserve Protection and Management
Regional Supervisors for Natural Resources

FROM: Norman J. VanValkenburgh

SUBJECT: DIVISION DIRECTION -- LF-84-2 Supplement
TOPIC: Cutting, Removal or Destruction of Trees and Other Vegetation on Forest Preserve Lands

As you will recall, Commissioner Williams promulgated Organization and Delegation Memorandum #84-06 on February 16, 1984 for the purpose of "...establish(ing) a policy regarding the prohibition of cutting, removal or destruction of trees and other vegetation on all Forest Preserve lands pursuant to Article XIV of the Constitution of New York State." In order to implement the provisions of #84-06, this Division issued procedures on May 31, 1984 under designation LF-84-2.

However, the question of whether or not live-standing trees could be cut and used for maintenance of trails including "the construction of structures such as foot bridges, dry tread and water bars" remained. Accordingly, an opinion on this question was formally requested of the Attorney General on November 8, 1985. A copy of such request is attached hereto for information and clarification purposes.

A reply from the Attorney General under date of June 24, 1986 has now been received. A copy of such Formal Opinion No. 86-F3, which allows for the "supervised selective cutting...of only those few scattered trees necessary for the maintenance of popular and steep trails to lessen soil compaction, erosion and the destruction of vegetation" within other specified constraints and parameters, is attached and made a part of this memorandum.

With Formal Opinion No. 86-F3 in hand, it is appropriate to now revise Division Direction-LF-84-2 to incorporate those added authorities. Accordingly, paragraph 1 (page 4) of Part II of LF-84-2 is hereby deleted and the following substituted therefor:

1. <u>Maintenance of foot trails, snowmobile trails, cross-country ski trails, horse trails.</u>

This includes projects that involve blowdown removal, hazard tree elimination (3" or more in diameter), problem tree removal (3" or more in diameter), mowing, etc.

Applications may be submitted by Area if appropriate (i.e., High Peaks Wilderness Area, St. Regis Canoe Area, Saranac Lake Wild Forest, Whiteface Mountain Intensive Use Area, etc.). Trails should be listed separately with the total length of the trail covered by a single Application, if appropriate, and in priority order of needed maintenance.

Live-standing trees may be cut or used for the construction of bridges, dry tread, waterbars or other minor trail structures only after considering the following alternatives and in accordance with the following conditions:

A. Alternatives to any type of trail hardening or structural development must be considered, especially in wilderness areas where such structures diminish the character of the area. Such alternatives include the closing or limitation of use of a trail where the impact of such use is leading to degradation of the other resources and the character of the Forest Preserve. A second alternative is to relocate the trail in such a way that trail hardening would not be necessary.

B. If, after considering the above alternatives, it is determined that structures are needed to protect the surface of the trail or the safety of the public, the following materials should be considered in order of priority:

1. Native rock or stone from near the site.

2. Native rock or stone from another location brought to the site.

3. Peeled, but untreated timber or logs from another location brought to the site.

4. On-site trees in accordance with the conditions under C. following.

C. If on-site trees are to be used, such use must be in accordance with the following conditions:

1. The Regional Forester or his designated representative must approve all trees to be cut, after considering any other previous cutting that has been done in the area.

2. Cutting must be discreet with tops fully lopped and dispersed out of sight of the trails, and with stumps cut flush to the ground.

3. Live trees must be between three to twelve inches in diameter (DBH), and must be at least 100 feet apart.

4. Structures requiring the use of live on-site trees are not to be replaced more frequently than 7-10 years, which is the range of normal life expectancy.

Dead and downed material may be used for such purposes although consideration must be given to human safety and the longevity or life of such structures when such material is used.

Director of Lands and Forests

Attachments

cc: D. Grant
H. Doig
J. Corr
G. Colvin
G. Sovas
K. Wich
R. Bernhard
Regional Directors
Bureaus of Fish and Wildlife
Bureaus of Lands and Forests
Bureaus of Marine Resources
Bureaus of Mineral Resources

MEMORANDUM

May 31, 1984

TO: Chief, Bureau of Preserve Protection and Management
Regional Supervisors for Natural Resources

FROM: Norman J. VanValkenburgh

SUBJECT: DIVISION DIRECTION — LF-84-2
TOPIC: Cutting, Removal or Destruction of Trees and Other Vegetation on Forest Preserve Lands

PURPOSE: The purpose of this memorandum is to establish administrative procedures for the implementation of Commissioner Williams' Organization and Delegation Memorandum #84-06 relating to the construction of new facilities, the expansion or modification of existing facilities and routine maintenance projects on lands of the Forest Preserve.

BACKGROUND: Such Organization and Delegation Memorandum states, in part: "Section 9-0105 of the Environmental Conservation Law provides that the Division of Lands and Forests has responsibility for the 'care, custody and control' of the Adirondack and the Catskill Forest Preserve. In accordance with this responsibility, all construction of new facilities, expansion or modification of existing facilities and maintenance of facilities, that will result in the cutting, removal or destruction of vegetation on any of the lands constituting the Forest Preserve shall require approval of the Director of the Division of Lands and Forests...." In order to carry out this direction and policy, the succeeding procedures will be followed by regional and non-regionalized personnel in requesting approval for such projects on lands of the Forest Preserve that involve the cutting, removal and/or destruction of vegetation. In all cases, the provisions and constraints of the Organization and Delegation Memorandum will be recognized and complied with.

PART I - Construction of New Facilities and the Expansion or Modification of Existing Facilities

PROCESS AND CALENDAR

October-November

Regional Operations Supervisor or Manager of Non-Regionalized Facility	1. Following conceptual approval of the project by the Regional and/or appropriate Central Divisional Offices, prepares a

October-November (Cont'd)	Forest Preserve Project Work Plan in the form attached hereto as Appendix A for each proposed project. Each such Plan shall include: (1) A description of the project and its purpose, (2) A sketch map delineating the project and showing its location, (3) A count by species and size class, of all trees to be cut, removed or destroyed, (4) Identification of any protected species of vegetation within 300' of the area to be disturbed, (5) A description of measures to be taken to mitigate the impact on vegetative cover, and (6) Proposed use of motorized equipment or motor vehicles, if any.
	2. Submits completed Work Plan to the Regional Supervisor for Natural Resources.
Regional Supervisor for Natural Resources	3. Reviews Work Plan for completeness and conformance to Delegation Memorandum #84-06 and forwards to the Regional Forester.
December	
Regional Forester	4. Enters receipt of Work Plan in Regional Log of Forest Preserve Projects (See Appendix B/attached).
	5. Reviews Forest Preserve Project Work Plan to determine if project is appropriate taking into consideration Forest Preserve land classification, Unit Management Plan goals and management objectives for the land area involved.
	6. Makes on-site field inspections as necessary and appropriate.
	7. Insures that SEQR requirements for each project have been addressed.
	8. Consults with Operations Supervisor or Facility Manager to effect any changes or modification to Work Plan.
	9. Signs Work Plan signifying approval or indicates disapproval by stating reasons in Comments Section. If approved, forwards Work Plan through Regional Supervisor for Natural Resources to Regional Director or appropriate Division Director, in the case of non-regionalized facil-

December (cont'd)

ities. If disapproved, returns Work Plan to originator.

10. Completes Regional Log.

January

Regional Director or Director of Division responsible for Facility

11. Reviews Forest Preserve Project Work Plan.

12. Signs Work Plan signifying approval or indicates disapproval by stating reasons in Comments section.

13. If approved, forwards Work Plan to Director of Lands and Forests. If disapproved, returns Work Plan through Regional Supervisor for Natural Resources and Regional Forester to originator.

February

Director of Lands and Forests

14. Effects review of Work Plan by appropriate Central Office staff to determine that Plan conforms to Division goals and is in keeping with responsibility for care, custody and control of lands of the Forest Preserve.

15. Signs Work Plan signifying approval or indicates disapproval by stating reasons in Comments section.

16. Returns Work Plan to Regional Director or appropriate Division Director.

March

Regional Director or Director of Division responsible for Facility

17. Distributes Work Plan through Regional Supervisor for Natural Resources and Regional Forester to originator.

Current Fiscal Year

Regional Operations Supervisor or Manager of Non-Regionalized Facility

18. Implements project in accordance with Work Plan approvals and conditions.

Regional Forester

19. Monitors implementation of Work Plan to insure conformance to approvals and conditions.

Current Fiscal Year (cont'd)	20. On completion of project, completes Inspection Report (See Appendix C attached) and retains in Project file.

PART II - Routine Maintenance Projects

PROCESS

Application for routine maintenance projects on lands of the Forest Preserve shall be submitted on the form attached hereto as Appendix D as soon as possible in advance of the starting date of the project. The Application should be directed to the Regional Supervisor for Natural Resources who will forward it to the Regional Forester. The Application will be reviewed as rapidly as possible by the Regional Forester and a determination made as to approval or disapproval.

When approvals have been granted, a copy of the Application will be forwarded to appropriate Regional Lands and Forests personnel to assure proper notification and provide for monitoring of the project.

Applicants should consider the following guidelines when submitting project requests:

1. Maintenance of foot trails, snowmobile trails, cross-country ski trails, horse trails, etc.

   This includes projects that involve blowdown removal, hazard tree elimination (3" or more in diameter), problem tree removal (3" or more in diameter), mowing, etc.

   Applications may be submitted by Area if appropriate (i.e., High Peaks Wilderness Area, St. Regis Canoe Area, Saranac Lake Wild Forest, Whiteface Mountain Intensive Use Area, etc.). Trails should be listed separately with the total length of the trail covered by a single Application, if appropriate and in priority order of needed maintenance. It is clearly understood that live standing trees are not to be cut or used for construction of bridges, dry tread, water bars or other structures. Dead and downed material may be used for such purposes although consideration must be given to human safety and the longevity or life of such structures when such material is used.

2. Maintenance of roads, 'phone lines, power lines, ski lifts, downhill ski trails, canoe carries, parking areas, openings around buildings, scenic vistas, etc.

   This includes projects that involve the removal of hazardous, problem or edge trees 3" or more in diameter.

   Projects should be listed individually but, several may be submitted on a single Application if they are similar in nature (i.e., 'phone lines A, B, & C). Tree counts are advisable where more than an occasional live tree must be cut to avoid potential damage to the facility ... question. Felled trees may not be utilized for any purpose and should ... scattered near the site so as not to interfere with the facility and ... unobtrusive.

3. Removal of dead and hazardous trees in developed areas ... as campgrounds and ski centers that potentially endanger people.

This includes projects involving removal of dead and/or hazardous trees in, developed or intensive use areas.

Applications should be submitted separately for each facility. However, all projects for a specific facility can be included on a single Application. Tree counts should be included with the Application. Trees that are proposed to be removed should be flagged. Trees that are felled may be cut up and used for fuel at the facility, but for no other purpose.

4. Boundary line surveys and maintenance.

This includes all projects on lands of the Forest Preserve whether done by Department employees or by others under contract to the Department.

More than one survey project may be included on a single Application but, separate Applications should be submitted for survey projects geographically distant from each other.

5. Salvage of windfall timber when such blowdown timber constitutes a fire hazard.

This includes projects of fire hazard circumstances and should be submitted on Applications for each Area involved.

In any of the above situations, projects will be checked and monitored by the Regional Forester.

Director of Lands and Forests

Attachments

cc: D. Grant
H. Loiy
G. Colvin
G. Dovas
K. Wich
R. Bernhard
Regional Directors
Bureaus of Fish and Wildlife
Bureaus of Lands and Forests
Bureaus of Marine Resources
Bureaus of Mineral Resources

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF LANDS AND FORESTS

Forest Preserve Project Work Plan
for
Construction of New Facilities and the Expansion or
Modification of Existing Facilities

FY 19__ - ____

Region/Facility	Project Title & Location	Land Classification	Project No.

Description & Justification (Attach Sketch Map Showing Location and other Required Supporting Documents):

Description of Use of Motorized Equipment or Motor Vehicles, if any:

Prepared By: Date:

APPROVALS OR DISAPPROVALS

Comments:

Date: ______________________

____
Regional Forester

Date: ______________________

____
Regional Supervisor for
Natural Resources

Date: ______________________

____
Regional Director or
Division Director

Date: ______________________

____
Director of Lands and Forests

APPENDIX A

REGIONAL LOG
FOREST PRESERVE PROJECTS

REGION ______ F.Y. ______

Planned	Originator	Project Description	Project: Maintenance	Project: Facility	Dates of Inspection	Date of Approval or Disapproval	Comments, including Approval or Disapproval Action

INSPECTION REPORT

FOREST PRESERVE PROJECT

REGION: ______ INSPECTED BY: ____________________ DATE: ____________

PROJECT NO.: ____________

PROJECT LOCATION:

PROJECT DESCRIPTION:

TREES CUT (NO. & SPECIES):

VEGETATION DISTURBED AND MITIGATING ACTIONS TAKEN:

COMMENTS:

APPENDIX C

New York State Department of Environmental Conservation

MEMORANDUM

TO: John Plausteiner
FROM: Terry E. Healey
SUBJECT: ORDA Project Development and Implementation
DATE: March 20, 1991

At a meeting in November, 1990 between Tom Monroe; Ned Harkness; Richard Persico, acting as Counsel for ORDA; and me; and a subsequent meeting with you, it was agreed that it would be useful for ORDA to have an outline of procedures to follow to insure proper planning and authorization has been completed when developing projects for rehabilitation or improvement of facilities on the State venues at Whiteface Mt. Ski center, Mt. Van Hoevenburg and Gore Mt. Ski Center. These procedures, which are aside from funding procurement, should be followed for any project at the State owned venues which has been approved by the ORDA Board. Generally the sequence presented herein would apply but there may be exceptions for certain unique projects.

1. Facilitate the coordination of the ORDA Environmental Monitor and DEC Region 5 Natural Resources Supervisor on the proposed project in accordance with the provisions of the Memorandum of Understanding (MOU) between ORDA and DEC.

2. Consult the DEC/ORDA (MOU) to determine if:

   a. the project requires authorization within a Unit Management Plan (UMP) or

   b. may be considered as minor maintenance of rehabilitation work.

3. If answer to 2 a. is yes consult the specific UMP to determine if the project is authorized as proposed or if the UMP has to be amended.

4. If answer to 2 b. is yes proceed to secure confirming opinions from DEC.

5. If UMP amendment is required initiate process called for in provision VII E. of the MOU.

6. Address the provisions of the State Environmental Quality Review Act (SEQR) and complete appropriate Environmental Assessment Form. Determine if a public hearing should be held on the project proposal. (In any event the local municipality should be informed of the project proposal).

7. Develop preliminary project plans including all provisions called for in the appropriate UMP and DEC/ORDA MOU.

8. Secure from DEC a determination as to whether there is any DEC jurisdiction beyond the UMP which must be addressed (i.e. SPDES) and apply for necessary permits.

9. Secure from APA a determination as to whether there is any Adirondack Park Agency jurisdiction involved (Article 24, Section 809 and Section 814) and apply for necessary permits.

10. Insure that there is no other State agency involvement. DEC can assist with this.

11. When all UMP, SEQR and permit requirements have been established develop final plans.

12. Initiate bidding and contracting process.

13. Start construction phase of project.

14. Monitor the progress of the project and take additional environmental safeguards if necessary.

15. When the project has been completed include a letter of completion in the UMP for the facility for future reference and UMP updating.

I hope the above procedural outline is helpful to you in future project development and implementation.

Terry E. Healey

Terry E. Healey
Supervisor of Natural Resources
Region 5

TEH:j
cc: T. Monroe

APPENDIX B

1996 AMENDMENTS

WHITEFACE

April 9, 2001

Thomas D. Martin
Regional Forester Region 5
New York State
Department of Environmental Conservation
Route 86, PO Box 296
Ray Brook, New York 12977-0296

Dear Tom:

As per our phone conversation, I am submitting a request for modifications to a pre approved trail that is listed in the 1996 Unit Management Plan Update and Amendment (UMP). The trail is listed as 19a in the UMP, and will be located adjacent to the existing Parkway Trail. Some revisions are also necessary on Upper Parkway and Upper Thruway as they are planned to be a part of the proposed race trail. Finally, an exit will be required off of the Lower Valley Trail. More detail is available on the attached proposal.

We hope to begin this trail as soon as possible after the snow melts in order to complete the project for the next winter season.

Please advise if you need anything further from me. I would be pleased to show you the area at anytime should you should desire an on site visitation.

Yours Truly,

Jay Rand
General Manager
Whiteface Mountain Ski Center

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF LANDS AND FORESTS

Forest Preserve Project Work Plan
for
Construction of New Facilities and Expansion or
Modification of Existing Facilities

FY 20 01,02

Region/Facility	Project Title & Location		Project No.
5/ Whiteface Mt. Ski Center		Giant Slalom (GS) Trail Revisions UMP Trail 19a	WF-01-1

Description & Justification (Attached Map or Sketch Showing Location)
(Refer to Exhibit A for Sketch of Project)

During the 1980 Winter Olympics the Parkway Trail was used for GS Alpine Events. Recently the Federation of International Skiing (FIS) has set a minimum standard of 40 meters (m) or 131', which has made Parkway too narrow to meet standards. Consequently, we have lost our certification for International events on Parkway. Due to the terrain it is not feasible to widen Parkway as it has solid rock walls on the skiers left and steep drop-offs on the skiers right.

The 1996 Unit Management Plan Update and Amendment (UMP) includes an approved section of trail off of Parkway (Refer to Exhibit B, Pg.268) that could be substituted for a portion of the new GS trail. The UMP designates a 36.6m or 120' maximum width. Consequently, we are seeking an approval to widen this section of UMP Trail 19a to 40m or 131' which is an additional 3.4m or 11'. (Refer to Exhibit C for UMP tree tally) Note: Our hand count includes the entirety of 19a. The UMP figure for total trees to be removed on trail 19a is 9,438. The total hand count of trees to be removed is 580, which is considerably less than the UMP count. (Refer to Exhibit D1)

The upper section of the proposed GS trail would simply be on Upper Parkway and Upper Thruway, which would require some tree removal on the skiers left. (Refer to Exhibit A for locations and Exhibit D2 for the tree count in this area.) The only other tree removal in this area would be an exit off of the existing Lower Valley Trail. (Refer to Exhibit D3)

In summary we are requesting a 3.4m/11' addition to UMP approved trail 19a, minor tree removal on the Upper Parkway Trail, widening of the Upper Thruway Trail to a minimum of 40m/132' to meet FIS standards, and a new exit approximately 30m/98' x 60m/197' off of the Lower Valley Trail. I note again that the tree count for this entire project is significantly less than the number of trees anticipated and approved to be cut in the UMP for Trail 19a.

The completion of this trail will once again put Whiteface within the parameters of a certified Giant Slalom Trail for International Competitions and Training.

Prepared By: Jay Rand **Comments:**

Date:

APPROVALS

Regional Forester

Date:

Reg. Dir./Division Director

Date:

Director of Lands & Forests

Date:

April 9, 2001

Thomas D. Martin
Regional Forester Region 5
New York State
Department of Environmental Conservation
Route 86, PO Box 296
Ray Brook, New York 12977-0296

Dear Tom:

As per our phone conversation, I am submitting a request for modifications to a pre approved trail that is listed in the 1996 Unit Management Plan Update and Amendment (UMP). The trail is listed as 19a in the UMP, and will be located adjacent to the existing Parkway Trail. Some revisions are also necessary on Upper Parkway and Upper Thruway as they are planned to be a part of the proposed race trail. Finally, an exit will be required off of the Lower Valley Trail. More detail is available on the attached proposal.

We hope to begin this trail as soon as possible after the snow melts in order to complete the project for the next winter season.

Please advise if you need anything further from me. I would be pleased to show you the area at anytime should you should desire an on site visitation.

Yours Truly,

Jay Rand
General Manager
Whiteface Mountain Ski Center

Unit Management Plan Update and Amendment

July 1996

Date of Acceptance of DGEIS: November 5, 1995
Date of Acceptance of FGEIS: May 20, 1996

Whiteface

THE OLYMPIC MOUNTAIN

PREPARED BY:

sno.engineering

USA
LITTLETON
FRISCO
BELLEVUE
CANADA
WHISTLER
JAPAN
TOKYO

CLOUGH, HARBOUR & ASSOCIATES

105 SARANAC AVE
P.O. BOX 110

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

EXHIBIT B

.S. Conservation Dept. FIELD TALLY SHEET District No. ______

Forestry Form No. 215

County ESSEX

ner WHITEFACE MOUNTAIN Unit No. ______ Date 4/18/01

ss: ROUTE 86, WILMINGTON, NY 12997 Tally by Jim Hoyte Jr and Chris Gallagher

Timber marked on ______ acres

AIL: UMP 19A + increase

ies / gs / D.B.H.	ASH	BIRCH	BEECH	MAPLE	Spruce			Cordwd. Trees	D.B.H.
6	2	4	57	31	2				6
8	2	5	41	37	3				8
10	1	4	39	34	5				10
12	1	11	33	33					12
14		4	31	30					14
16	2	5	28	35					16
18	1	1	15	19					18
20		2	12	24					20
22			4	8					22
24			2	12					24
26									26
28									28
30									30
32									32
34									34
									36
TOTAL	9	36	262	263	10				

— EXHIBIT D1 — 580

[redacted]

S Conservation Dept. FIELD TALLY SHEET

Forestry Form No. 215

county ESSEX

ner WHITEFACE MOUNTAIN Unit No. ______ Date 4/6/01

ss: ROUTE 86, WILMINGTON, NY 12997 Tally by Jim Hoyte Jr and Tom Cooper

Timber marked on ______ acres

IL: Upper Parkway - Upper Thruway

D.B.H.	ASH	BIRCH	BEECH	MAPLE	Spruce	Cordwd. Trees	D.B.H.
6		7	7	10	1		6
8		3	20	15	1		8
10		2	10	4			10
12			2				12
14							14
16	2						16
18		[illegible]	[illegible]	40			18
20			[illegible]				20
22							22
24		[illegible]	[illegible]	20			24
26							25
28							28
30							30
32							32
34							34
36							36
TOTAL	2	34	58	86	2		

EXHIBIT D 2 - 202

'.S. Conservation Dept. FIELD TALLY SHEET District No. ______

Forestry Form No. 215

County ESSEX

ner WHITEFACE MOUNTAIN Unit No. ______ Date 4/8/01

ss: ROUTE 86, WILMINGTON, NY 12997 Tally by Jim Hayne Jr and Chris Gallagher

Timber marked on ______ acres

RAIL: Exit From Lower Valley

cies / gs / B.H.	ASH	BIRCH	BEECH	MAPLE	Spruce				Cordwd. Trees	D.B.H.
6			19							6
8			11							8
10			8							10
12			4							12
14			1							14
16			3							16
18			1							18
20			2							20
22										22
24										24
26										26
28										28
30										30
32										32
34										34
										36
Total			49							

EXHIBIT D3 49

[illegible]

Number of trees of various species and sizes to be removed in new and widened trails and other clearings

New Trails and Existing Trails to be Widened

Tree Species, Size (dbh)		Parkway (Upper) Trail - 18 (Phase-IV)	Parkway (Lower) Trail - 19 (Phase-IV)	New Trail - 19a (Phase-IV)	New Trail - 27a (Phase-IV)	Low Road Trail - 63 (Phase-IV)	Mixing Bowl Trail - 30 (Phase-V)	Wolf Trail - 31 (Phase-V)	(Old 44) Trail - 31a (Phase-V)	Deer Trail - 33 (Phase-V)	Parking Lot 3 Expansion (Phase-V)
Balsam fir,	>4"	266	0	0	0	0	0	0	0	0	0
	3"-4"	476	0	0	0	0	0	0	0	0	0
Yellow birch,	>4"	42	14	286	287	7	14	70	7	35	112
	3"-4"	28	28	572	287	14	14	70	7	35	112
Red spruce,	>4"	56	0	0	0	0	0	0	0	0	0
	3"-4"	28	0	0	0	0	0	0	0	0	0
White birch,	>4"	266	21	429	287	11	28	70	7	35	224
	3"-4"	84	21	429	287	11	14	70	7	35	112
Striped maple,	>4"	56	0	0	0	0	0	0	0	0	0
	3"-4"	98	7	143	0	4	0	0	0	0	0
Cherry,	>4"	56	0	0	0	0	0	0	0	0	0
	3"-4"	70	0	0	0	0	0	0	0	0	0
Popular,	>4"	42	0	0	0	0	0	0	0	0	0
	3"-4"	84	0	0	0	0	0	0	0	0	0
Red pine,	>4"	0	0	0	0	0	0	0	0	0	0
	3"-4"	28	0	0	0	0	0	0	0	0	0
Red spruce,	>4"	0	0	0	0	0	0	0	0	0	0
	3"-4"	28	0	0	0	0	0	0	0	0	0
Sugar maple,	>4"	42	49	1,001	574	25	28	140	14	70	224
	3"-4"	0	77	1,573	574	39	42	140	14	70	336
American beech,	>4"	14	56	1,144	1,148	28	42	280	28	140	336
	3"-4"	0	49	1,001	1,148	25	42	280	28	140	336
White pine,	>4"	0	0	0	0	0	0	0	0	0	0
	3"-4"	0	0	0	574	0	28	140	14	70	224
Eastern hemlock,	>4"	0	0	0	574	0	28	140	14	70	224
	3"-4"	0	0	0	287	0	14	70	7	35	112
White ash,	>4"	0	28	572	287	11	0	70	7	35	0
	3"4"	0	21	429	287	11	0	70	7	35	0
Red maple,	>4"	0	42	858	287	21	14	70	7	35	112
	3"-4"	0	49	1,001	287	25	14	70	7	15	112
ALL TREES	>4"	840	210	4,290	3,444	106	154	840	84	420	1,232
ALL TREES	3"-4"	924	252	5,148	3,731	129	168	910	91	455	1,344
TOTALS:		1,764	462	9,438	7,175	235	322	1,750	175	875	2,576
AMOUNT OF CLEARING (Acres)		0.6	0.2	4.1	4.1	0.1	0.2	1.0	2.9	0.5	1.6

EXHIBIT C

New York State Department of Environmental Conservation
Office of Natural Resources, Region 5
Division of Lands & Forests
Route 86 – P.O. Box 296, Ray Brook, New York 12977
Phone: (518) 897-1276 • **Fax:** (518) 897-1370
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

April 18, 2001

Mr. John Banta
Adirondack Park Agency
PO Box 99
Ray Brook, NY 12977

Re: Whiteface Mountain Ski Center Unit Management Plan Amendment

Dear John:

Enclosed is a proposed amendment to the Whiteface Mountain Ski Center Unit Management Plan for Adirondack Park Agency review and approval under the terms and conditions of the Adirondack Park State Land Master Plan.

The amendment deals with the widening of portions of the Upper Thruway and Upper Parkway trails and the modification of the footprint for a new trail #19a which was approved under the 1996 UMP.

A Negative Declaration will be submitted for inclusion in the April 25th Environmental Notice Bulletin. A listing of individuals and organizations who will be sent copies of the proposed amendments is attached to this letter.

We would appreciate the inclusion of this proposal in the May Agency meeting.

Thank you for your assistance.

Sincerely,

Thomas D. Martin

Thomas D. Martin
Regional Forester

TDM/KA:mb
Enclosures
cc: K Richards
T. Wolfe
J. Rand, ORDA
C. Scrafford, APA

PROPOSED AMENDMENT
WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN
May 2001

This amendment to the Whiteface Mountain Ski Center Unit Management Plan of 1996 (the Plan) addresses modification of the footprint for a new trail which was pre-approved in the Plan as well as widening portions of the Upper Parkway trail and the Upper Thruway trail.

Rationale for amendment of the Plan

During the 1980 Olympics, the Parkway trail was used for Giant Slalom (GS) Alpine Events. Recently the Federation of International Skiing (FIS) has set a minimum standard of 40 meters (131 ft.) for the GS course. Parkway currently has been maintained at a maximum width of 120 ft, as specified in the Plan. This new standard has made Parkway too narrow to be certified for international competition. Consequently, the Olympic Regional Development Authority (ORDA) has lost certification for international competition on Parkway.

ORDA and DEC propose to relocate the race course to utilize a combination of the following trails: Upper Parkway, Upper Thruway, and a yet to be built, but approved under the Plan, trail identified as trail 19a. Relocating the course to this proposed route is necessary because widening of the Lower Parkway trail is not possible due to terrain restrictions. Lower Parkway is defined by a sharp drop-off to the skier's right and a series of solid rock walls to the skier's left. This relocation will involve three modifications to the Plan, slight widening of portions of Upper Parkway and Upper Thruway to meet the 40 m. width standard, modification of the footprint of trail 19a, and extension of trail 19a to allow a smooth exit from the Lower Valley trail.

Each action is described in detail as follows:

1. Widening of Upper Parkway and Upper Thruway trails

   The proposed start of the course will remain in the same location on Upper Parkway as has been used in the past. The course would quickly shift to the Upper Thruway trail, which would provide a smooth transition into trail 19-a. Widening of these upper sections would be limited to 9.5 m. (31.3 ft.), which would bring the course into compliance with FIS standards.

   Locations where trail widening would be necessary are identified on the map attached as Appendix A. A hand tally has identified 202 trees greater that 3" dbh would need to be removed.

2. Modification of the footprint of trail 19-a

   Trail 19-a lies between the Lower Parkway and Lower Thruway trails and was identified in the Plan on page 268. Proposed modification of the approved footprint is limited to extension of the upper portion of the trail to provide a smooth transition from the Upper Thruway trail and widening of the footprint by 3.4 m. (11 ft.) to meet FIS standards.

The change in the footprint of trail 19-a is identified on the map attached as Appendix A. A hand tally identified 580 trees greater that 3" dbh that would need to be removed for establishment of this new footprint. The approved UMP estimated a maximum of 9,438 trees greater that 3" dbh might need to be removed for creation of this trail. Past trail construction has confirmed that estimates developed in the Plan have consistently run high. In addition mortality from the 1998 Ice Storm have reduced the number of live standing trees that would need to be removed.

3. <u>Exit from Lower Valley</u>

The exit of trail 19-a onto the Lower Valley trail is not at a location that would allow a safe finish for the race course. The approved exit would enter the Lower Valley in a narrow area which is problematic since the race finish area would conflict with the popular recreational trail. The proposal is to extend an exit from trail 19-a over an island immediately below the approved exit of trail 19-a and between the Lower Parkway and Lower Valley trails, and then into an island between the Lower Valley trail and the Parkway chairlift. This proposed exit would segregate the race course from the popular recreational trail, providing increased level of safety to skiers and reducing congestion in this area where trails begin to converge near the base of the ski area.

Location of the proposed exit is identified on the map attached as Appendix A. A hand tally identified 49 trees greater than 3" DBH that would need to be removed to complete this modification.

For publication in the April 25th Environmental Notice Bulletin

Negative Declaration

Essex County – The NYS DEC. as lead agency, has determined that an amendment to the Unit Management Plan for the Whiteface Mountain Ski Center will not have a significant environmental impact.

This action involves the NYS DEC adopting one proposed amendment to the 1996 Unit Management Plan Update for the Whiteface Mountain Ski Center under the terms and guidelines established by the Adirondack Park State Land Master Plan. The amendment addresses modifications to several trails that will maintain their certification for international Alpine ski competition. Specifically, the amendment proposes widening portions of two trails, modification of the footprint of one new trail approved in the 1996 Plan, and creation of an exit of the new trail in a location that will reduce trail congestion and conflict between recreational use of the surrounding ski trails and the race course.

No more than 831 trees over 3" DBH would need to be removed to accomplish the modifications proposed in the amendment.

The project location is in the Town of Wilmington, Rt. 86, Essex County, New York State Forest Preserve, on lands classified by the Adirondack Park State Land Master Plan as Intensive Use (Whiteface Mountain Ski Center). This area is operated by the Olympic Regional Development Authority (ORDA) pursuant to enabling law and agreements with NYS DEC.

Comments on the draft plan amendment will be accepted through May 9, 2001.

Contact: Thomas Martin, Regional Forester, NYS DEC, Rt 86, Ray Brook, NY 12977, (518) 897-1200.

Name	Organization	Address	City/State/Zip
Jean Ashworth, Supervisor	Town of Wilmington		Wilmington, NY 12997
Shirley Seney, Supervisor	Town of North Elba		Lake Placid, NY 12946
	E. M. Cooper Memorial Library		Wilmington, NY 12997
	Lake Placid Library	Main St.	Lake Placid, NY 12946
Bruce Carpenter	NY Rivers Unlimited	199 Liberty Plaza	Rome, NY 13440
John Mills	Trout Unlimited, Champlain Valley Chapter	82B Kiwassa Rd.	Saranac Lake, NY 12983
Kathleen Regan	Adirondack Nature Conservancy	PO Box 65	Keene Valley, NY 12943
David Gibson	Assn. for the Protection of the Adirondacks	30 Roland Pl.	Schenectady, NY 12304
Peter Bauer	Resident's Committee to Protect the Adirondacks	PO Box 27	North Creek, NY 12853
John Stoffer	Sierra Club, Atlantic Chapter	353 Hamilton St.	Albany, NY 12210
Neil Woodworth	Adirondack Mountain Club	PO Box 3055	Lake George, NY 12845
Bernhard Melewski	The Adirondack Council	PO Box D-2	Elizabethtown, NY 12932
Sherry Morgan	US Fish and Wildlife Service	3817 Luker Rd.	Cortland, NY 13045
Ann Robbins		885 Cumberland Head Rd.	Plattsburgh, NY 12901
Favor Smith		Bear Cub Rd.	Lake Placid, NY 12946

Whiteface
THE OLYMPIC MOUNTAIN

Administration Fax 518-946-7400
Marketing Fax 518-946-4335

email: info@orda.org

April 24, 2,000

Mr. Thomas D. Martin
NYS Department of Environmental Conservation
Regional Forester Region 5
Route 86, PO Box 296
Ray Brook, NY 12977-0296

Dear Tom:

As you know two (2) sections of terrain were approved for Glade Skiing in the 1996 Unit Management Plan (UMP) for Whiteface Mountain. Glade skiing by definition involves skiing through sections of thinned out trees and ground disturbance is often involved. Tree skiing is the same scenario, but without ground disturbance.

Glade/Tree Skiing has become extremely popular at many ski resorts. Many of our Eastern Ski Area Competitors such as Jay Peak in Vermont have developed a variety of Glade/Tree Skiing Areas. During the past few years we have had many requests for this type of skiing opportunity. We are hoping to establish terrain by next season.

We have reviewed the approved UMP locations for Glade Skiing (Refer to attached Chart #14). The approved areas involve sections adjacent to Mountain Run and Lower Mackenzie Trails. Upon careful review we very much would like to include an additional section of approximately 13 Acres that predominantly exists between Upper Empire and Upper Northway. Access would be from these trails.

Preparation of the area would not involve any ground disturbance, and we estimate that the maximum # of trees over 3" necessary to be removed would not exceed 100 trees. Snowmaking is not involved nor is any type of winter grooming. Preparation mostly involves brushing and the removal of dead trees and small growth of 3" or less. These would be cut into sections and used to fill holes.

The general character of the natural setting would basically remain untouched, yet a great new natural feature, other than a traditional ski trail, would be added to Whiteface Mountain Ski Center for the enjoyment of the general public.

Route 86 * P.O. Box 1980 * Wilmington, NY * 12997 * 518-946-2223
Operated by the Olympic Regional Development Authority

Please feel free to call with any questions or comments. We would hope to begin work on this project as soon as possible. Thank you for this consideration. Please keep me advised.

Yours Truly,

Jay Rand

Jay Rand
General Manager
Whiteface Mountain Ski Center


Note: Refer to Section II.B for
lift and trail specifications.
v 2018000

New York State Department of Environmental Conservation
Office of Natural Resources, Region 5
Division of Lands & Forests
Route 86 – P.O. Box 296, Ray Brook, New York 12977
Phone: (518) 897-1276 • **Fax:** (518) 897-1370
Website: www.dec.state.ny.us

Environmental Conservation 30 YEARS
John P. Cahill
Commissioner

June 16, 2000

Mr. John Banta
Adirondack Park Agency
PO Box 99
Ray Brook, NY 12977

Re: Whiteface Mountain Ski Center Unit Management Plan Amendments

Dear John:

Enclosed are proposed amendments to the Whiteface Mountain Ski Center Unit Management Plan for Adirondack Park Agency review and approval under the terms and conditions of the Adirondack Park State Land Master Plan.

The amendments deal with the creation of a 13-acre area for glade skiing between the Upper Empire and Upper Northway trails and designation of additional trails for mountain biking.

A Negative Declaration was submitted for inclusion in the June 28th Environmental Notice Bulletin. A listing of individuals and organizations who were sent copies of the proposed amendments is enclosed with this letter.

We would appreciate the inclusion of this proposal in the July Agency meeting.

Thank you for your assistance.

Sincerely,

Thomas D. Martin

Thomas D. Martin
Regional Forester

TDM/KA:mb
Enclosures
cc: K Richards
T. Wolfe
J. Rand, ORDA
C. Scrafford, APA
File: ORDA Whiteface

NEW YORK STATE CENSUS 2000
BE PART OF THE COUNT

For publication in the June 28th Environmental Notice Bulletin

Negative Declaration

Essex County – The NYS DEC, as lead agency has determined that two proposed amendments to the Unit Management Plan for the Whiteface Mountain Ski Center, will not have a significant environmental impact.

This action involves the NYS DEC adopting three proposed amendments to the 1996 Unit Management Plan Update for the Whiteface Mountain Ski Center under the terms and guidelines established by the Adirondack Park State Land Master Plan. The amendments address creation of an additional glade skiing area and designation of existing trails and paths for mountain bike use.

Amendment Number One: involves creation of a 13-acre glade/tree skiing area between the Upper Empire and Upper Northway trails. The purpose of this proposal is to provide additional terrain for glade skiing, an open woods form of downhill skiing, which was first established in areas adjacent to the Mountain Run and Lower Mackenzie trails as part of the 1996 Unit Management Plan Update. Preparation of this area would not involve any ground disturbance. No more than 100 trees over 3" DBH would need to be removed in this 13-acre area. Snowmaking is not involved nor is any type of winter grooming. Most of the preparation involves brushing and removal of dead trees and small growth of 3" DBH or less. The general character of the glade area would remain basically untouched, however a great new natural feature, other than a traditional ski trail would be added to the Whiteface Mountain Ski Center for the enjoyment of the general public and the Citizens of the State of New York.

Amendment Number Two: involves the designation of additional trails open for mountain biking. With the construction of the new gondola late in 1999 ORDA proposes to utilize the gondola rather than the two existing chair lifts for the existing mountain bike program. The existing trails open for mountain biking were identified based on use patterns generated by the use of two chairlifts. The Department proposes to designate additional trails to relieve congestion on the limited number of trails available from the top of the gondola. This additional terrain will be composed of a combination of present ski trails and existing pathways. Varying degrees of brushing would be involved on these sections, but no trees over 3" DBH would be cut. This alternative would allow three additional routes down to the mid-station lodge. These routes would provide routes for the full range of users to safely and enjoyably reach the network of trails on the lower section of the mountain.

The project location is in the Town of Wilmington, Rt. 86, Essex County, New York State Forest Preserve, on lands classified by the Adirondack Park State Land Master Plan as Intensive Use (Whiteface Mountain Ski Center). This area is operated by the Olympic Regional Development Authority (ORDA) pursuant to enabling law and agreements with NYS DEC.

Comments on the draft plan amendment will be accepted through July 12, 2000.

Contact: Thomas Martin, Regional Forester, NYS DEC, Rt 86, Ray Brook, NY 12977, (518) 897-1200.

PROPOSED AMENDMENTS
WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN
June 2000

These amendments to the Whiteface Mountain Ski Center Unit Management Plan of 1996 address creation of a new glade skiing area between the Upper Empire and Upper Northway ski trails and designation and marking of additional trails for mountain bike use.

Each action es described in detail as follows:

1. Glade Ski Area: Upper Empire and Upper Northway Area

Glade skiing has become extremely an extremely popular activity at many ski areas. Many competing Eastern ski areas have created glades for skiing. The approved 1996 Unit Management Plan provided for creation of glade skiing areas adjacent to the Mountain Run and Lower Mackenzie trails. These areas have become extremely popular with skiers and in recent years users have been asking that additional areas at Whiteface be opened for glade/tree skiing.

A 13-acre area between the Upper Empire and Upper Northway trails has been identified by ORDA and DEC personnel as suitable for glade skiing. Ingress and egress to the glade area would be from these trails.

Preparation of this area would not involve any ground disturbance. No more than 100 trees over 3" DBH would need to be removed in this 13-acre area. Snowmaking is not involved nor is any type of winter grooming. Most of the preparation involves brushing and removal of dead trees and small growth of 3" DBH or less. This material would be cut into short sections and used to fill holes.

The general character of the glade area would remain basically untouched, however a great new natural feature, other than a traditional ski trail would be added to the Whiteface Mountain Ski Center for the enjoyment of the general public and the Citizens of the State of New York.

A map of the proposed glade area is attached as Appendix 1.

2. Designation of additional mountain bike trails

The approved 1996 UMP identified trails at the ski center open for summer use as mountain bike trails. With the construction of the new gondola late in 1999 ORDA proposes to utilize the gondola rather than the two existing chair lifts for the mountain bike program.

The existing trails open for mountain biking were identified based on use patterns generated by the use of two chairlifts. This system required the rider to exit the first chairlift at the mid station lodge. The rider could then ride trails from mid-station down to the base of the mountain or continue up the second chairlift to the summit of Little Whiteface. Since most users would concentrate on the lower terrain, only two trails were designated from the top of Little Whiteface.

The gondola has only one exit point, the top of Little Whiteface. Consequently, all riders will now reach the top of the mountain. In the absence of designation of additional trails there will be a greater level of crowding and an increased risk of injury since all riders will be funneled down two trails with difficult sections.

The Department proposes to designate additional trails, as outlined on the map attached as Appendix B. This additional terrain will be composed of a combination of present ski trails and existing pathways. New sections through the woods, as delimited on the above referenced map, would be confined to single-track routes. Varying degrees of brushing would be involved on these sections, but no trees over 3" DBH would be cut. This alternative would allow three additional routes down to the mid-station lodge. These routes would provide routes for the full range of users to safely and enjoyably reach the network of trails on the lower section of the mountain.

Jean Ashworth, Supervisor
Town of Wilmington
Wilmington, NY 12997

Shirley Seney, Supervisor
Town of North Elba
Lake Placid, NY 12946

E. M. Cooper Memorial Library
Wilmington. NY 12997

Lake Placid Library
Main St.
Lake Placid, NY 12946

Bruce Carpenter
NY Rivers Unlimited
199 Liberty Plaza
Marine Midland Building
Rome, NY 13440

John Mills
Trout Unlimited
Champlain Valley Chapter
82B Kiwassa Rd.
Saranac Lake, NY 12983

Kathleen Regan
Adirondack Nature Conservancy
PO Box 65
Keene Valley, NY 12943

David Gibson
Assn. for the Protection of the Adirondacks
30 Roland Pl.
Schenectady, NY 12304

Peter Bauer
Resident's Committee to Protect the Adirondacks
PO Box 27
North Creek, NY 12853

John Stoffer
Sierra Club, Atlantic Chapter
353 Hamilton St.
Albany, NY 12210

Neil Woodworth
Adirondack Mountain Club
PO Box 3055
Lake George, NY 12845

Bernhard Melewski
The Adirondack Council
PO Box D-2
Elizabethtown, NY 12932

Sherry Morgan
Field Supervisor
US Fish and Wildlife Service
3817 Luker Rd.
Cortland, NY 13045

Ann Robbins
885 Cumberland Head Rd.
Plattsburg, NY 12901

Favor Smith
Bear Cub Rd.
Lake Placid, NY 12946

April 14, 2,000

Mr. Thomas D. Martin
NYS Department of Environmental Conservation
Regional Forester Region 5
Route 86, PO Box 296
Ray Brook, NY 12977-0296

Dear Tom:

We plan to use the Gondola this summer season, instead of the two (2) chairlifts previously involved, to transport visitors and Mt. Bikers to the summit of Little Whiteface. Consequently, our Mountain Bike Program will be run from the summit of Little Whiteface. During the past several years bikes were restricted from mid station down under most circumstances

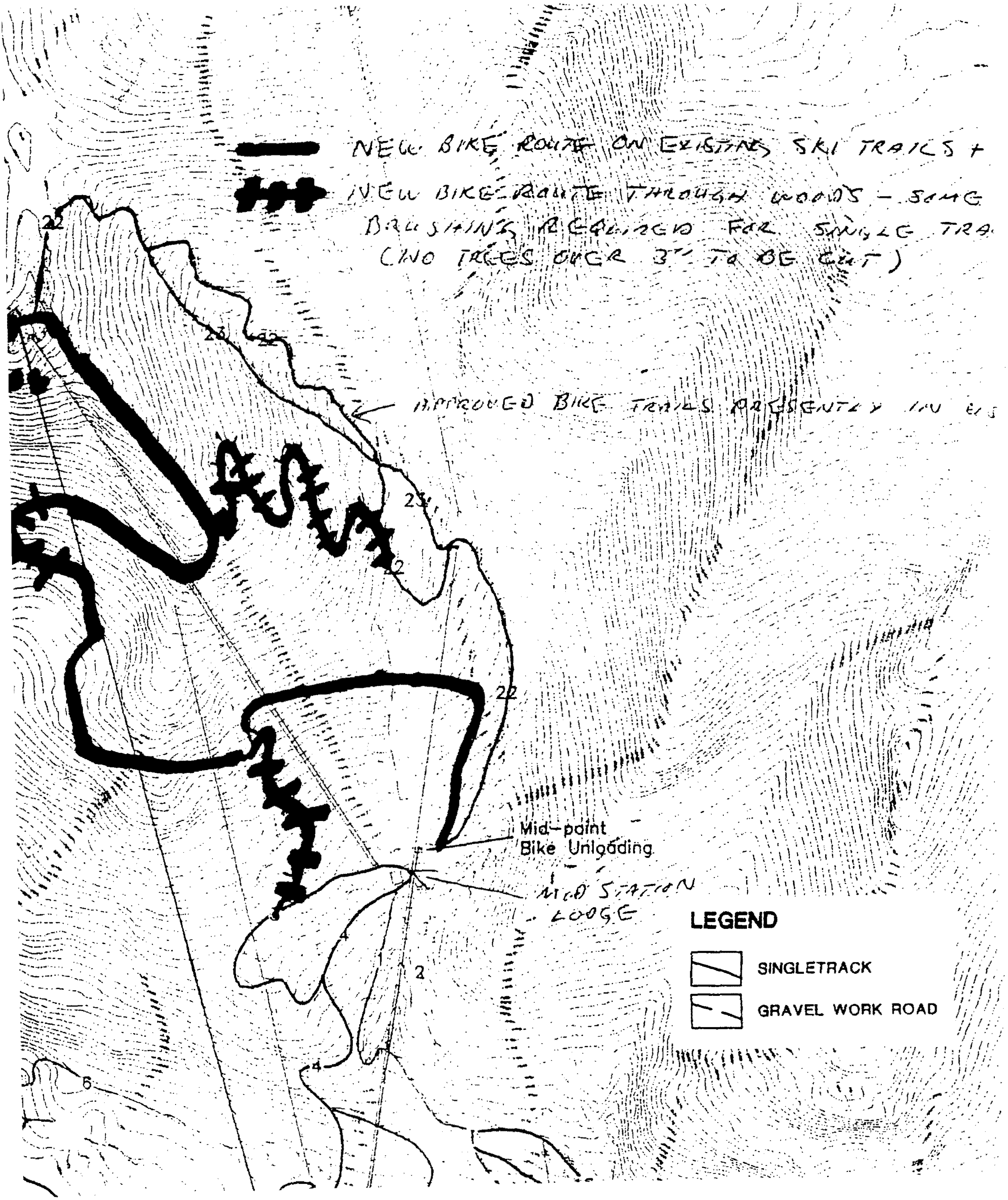
The two (2) trails approved in our Unit Management Plan from the summit area of Little Whiteface are somewhat limited and both have difficult sections that limit the activity to experienced riders. In an effort to broaden the terrain for various skill levels and add more variety I am requesting permission to add alternative routes from the summit of Little Whiteface. (Refer to attached UMP Mt. Bike Legend)

The proposed alternative Mt. Bike Routes would utilize a combination of present ski trails and existing pathways. New sections through the woods are limited, as exhibited on the attached map, and would be confined to single-track routes. Only brushing would be involved. No trees over 3" would be cut.

We hope to commence our Mt. Bike season in June. If you need further information or would like to inspect the proposed locations please let me know. I look forward to your reply.

Yours Truly,

Jay Rand
General Manager
Whiteface Mountain Ski Center


NEW BIKE ROUTE ON EXISTING SKI TRAILS +
NEW BIKE ROUTE THROUGH WOODS - SOME BRUSHING REQUIRED FOR SINGLE TRA
(NO TREES OVER 3" TO BE CUT)
APPROVED BIKE TRAILS PRESENTLY IN US
Mid-point
Bike Unloading
MID STATION
LODGE
LEGEND
SINGLETRACK
GRAVEL WORK ROAD

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF LANDS AND FORESTS

Forest Preserve Project Work Plan
for
Construction of New Facilities and Expansion or
Modification of Existing Facilities

FY 1999,00

Region / Facility	**Project Title & Location**	**Project N0.**
5/ Whiteface Mountain Ski Center	Trail Improvements	
Wimington, NY 12997	Skyward Trail	WFMT-99-2

Description & Justification (Attached Map or Sketch Showing Location)

In preparation for a successful 1998 Gold Cup US Ski Team Downhill Event, an amendment to the Whiteface Mt. Ski Center Unit Management Plan (UMP) was approved. This amendment granted approval to widen the uppermost 1,200' section of trail by 40' to a 120' width. The results were excellent, and provided a much improved downhill race trail and an excellent recreational trail for the public. The number of accidents on this trail have been reduced significantly since the changes were made. In preparation for the 2,000 Goodwill Games, race officials have requested an additional 60' width in this area. The new area would be 1.65 acres. It is felt the results to the skiing public would be very positive once again.

The pre approved area proposed in exchange would be:
Trail #47 - Calamity Lane (.9 acres) - 2,047 trees
Trail #23 - Portion of Lower Valley (800x50 or .92 acres) - 235 trees

Total Trees - 2,287

Note: The attached tree count for the proposed area is for 659 trees total.

Consequently, it is estimated that 1,628 less trees would be cut if this is approved.

Prepared By: **Comments:** Manager . Whiteface Mt. Ski Center

Date:

APPROVALS

Regional Forester

Date:

Reg. Dir./Division Director

Date:

Director of Lands and Forests

Date:

S. Conservation Dept.
Forestry Form No. 215

FIELD TALLY SHEET

District No. ________

County ESSEX

ner WHITEFACE MOUNTAIN — Unit No. ________ Date 3/25/99

s. ROUTE 86, WILMINGTON, NY 12997 — Tally by Chris Gallagher, Tom Cooper, Kim Hildreth

Timber marked on 165 acres

AIL:

ies	ASH	BIRCH	BEECH	MAPLE	BALSAM				Cordwd. Trees	D.B.H.
L.S. / H.		21			147 / 635					
6		79			131					6
8		31			35					8
10		33			26					10
12		10			11					12
14										14
16										16
18										18
20										20
22										22
24										24
26										26
28										28
30										30
32										32
34										34
										36

Total Trees 659

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF LANDS AND FORESTS

Forest Preserve Project Work Plan
for
Construction of New Facilities and Expansion or
Modification of Existing Facilities

FY 1999,00

Region / Facility	**Project Title & Location**	**Project N0.**
5/ Whiteface Mountain Ski Center Wimington, NY 12997	Trail Improvements Excelsior. Lower Northway	WFMT-99-3

Description & Justification (Attached Map or Sketch Showing Location)

Some of the most demanding Intermediate ski traffic occurs on Upper Excelsior and Lower Northway. A large percentage of these skiers originate from the summit of little Whiteface. The construction of a Gondola, planned for this summer, will add to the traffic. It is felt that a minor adjustment of approximately(225'x50' or .26 acres) on Excelsior and the widening of Lower Northway (800'x40' or .73 acres) will help mitigate the traffic problem. It is proposed that the Pre Approved UMP trail sections Upper Catwalk (.2 acres), a section of Runner Up (.1 acres)and a section of Upper Cloudspin approximately (700'x40' or.64 acres) be exchanged for the new cuts. The exchange is nearly equal. and will provide a safer mountain for all.

The tree count approved in the UMP for the territory we are proposing to exchange is far greater than the new cuts we are proposing. The UMP shows approval for the following tree cuts:
Trail #66 - Upper Catwalk - 1,610 trees
Trail #42 - Runner Up - 175 trees
Trail #1 - Upper Cloudspin - 891 trees(Section estimated at 58%)

Note: The attached tree count for the proposed exchange is for 506 trees total.

Prepared By: [signature] | **Comments:** Manager Whiteface Mt Ski Center

Date: 3/23/99

APPROVALS

Regional Forester

Date:

Reg. Dir./Division Director

Date:

Director of Lands and Forests

Date:

S. Conservation Dept.
Forestry Form No. 215

FIELD TALLY SHEET

District No. ______

County ESSEX

ner WHITEFACE MOUNTAIN Unit No. ______ Date 3/4/99

ess: ROUTE 86, WILMINGTON, NY 12997 Tally by RON ROSIO

Timber marked on .73 acres LOWER NORTHWAY

AIL:

ies	STRIPED MAPLE	BIRCH	BEECH	CHERRY	BALSAM			
3"	10	10		30	73			3
4"	9	11		27	43			4
6	7	18		4	41			6
8	1	23			6			8
10		13			1			10
12		12						12
14		4						14
16	TOTAL 27	91		81	104			16
18				303				18
20								20
22								22
24								24
26								26
28								28
30								30
32								32
34								34
								36

S. Conservation Dept. FIELD TALLY SHEET District No. ______

Forestry Form No. 215 County ESSEX

ar WHITEFACE MOUNTAIN Unit No. ______ Date 3/3/99

ess: ROUTE 86, WILMINGTON, NY 12997 Tally by PAT Doyle

Timber marked on .26 acres

IL:

	STRIPED Maple [redacted]	BIRCH	[redacted]	[redacted]	BALSAM	CHERRY	
3"	2	12			40		3
4"	16	40			22	17	4
6	11	8			12		6
8		7			12		8
10		4					10
12							12
14							14
16	TOTAL 29	71			86	17	16
18							18
20			203				20
22							22
24							24
26							26
28							28
30							30
32							32
34							34
							36

New York State Department of Environmental Conservation
Office of Natural Resources, Region 5
Lands & Forests
PO Box 296, Route 86, Ray Brook, NY 12977
(518) 897-1291 FAX: (518) 897-1370

John P. Cahill
Commissioner

June 17, 1999

Mr. Jay Rand, Manager
Whiteface Mountain Ski Center
Route 86, Box 1980
Wilmington, NY 12997

RE: Whiteface Mountain UMP Proposed Amendments

Dear Jay:

Attached are copies of the UMP amendments forwarded to the Adirondack Park Agency (APA) on June 3. Also included is the SEQR Negative Declaration that was published in the Environmental Notice Bulletin on June 9.

I met with Chuck Scrafford last week and he will try to get the package on the next available APA agenda.

Also, thank you for allowing us access to the Whiteface Veteran's Memorial Highway on June 8 with officials from the Italian National Park Service. As always, your staff was very courteous and helpful.

Sincerely,

James R. Papero
Senior Forester - Forest Preserve

JRP/cmt
Attachments

New York State Department of Environmental Conservation
Office of Natural Resources, Region 5
Route 86 – P.O. Box 296, Ray Brook, New York 12977
Phone: (518) 897-1276 FAX: (518) 897-1370

+/ 4

John P. Cahill
Commissioner

June 3, 1999

Mr. Charles Scrafford
Supervisor of Regional Planning
Adirondack Park Agency
Route 86, PO Box 99
Ray Brook, NY 12977

Re: Whiteface Mountain Ski Center Unit Management Plan Amendments

Dear Chuck:

Enclosed are proposed amendments to the Whiteface Mountain Ski Center Unit Management Plan for Adirondack Park Agency review and approval under the terms and conditions of the Adirondack Park State Land Master Plan.

Two of the amendments deal with trail widening on the Upper Excelsior-Lower Northway and Skyward ski trails. A third amendment addresses the designation and establishment of four (4) emergency evacuation routes to the proposed Gondola line.

A Negative Declaration was submitted to the Environmental Notice Bulletin on June 1, 1999.

Thank you for your assistance.

Sincerely,

Tom

Thomas H. Wahl
Supervisor of Natural Resources

THW/JRP/cmt
Enclosure

Applicant: NYS DEC Region 5, Division of Fish
Lawrence E. Strait, Regional Fisheries Mgr.
PO Box 296
Ray Brook, NY 12977
Office: APA/5
Contact: Richard D. Jarvis/Lawrence E. Strait
SEQR: 3 **SHPA:** -
Last Filing Date: 6/24/99
Project Location: Town of Santa Clara
Project Description: The project site is Little Green Pond, its inlet and outlet to confluence with Little Clear Pond on lands under water, surrounded by Saranac Lake Wild Forest and St. Regis Canoe Area per the Adirondack Park State Land Master Plan.

Regulated activity involving wetlands: Proposed use of pesticide rotenone (EPA 432-112) at a concentration of 1.0 ppm to eliminate undesirable fish in Little Green Pond. Treatment will occur in 1999 or 2000 after any osprey chicks have fledged or during open water season if nesting is unsuccessful. There will be water use restrictions during and after treatment. After natural detoxification, the pond will be restocked with trout and used as a broodstock pond. This is the third reclamation of the pond. Use of bait fish are prohibited at the pond.

Permit: Freshwater Wetlands Act and 9 NYCRR Part 578. Adirondack Park Agency Project 99-118.

SEQR NOTICES

Negative Declaration

Essex County - The NYS DEC, as lead agency, has determined **that three proposed amendments to the Unit Management Plan for the Whiteface Mountain Ski Center**, will not have a significant environmental impact.

This action involves the NYS DEC adopting three proposed amendments to the 1996 Unit Management Plan Update and Amendment for the Whiteface Mountain Ski Center under the terms and guidelines established by the Adirondack Park State Land Master Plan. Two of the proposed amendments address widening of the Upper Excelsior-Lower Northway and Skyward Ski Trails. A third amendment addresses the need for four (4) emergency evacuation routes to access the 8,600 foot long Gondola line.

Amendment Number One (Excelsior-Lower Northway Trail) involves exchanging pre-approved UMP trail sections on Trail #66-Upper Catwalk, Trail #01-Upper Cloudspin and Trail #42-Runner Up for a new section of trail approximately 225'x50' (0.26 acres) on Excelsior and a new section of trail approximately 300'x40' (0.73 acres) on Lower Northway. The purpose of this amendment is to widen these trails to improve traffic flow and safety for skiers originating from the summit of Little Whiteface and anticipated traffic from the Gondola Line when operational. The exchange is nearly equal in size to earlier proposals. The number of trees to be cut (506 trees) represents a reduction of 2,170 trees from earlier proposals.

Amendment Number Two (Skyward Trail) involves exchanging pre-approved UMP trail sections on Trail #47-Calamity Lane and Trail # 23-Portion of Lower Valley for a new section of trail on Skyward approximately 800'x180' (1.65 acres). An earlier approved amendment to the UMP had widened the uppermost section of the Skyward Trail from 40 feet to 120 feet in preparation of the 1998 Gold Cup Ski Team Downhill Event. Results were excellent and provided for a much improved downhill race and recreational ski trail. The number of accidents on this trail has been reduced significantly since the trail was widened. Race officials for the Year 2000 Goodwill Games have requested this trail be widened an additional 60 feet to a total width of 180 feet, well within the maximum 200 feet trail width prescribed by constitutional amendment. The latter encompasses an area of 1.65 acres and requires the removal of 659 trees. This number represents a net reduction of 1,628 trees to be cut from earlier proposals.

Amendment Number Three (Emergency Evacuation Routes to the Gondola Line) involves the designation and construction of four (4) emergency trails, 12-15 feet in width to access the Gondola Line for rescue operations in case of a Gondola failure or problem. The NYS Dept. of Labor is requiring these routes for emergency use prior to lift opening. Section #1 is 590 feet long and requires 48 trees to be cut and, Section #2 is 2,100 feet long and requires 472 trees to be cut. Sections #3 (230 feet long) and #4 (210 feet long) utilize old service roads and require no tree cutting, only minor brushing.

The project location is in the Town of Wilmington, Rt. 86, Essex County, New York State Forest Preserve, on lands classified by the Adirondack Park State Land Master Plan as intensive use (Whiteface mountain Ski Center). This area is operated by the Olympic Regional Development Authority (ORDA) pursuant to enabling law and agreements with the NYS DEC.

Contact: Thomas H. Wahl, Supervisor of Natural Resources, NYS DEC, Rt. 86, Box 296, Ray Brook, NY 12977 (518) 897-1200.

PROPOSED AMENDMENTS
WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN
May, 1999

These amendments to the Whiteface Mountain Ski Center Unit Management Plan of 1996 address widening of the Upper Excelsior - Lower Northway and Skyward ski trails and new construction of four (4) emergency evacuation routes to the 8,600 feet Gondola Line.

Each action is described in detail as follows:

1. Upper Excelsior - Lower Northway Ski Trail:

Some of the most demanding intermediate ski traffic occurs on these trails. A large proportion of these skiers originate from the summit of Little Whiteface. Completion of the Gondola planned for this summer will add to more skier traffic. It is felt that a minor adjustment of approximately 225'x50' or 0.26 acres on Excelsior and the widening of Lower Northway (800'x40' or 0.73 acres) will help mitigate the traffic problem and improve safety.

It is proposed that the pre-approved UMP trails sections for Upper Catwalk (0.2.acres), a section of Runner Up (0.1 acres), and a section of Upper Cloudspin approximately (700'x40' or 0.64 acres) be exchanged for the new cuts. The exchange is nearly equal in total area and will provide for a safer mountain for all.

The proposed tree count approved in the UMP for Upper Catwalk, Upper Cloudspin, and Runner Up is far greater than the new cuts proposed in the exchange.. The UMP shows approval for the following tree cuts:

Trail #66 - Upper Catwalk	1,610 trees
Trail #01 - Upper Cloudspin	891 trees
Trail #42 - Runner Up	175 trees
	2,676 trees

The tree count for the proposed exchange is for 506 trees total. This means that 2,170 less trees will have to be cut.

2. Skyward Trail

In preparation of the 1998 Gold Cup US Ski Team Downhill Event, an earlier amendment to the UMP addressed widening the uppermost 1,200 feet of this trail from 40 feet to 120 feet. Results were excellent and provided for a much improved downhill race and recreational trail. The number of accidents on this trail was reduced significantly since the trail was widened. In preparation for the 2,000 Goodwill Games, race officials have requested this trail be widened an additional 60 feet. This would encompass a total area of 1.65 acres and create a new trail width of 180 feet, well within the 200 feet guidelines set by constitutional amendment.
This proposal exchanges UMP pre-approved trail sections and tree cuts for the following:

Trail #47 - Calamity Lane (0.9 acres) -	2,047 trees
Trail #23 - Portion of Lower Valley ((800'x50' or 0.92 acres) -	235 trees
	2,287 trees

The tree count for the proposed area is 659 trees. This means that 1,628 less tress will have to be cut.

3. Gondola Emergency Evacuation Routes

In conjunction with the installation of the pre-approved 8,600 feet Gondola line, ORDA proposes to designate and construct four (4) evacuation trails, 12-15 feet in width to access the Gondola line for rescue operations in case of a Gondola failure or problems. It will be critical to reach multiple locations along the line simultaneously in case of a manual evacuation or emergency.. The Department of Labor requires these be included in the evacuation preplan prior to lift opening.

These are referenced as:

Section	Length (ft.)	#Trees to be Cut
1	590 .	48
2	2,100	472
3	230	*
4	210	*

* Sections 3 and 4 are old service roads and do not require any tree cutting over 3 inches. Only minor brushing will be required..

Sketch maps and tree counts for each amendment attached.

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
ADIRONDACK PARK AGENCY
P.O. Box 99, Route 86
RAY BROOK, NEW YORK 12977
(518) 891-4050
FAX: (518) 891-3938

To: Jay Rand
Chris Conway
Jay

July 20, 1999

Mr. Ted T. Blazer
President and CEO
Olympic Regional Development
Authority
Lake Placid, NY 12946

Dear Mr. Blazer:

Re: Whiteface Mountain Ski Area
Unit Management Plan/Update

I am pleased to advise you that at its July 9 meeting, the Agency determined that amendments to the above referenced unit management plan comply with the guidelines and criteria of the Adirondack Park State Land Master Plan. I have enclosed the Agency's resolution.

If we can be of any further assistance on this or any other matters, please feel free to give me a call.

Sincerely,

Daniel T. Fitts
Daniel T. Fitts
Executive Director

DTF:jsb:P:csz
Enclosure
cc: Agency Members and Designees

STATE OF NEW YORK
EXECUTIVE DEPARTMENT

ADIRONDACK PARK AGENCY

P.O. Box 99, Route 86
RAY BROOK, NEW YORK 12977
(518) 891-4050
FAX: (518) 891-3938

To Jerry Round
Cc: Chris Cona

RESOLUTION ADOPTED BY THE ADIRONDACK PARK AGENCY WITH RESPECT TO WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN

July 9, 1999

WHEREAS, Section 816 of the Adirondack Park Agency Act directs the Department of Environmental Conservation 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, under the authority of its management agreement with the Department of Environmental Conservation, has prepared a unit management plan for the Whiteface Mountain Ski Center Intensive Use Area, which the Agency on June 14, 1996, found complied with the State Land Master Plan, and

WHEREAS, the Department of Environmental Conservation with the concurrence of the Olympic Regional Development Authority, now proposes to amend the Unit Management Plan to eliminate:

a)	Upper Catwalk (Trail #66)	- 0.2 acres
b)	Runner Up (Trail #42)	- 0.1 acres
c)	Upper Cloudspin (Trail #1)	- 0.64 acres
d)	Calamity Lane (Trail #47)	- 0.9 acres
e)	Portion of Lower Valley (Trail #23)	- 0.92 acres

and instead propose to widen the Excelsior Trail (0.26 acres), the Lower Northway Trail (0.73 acres), and the Skyward Trail (1.65 acres), and to construct four emergency evacuation routes for the gondola authorized in the 1996 Unit Management Plan, and

WHEREAS, the Department of Environmental Conservation prepared a Negative Declaration pursuant to ECL §8-0109(4) and 6 NYCRR Parts 617 and 618, with respect to the proposed plan; and

WHEREAS, the Agency is requested to determine whether the proposed amendment of the Whiteface Mountain Ski Center Unit Management Plan complies with the general guidelines and criteria of the Adirondack Park State Land Master Plan; and

WHEREAS, the Adirondack Park Agency has reviewed the Whiteface Mountain Ski Center Unit Management Plan amendment;

NOW, THEREFORE, BE IT RESOLVED that the Adirondack Park Agency determines that the proposed amendment to the Whiteface Mountain Ski Center Unit Management Plan as described above complies with the guidelines and criteria of the Adirondack Park State Land Master Plan including the Guidelines for Management and Use of Intensive Use Areas, and

BE IT FINALLY RESOLVED that the Adirondack Park Agency authorizes its Executive Director to advise the Commissioner of Environmental Conservation and Chief Executive Officer of the Olympic Regional Development Authority of the Agency's determination.

CWS:nmh:csz

Ayes: Agency Chairman Richard H. Lefebvre, Agency Members James C. Frenette, Katherine Roberts, James Townsend, Frank Mezzano, William Kissel and Cecil Wray; Designee Stuart Buchanan, Department of Economic Development; Designee Richard L. Hoffman, Department of State

Nays:

Abstentions:

Recused and Not Present: Greg Caito, Designee, Department of Economic Development

Absent:

Whiteface
THE OLYMPIC MOUNTAIN

Administration Fax 518-946-7400
Marketing Fax 518-946-4335
email: info@orda.org

April 29, 1997

Mr. Thomas H. Wahl, Regional Forester
NYS Department of Environmental Conservation
PO Box 296, Route 86
Ray Brook, NY 12977 - 0296

Dear Tom :

Thank you for your site visitation today along with Chuck Scrafford. I appreciate the time and effort that you put forth in studying the Skyward Downhill. (Project # WF - 97 - 1) As you requested I have reviewed the trail space involved which I have sketched in and coded on the attached topographical map.

In unison with our site review and modifications I have recalculated the terrain involved accordingly:

New Cuts - Top Section of Skyward 1200' x 40' = 48,000 Sq.'
- Crossover Section to Chair Lift 250' x 10' = 2,500 Sq.'
- Island/ 180° Turn Section 125' x 125' = 15,625 Sq.'
- Crossover to Lower Cloudspin 195' x 120 = 23,400 Sq.'
- Side of Lower Cloudspin (Victoria) 900' x 40' = 36,000 Sq.'

Total Sq.' = 125,525' or 2.9 Acres

We are requesting an exchange of proposed trail 4a, which is 3 Acres and is located between Lower Cloudspin and Skyward, as is indicated on attached UMP pg. 164 and marked on the attached map.

Again, thank you for this consideration and time spent on this project. I look forward to your response.

Yours Truly,

Jay Rand
General Manager
Whiteface Mt. Ski Center

Route 86 ❄ P.O. Box 1980 ❄ Wilmington, NY ❄ 12997 ❄ 518-946-2223
Operated by the Olympic Regional Development Authority

						ACRES	
#4	Skyward (Lower)	3800'	125'	*	*[1]	10.9	Advanced
	New	300'	25'		*	0.2	Advanced
#4a	New	1100'	120'	*		3.0	Advanced
#5	Paron's Run	1700'	100'	*		3.9	Intermediate
	New	900'	120'	*		2.5	Intermediate
#6	Excelsior	5500'	75'	*		9.5	Intermediate
	New	300'	25'	*		0.2	Intermediate
	New	200'	120'	*		0.6	Intermediate
	New	80'	30'	*		0.1	Intermediate
	New	400'	20'	*		0.2	Intermediate
	New	120'	30'	*		0.1	Intermediate
	New	80'	30'	*		0.1	Intermediate
#7	Essex	1000'	60'	*		1.4	Expert
	New	800'	25'	*		0.5	Expert
#8	Northway (Upper)	1000'	50'	*		1.1	Expert
	New	500'	50'	*		0.6	Expert
#9	Northway (Lower)	1700'	50'	*		2.0	Intermediate
	New	400'	70'	*		0.5	Intermediate
	New	300'	20'	*		0.2	Intermediate
#10	Connector (New)	900'	30'	*		0.6	Intermediate
#11	Approach	1900'	65'	*		2.8	Advanced
#12	Empire	1600'	50'	*		1.8	Expert
	New	650'	30'	*		0.4	Expert
#13	Mackenzie (Upper)	1000'	80'	*		1.8	Expert
	New	450'	35'	*		0.4	Expert
#14	Mackenzie (Lower)	300'	125'	*		0.9	Advanced
		1100'	100'	*		2.5	Advanced
	New	1000'	35'	*		0.8	Advanced
#14a	Glade	1500'	150'			5.2	Advanced

[1] Partial.

New Trails and Existing Trails to be Widened

Number of trees of various species and sizes to be removed in new and widened trails and other clearings.

Tree Species, Size (dbh)	Cloudspin (Upper) Trail - 1 (Phase-II)	Cloudspin (Lower) Trail - 2 (Phase-II)	Skyward (Lower) Trail - 4 (Phase-II)	New Trail - 4a (Phase-II)	Parons Run Trail - 5 (Phase-II)	Excelsior Trail - 6 (Phase-II)	Northway (Lower) Trail - 9 (Phase-II)	Connector Trail - 10 (Phase-II)
Balsam fir, >4"	1,008	798	95	1,330	546	800	304	266
3"-4"	1,248	1,428	170	2,380	676	1,200	544	476
Yellow birch, >4"	528	126	15	210	286	280	48	42
3"-4"	192	84	10	140	104	120	32	28
Red spruce, >4"	0	168	20	280	0	80	64	56
3"-4"	96	84	10	140	52	80	32	28
White birch, >4"	0	798	95	1,330	0	380	304	266
3"-4"	0	252	30	420	0	120	96	84
Striped maple, >4"	0	168	20	280	0	80	64	56
3"-4"	0	294	35	490	0	140	112	98
Cherry, >4"	0	168	20	280	0	80	64	56
3"-4"	0	210	25	350	0	100	80	70
Popular, >4"	0	126	15	210	0	60	48	42
3"-4"	0	252	30	420	0	120	96	84
Red pine, >4"	0	0	0	0	0	0	0	0
3"-4"	0	84	10	140	0	40	32	28
Red spruce, >4"	0	0	0	0	0	0	0	0
3"-4"	0	84	0	140	0	40	32	28
Sugar maple, >4"	0	126	15	210	0	60	48	42
3"-4"	0	0	0	0	0	0	0	0
American beech, >4"	0	42	5	70	0	20	16	14
3"-4"	0	0	0	0	0	0	0	0
White pine, >4"	0	0	0	0	0	0	0	0
3"-4"	0	0	0	0	0	0	0	0
Eastern hemlock, >4"	0	0	0	0	0	0	0	0
3"-4"	0	0	0	0	0	0	0	0
White ash, >4"	0	0	0	0	0	0	0	0
3"-4"	0	0	0	0	0	0	0	0
Red maple, >4"	0	0	0	0	0	0	0	0
3"-4"	0	0	0	0	0	0	0	0
ALL TREES >4"	1,536	2,520	300	4,200	832	1,840	960	840
ALL TREES 3"-4"	1,536	2,772	320	4,620	832	1,960	1,056	924
TOTALS:	3,072	5,292	620	8,820	1,664	3,800	2,016	1,764
AMOUNT OF CLEARING (Acres)	1.1	1.8	0.2	3.0	0.6	1.3	0.7	0.6

New York State Department of Environmental Conservation
Division of Lands and Forests
Policy and Planning Section - Room 410C
50 Wolf Road, Albany, New York 12233-4250
Telephone: (518) 457-4208 Fax: (518) 457-5438

946-0400

John P. Cahill
Acting Commissioner

TO: Jay Rand

FROM: Linda Kashdan Schrom

DATE: 6/3/97

NUMBER OF PAGES: 3 INCLUDING COVER PAGE

FOR VERIFICATION OR PROBLEMS: CALL (518) 457-4208

MESSAGE

Let me know how these neg. dec. looks. Please check for accuracy and feel free to make any comments. I'm working on the LEAF now and having a couple of people review the documents

Since ~~The~~ trees will be chipped

Some brush will be chipped on site.

617.21
Appendix F
State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Identifying # ______________

Project Number ______________ Date 6-2-97

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation as lead agency, has determined that the proposed action described below will not have a significant effect on the environment and a Draft Environmental Impact Statement will not be prepared.

Name of Action: An Amendment to the Unit Management Plan for the Whiteface Mountain Ski Center.

SEQR Status: Type 1 X
Unlisted ____

Conditioned Negative Declaration: ____ Yes
X No

Description of Action: The New York State Department of Environmental Conservation proposes to adopt an amendment to the Unit Management Plan for the Whiteface Mountain Ski Center which will allow for the widening of the Skyward downhill trail and new construction of a cross-over from the Skyward to the Cloudspin trail. This will meet standards established by the Federation of International Skiing.

The proposal involves exchanging approximately three acres of land approved for widening under the approved Unit Management Plan Update and Amendment, dated July 1996, for approximately three acres of land not previously approved. This will allow for widening in various places along the length of the Skyward trail and the lower portion of the Cloudspin trail for downhill ski racing.

The action proposed will enhance and provide a safer area for public skiing. By widening the trail more skiers and snow boarders can be accommodated. The widening will aid in the securing of a variety of national and international competitions.

The project will also involve relocating some existing power lines, snowmaking lines and the installation of some safety netting.

The new cuts will require the removal of 634 trees, more than three inches in diameter, on approximately three acres.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

Town of Wilmington, Route 86, Essex County, New York State Forest Preserve lands classified as the Whiteface Mt. Ski Center.

Reasons Supporting This Determination:
(See 617.6(g) for requirements of this determination; see 617.6(h) for Conditioned Negative Declaration)

This action requires the removal of significantly fewer trees than had been approved in the Unit Management Plan. The 4,200 trees, more than three inches in diameter previously approved for removal in the Unit Management Plan will not be cut.

Although there will be disturbance to the underlying soil, erosion is not anticipated to be a problem. An erosion and sediment control plan will be implemented. This will include the staging of construction so that the total area exposed at anyone time is minimal. All disturbed areas will be seeded and mulched immediately after final grades are established. Structural measures include: filter fabric fences, erosion control blanket, and staked hay bales, where appropriate. In other projects involving new trail construction and widening of existing trails on Whiteface Mountain, erosion has been controlled and projects successfully completed.

There are no wetlands or significant habitats, or known rare, threatened, or endangered plant species identified in or adjacent to the project area. There are also no known archaeological resources in or adjacent to the project area.

Some brush, and small trees
~~The trees~~ will be chipped on site. Some of the material will be used for fill on the trails, and some for firewood on site.

If Conditioned Negative Declaration, provide on attachment the specific mitigation measures imposed.

For Further Information:

Contact Person: Thomas Wahl, Regional Forester

Address: NYS DEC
Route 86
Ray Brook, NY 12977-0296

Telephone Number: (518) 897-1200

For Type 1 Actions and Conditioned Negative Declarations, a Copy of this Notice Sent to:
Commissioner, Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233-0001
Appropriate Regional Office of the Department of Environmental Conservation
Office of the Chief Executive Officer of the political subdivision in which the action will be principally located.
Applicant (if any)
Other involved agencies (if any)

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 unmeasureable. 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.

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

Amendment of the Unit Management Plan for the Whiteface Mountain Ski Center
Name of Action

New York State Department of Environmental Conservation
Name of Lead Agency

Thomas Wahl	Regional Forester
or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Thomas Wahl by LKS	Peter Grupe by LKS
ature of Responsible Officer in Lead Agency	Signature of Preparer (If different from responsible officer)

6/4/97
Date

5. Approximate percentage of proposed project site with slopes: ☐0-10% ______ % ☐10-15% ______ % ☐15% or greater 100 %

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

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? N/A (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 Natural Heritage Program
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 ski slope

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

15. Streams within or contiguous to project area: N/A
a. Name of Stream and name of River to which it is tributary ______

16. Lakes, ponds, wetland areas within or contiguous to project area:
a. Name N/A 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: 3 acres initially; 3 acres ultimately.
   c. Project acreage to remain undeveloped ______ acres.
   d. Length of project, in miles: N/A (If appropriate)
   e. If the project is an expansion, indicate percent of expansion proposed 1.7 %;
   f. Number of off-street parking spaces existing N/A; proposed ______.
   g. Maximum vehicular trips generated per hour N/A (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 N/A height; N/A width; N/A length.
   j. Linear feet of frontage along a public thoroughfare project will occupy is? N/A ft.

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	Adir. Park Agency	6/97
State Agencies	☒Yes	☐No	NYS DEC	5/97
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 ☐special use permit ☐subdivision ☐site plan
   ☒new/revision of master plan ☐resource management plan ☐other ______

2. What is the zoning classification(s) of the site? forest preserve - intensive use
3. What is the maximum potential development of the site if developed as permitted by the present zoning?

   N/A

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

   Ski Center

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?

   forest preserve - intensive use

8. Is the proposed action compatible with adjoining/surrounding land uses within a ¼ mile? ☒Yes ☐No
9. If the proposed action is the subdivision of land, how many lots are proposed? N/A

   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 NYS DEC Date 5/29/97

Signature Peter Frueze by LK Title Supervising Forester

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

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

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated By Project Change
• 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 Agricultutal District, more than 2.5 acres of agricultural land.	☐	☐	☐Yes ☐No
• 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? ☒NO ☐YES (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)			
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, pre-historic 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
• 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?			
Examples that would apply to column 2 ☐NO ☒YES			
• 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: will improve recreational opportunities	☒	☐	☐Yes ☐No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated By Project Change
NOISE AND ODOR IMPACTS			
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
IMPACT ON PUBLIC HEALTH			
18. Will Proposed Action affect public health and safety? ☒NO ☐YES			
Examples that would apply to column 2			
• 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 liquified 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
• 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 environmental 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

New York State Department of Environmental Conservation
Division of Lands and Forests
Policy and Planning Section - Room 410C
50 Wolf Road, Albany, New York 12233-4250
Telephone: (518) 457-4208 Fax: (518) 457-5438

John P. Cahill
Acting Commissioner

MEMORANDUM

To: Jay Rand

From: Linda Kashdan-Schrom

Date: June 12, 1997

Subject: Amendment of the Unit Management Plan for Whiteface Mountain Ski Center

Attached is the finalized Negative Declaration and a copy of the listing of the project from the Environmental Notice Bulletin. (June 11,1997 issue). A copy of the Negative Declaration can go out to the public, but please don't send the Long Environmental Assessment Form out. It's an internal Department document that you may find helpful if you ever need to amend the Unit Management Plan again.

attachment

SEQR NOTICES

Negative Declaration

Essex County - The NYS DEC, as lead agency, has determined that the proposed **Amendment to the Unit Management Plan for the Whiteface Mountain Ski Center**, will not have a significant environmental impact.

The action involves the NYS DEC adopting an amendment to the Unit Management Plan for the Whiteface Mountain Ski Center which will allow for the widening of the Skyward downhill trail and new construction of a cross-over from the Skyward to the Cloudspin trail. This will meet standards established by the Federation of International Skiing.

The proposal involves exchanging approximately three acres of land approved for widening under the approved Unit Management Plan Update and Amendment, dated July 1996, for approximately three acres of land not previously approved. This will allow for widening in various places along the length of the Skyward trail and the lower portion of the Cloudspin trail for downhill ski racing.

The action proposed will enhance and provide a safer area for public skiing. By widening the trail more skiers and snow boarders can be can be accommodated. The widening will aid in the securing of a variety of national and international competitions. The project will also involve relocating some existing power lines, snowmaking lines and the installation of some safety netting. The new cuts will require the cutting of 634 trees, more than three inches in diameter, on approximately three acres.

The project is located in the Town of Wilmington, Rt 86, Essex County, New York State Forest Preserve lands classified as the Whiteface Mountain Ski Center.

Contact: Thomas Wahl, NYS DEC, Rt 86, Ray Brook, NY 12977-0296, (518)897-1200

Essex County - The Town of Chesterfield, as lead agency, has determined that the proposed **Enactment of the Zoning Law for the Town of Chesterfield**, will not have a significant environmental impact.

The action involves the enactment of the Zoning Law for the Town of Chesterfield, Essex County, New York. Negative Declaration issued as Zoning Law does not increase Adirondack Park allowable land use intensity, based on land capability and environmental impacts; zoning provides "permitted uses" and "special permit uses", latter of which requires case by case review and SEQRA compliances; Zoning Law deals with impacts on land, water agricultural, aesthetic resources, historic and archeological resources, open space, recreation and growth and character of community so that there would be no adverse impacts. The project is located in the entire Town of Chesterfield, Essex County.

Contact: Gerald H. Morrow, PO Box 456, Keeseville, NY 12944, (518)834-9042

For Additional Negative Declaration

See Statewide Section

Draft Generic EIS and Public Hearing

Washington County - The Town of Kingsbury Town Board, as lead agency, has accepted a Draft Generic EIS on the proposed **Amendments to the Town of Kingsbury Zoning Law**, a Type I action. Comments are requested on the Draft Generic EIS and will be accepted by the contact person until **July 15, 1997**.

A public hearing on the Draft Generic EIS will be held on **June 25, 1997 at 7:00pm** at the Town of Kingsbury Town Hall, 210 Main St, Hudson Falls, NY.

The action includes the amendment of the Town's zoning law, specifically, the creation of 5 land use designations, each with use, area & bulk regulations. They are:

RF-5A (Residential Forestry). This zone encompasses two separate areas and approximately 2000 acres of land. This designation's minimum lot size is 5 acres. It replaces Agricultural zoning;

RA-M-1A Residential-Agricultural). This zone encompasses three separate areas and approximately 420 acres of land. This designation's minimum lot size is 1 acre. It replaces Agricultural zoning;

LDR-25 Low Density Residential). This zone encompasses approximately 980 acres. Its minimum lot size is 25,000sf. It replaces Agricultural and R-15 zoning;

LDR-15 (Low Density Residential). This zone encompasses approximately 18 acres. Its minimum lot size is 15,000sf. It replaces R-10 zoning;

Ind-75 (Industrial). This zone encompasses three separate areas and approximately 1500 acres. Its minimum lot size is 75,000sf. It replaces Industrial and Agricultural zoning.

Contact: Thomas Gentile, Zoning Administrator, Town of Kingsbury, 210 Main St, Hudson, Falls, NY 12839, (518)747-2188

Draft Supplemental EIS and Public Hearing

Saratoga County - Town of Moreau Planning Board, as lead agency, has accepted a Draft SEIS on the proposed **Spurlock Adhesives, Inc. — Construction and operation of an adhesives manufacturing plant on Lot 3 within the Moreau Industrial Park.** Comments are requested on the Draft SEIS and will be accepted by the contact person until **the close of business on Thursday, July 17, 1997.**

A public hearing on the Draft SEIS will be held on **June 23, 1997 at 7:00 pm** at the Town of Moreau Town Hall at 61 Hudson Street, South Glens Falls, New York.

The action involves construction and operation of an adhesives manufacturing plant on Lot 3 within the Moreau Industrial Park which Industrial Park was previously the subject of a Final Generic Environmental Impact Statement and associated SEQR Findings Statement dated September 10, 1991 concerning the initial rezoning and development of the Park. The project is located at Lot 3, Moreau Industrial Park, Bluebird Rd, South Glens Falls, (T/ Moreau, Co./Saratoga), NY 12803.

Contact: Hon. G. Peter Jensen, Chairman, Town of Moreau Planning Board, Town Hall, 61 Hudson Street, South Glens Falls, NY 12803

617.21
Appendix F
State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Identifying # 97-PL/FP-5-13

Project Number ____________ Date 6-2-97

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation as lead agency, has determined that the proposed action described below will not have a significant effect on the environment and a Draft Environmental Impact Statement will not be prepared.

Name of Action: An Amendment to the Unit Management Plan for the Whiteface Mountain Ski Center.

SEQR Status: Type 1 X
Unlisted ____

Conditioned Negative Declaration: ____ Yes
X No

Description of Action: The New York State Department of Environmental Conservation proposes to adopt an amendment to the Unit Management Plan for the Whiteface Mountain Ski Center which will allow for the widening of the Skyward downhill trail and new construction of a cross-over from the Skyward to the Cloudspin trail. This will meet standards established by the Federation of International Skiing.

The proposal involves exchanging approximately three acres of land approved for widening under the approved Unit Management Plan Update and Amendment, dated July 1996, for approximately three acres of land not previously approved. This will allow for widening in various places along the length of the Skyward trail and the lower portion of the Cloudspin trail for downhill ski racing.

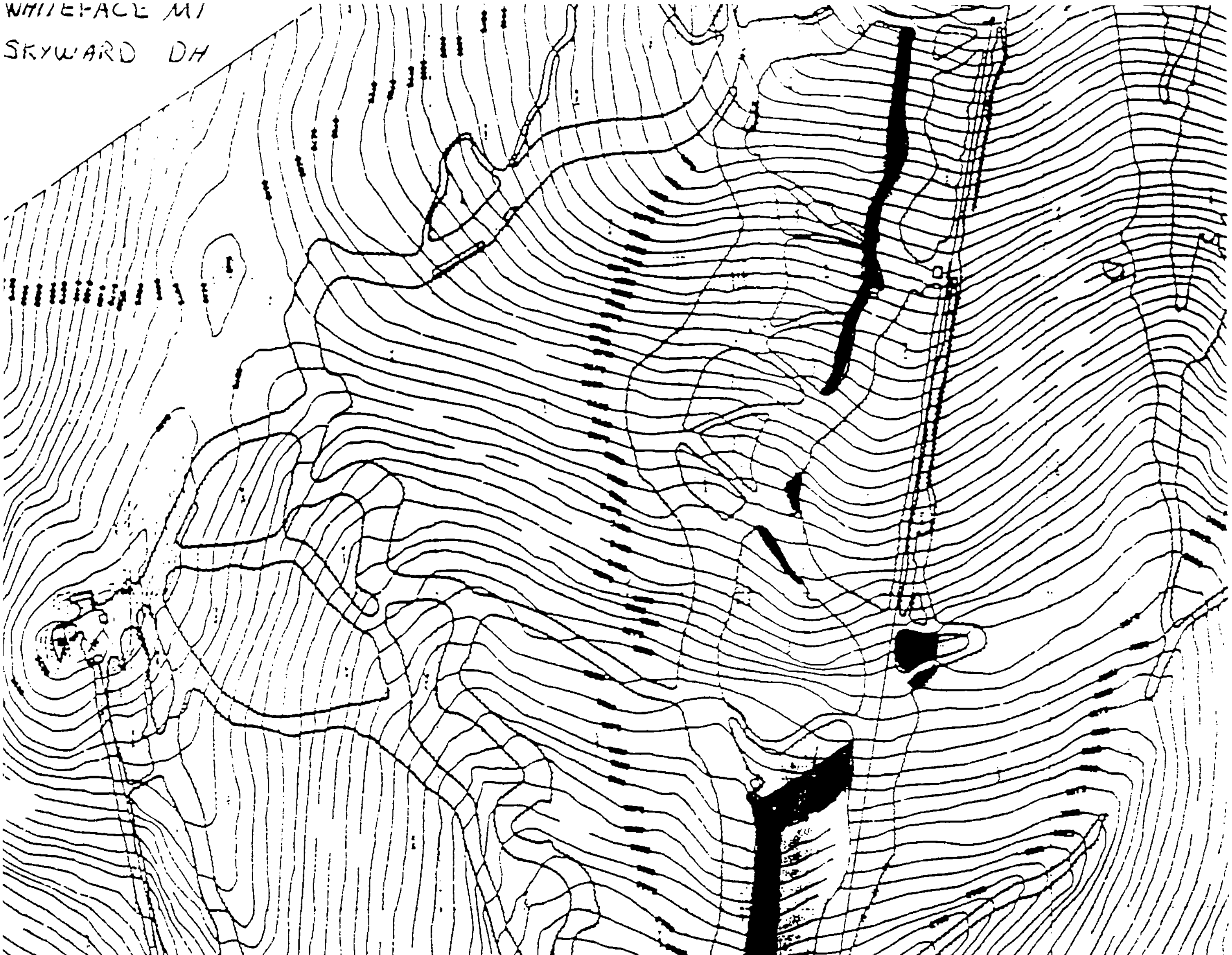
The action proposed will enhance and provide a safer area for public skiing. By widening the trail more skiers and snow boarders can be accommodated. The widening will aid in the securing of a variety of national and international competitions.

The project will also involve relocating some existing power lines, snowmaking lines and the installation of some safety netting.

The new cuts will require the cutting of 634 trees, more than three inches in diameter, on approximately three acres.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

Town of Wilmington, Route 86, Essex County, New York State Forest Preserve lands classified as the Whiteface Mt. Ski Center.


WHITEFACE MT
SKYWARD DH

Land

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
ADIRONDACK PARK AGENCY
P.O. Box 99, Route 86
RAY BROOK, NEW YORK 12977
(518) 891-4050
FAX: (518) 891-3938

M E M O R A N D U M

TO: Agency Members and Designees

FROM: Charles W. Scrafford CWS

DATE: July 2, 1997

SUBJECT: Amendment To The Whiteface Mountain Ski Center Unit Management Plan

Attached for your approval is an amendment to the Whiteface Mountain Ski Center Unit Management Plan. A comprehensive update of the unit management plan for the Whiteface Mountain Ski Center was completed and approved by the Agency on June 14 1996. Page 164 of that plan calls for the construction of a trail designated 4a between the Lower Cloudspin and Skyward trails. This proposed trail was approximately three acres in size and would have involved the cutting of over 4,800 trees. The proposed amendment eliminates proposed trail 4a and replaces it with modifications to both the Cloudspin and Skyward trails and the construction of a crossover tail between the Cloudspin and Skyward trails. The total disturbed area of the proposed new trail alignment will be 2.9 acres and will require the cutting of 643 trees more than three inches in diameter. As stated in the proposed amendment, the new trail configuration is necessary to meet the Federation of International Skiing requirements for competition and will improve recreational skiing. The amendment will necessitate relocation of some power lines and snow making water lines, as well as the installation of safety netting. The resulting trail widths will be in compliance with constitutional limits.

A negative declaration concerning the amendment was published in the Environmental Notice Bulletin on June 11, 1997 (attached). In addition, comments were solicited from the parties (list attached) commenting on the 1996 comprehensive revision of the Unit Management Plan. As of the requested date for comments, June 27, 1997, no comments were receive.

Staff recommends the Agency find the amendment consistent with the SLMP. A resolution is attached for your consideration.

CWS:hs:csz6.1
Attachments

New York State Department of Environmental Conservation

Division of Lands and Forests
Route 86 - Ray Brook, NY 12977-0296
Tel.: (518) 897-1278, Fax: (518) 897-1370

John P. Cahill
Acting Commissioner

RECEIVED
JUN 30 1997
ADIRONDACK PARK AGENCY

June 27, 1997

Mr. Charles Scrafford
Regional Supervisor of Planning
Adirondack Park Agency
Route 86, P.O. Box 99
Ray Brook, NY 12977

Dear Chuck:

The enclosed amendment to the Whiteface Mountain Ski Center Unit Management Plan is hereby being submitted for Adirondack Park Agency approval. A Negative Declaration was published in the Environmental Notice Bulletin on June 11, 1997.

Interested parties relative to the development of the Unit Management Plan were afforded the opportunity to submit written comments relative to this amendment. No comments were received.

Sincerely,

Thomas H Wahl

Thomas H. Wahl, C.F.
Regional Forester

THW:PG:mb
Enclosure

MANAGEMENT AMENDMENT PLAN UNIT
WHITEFACE MOUNTAIN SKI CENTER

ACTION SUMMARY STATEMENT

This amendment to the Unit Management Plan for the Whiteface Mountain Ski Center allows for the widening of the Skyward downhill trail and new construction of a cross-over from the Skyward to the Cloudspin trail.

Approximately three acres of land approved for widening Trail 4a under the approved Unit Management Plan (UMP page 164), dated July 1996, will be exchanged for approximately three acres of land not previously approved. Widening will occur at five locations along the length of the Skyward trail and the lower portion of the Cloudspin trail (see listing below). Some of the existing power lines and snowmaking lines will be relocated. Additional safety netting will be installed.

NEW CUTS	- Top section of Skyward; 1,200' X 40'	= 48,000 sq. ft.
	- Crossover Section to Chair Lift; 250' X 10'	= 2,500 sq. ft.
	- Island/180 Degree Turn Section; 125' X 125'	= 15,625 sq. ft.
	- Crossover to Lower Cloudspin; 195' X 120'	= 23,400 sq. ft.
	- Side of Lower Cloudspin (Victoria); 900' X 40	= 36,000 sq. ft.
	Total Sq. Ft.	= 125,525 or 2.9 Acres

This action is needed to meet standards established by the Federation of International Skiing and will aid in securing a variety of national and international competitions. In addition, this action will provide a safer area for public skiing.

This amendment will necessitate the cutting of 634 trees, more than three inches in diameter. However, the 4,200 trees, more that three inches in diameter previously approved under the Unit Management Plan for removal, will not be cut.

SEQR NOTICES

Negative Declaration

Essex County - The NYS DEC, as lead agency, has determined that the proposed **Amendment to the Unit Management Plan for the Whiteface Mountain Ski Center**, will not have a significant environmental impact.

The action involves the NYS DEC adopting an amendment to the Unit Management Plan for the Whiteface Mountain Ski Center which will allow for the widening of the Skyward downhill trail and new construction of a cross-over from the Skyward to the Cloudspin trail. This will meet standards established by the Federation of International Skiing.

The proposal involves exchanging approximately three acres of land approved for widening under the approved Unit Management Plan Update and Amendment, dated July 1996, for approximately three acres of land not previously approved. This will allow for widening in various places along the length of the Skyward trail and the lower portion of the Cloudspin trail for downhill ski racing.

The action proposed will enhance and provide a safer area for public skiing. By widening the trail more skiers and snow boarders can be can be accommodated. The widening will aid in the securing of a variety of national and international competitions. The project will also involve relocating some existing power lines, snowmaking lines and the installation of some safety netting. The new cuts will require the cutting of 634 trees, more than three inches in diameter, on approximately three acres.

The project is located in the Town of Wilmington, Rt 86, Essex County, New York State Forest Preserve lands classified as the Whiteface Mountain Ski Center.

Contact: Thomas Wahl, NYS DEC, Rt 86, Ray Brook, NY 12977-0296, (518)897-1200

Essex County - The Town of Chesterfield, as lead agency, has determined that the proposed **Enactment of the Zoning Law for the Town of Chesterfield**, will not have a significant environmental impact.

The action involves the enactment of the Zoning Law for the Town of Chesterfield, Essex County, New York. Negative Declaration issued as Zoning Law does not increase Adirondack Park allowable land use intensity, based on land capability and environmental impacts; zoning provides "permitted uses" and "special permit uses", latter of which requires case by case review and SEQRA compliances; Zoning Law deals with impacts on land, water agricultural, aesthetic resources, historic and archeological resources, open space, recreation and growth and character of community so that there would be no adverse impacts. The project is located in the entire Town of Chesterfield, Essex County.

Contact: Gerald H. Morrow, PO Box 456, Keeseville, NY 12944, (518)834-9042

For Additional Negative Declaration

See Statewide Section

Draft Generic EIS and Public Hearing

Washington County - The Town of Kingsbury Town Board, as lead agency, has accepted a Draft Generic EIS on the proposed **Amendments to the Town of Kingsbury Zoning Law**, a Type I action. Comments are requested on the Draft Generic EIS and will be accepted by the contact person until **July 15, 1997**.

A public hearing on the Draft Generic EIS will be held on **June 25, 1997 at 7:00pm** at the Town of Kingsbury Town Hall, 210 Main St, Hudson Falls, NY.

The action includes the amendment of the Town's zoning law, specifically, the creation of 5 land use designations, each with use, area & bulk regulations. They are:

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RA-M-1A Residential-Agricultural). This zone encompasses three separate areas and approximately 420 acres of land. This designation's minimum lot size is 1 acre. It replaces Agricultural zoning;

LDR-25 (Low Density Residential). This zone encompasses approximately 980 acres. Its minimum lot size is 25,000sf. It replaces Agricultural and R-15 zoning;

LDR-15 (Low Density Residential). This zone encompasses approximately 18 acres. Its minimum lot size is 15,000sf. It replaces R-10 zoning;

Ind-75 (Industrial). This zone encompasses three separate areas and approximately 1500 acres. Its minimum lot size is 75,000sf. It replaces Industrial and Agricultural zoning.

Contact: Thomas Gentile, Zoning Administrator, Town of Kingsbury, 210 Main St, Hudson Falls, NY 12839, (518)747-2188

Draft Supplemental EIS and Public Hearing

Saratoga County - Town of Moreau Planning Board, as lead agency, has accepted a Draft SEIS on the proposed **Spurlock Adhesives, Inc. — Construction and operation of an adhesives manufacturing plant on Lot 3 within the Moreau Industrial Park**. Comments are requested on the Draft SEIS and will be accepted by the contact person until the close of business **on Thursday, July 17, 1997**.

A public hearing on the Draft SEIS will be held on June 23, 1997 at 7:00 pm at the Town of Moreau Town Hall at 61 Hudson Street, South Glens Falls, New York.

The action involves construction and operation of an adhesives manufacturing plant on Lot 3 within the Moreau Industrial Park which Industrial Park was previously the subject of a Final Generic Environmental Impact Statement and associated SEQR Findings Statement dated September 10, 1991 concerning the initial rezoning and development of the Park. The project is located at Lot 3, Moreau Industrial Park, Bluebird Rd, South Glens Falls, (T/ Moreau, Co./Saratoga), NY 12803.

Contact: Hon. G. Peter Jensen, Chairman, Town of Moreau Planning Board, Town Hall, 61 Hudson Street, South Glens Falls, NY 12803

LIST OF INTERESTED PARTIES WHO WERE AFFORDED THE OPPORTUNITY TO COMMENT ON THE AMENDMENT TO THE WHITEFACE MOUNTAIN SKI CENTER UMP

Mr. Peter Bauer
Residents Committee to
Protect the Adirondacks
PO Box 27, Main Street
North Creek, NY 12853

Mr. Bruce Carpenter
NY Rivers Unlimited
199 Liberty Plaza
Marine Midland Building
Rome, NY 13440

Mr. Dave Gibson
Assoc. For the Protection
of the Adirondacks
30 Roland Place
Schenectady, NY 12304

Mr. Roy Holzer, Supervisor
Town of Wilmington
Wilmington, NY 12997

Lake Placid Public Library
Main Street
Lake Placid, NY 12946

Mr. Bernard Melewski
The Adirondack Council
PO Box D-2
Church Street
Elizabethtown,NY 12932

Mr. John W. Mills
Champlain Valley
Chapter Trout Unlimited
82 B Kiwassa Road
Saranac Lake, NY 12983

Ms. Sherry W. Morgan
Field Supervisor
US Fish & Wildlife Service
3817 Luker Road
Cortland, NY 13045

Ms. Kathleen Regan
The Adirondack Nature Conservancy
PO Box 65
Keene Valley, NY 12943

Ms. Ann B. Robbins
885 Cumberland Head Road
Plattsburgh, NY 12901

Ms. Shirley Seney, Supervisor
Town of North Elba
Lake Placid, NY 12946

Mr. Favor Smith
Bear Cub Road
Lake Placid, NY 12946

Mr. John Stoffer
Sierra Club, Atlantic Chapter
353 Hamilton Street
Albany, NY 12210

Wilmington E.M. Cooper
Memorial Library
Wilmington, NY 12977

Mr. Neil Woodworth, Director
The Adirondack Mountain Club
PO Box 3055
Lake George, NY 12845

6/27/97

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
ADIRONDACK PARK AGENCY
P.O. Box 99, Route 86
RAY BROOK, NEW YORK 12977
(518) 891-4050
FAX: (518) 891-3938

**RESOLUTION PROPOSED FOR ADOPTION BY
THE ADIRONDACK PARK AGENCY
WITH RESPECT TO
WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN**

July 10, 1997

WHEREAS, Section 816 of the Adirondack Park Agency Act directs the Department of Environmental Conservation 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, under the authority of its management agreement with the Department of Environmental Conservation, has prepared a unit management plan for the Whiteface Mountain Ski Center Intensive Use Area, which the Agency on June 14, 1996, found complied with the State Land Master Plan, and

WHEREAS, the Department of Environmental Conservation with the concurrence of the Olympic Regional Development Authority, now proposes to amend the Unit Management Plan to eliminate construction of proposed trail 4a and instead to reconfigure both the Cloudspin and Skyward trails, and construct a crossover between the two trails, and

WHEREAS, the Department of Environmental Conservation prepared a Negative Declaration pursuant to ECL §8-0109(4) and 6 NYCRR Parts 617 and 618, with respect to the proposed plan; and

WHEREAS, the Agency is requested to determine whether the proposed amendment of the Whiteface Mountain Ski Center Unit Management Plan complies with the general guidelines and criteria of the Adirondack Park State Land Master Plan; and

WHEREAS, the Adirondack Park Agency has reviewed the Whiteface Mountain Ski Center Unit Management Plan amendment;

NOW, THEREFORE, BE IT RESOLVED that the Adirondack Park Agency determines that the proposed amendment to the Whiteface Mountain Ski Center Unit Management Plan to eliminate construction of proposed trail 4a and instead to reconfigure both the Cloudspin and Skyward trails, and construct a crossover between the two trails complies with the guidelines and criteria of the Adirondack Park State Land Master Plan including the Guidelines for Management and Use of Intensive Use Areas, and

BE IT FINALLY RESOLVED that the Adirondack Park Agency authorizes its Executive Director to advise the Commissioner of Environmental Conservation and Chief Executive Officer of the Olympic Regional Development Authority of the Agency's determination.

CWS:nmh:csz

Ayes:

Nays:

Abstentions:

Absent:

State of New York
Executive Department
ADIRONDACK PARK AGENCY
P.O. Box 99, Route 86
Ray Brook, NY 12977
(518)891-4050
FAX: (518)891-3938

July 21, 1997

Honorable John P. Cahill
Commissioner
Department of Environmental
Conservation
50 Wolf road
Albany, NY 12233

Mr. Ted T. Blazer
President and CEO
Olympic Regional Development
Authority
Lake Placid, NY 12946

Dear Commissioner Cahill and Mr. Blazer:

Re: Whiteface Mountain Ski Center
Unit Management Plan Amendment

I am pleased to advise you that at its July 11 meeting, the Agency determined that the amendment of the above referenced unit management plan described in the June 27 submittal to the Agency complies with the guidelines and criteria of the Adirondack park State Land Master Plan. I have enclosed the Agency's resolution.

If I can be of further assistance, please feel free to call.

Sincerely,

Daniel T Fitts
Executive Director

DTF:nmh:csz
Enclosures
cc: Gregory B Campbell

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
ADIRONDACK PARK AGENCY
P.O. Box 99, Route 86
RAY BROOK, NEW YORK 12977
(518) 891-4050
FAX: (518) 891-3938

RESOLUTION ADOPTED BY THE ADIRONDACK PARK AGENCY WITH RESPECT TO WHITEFACE MOUNTAIN SKI CENTER UNIT MANAGEMENT PLAN

July 11, 1997

WHEREAS, Section 816 of the Adirondack Park Agency Act directs the Department of Environmental Conservation 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, under the authority of its management agreement with the Department of Environmental Conservation, has prepared a unit management plan for the Whiteface Mountain Ski Center Intensive Use Area, which the Agency on June 14, 1996, found complied with the State Land Master Plan, and

WHEREAS, the Department of Environmental Conservation with the concurrence of the Olympic Regional Development Authority, now proposes to amend the Unit Management Plan to eliminate construction of proposed trail 4a and instead to reconfigure both the Cloudspin and Skyward trails, and construct a crossover between the two trails, and

WHEREAS, the Department of Environmental Conservation prepared a Negative Declaration pursuant to ECL §8-0109(4) and 6 NYCRR Parts 617 and 618, with respect to the proposed plan; and

WHEREAS, the Agency is requested to determine whether the proposed amendment of the Whiteface Mountain Ski Center Unit Management Plan complies with the general guidelines and criteria of the Adirondack Park State Land Master Plan; and

WHEREAS, the Adirondack Park Agency has reviewed the Whiteface Mountain Ski Center Unit Management Plan amendment;

NOW, THEREFORE, BE IT RESOLVED that the Adirondack Park Agency determines that the proposed amendment to the Whiteface Mountain Ski Center Unit Management Plan to eliminate construction of proposed trail 4a and instead to reconfigure both the Cloudspin and Skyward trails, and construct a crossover between the two trails complies with the guidelines and criteria of the Adirondack Park State Land Master Plan including the Guidelines for Management and Use of Intensive Use Areas, and

BE IT FINALLY RESOLVED that the Adirondack Park Agency authorizes its Executive Director to advise the Commissioner of Environmental Conservation and Chief Executive Officer of the Olympic Regional Development Authority of the Agency's determination.

CWS:nmh:csz

Ayes:	Gregory B. Campbell, Chairman; Members Eleanor F. Brown, James C. Frenette, Richard H. Lefebvre, Katherine O. Roberts, and Barbara Sweet; Alexander F. Treadwell, Secretary of State; Designee Sandra L. LeBarron, Department of Environmental Conservation; Designee Jeffrey Magliato, Department of Economic Development
Nays:	
Abstentions:	
Absent:	Members Arthur V. Savage and John K. Ryder

APPENDIX C

LETTER FROM NYSDEC 9/2/98

New York State Department of Environmental Conservation
Office of Natural Resources, Region 5
Route 86 – P.O. Box 296, Ray Brook, New York 12977
Phone: (518) 897-1276 FAX: (518) 897-1370

John P. Cahill
Commissioner

September 2, 1998

Mr. Bruce McCulley
Olympic Regional Development Authority
Whiteface Mountain Ski Center
Wilmington, NY 12997

Dear Bruce:

This letter will serve as permission to allow ORDA to set up a portable sawmill at Whiteface to produce lumber for building projects on site. All saw lumber cut from trees that come from the mountain can only be used on-site. The lumber can neither be traded, sold nor be used off-site. As long as you follow these requirements, there will be no violation of the prohibition of sale removal or destruction in the constitution of timber on the Forest Preserve.

Sincerely,

Thomas D. Martin

Thomas D. Martin
Regional Forester

TDM:mb
File: ORDA Whiteface

APPENDIX D

LETTER FROM NYSDEC 2/17/77

New York State Department of Environmental Conservation

MEMORANDUM

TO: Olympic Files
FROM: Philip H. Gitlen
SUBJECT: Whiteface Mountain Ski Center - Expansion of Trails

DATE: February 17, 1977

Creation of the Whiteface Mt. Ski Center

On November 4, 1941 the People of the State of New York passed an Amendment to Article 14, Section 1 of the New York State Constitution, the "forever wild" clause authorizing the:

> "constructing and maintaining [of] not more than twenty miles of ski trails thirty to eighty feet wide on the North, East and Northwest slopes of Whiteface Mt. in Essex County."

Chapter 691 of the Laws of 1944 created the Whiteface Mt. Authority from the Whiteface Mt. Highway Commission. The new Authority assumed the responsibility of the Memorial Highway and was further given the authority to "acquire, construct, reconstruct, equip, improve, extend, operate and maintain ski trail developments" at Whiteface Mt., Gore Mt. and Old Forge (Laws of 1944, ch. 691 §1). The term "ski trail development" was defined as meaning;

> "ski trails, ski tows, open slopes made available for skiing, and all such appurtenances, facilities and related developments as in the judgment of the Authority may be necessary for the promotion, use and enjoyment of the ski trails." (Laws of 1944 ch. 691, §1; Public Authorities Law §101 [repealed 1974])

The use of the language underlined above, is of considerable interest because in 1947 an additional Amendment to the "forever wild" clause of the New York Constitution authorized the construction of ski trails at Belleayre and Gore Mountains together with "appurtenances thereto". The absence of the term "appurtenances" in the Amendment authorizing the development of the Whiteface Mt. Ski Center had caused some to argue that Whiteface Mt. was not to be developed as a commercial ski center, complete with lodges, lifts, parking facilities, etc. but was to solely consist of ski trails between thirty and eighty feet wide.

Apparently, however, the Legislature in 1944 was of a different view and authorized the Adirondack Mt. Authority not only to develop ski trails at Whiteface Mt. but to undertake "ski trail development" which was defined to include "ski tows, open slopes made available for skiing, and such appurtenances, facilities and related developments as in the judgment of the Authority may be necessary for the promotion, use and enjoyment of the ski trails."

The limitations, if any, to the development of the Whiteface Mt. Ski Center was further made the subject of an Attorney General's opinion in 1957. In that opinion, the current Attorney General opined that the Amendment to the Constitution authorizing the development of the Whiteface Mt. Ski Center "was intended and must be interpreted to authorize a ski trail development in the full extent as it is defined in Section 101, subd. 4, of the Public Authorities Law (see definition of "ski trail development" cited above).

Accordingly, not only has the Legislature authorized the development of Whiteface Mt. as a modern ski center including "open slopes", "ski tows" and related facilities, but the New York State Attorney General has agreed that the Legislature correctly interpreted the limitations contained in the New York State Constitution when it created the Whiteface Mt. Authority (see report of Attorney General 1957 pp.197 et seq.)

In 1960 the Whiteface Mt. Authority was renamed the "Adirondack Mt. Authority" (Laws of 1960; ch. 958). In 1974 the Adirondack Mt. Authority ceased to exist and the New York State Department of Environmental Conservation assumed responsibility for the continued development, maintenance and operation of the Whiteface Mt. Ski Center.

Existing Conditions at Whiteface Mt. Ski Center

The only significant improvements which have occurred at the Whiteface Mt. Ski Center since the Department of Environmental Conservation assumed jurisdiction over the operation, maintenance and development of that Center, has been the addition of a small building at the Easy Acres area housing the Alpine Training Center and the construction this past Summer of a new "Quad" lift replacing the former chairlift No.1. All other aspects of the facility as it currently exists are as a result of it's development by the Adirondack Mt. Authority and its predecessor. Certain aspects of this development warrant further development here to provide a basis for the discussion of proposed improvements which follows.

Approximately twelve miles of ski trails were developed by the Adirondack Mt. Authority. These ski trails range in width from approximately thirty feet to a maximum where two trails join together of 400 ft. ("Deer" and "Lower Valley Run") and a maximum for a single trail or "slope" of 250 ft. ("Deer"). A review of other trails at the Whiteface Mt. Ski Center indicates that where two or more trails join together they were often developed so as to be a multiple of allowable 80 ft. width, e.g. where "Cloudspin" and "Downhill" join together they are of a combined width of approximately 200 ft., and where "McKenzie", "Wilderness" and "Approach" join together they are of a common width of approximately 300 feet.

p. 2

There are two conclusions which can be drawn from this pattern of development. The first is that where two or more trails join together a multiple of the constitutionally imposed width limitation may be allowable. The second is that "slopes" may be provided pursuant to the legislation authorizing development of Whiteface Mt. and the Attorney General's opinion, both cited above. The latter conclusion, however, appears to be of doubtful constitutionality, particularly considering the fact that the 1944 legislation has since been repealed.

In addition, trails which have lifts associated with them are often considerably wider than the constitutionally stated maximum width of 80 feet. For example, "Appleknocker" is bisected by chairlift #5 and is as wide as 200 feet in certain places; Valley Run is bisected by chairlift #1 and is 125 feet wide in certain places. Cloudspin, which is bisected in places by chairlift #6, is 150 feet wide in certain places.

From this one can conclude that where a chairlift bisects a trail, an allowance for the width of the chairlift may be allowed in addition to the constitutional requirement for trail widths. This has the beneficial effect of limiting the amount of new clearing required for chairlifts and enhancing the visual appearance of the ski center. Staff have advised that the clearing for a chairlift would be at least thirty to fifty feet.

p. 3

Whiteface Mt. Ski Center, of course, also contains the normal appurtenances to any modern ski center including a large base lodge, considerable parking facilities and snow-making facilities over a portion of the lower mountain. Each appurtenance has required clearing of forested areas.

Proposed Developments

In connection with the Department's implementation of it's long range plan for further development of the Whiteface Mt. Ski Center for the recreational skiier as well as to provide appropriate facilities for the Alpine events which are part of the 1980 Winter Olympic Games, the following improvements are planned:

1. Expansion of the existing base lodge;
2. The installation of a significant additional amount of snow-making;
3. Construction of a new warehouse and competitor's building;
4. The construction of a new giant slalom trail;
5. The relocation of former chairlift #1 to serve the giant slalom trails;
6. The replacement of a portion of existing chairlift #6 with a surface lift to provide better access to the summit of Whiteface Mt.; and
7. The limited widening of existing trails and the addition of certain safety "run-outs" on "Downhill" and "Cloudspin".

The expansion of the base lodge, installation of snow-making, relocation and modification to lifts, and construction of additional buildings all appear to be in conformance with the earlier legislative interpretation of the Amendment to the New York State Constitution authorizing the development of the ski center by the Whiteface Mt. Authority as further interpreted by the aforementioned opinion of the New York State Attorney General. The aspect of the Department's development plans which have received considerable attention here have revolved around the construction of the new giant slalom trail and the widening of existing trails due to the more explicit limitations contained in the aforementioned Constitutional Amendment with respect to the allowable mileage and width of ski trail.

With respect to the constitutional limitation which authorizes the development of "not more than twenty miles" of ski trails, the addition of the new giant slalom trail will result in a total of 16 miles of ski trails at the Whiteface Mt. Ski Center. Accordingly, the construction of this ski trail will not violate the express limitation on the allowable length of trails to be developed. This is so even if one considers areas where two trails join together as separate trails for the mileage computation.

The more difficult issue is the allowable width of trails at Whiteface Mt. Ski Center. As noted earlier, there already exist trails or perhaps more properly called "slopes" which greatly exceed the 80 ft. limitation contained in the New York State Constitution. In addition, existing "trails" are, in places, considerably wider than 80 feet. This may be a result of original construction of the trails or may be a result of the natural forces which are present whenever one clears an area on a mountain noted for it's high winds and excessive snow cover. More likely, the portions of the trails which are greater than the 80 ft. limitation are probably a combination of man-made and natural (e.g. windthrow) forces. Nevertheless, the New York State Constitution expressly limits the width of ski trails to a maximum of 80 feet.

With this background, this memorandum will examine the need and reasons for the proposed widening of existing ski trails as well as the parameters which ought be established for the construction of the new giant slalom trail.

There are several reasons for widening the existing ski trails at Whiteface Mt. These include: providing a measure of safety for the recreational skier on relatively steep and winding trails, compliance with the FIS rules which require a minimum trail width of thirty meters for FIS approval, adequate provision for access by modern snow grooming machinery without creating an unsafe condition for the recreational skiier, and provision of adequate means of access for use and maintenance of the snow making systems to be installed without decreasing the safety afforded the recreational skiier.

p.5

As is apparent from the prior development of Whiteface Mt., where lifts (an "appurtenance") bisect trails, an additional width allowance has been utilized to provide a safe skiing area. Additionally, where trails have joined together it has apparently been assumed that a multiple of the 80 ft. width limitation has been allowed.

Accordingly, several working rules may be derived from both the past history of Whiteface Mt. and the requirements attendant with the development of a modern ski center:

1. Where a lift bisects a trail, an allowance for the clearing required for the lift must be made. In such cases, a minimum of 30 additional feet of clearing is required for the lift line.

2. Where trails join together or at the junction of two trails a multiple of the 80 ft. width is allowable; and

3. Sufficient clearing adjacent to ski trails can be allowed for the purposes of installing and maintaining snow-making systems, an appurtenance to a modern ski center.

p.6

The Department staff has prepared a map of all the ski trails to be used during the 1980 Winter Olympics and has indicated thereon all of the areas which are currently less than 30 meters in width and the extent of clearing which would otherwise be required for FIS approval (areas which the FIS has requested be cleared to insure a safe finish area). The Department has considered these drawings in connection with it's proposed plans for expanding the lift and snow-making capacities at Whiteface Mt. and the legal justification for widening each area in order to meet FIS specifications, accommodate the new snow-making system, and provide a reasonably safe skiing environment considering the location of lifts, the topography and similar considerations. The following is a discussion keyed to the map prepared by the Department's staff of each proposed area of widening and/or clearing:

Cloudspin (Women's downhill)

Area 1. This 400 ft. section of trail is relatively steep and is currently as narrow as 50 ft. While the installation of snow-making piping can be accomplished within the trees on the edge of the trail, adequate room for maintenance and operation while maintaining a safe skiing area requires that certain widening of the trail occur. In addition, the use of grooming equipment on this area will require widening so that grooming can be conducted without obstructing the trail or creating a hazard for the recreational skiier. Accordingly, it is proposed that the trail be widened to approximately 90 (plus or minus) feet taking into account the 80 ft. limitation contained in the Constitution and an allowance for 10 feet of clearing for the provision of a suitable area for the maintenance and operation of snow-making equipment as well as to provide adequate room for grooming of the trails without creating an unsafe condition for the skiier. In this connection it should be noted that the grooming machinery to be used by the Department is approximately 15 feet wide and is capable of using implements for snow-grooming which may be as much as 20 feet wide. The area to be cleared contains birch, balsam and spruce averaging 3 inches in width.

Area 2. This 100 ft. section of trail is at the end of a steep curving run which is currently 70 feet in width. The Department proposes to widen this area to approximately 90 feet which is considerably less than the width of the trail just down hill from this area. This widening is necessitated by the installation of the snow-making equipment and the use of snow-grooming equipment as noted above. In addition, chairlift #6 bisects this trail in this area.

Area 3. This 200 ft. section of trail is between two sections which are considerably in excess of 80 feet wide. The trail here is currently approximately 50 feet wide and it is proposed to widen it to approximately 90 feet to accommodate the installation of the snow-making equipment, the maintenance and grooming vehicles as well as to accommodate the installation of a new overhead electric system. This trail section is also bisected by chairlift #6.

Area 4. This 100 ft. section is at the junction of a crossover from "Downhill" which is currently 70 feet wide. The Department proposes to widen this section of trail to approximately 90 feet, to allow for the installation of the snow-making piping and access thereto, and to accommodate maintenance vehicles. Chairlift #6 currently bisects this section of trail.

Areas 5, 6 and 7. These areas encompass approximately 2300 ft. of trail where the current width ranges from 50 to 70 feet. Although snow-making will be installed in these areas, the trail at these locations is relatively straight and not as steep as in the upper mountain area and accordingly, there is no compelling need to widen these sections beyond the 80 ft. limitation contained in the New York State Constitution.

Area 8. This is an extremely small area at the junction of three ski trails with a current width of approximately 180 feet. The proposed widening will not result in the three trails being wider than a combined total of 240 ft. and accordingly is apparently in conformance with the Constitution. In addition, although snow-making will be installed on this trail, the width provided by the three common trails does not necessitate any additional clearing.

Downhill (Men's downhill)

Area 9. This is a 300 ft. section of steep, twisting trail which is currently 50 feet wide in which the Department proposes to widen to approximately 90 feet. The need and justification for this widening is the same as with area #1 with the addition that a snow-making pumphouse (#4) is proposed for installation in this area.

Areas 10 and 11. These encompass approximately 800 feet of trail where the current width is approximately 70 feet. The Department proposes to widen these sections to approximately 90 feet for the same reasons as given with respect to area #1.

Area 12. This is a 400 ft. section of relatively steep, twisting trail which is currently approximately 40 feet wide. FIS has required that this particular section of trail be widened to provide safety for the competitive skiier. In addition, for the reasons given with respect to area #1, widening is needed for safety for the recreational skiier. This will require a certain amount of clearing as well as the construction of a minor structure to bridge a narrow gorge area to make a trail approximately 90 ft. wide.

Areas 13, 14 and 15. These areas comprise approximately 1,000 feet of trail which are currently 50 to 75 feet in width which are located in a relatively flat straight area. Accordingly, although the Department will be installing snow-making in these areas and will be utilizing snow grooming machinery in these areas, no widening in excess of the 80 ft. limitation contained in the Constitution is required.

Areas 16 and 16a. These are relatively small areas at the junction of "Cloudspin", "Downhill" and the giant slalom trail. The clearing required will not result in a maximum width in excess of the 240 feet, the allowable limit for three merged trails.

Wilderness (Slalom)

Area 18. This section of trail is currently approximately 60 feet wide and the Department proposes to widen it to 90 feet. This area will be the subject of the installation of underground snow-making pipes and accordingly, additional clearing is required to prevent tree roots from interfering with the snow-making pipes and to provide adequate room for maintenance and operation of the snow-making system.

Area 18a. This is actually not a ski trail, but a work road which is currently 20 to 30 feet wide and which will be widened to accommodate maintenance equipment.

Area 18b. This area is approximately 1,000 ft. long and is currently 60 feet wide. The Department proposes to widen this trail to 90 feet for the reasons given for area #18.

Giant Slalom

Area 18c. This area is at the junction of the existing giant slalom and the proposed giant slalom trails as well as the beginning of the slalom trail. In addition, chairlift #2 bisects the existing giant slalom trail. The Department proposes to widen this area to approximately 250 feet wide, taking into account the existence of the three trails and the lift.

Area 19. No cutting is apparently required in this area.

Area 20. This area will be widened from approximately 50 feet to approximately 90 feet to accommodate underground snow-making equipment.

Area 21. This area, over 1,000 feet in length is approximately 50 feet wide and will be widened to approximately 80 feet. Although underground snow-making will be installed in this section, it is relatively straight and not quite as steep as other areas and accordingly the installation of pipes and access for maintenance and operation can be accomplished within an 80 ft. trail width.

Finish Area

Area 17a. This is the confluence of four trails bisected by lift #1 and is currently 120 feet wide. The Department proposes to widen this area to 300 feet well within the allowable limitation for a multiple of four trails.

Area 17. This is below the finish area and can be considered an extension of the above mentioned four trails. Accordingly, the proposed widening to 250 feet from the current 150 feet is, again, well within the multiple allowed for four merged trails.

Area 17b. The Department staff does not see any particular reason for this clearing and accordingly it is not now being proposed.

PHG/jlb

APPENDIX E

FIS TRAIL HOMOLOGATION CERTIFICATES

[redacted]

FEDERATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND

Certificat Homologation

L'homologation de la piste suivante est confirmée
The approval of the following course has been confirmed
Die Homologierung nachstehend aufgeführter Piste wird hiermit bestätigt

Slalom
Mtn. Run Olympic
Whiteface Mtn.
USA

TECHNICAL DATA IN METER / DETAILS TECHNIQUES EN METRES / TECHNISCHE DATEN IN METERN

L = Ladies / Dames / Damen M = Men / Messieurs / Herren	Start Départ Start	Finish Arrivée Ziel	Vertical drop Dénivellation Höhenunterschied	Total length Longueur effective Schräge Länge
M+L	845	667	**178**	426
M	876	667	**209**	483

Inspector - Inspecteur - Inspektor Ted Sutton

The course has been approved and corresponds to the requirements of the ICR
La piste e été approuvée et correspond aux prescriptions du RIS
Die abgenommeme Piste entspricht den Bestimmungen der IWO

Replaces decree no. / Remplace le décret no / Ersetzt Dekret Nr. 1442/074/79

The course has been filed by the FIS under no.
La piste e été enregistrée par la FIS sous le no.
Die Piste wurde bei der FIS registriert unter Nr.
5716/226/00

Expiry date
Date d'expiration
Verfallsdatum
30.10.2010

Sub-Committee for Alpine Courses
Sous-comité pour pistes alpines
Sub-Komitee für Alpine Wettkampfstrecken

President

Le Président,

Walter TRILLING

FIS/Oberhofen, 30.10.2000

rptAlPrtCertificate/30 10 00

Please observe notification at the back/Voir nota au verso/Hinweis auf Rückseite beachten!

[redacted]

FEDERATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND

Certificat Homologation

L'homologation de la piste suivante est confirmée
The approval of the following course has been confirmed
Die Homologierung nachstehend aufgeführter Piste wird hiermit bestätigt

Slalom
Thruway
Whiteface Mtn.
USA

TECHNICAL DATA IN METER / DETAILS TECHNIQUES EN METRES / TECHNISCHE DATEN IN METERN

L = Ladies / Dames / Damen M = Men / Messieurs / Herren	Start Départ Start	Finish Arrivée Ziel	Vertical drop Dénivellation Höhenunterschied	Total length Longueur effective Schräge Länge
M+L	780	600	**180**	550
M	820	600	**220**	674

Inspector - Inspecteur - Inspektor Ted Sutton

The course has been approved and corresponds to the requirements of the ICR
La piste e été approuvée et correspond aux prescriptions du RIS
Die abgenommeme Piste entspricht den Bestimmungen der IWO

Replaces decree no. / Remplace le décret no / Ersetzt Dekret Nr. 2626/146/86

The course has been filed by the FIS under no.
La piste e été enregistrée par la FIS sous le no.
Die Piste wurde bei der FIS registriert unter Nr.

5715/225/00

Expiry date
Date d'expiration
Verfallsdatum

30.10.2010

Sub-Committee for Alpine Courses
Sous-comité pour pistes alpines
Sub-Komitee für Alpine Wettkampfstrecken

President

Le Président,

Walter TRILLING

FIS/Oberhofen, 30.10.2000

rptAlPrtCertificate/30.10.00

Please observe notification at the back/Voir nota au verso/Hinweis auf Rückseite beachten!

[redacted]

FEDERATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND

Certificat Homologation

L'homologation de la piste suivante est confirmée
The approval of the following course has been confirmed
Die Homologierung nachstehend aufgeführter Piste wird hiermit bestätigt

Downhill/Descente/Abfahrt
Men's Olympic Downhill
Whiteface Mt.
USA

TECHNICAL DATA IN METER / DETAILS TECHNIQUES EN METRES / TECHNISCHE DATEN IN METERN

F = Ladies / Dames / Damen M = Men / Messieurs / Herren	Start Départ Start	Finish Arrivée Ziel	Vertical drop Dénivellation Höhenunterschied	Total length Longueur effective Schräge Länge
M	1313	481	832	3030

Inspector - Inspecteur - Inspektor   Ted Sutton

The course has been approved and corresponds to the requirements of the ICR
La piste e été approuvée et correspond aux prescriptions du RIS
Die abgenommeme Piste entspricht den Bestimmungen der IWO

Replaces decree no. / Remplace le décret no / Ersetzt Dekret Nr. 4234/107/94

The course has been filed by the FIS under no.
La piste e été enregistrée par la FIS sous le no.   **5421/151/99**
Die Piste wurde bei der FIS registriert unter Nr.

Expiry date
Date d'expiration   29.10.2004
Verfallsdatum

Sub-Committee for Alpine Courses
Sous-comité pour pistes alpines
Sub-Komitee für Alpine Wettkampfstrecken

President

Le Président,

Walter TRILLING

FIS/Oberhofen, 29.10.1999

rptAlPrtCertificate/29.10.99

Please observe notification at the back/Voir nota au verso/Hinweis auf Rückseite beachten!

[redacted]

FEDERATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND

Certificat Homologation

L'homologation de la piste suivante est confirmée
The approval of the following course has been confirmed
Die Homologierung nachstehend aufgeführter Piste wird hiermit bestätigt

Super-G
Mens + Womens Wold Cup SG
Whiteface Mt., NY
USA

TECHNICAL DATA IN METER / DETAILS TECHNIQUES EN METRES / TECHNISCHE DATEN IN METERN

F = Ladies / Dames / Damen M = Men / Messieurs / Herren	Start Départ Start	Finish Arrivée Ziel	Vertical drop Dénivellation Höhenunterschied	Total length Longueur effective Schräge Länge
M+F	1204	655	**549**	2004
M	1303	655	**648**	2210

Inspector - Inspecteur - Inspektor Claude Dumontier

The course has been approved and corresponds to the requirements of the ICR
La piste a été approuvée et correspond aux prescriptions du RIS
Die abgenommeme Piste entspricht den Bestimmungen der IWO

The course has been filed by the FIS under no.
La piste a été enregistrée par la FIS sous le no.
Die Piste wurde bei der FIS registriert unter Nr.

4941/124/97

Expiry date
Date d'expiration
Verfallsdatum

21.10.2002

Sub-Committee for Alpine Courses
Sous-comité pour pistes alpines
Sub-Komitee für Alpine Wettkampfstrecken

President

Walter TRILLING

FIS/Oberhofen, 21.10.1997

rpsAlPnCertificate/21.10.97

Please observe notification at the back/Voir nota au verso/Hinweis auf Rückseite beachten!

FEDERATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND

Certificat Homologation

L'homologation de la piste suivante est confirmée
The approval of the following course has been confirmed
Die Homologierung nachstehend aufgeführter Piste wird hiermit bestätigt

Giant slalom/slalom géant/Riesenslalom
World Cup SG ? GS
Whiteface Mtn.
USA

TECHNICAL DATA IN METER / DETAILS TECHNIQUES EN METRES / TECHNISCHE DATEN IN METERN

L = Ladies / Dames / Damen M = Men / Messieurs / Herren	Start Départ Start	Finish Arrivée Ziel	Vertical drop Dénivellation Höhenunterschied	Total length Longueur effective Schräge Länge
M+L	1204	823	**381**	1180

Inspector - Inspecteur - Inspektor Ted Sutton

The course has been approved and corresponds to the requirements of the ICR
La piste e été approuvée et correspond aux prescriptions du RIS
Die abgenommeme Piste entspricht den Bestimmungen der IWO

The course has been filed by the FIS under no.
La piste e été enregistrée par la FIS sous le no. **5717/227/00**
Die Piste wurde bei der FIS registriert unter Nr.

Expiry date
Date d'expiration 30.10.2010
Verfallsdatum

Sub-Committee for Alpine Courses
Sous-comité pour pistes alpines
Sub-Komitee für Alpine Wettkampfstrecken

President

Le Président,

Walter TRILLING

CERTIFICAT HOMOLOGATION

FREESTYLE
BALLET

Lake Placid

USA

Bear Trail

FIS HOMOLOGATION NUMBER: 7005.004.90

TYPE OF HOMOLOGATION: A

MONTREUX (SUI), MAY 1990

FREESTYLE COMMITTEE CHAIRMAN

JOHN JOHNSTON

FREESTYLE SUBCOMMITTEE FOR RULES AND TECHNICAL

H Roh

HENRI ROHNER

FÉDÉRATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION

CERTIFICAT HOMOLOGATION

FREESTYLE
AERIALS

Lake Placid

USA

Kodak Sports Park

FIS HOMOLOGATION NUMBER: 7006.005.90

TYPE OF HOMOLOGATION: A

MONTREUX (SUI), MAY 1990

FREESTYLE COMMITTEE CHAIRMAN

JOHN JOHNSTON

FREESTYLE SUBCOMMITTEE FOR RULES AND TECHNICAL

HENRI ROHNER

FÉDÉRATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION

APPENDIX F

INVENTORY OF FACILITIES (7/3/01)

DRAFT

WHITEFACE MOUNTAIN SKI CENTER/VETERAN'S MEMORIAL HIGHWAY
WILMINGTON, NEW YORK 12997

INTRODUCTION

Whiteface Mountain Ski Center and Whiteface Mountain Veteran's Memorial Highway are owned by the State of New York and operated by the Olympic Regional Development Authority. Whiteface is one of the region's major employers and employs summer – 80 employees and winter – excess of 250 employees.

WHITEFACE MOUNTAIN SKI CENTER

The ski center opened for public use January 25, 1958. The ski center's lowest lift, Mixing Bowl Lift, base elevation of 1,220' above sea level and on our highest lift, Summit Triple Lift, top terminal 4,386' above sea level give Whiteface the highest continuous vertical drop in the northeast of 3,161'. The ski center boasts 6 double chairs, 2 triple chairs, 1 quad chair and 1 Gondola with a combined uphill capacity of 13,279 skiers per hour that serve 65 ski trails of which 97% are covered by snowmaking.

Whiteface Mt. Ski Center was the host of the 1980 Winter Olympic Alpine events.

The ski terrain ranges from beginner to the finest expert terrain anywhere.

Ski Center skier visitors are in excess of 150,000 annually.

Additionally, the Ski Center operates summers from the end of June until mid- October. The Cloudsplitter Gondola for scenic rides with annually in excess of 35,000 visitors.

WHITEFACE VETERAN'S MEMORIAL HIGHWAY

The highway opened to public July 20, 1935 and President Franklin D. Roosevelt dedicated the highway to the war veterans September 14, 1935.

The tollhouse is located west of the Town of Wilmington, at an elevation of 2,310'. From there the highway twists over the next 5 miles to the castle, which is 270' below the summit. Here a 426' long tunnel into the heart of Whiteface brings one to the elevator that rises to the summit, 4867'.

From here, breathtaking views of the Adirondack High Peaks, St. Lawrence River Valley, Lake Champlain and beyond to Vermont can be enjoyed.

Nearly 100,000 visitors come to enjoy this facility annually which operates from mid-May until mid-October.

REV: 06/26/01
Introduction

I

WHITEFACE MOUNTAIN SKI CENTER

INVENTORY OF FACILITIES

JULY 3, 2001

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WHITEFACE MT. SKI CENTER/VETERAN'S MEMORIAL HIGHWAY
DESCRIPTION OF FACILITIES
BUILDING INVENTORY

INDEX

REV: 07/03/01
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WHITEFACE MOUNTAIN SKI CENTER
MANAGEMENT PLAN

BUILDING INVENTORY

MAIN BASE LODGE

This is the main day visitor lodge at Whiteface Mt. Ski Center. It is located approximately 1,600' west of Route 86 immediately across the west branch of the AuSable River.

FIRST FLOOR

Restrooms
Locker Rooms
Ticket Sales
Service America
Time Clock Room
Lift Operations Room
Mechanical Utility Room
Security Office

GROUND LEVEL

Rental Shop
Main Ticket Booth
Lift Main. Shop
Gondola Cabin Parking

SECOND FLOOR

Mixing Bowl Food Court & Kitchen
Medical Services Area
Ski Patrol Ski Room
Host Patrol Office
Ski School
Ski Shop
Guest Services
Information
Sun Deck
Marketing
Members Locker Room

THIRD FLOOR

Administration
Cloudspin Lounge
Cloudspin Deck

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY
BASE LODGE GENERAL DESCRIPTION

DEPARTMENT USE & DIMENSIONS

TOTAL BASE LODGE FLOOR SPACE			59.120 SQ. FT.
GROUND FLOOR	Total Space: 13,740 sq. ft.		
Gondola Garage (new 1999)		100 x 50	5.000 sq. ft.
Lift Maint. Shop (new 1999)		100 x 19	1.900
Rental/Repair Shop (new 2001)		65 x 58	3.770
Entry Foyer		65 x 30	1.950
Emergency exits from AuSable Room		10 x 32	320
Emergency exits from Whiteface Rm. 1		10 x 28	280
Emergency exits from Whiteface Rm. 2		10 x 28	280
Emergency exits from Heat Exc. Mech.		10 x 24	240
TOTAL GROUND FLOOR SPACE			13.740
FIRST FLOOR	Total Space: 11,076 sq. ft.		
Lower Level Foyer & Hallways		42 x 50	2.100
Main Hallway		12 x 80	960
Locker Room		12 x 24	288
Stairwell		12 x 16	192
Restrooms (Men & Women)		32 x 44	1.408
Changing Area		40 x 52	2.080
File Storage		12 x 24	288
Furnace & Utility Room		26 x 32	832
Time Clock Room. Security		48 x 56	2.688
Old Ticket Booth		8 x 30	240
TOTAL FIRST FLOOR SPACE			11.076
SECOND FLOOR	Total Space: 27,948 sq. ft.		
AuSable Room		74 x 82	6.068
Whiteface Room		82 x 82	6.724
Ski Shop		32 x 40	1.280
Kitchen & Storage Areas	32 x 40	112 x 36	5.312
Ski Patrol	32 x 36	14 x 24	1.488
Locker Area		20 x 38	760
Locker Room		26 x 24	624
Host Patrol		8 x 12	96
Guest Services		32 x 38	1.216
Ski School Area		32 x 44	1.408
Hallways	120 x 12. 12 x 32. 4 x 40	26 x 38	2.972
TOTAL SECOND FLOOR SPACE			27.948
THIRD FLOOR			
Cloudspin Lounge		52 x 102	5.304
FOURTH FLOOR			
Administration		38 x 54	2.052

REV 07/03/01
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WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

MID-STATION LODGE

DESCRIPTION AND DIMENSIONS

This lodge is located at elevation 2,075', approximately one mile from the base area. It is in the summer accessible only by 4WD, winter by over-the-snow machines or ski lift. Its location at mid-point on Lift E is also the base area of Lift G.

TOTAL MID-STATION LODGE FLOOR SPACE		7,590 SQ. FT.
DOWNSTAIRS		
Boule Bistro (94-95)*		3,018 sq. ft.
Cafeteria Storage*		
Restrooms	24 x 24	576
Ski Patrol*	8 x 15	120
		3,714 sq. ft.

*Lounge, ski patrol, cafeteria storage remodeled 94/95 season, is now Boule Bistro Lounge with * rooms changed, sq. ft. still same.

MAIN FLOOR – UPSTAIRS		
Cafeteria	57 x 68	3,876 sq. ft.
Kitchen	24 x 20	

WHITEFACE MOUNTAIN SKI CENTER

BUILDING INVENTORY

KID'S KAMPUS LODGE
AKA BUNNY HUTCH

The Kid's Kampus Lodge is located at the base of Lift "C". It is a log cabin structure with a full basement and houses the following services:

FIRST FLOOR

Bunny Hutch Nursery	58'8" x 38'8"	2,282 sq. ft.
Cafeteria	54'8" x 40'8"	2,184 sq. ft.
Rentals	20' x 40'	800 sq. ft.

*Engineers Building, 20' x 40', was annexed to the log building to serve as ticket sales and ski rentals in 1993.

BUILDING SIZE:	98'8" x 38'8"	3,806 sq. ft.

BASEMENT:
Restrooms
Storage
Bear's Den
Storage-Ticket Sales/Rentals 9,874 sq. ft.

TICKET SALES

Ticket Sales is now located in a double-wide modular purchased 2001.

BUILDING SIZE (2):	12' x 36' (x2)	864 sq. ft.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

MAINTENANCE GARAGE

Is located at Kids Kampus area. This maintenance garage houses all ski center support facilities: vehicle maintenance garage, employees' lobby, warehouse and storage, carpenter shop, trail maintenance shop, machinist room, electrical shop, oil storage room and restrooms.

Type of Construction:

One Floor Metal Building

Vehicle Maintenance. Garage	46'6" x 120'	5.580 sq. ft.
Carpenter Shop	42' x 40'	1.680 sq. ft.
Electrical Shop	30' x 40'	1.200 sq. ft.
Trail Shop/Warehouse	30' x 40'	1.200 sq. ft.

ALPINE TRAINING CENTER

This two-story building is an annex to the main base lodge. It houses the New York Ski Educational Foundation.

Type of Construction:

Cement Block – Peaked Wooden Truss roof
Overall size: 24' x 96' 4.600 sq. ft.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

LADIES START BUILDING LIFT "F"

This warm-up building for skiers is located 400' below Lift "F". It is supported by concrete and steel piers, and the main floor, which is accessible by means of a stairway, exists at ground level of Lift "F".

Building Size: 34' x 20' 680 sq. ft.

This building is approximately 2 miles from the base area and is accessible only by means of Chairlift "F".

WARMUP BUILDING AND SHELTER TOP OF LIFT "G"

This building is approximately 24' x 32', 786 sq. ft. and serves as a warm-up building for skiers and ski patrol dispatch station. It is located on top of Little Whiteface opposite the top terminal of Lift "G" and the Gondola. This building also serves as a shelter during the summer and is accessible by chairlift, Gondola and all-terrain vehicles, winter by means of chairlift, Gondola, and over-the-snow vehicles.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

BUS LOT TICKET BOOTH

This wood structure is located in the Bus Parking Lot. The entrance to this area is from the main access road just off Route 86.

Size: 24' x 30', or 720 sq. ft.

DON STRAIGHT'S BUILDING

This wood structure is located uphill of the base lodge at the bottom of the Boreen Trail.

Size: 20' x 18', or 360 sq. ft.

FOX POLE BARN

This 3 sided wood storage shed is located uphill of Pumphouse #2 on the Fox Trail.

Size: 34' x 50', or 1,700 sq. ft.

POLE BARN "C"

Access to this metal clad building is from a service road at the bottom of Parking Lot #4.

Size: 30' x 40', or 1,200 sq. ft.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

MENS DOWNHILL START

This building is located at the uppermost portion of Cloudspin and can be accessed via Lift "F". It is a wood structure with one entrance and one exit. Size: 24' x 13', or 312 sq. ft. It is presently used as a ski patrol watch station.

LADIES DOWNHILL START

This building was removed for The Goodwill Games – Lift "F" "warm-up" building is now the Ladies Start Building.

MENS GIANT SLALOM/SLALOM START BUILDING

This building is located at the top of the Parkway ledges. It can be accessed via Lift "I" or Lift "G" from mid-station. It is a wood structure with one access door and two exits.

WOMENS GIANT SLALOM/SLALOM START BUILDING

This building is located just uphill of 1,900' Road on Mountain Run. It can be reached from Lift "I" or Lift "G" from mid-station. It is a wood structure with one entrance and two exits. Size 21' x 21', or 441 sq. ft.

DOWNHILL FINISH BUILDING

This building is located across from Tower 10 of Lift "E" on a portion of Lower Valley.
Access is gained from Lift "B".
It is a two-story, wood structure.
Size: 24' x 23' – 7' x 15' – 12' x 10', or 777 sq. ft.

SLALOM FINISH BUILDING

This building is located at the bottom of Mountain Run just uphill of Mid-station Lodge. It can be accessed from Lift "E" to Mid-station or Lift "D". It is a two-story, wood structure. Also houses Ski Patrol and Host Patrol during the winter months.
Size: 24' x 23' – 7' x 15' – 12' x 10', or 777 sq. ft.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

SNOWMAKING

PUMPHOUSE #1

This metal building is located at the base of Lift "A" near the base lodge.
Size: 12' x 16',or 192 sq. ft.

PUMPHOUSE #2

This metal building is located at the top of Lift "A". It is the main pumping and compressor station for the snowmaking system. Size: 90' x 100', or 9,000 sq. ft.

A metal 16' x 16' addition was added in 1991, or 256 sq. ft.

PUMPHOUSE #3

This metal structure is located adjacent to the Mid-station Lodge to the east.
Size: 26' x 56', or 1456 sq. ft.

CHATEAU

This wooden structure is located adjacent to Pumphouse #3, which serves as the snowmaking warming building and lunch area. Size: 19' x 20', or 380 sq. ft.

PUMPHOUSE #4

This building is located below the Niagara section of Cloudspin. It can be accessed from Lift "F" or from Excelsior via the Connector Trail. Size: 22' x 24', or 528 sq. ft.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY

SNOWMAKING

VALVEHOUSE A

This metal structure is located on a service road to the east of the Downhill Finish Building, Tower 10 –1A. Size: 10' x 16', or 160 sq. ft.

VALVEHOUSE B

This metal building is located at the top of Lift "E" at the trailhead of Easy Street. Size: 10' x 16', or 160 sq. ft.

VALVEHOUSE C

This structure is located at the junction of Approach and Upper Wilderness trails. The access to this building is from the top of Lift "G". Size: 10' x 10', or 100 sq. ft.

VALVEHOUSE D

This metal structure is located at the junction of Thruway and Calamity Lane trails on the west side. Size: 10' x 10', or 100 sq. ft.

VALVEHOUSE E

This is an 8' X 8', or 64 sq. ft. block building at the junction of Upper Valley and Excelsior.

VALVEHOUSE F

This is an in-ground 6' x 6', or 36 sq. ft. valvehouse located at the base of Lift "B".

VALVEHOUSE G

Located at the top of the Mens Downhill, it is a 4' x 4', or 16 sq. ft. wood frame structure.

WHITEFACE MOUNTAIN SKI CENTER

BUILDING INVENTORY

MEMORIAL HIGHWAY

The Memorial Highway is a combination of four separate buildings and five miles of the most scenic highway in the northeastern United States.

The Tollhouse (1935) is located three miles west of the Town of Wilmington, Route 86, and is directly off Route 431. This highway is open to public use from mid-May to mid-October. The Tollhouse elevation is 2,310' above sea level.

The Tollhouse itself is a simulated redwood log building that also houses the ticket and highway supervisor's office; as well as the employee clockroom, 2 restrooms, an interpretive museum downstairs and 3 bedrooms upstairs.

This Tollhouse is the starting point of the actual Memorial Highway. The Highway is 5 miles in length and has an incline of 8% with views at various points in all directions. The Highway terminates at the Castle parking lot, elevation 4,591'. The parking lot capacity is 130 cars.

The Castle building (1935) is a granite stone building: the first floor consists of a lobby, restrooms, and the Highway's operating staff office. The second floor consists of a restaurant with a seating capacity of 75 guests, kitchen and gift shop.

WHITEFACE MOUNTAIN SKI CENTER

BUILDING INVENTORY

MEMORIAL HIGHWAY

Tunnel (1938) – Off the Castle parking lot is the entrance to the tunnel, which is 424' deep and leads to the summit elevator.

Summit Elevator (1938) – From the inner most point of the tunnel, rises the summit elevator, 276' to the summit building and the actual summit of Whiteface, elevation 4,867'.

Summit Building (1938) – This summit building is a round granite stone building. It consists of an elevator lobby and vending machines. Attached to this building is the silo.

Silo (1970) – This silo type building houses the equipment of the Atmospheric Scientific Research Department of the University of New York State.

WHITEFACE MOUNTAIN SKI CENTER
BUILDING INVENTORY
MEMORIAL HIGHWAY – TOLL HOUSE AND CASTLE

TOLL HOUSE — Total Floor Space: 3,152 sq. ft.

Basement	28' x 32'	896 sq. ft.
First Floor/Main Floor	28' x 32', 16' x 10'	1,056 sq. ft.
Ticket Offices	12' x 12', 16' x 10'	304 sq. ft.
Second Floor	28' x 32'	896 sq. ft.

Building Description: Wood Structure, Chalet Type

CASTLE — Total Floor Space: 3,360 sq. ft.

First Floor		
Rest Rooms	20' x 20', 10' x 10'	340 sq. ft.
Foyer		580 sq. ft.
Office	14' x 10'	140 sq. ft.
Utility Room	6' x 10'	60 sq. ft.
Adjacent Utility Room Power	8' x 10'	80 sq. ft.
Adjacent Utility Room Furnace	8' x 10'	80 sq. ft.
Total First Floor Space		1,280 sq. ft.
Second Floor		
Kitchen	40' x 12'	480 sq. ft.
Cafeteria	40' x 40'	1,600 sq. ft.
Souvenirs	12' x 28'	336 sq. ft.

Building Description: Stone Masonry

SUMMIT BUILDING — Total Floor Space: 1,256 sq. ft.

Building Description: Round Stone Masonry 40' diameter

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFTS

LIFT	TYPE	VERT.	HORIZ.	SLOPE LENGTH	CAPAC.	MANUF.	YEAR	VTF	CABLES	SPEED	NO. OF CHAIRS	CHAIR SPACE
A	DOUBLE	92	680	687	800	HALL	1984	73,600	1 1/8	400	24	60
B	DOUBLE	310	1,500	1,534	1,200	HALL	1984	372,000	1 1/8	500	62	50
C	TRIPLE	258	1,773	1,792	1,600	RIBLET*	1986	412,800	1 1/8	425	77	47.5
D	DOUBLE	880	4,030	4,140	1,200	HALL	1976	1,056,000	1 1/8	500	167	50
E	TRIPLE	1,314	6,120	6,265	1,670	CTEC	1988	2,194,380	1 3/8	500	226	55
F	QUAD	1,830	4,285	4,706	1,500	CTEC	1997	2,745,000	1 5/8	500	118	80
G	DOUBLE	1,555	4,202	4,515	1,100	HALL	1988	1,710,500	1 3/8	500	153	60
H	DOUBLE	979	2,265	2,475	1,200	CTEC	1989	1,174,800	1 1/4	500	94	50
I	DOUBLE	1,458	3,935	4,220	800	HALL	1979	1,166,400	1 1/4	465	122	69.75
J	ROPE TOW	40	450	450	400	MULTI-SKI	1992	16,000	5/16	270	40	8
K	GONDOLA	2,432	7,987	8,486.5	1,800	DOPPELMAYR	1999	4,377,800	54 MM	1212	61	NA

*MOVED FROM SUMMIT 1997
VTF: VERTICAL HOURLY CAPACITY

rev: 07/03/01
invlftst

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "A" DRIVE PANEL

Manuf: Fincor	Model #: 3122C0253A
H:P: 25 KVA: 31	Serial #: 46823
Supply Voltage: 460/30	60 HZ
460 AC Input	500 DC Output
Amps: 38 AC/43 DC	Field: 300 DC
Schematic: D1051117	Assembly: D105077004- 1105077101

DRIVE MOTOR

Manuf: Fincor DC	H.P.: 25
R.P.M.: 1750/2300	FRAME: AD188AT
Arm: 500 volts	Amps: 22.7
Shunt Wound	Field Volts: 150/300
Field Ohms: 46.3/1/07	Serial #: N41857-1-TJ075

BLOWER MOTOR

Manuf: Baldar	D.C.: 3 Phase
Cat #: W684	Serial #: AN3457
Spec: 34-234-157	Frame: 560
Volts: 208/230/480	Amps: 1.5/1.4/7
R.P.M.: 3450	

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "B" DRIVE PANEL

Manuf: Fincor	Model #: 3123CO753A
H.P. 75 KVA: 86	Serial #: 46819
Supply Voltage: 460/30 AC	60 HZ
460 VAC Input	500 VDC Output
Amps: 103 AC/123 DC	Field: 300 VDC
Schematic: D1051117	Assembly: 105077004, 105077108
Job #: F117901	

DRIVE MOTOR

Manuf: Fincor	H.P. 75
R.P.M.: 1750	Frame: AD366AT
Arm: 500 Volts	Amps: 123
Stab Shunt Wound	Field Volts: 150/300
Field Ohms: 35.8/14.3	Field Amps: 2.96/1.48
Model #: 36608452B08	Serial #: N41857-2-TJ074

BLOWER MOWER

Manuf: Baldor	DC: 3 Phase
Cat #: VA3545	Serial #: W684
Spec: 34-294-282	Frame: 56C
Volts: 208/240/460	Amps: 3.2/3.0/1.5
R.P.M.: 3450	

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "C" DRIVE PANEL

Manuf: Sabina Type: T6800
H.P.: 100
Supply volts: 480 V.A.C.
Amps: 145
Schematic: D17903.4

Model#: J6/Spec
Serial #: 78092/17903
60 HZ
500 DC Output / 161 Amps
Field: 300 VDC / 4.3 Amps

DRIVE MOTOR:

Manuf: Sabina LAK203C-3211Atz
R.P.M.: 1750
Arm: 500DC
Shunt Wound
Field Ohms: 57
Model #: D5050P
Elec. Specs: Continuous Duty Nema DPFG
324 CFM

H.P.: 100 74 / KW
Frame: AD328AT
Amps: 161
Field Volts: 150/300
Field Amps: 8.6 /4.3
Serial #: 00912613-SFP030

BLOWER MOTOR:

Sabina: Cat. No. 10112.00 TEFC
Model: C6T34FC6C
RPM: 3450/2850 H.P. 1 HZ 60/50
Frame: C56C P.F. 84 Eff. 77 Ser. Fact 1.15
Cont. Duty Max. Amb: 40 degrees Celsius
3 PH 208/230/460

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "D" DRIVE MOTOR

Manuf: Avtek	H.P.: 200
R.P.M.: 1750	Frame: 504AT
Arm: 500 VDC	Amps: 320
Stab Shunt Wound	Field Volts: 150/300
Field Ohms: 54 @ 25 degrees C	Field Amps: 3.95
Model #: AM187572UWV	Serial #: JMK075854-1536

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "E" DRIVE PANEL W/CTEC MODIFICATIONS

Manuf: Sabina	Spec: 47917/6387
Type: T6800VP	Amps: 575
H.P.: 400	Wiring Diagram: D6387.4
460 VAC Input	500 VDC Output

DRIVE MOTOR

Manuf: Sabina (GE)	H.P. 400
R.P.M.: 1750	Type: CD508AT
Arm: 500 VDC	Amps: 629
Shunt Wound	Field Volts: 150/300
Field Ohms: 33.7 @ 25 degrees C	Field Amps: 6.7
Model #: 5CD224TA044B001	Serial #: VC-1-333VD

BLOW MOTOR

Manuf: Baldor	D.C.: 3 Phase
Cat #: VM3554	Serial #: F288
Specs: 35A13W206	Frame: 56C
Volts: 208-230/460	Amps: 5.3-5/2.5
R.P.M.: 1725	H.P. 1 ½

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "F" DRIVE PANEL

Manuf: Sabina
100 VDC/1000 TFB
H.P.: 400
480 AC Input
Wiring Diagram: D17809.4

Spec #: 78010/17809
Amps: 575
Type: T6800 VM RG 8800
500 VDC Output-Amps 640

DRIVE MOTOR

Manuf: Sabina (UNIQORE)
R.P.M.: 1750
Arm: 500 VDC
Shunt Wound
Field Amps: 9.6/19.2

H.P.: 400
Type: LAK 4011 ATZ
Amps: 637
Field Volts: 150/300

BLOWER MOTOR

Manuf: Sabina
Cat #: VM3613
Spec #: 36A13X100
Volts: 208-230/460
R.P.M.: 3450

D.C.: 3 phase
Serial #: F197
Frame: 184C
Amps: 13.2/12/6

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "G" DRIVE PANEL W/CTEC MODIFICATIONS

Manuf: Sabina	Spec #: 50426/6653
Type: RG8800	Amps: 365
H.P.: 250	Wiring Diagram: D6653.4
480 VAC Input	500 VDC Output

DRIVE MOTOR

Manuf: Avtek (GE)	H.P.: 250
R.P.M.: 1750	Type: CD506AT
Arm: 500 VDC	Amps: 398
Shunt Wound	Field Volts: 150/300
Field Ohms: 43 @ 25 degrees C	Field Amps: 5.0
Model #: 5CD223SA013A004	Serial #: GN1-187-GN

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "H" DRIVE PANEL W/CTEC MODIFICATIONS

Manuf: Sabina
Type: RG8800
H.P.: 200
480 VAC Input

Spec #: 5042516653
Amps: 294
Wiring Diagram: D6653.4
500 VDC Output

DRIVE MOTOR

Manuf: Avtek (GE)
R.P.M.: 1750
Arm: 500 VDC
Shunt Wound
Field Ohms: 54 @ 25 degrees C
Model: AM018757-ZUWV

H.P.: 200
Type: 504AT
Amps: 320
Field Volts: 150/300 DC
Serial #: JMK075854-0470

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

LIFT "I" DRIVE CONTROL

Manuf: Sabina Spec#: 62391/7929 Type: T6800	
H.P.: 200	
460 Volts 294 Amps	60 HZ 3 Phase
Output Arm: 500 VDC	Diagram #: D7929.4
Fld's 300 UDC	

DRIVE MOTOR

Manuf: Sabina (Baldor, Enco, France)	Ser.# 87059 3/5	Frame: 4010AT
H.P.: 200	460V DC	Arm.Volts 500
R.P.M.: 1750	Field Volts: 300	Amps: 320
Field Amps: 4.2/8.4		
Motor Style: SHF250VL2R		

BLOWER MOTOR:

Baldor 3PH: Cat. #: VM3613	Spec. #: 36A13X100	Frame: 184C 5HP
208/230/460 V	R.P.M.: 3450	60 HZ
1.2/12/6 Amps		

LIFT "J" DRIVE CONTROL

Manuf: Multi-Ski-Lift, Inc.
H.P.: 5-15 hp
Max. Incline: 40%/22 degrees
Variable Speed Drive: 0-27 fpm
Bullwheels: 5 ft.
Horizontal Rope Clearance: 5 ft.
Wire Rope (6:1 Safety Factor) 8mm (5/16") galv.
Stop Gates: Top & Bottom
Anti Roll Back Mechanism included

Max. Lift Capacity: 720 pph
Max. Length: 500 ft.

DRIVE MOTOR

Electric Motor: 480 volts, 3 phase

Sew-Eurodrive
Bruchsal, Germany
Type: RF93 DV112M-4Z 3 phase
No. 010483113 - - 1.20 -03002-8MB.C40
R.P.M.: 1700/17
W4.0
V460 - - - - A 1. 6 - - - - - H260
LM V1 - - - - - KG 148, 8 LP-54-INS-B
Brake V - - - - NM - - - - NEMA
Time Rate Cont. - - - K.P.A. – Code - - Design, B

WHITEFACE MOUNTAIN SKI CENTER
INVENTORY OF FACILITIES
LIFT INFORMATION

GONDOLA — LIFT "K"

DRIVE PANEL

(Made in Germany)
ABB Type DCS502B120051 – 2100000
Ser.#: 04092561A9311841
U_1 3 – 500V
I_1 980 A 50/60 HZ
520 VDC
I_2 1200 A

DRIVE MOTOR #1

ABB DC Machine #: HM2352573 1999 – 08
Type: DMA – 280L61V

P. 447 KW	N. 1761	1/min U. 500 V
I. 940 A	Duty 51	M. Rot 530 XG
M. Total 1835K6	J. 7.10 KGM^2	1C 06
U_2 300V	I_E 8.0	E2 IEC 34-1
V 0.84	M 3/S	1C 06 1M 1002 1P 23
C1 H/F	T: 40 degrees Celsius	

DRIVE MOTOR #2

Same as above Serial#: HM2352574

GONDOLA BLOWER MOTORS

ABB
C1.F 1P55 1EC34
MT112M28F215-2
#: 2047667

Volts	Hz	Min	Kw	Amps
660-690Y	50	2900	4.0	4.8
360-420D	50	2900	4.0	8.3
440-490D	60	3470	4.6	8.3

WHITEFACE MOUNTAIN SKI CENTER

SNOWMAKING PLANT EQUIPMENT SUMMARY

QUANTITY PUMPS	SIZE MOTOR	MANUFACTURER	YEAR	GPM	TDH	
3	150 H.P.	FLOWAY	1999	2000	238	
8	250 H.P.	INGERSOLL-RAND	1978	600	1182	1182
1	60 H.P.	PIEUGER IDP	1995	1000	102	
2	350 H.P.	FLOWAY	1999	900	1182	
1	400 H.P.	INGERSOLL-DRESSER	1995	1000	1182	
1	400 H.P.	FLOWAY	1999	1000	1182	
2	400 H.P.	INGERSOLL DRESSER	1995	950	1330	
1	400 H.P.	FLOWAY	1999	950	1332	

QUANTITY COMPRESSORS	SIZE MOTOR	MANUFACTURER	YEAR		
5	250 H.P.	INGERSOLL-RAND	1978	1100 C.F.M.	7000
1	250 H.P.	JOY	1972	1170 C.F.M.	7000
6	392 H.P.	INGERSOLL-RAND	1984	1500 C.F.M.	15000
2	800 H.P.	INGERSOLL-RAND	1995	4000 C.F.M.	200000
1	1250 H.P.	INGERSOLL-RAND	1997	6000 C.F.M.	300000

WHITEFACE MOUNTAIN SKI CENTER
PRIORITY PLAN FOR LOAD SHEDDING

LIFTS

LIFT	1=IN USE	KW	USING
LIFT A	1 25 HP	18.64	0.00
LIFT B	1 75 HP	55.92	0.00
LIFT C	1 50 HP	37.28	0.00
LIFT D	200 H	149.14	0.00
LIFT E	1 400 H	298.28	0.00
LIFT F	1 350 H	260.99	0.00
LIFT G	1 250 H	186.43	0.00
LIFT H	200 H	149.14	0.00
LIFT I	200 H	149.14	0.00
LIFT J	1 8 HP	6	0.00
LIFT K	1 1200 HP		
		1310.96	0.00

PUMPS

PUMP	1=IN USE	KW	USING
PUMP 1	100 HP	74.57	0.00
PUMP 2	1 125 HP	93.21	0.00
PUMP 3	1 125 HP	93.21	0.00
PUMP 4	1 250 HP	186.43	0.00
PUMP 5	250 HP	186.43	0.00
PUMP 6	250 HP	186.43	0.00
PUMP 7	1 250 HP	186.43	0.00
PUMP 8	200 HP	149.14	0.00
PUMP 10	15 HP	11.18	0.00
PUMP 11	1 250 HP	186.43	0.00
PUMP 12	250 HP	186.43	0.00
PUMP 13	1 250 HP	186.43	0.00
PUMP 14	300 HP	223.71	0.00
PUMP 15	300 HP	223.71	0.00
		2173.74	0.00

COMPRESSORS

CMPRSR	1=IN USE	KW	USING
COMP.1	1 400 HP	298.28	0.00
COMP.2	1 400 HP	298.28	0.00
COMP.3	250 HP	186.43	0.00
COMP.4	250 HP	186.43	0.00
COMP.5	300 HP	223.71	0.00
COMP.6	250 HP	186.43	0.00
COMP.7	250 HP	186.43	0.00
COMP.8	250 HP	186.43	0.00
COMP.9	1 392 HP	292.31	0.00
COMP.10	1 392 HP	292.31	0.00
COMP.11	392 HP	292.31	0.00
COMP.12	392 HP	292.31	0.00
COMP.13	392 HP	292.31	0.00
COMP.14	392 HP	292.31	0.00
		3506.28	0.00

TOTAL LIFTS IN USE = 0.00 KW	TOTAL PUMPS 0.00 KW	TOTAL COMPRESSORS 0 KW
TOTAL KW IN USE = 600 KW	TOTAL ALL K 600 KW	TOTAL ALL K 600 KW

LODGES = 500 KW
IN THE EVENT THAT NYSEG CALLS WHITEFACE MT AND REQUESTS THAT WE REDUCE OUR ELECTRICAL CONSUMPTION TO OUR NON-INTERRUPTABLE LEVEL OF 3985 KW - THIS PRIORITY PLAN WILL BE USED

rev: 07/03/01
loadshed

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #1

PUMP #1	MOTOR
Manuf.: Floway	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 150
Size: 14 DOH	S/N: WPD 9909528
G.P.M.: 2000	
T.D.H.: 238'	
S/N: 37159-1-2	

PUMP #2	MOTOR
Same as above	Same as above
S/N: 37159-1-1	S/N: WPD 9909527

PUMP #3	MOTOR
Same as above	Same as above
S/N: 37159-1-3	S/N: WPD 9909529

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #2

PUMP #4	MOTOR
Manuf.: Ingersoll-Rand	Manuf.: U.S. Motors
Class: CNTA	H.P.: 250
Horizontally Split – 6 stage	Frame: 447TS
G.P.M.: 600	R.P.M.: 3555
T.D.H.: 1182'	S.F.: 1.15
S/N: 0877187	S/N: 88 – 03669
PUMP #5	MOTOR
Same as above	Same as above
S/N: 0877194	S/N: 88 – 03674
PUMP #6	MOTOR
Same as above	Same as above
S/N: 0877188	S/N: 88 – 03670
PUMP #7	MOTOR
Same as above	Same as above
S/N: 0877189	S/N: 88 – 03673

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #2

PUMP #8	MOTOR
Manuf.: Floway	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 350
Size: 10 JKM	Frame: L449VP20
G.P.M.: 900	R.P.M.: 3570
T.D.H.: 1182'	S.F.: 1.15
S/N: 37186 – 1 – 2	S/N: XPG 432031
PUMP #9	MOTOR
Same as above	Same as above
S/N: 37186 – 1 – 1	S/N: XPG 435032
PUMP #10	MOTOR
Manuf.: Pleuger IDP.	H.P.: 60
Type: QN 102	FLA: 83
Model: M – 082 – 48	S.F.: 1.15
S/N: 3336959505	R.P.M.: 3530

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #1

COMPRESSOR #1	MOTOR
Manuf.: Ingersoll-Rand Model: SSR 1500 W Type: Rotary Screw Cap.: 1500 CFM at 125 P.S.I. S/N: 34992	Manuf.: Westinghouse H.P.: 392 R.P.M.: 1770 Volts: 460 Amps: 450 Frame: 449 TDZ S/N: 8408
COMPRESSOR #2	MOTOR
Same as above S/N: 34991	Same as above S/N: 8404
COMPRESSOR #3	MOTOR
Manuf.: Joy Model: Twistair 1170 BAN 4 AFD Type: Rotary Screw Cap.: 1170 CFM at 125 P.S.I. S/N: TFB 240	Manuf.: Westinghouse H.P.: 250 R.P.M.: 1775 Volts: 460 Amps: 275 Frame: 445TS S/N: 7510

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #1

COMPRESSOR #4	MOTOR
Manuf.: Ingersoll-Rand	Manuf.: Westinghouse
Model: Pac-Air 250	H.P.: 250
Type: Rotary Screw	R.P.M.: 1775
Cap.: 1100 CFM at 115 P.S.I.	Volts: 460
S/N: T 1572 U 78875	Amps: 276
	Frame: 445 TDZ
	S/N: 7802 – D
COMPRESSOR #5	**MOTOR**
Same as above	Same as above
S/N: T 1573 U 78875	S/N: 7802 - C
COMPRESSOR #6	**MOTOR**
Same as above	Same as above
S/N: T 1574 U 78875	S/N: 7802 – B
COMPRESSOR #7	**MOTOR**
Same as above	Same as above
S/N: 1571 U 78875	S/N: 7802 – E
COMPRESSOR #8	**MOTOR**
Same as above	Same as above
T 1575 U 78875	S/N: 7802 – A

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #2

COMPRESSOR #9	MOTOR
Manuf.: Ingersoll-Rand	Manuf.: Siemens
Model: Centac 2 CV35M3 EAC	H.P.: 800
Type: Centrifugal	R.P.M.: 3576
Cap.: 3934 CFM at 139 P.S.I.	Volts: 4160
S/N: M 95 – 8489	Amps: 96
	Frame: 588 Y

COMPRESSOR #10	MOTOR
Same as above	Same as above
S/N: M95-8488	S/N: E 07495 – 01 –1

COMPRESSOR #11	MOTOR
Manuf.: Ingersoll-Rand	Manuf.: Westinghouse
Model: 1500 H	H.P.: 392
Type: Rotary Screw	R.P.M.: 1770
Cap.: 1500 CFM at 125 P.S.I.	Volts: 460
	Amps: 450
	Frame: 449 TDZ
	S/N: 8408

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #2

COMPRESSOR #12

Same as #11
S/N: 34994

MOTOR

Same as #11
S/N: 8409 – B

COMPRESSOR #13

Same as #11
S/N: 34990

MOTOR

Same as #11
S/N: 8408 – A

COMPRESSOR #14

Same as #11
S/N: 34989

MOTOR

Same as #11
S/N: 8408 – B

COMPRESSOR #15

Location: At Garage
Manuf: Ingersoll-Rand
Model: Centac 2 AC 115513
Type: Centrifugal-Diesel Driven
Cap.: 5953 CFM at 125 P.S.I.
S/N: M97 – 9849

ENGINE

Manuf.: Cat
H.P.: 1480
AR #: 8N0461
Fuel: Diesel
Max. Alt: 1280
S/N: 27 Z 00776

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #3

PUMP #11	MOTOR
Manuf.: Ingersoll-Rand	Manuf.: U.S. Motors
Class: CNTA	H.P.: 250
Horizontally Split - 6 Stage	Frame: 447 TS
G.P.M.: 600	R.P.M.: 3555
T.D.H.: 1182	S.F.: 1.15
S/N: 0877193	S/N: 88 – 00492

PUMP #12	MOTOR
Same as above	Same as above
S/N: 0877191	S/N: 88 – 03672

PUMP #13	MOTOR
Same as above	Same as above
S/N: not noted	S/N: 88 – 03671

PUMP #14	MOTOR
Manuf.: Ingersoll-Dresser	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 400
Size: 12L54 – 8TF16	Frame: L445VP16
G.P.M.: 1000	R.P.M.: 3570
T.D.H.: 1182	S.F.: 1.15
S/N: 95-70-110224-1	S/N: XK6401040

PUMP #14A	MOTOR
Manuf.: Floway	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 400
Size: 10 JKM	R.P.M.: 3570
G.P.M.: 1000	S.F.: 1.15
S/N: 37186-4-1	S/N: YP6451035

WHITEFACE MOUNTAIN SKI CENTER
SNOWMAKING PLANT INVENTORY

PUMPHOUSE #4

PUMP #15	MOTOR
Manuf.: Ingersoll-Dresser	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 400
Size: 10M50-7	Frame: L445VP16
G.P.M.: 950	R.P.M.: 3570
T.D.H.: 1330	S.F.: 1.15
S/N: 95-70-110223-2	S/N.: XKG 405040

PUMP #16	MOTOR
Same as above	Same as above
S/N: 95-70-110223-1	S/N: XKG 401039

PUMP #17	MOTOR
Manuf.: Floway	Manuf.: G.E.
Class: Vertical Turbine	H.P.: 400
Size: 10 JKH	Frame: L449VP20
G.P.M.: 950	R.P.M.: 3570
T.D.H.: 1332	S.F.: 1.15
S/N: 37186-7-1	S/N: VPG 452035

WHITEFACE MOUNTAIN SKI CENTER
HOT WATER SYSTEM DATA

BASE LODGE

#1 Manuf: John Woods (Boiler Heated)
Size: 75 gal.
Model #: JWS-75IT Cat.# S7500
Serial #: 9802734233
Volts: 110/120V
Elements: Year Installed: 1999

#2 Same as above
Serial #: 9802734225

TRAINING CENTER BUILDING: None

ENGINEER'S BUILDING

No longer in use

MID-STATION LODGE

#1 Manuf: A.O. Smith Energy Saver Hot Water Tank
Size: 80 US Gals. Capacity
Model #: EES80913
Serial #: MJ92-0022330-913
Voltage: 220-240 VAC 1PH
Elements: 4500 Watts

#2 Manuf: Bradford
Size: 80 US Gals. Capacity
Model#: M280R6DS13
Serial #: SA0846855
Voltage: 240 V.A.C.
Elements: (2) 4500 Watts

Manuf: Jacuzzi Water Pump
Model #: 5DB1-T
Serial #: 16NOV90

Manuf: Jacuzzi Motor
5.0 H.P. 3450 R.P.M.
3 PH 230/460 Volts
Amps 13.4/6.7 Cont. Duty

WHITEFACE MOUNTAIN SKI CENTER
HOT WATER SYSTEM DATA

TOLL HOUSE

Manuf: Dayton
Model #: EES-30-915
Serial #: MJ92-0015226-915
Volts: 240 Volts
Size: 30 US Gals.
Elements: 2-4,500 Watts

Manuf: Meyers-Ejecto Water Pump
Model #: 5KC36HN3004T
Serial #: NCG
Cat #: 1CM60
Motor: General Electric Jet Pump
Size: ½ H.P. 1 PH
Volts: 115/230 3450 R.P.M.

Manuf: GE
Model: SK3C39HH2754BX
HP ½ 60 HZ
Volts: 115/230 1 PH
3450 R.P.M. Amps: 8.20 /4.10

WHITEFACE MOUNTAIN SKI CENTER
HOT WATER SYSTEM DATA

BUNNY HUTCH LODGE (KID'S KAMPUS) #1

Electric: 240 Volts
Manuf: Bradford
Model #: M 80 RSD
Serial #: SK 462856
Element: 2 – 4,500 Watts
Capacity: 80 Gals
Year Installed: 1978

BUNNY HUTCH LODGE (KID'S KAMPUS) #2

Electric: 240 Volts
Manuf: Bradford White
Model #: M180R6DS13
Serial #: SA0846854
Element: 2 – 4,500 Watts
Capacity: 80 Gals
Year Installed: 1997

MAIN GARAGE

Electric: 208 Volts
Manuf: Ruud
Model #: R.P. 30TC8-2
Serial #: RU 06679105781
Element: 2 – 4,500 Watts
Capacity: 30 Gals
Year Installed: 1978

CASTLE

Electric: 240 Volts 1 PH
Manuf: Ruud Master
Model #: ME 80-2
Serial #: RU 0692C11081
Element: 4,500 Watts
Capacity: 80 Gals
Year Installed: ?

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

BASE LODGE: Serving the old portion of the base lodge
Basement and 1st floor
Oil Fired Hot Water

#1 Manuf: Smith Boilers
Serial #: F98-478
Light Oil 6.50 6 PH
MAWP. Steam 15 PSI MAWP. Water 80 PSI
19 Series - 7

#2 Same as above
Serial #: F98-477

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

BASE LODGE CONT. (MAIN BOILER)

FIRE EYE:

Manuf: Utica Boilers (4)
Model #: BOP-77
S/N: KH26673
S/N: KH26682
S/N: KH26681
S/N: KH26678

1 – B-R-Gross Output: 300,000

Water: 260,900 BTU HR

Pump Press 100 PSI
Oil 2.8 GPH
Max. W.P. 100 PSI

BECKETT OIL BURNERS

120 V.A.C.	1 PH	
Model #:	1)	AH 147230
	2)	AH 147239
	3)	AH 147243
	4)	AH 147240

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

BASE LODGE: HOT AIR SYSTEM SERVING THE NEW PORTION OF THE BASE LODGE
4 OIL FIRED BOILERS 1933

PUMP DATA:

Water circulating pumps: 2 SAME
Manuf: Armstrong Pumps, Inc.
North Tonawanda, N.Y.
Model #: 2D 4030
Serial #: 1^{ST} PUMP: 91775
2^{ND} PUMP: 91776
Construction: BF 6.75
Capacity: 105 GPM 40 FT
Drive: 2 HP 1750 RPM

DRIVE MOTOR:

#1:
Manuf: Baldwin Industrial Motors
Catalog #: M 3558T
Specific : 35AO1-872
Frame: 145T
Serial #: F 983
H.P.: 2
R.P.M.: 1725
Rating: 40 C Continuous
Class B: Code K

Volts: 208-230/480
Amps: 6.5 6.2/3.1
HZ: 60
Serv. Fac.: 1.15
F.L. Efficiency : 81%
77%

#2:
Manuf: Toshiba Motor
Model #: B0024FGF2A4
Frame: 145T
Amps: 6.0/3.0
Volts: 230/460 V.A.C. 1725 R.P.M.
TEFC 3 PH Induction

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

HOT AIR CONVERTER:

Manuf: McQuay, Minneapolis, MN 55440
Model #: LHD 228 CH
Serial #: 3HDOO397

Lube while running if possible
Recommended Grease:

Sinclair Oil Co.	Litholane
Humble Oil Co.	Lidoc No. 2
Keystone Oil Co.	84-H Med..
Shell Oil Co.	Alvania No. 2

Suggested Interval:

Temp:	Continuous Operation	12 HPD
To 150	6 Months	1 Year
To 200	3 Months	6 Months
Over 200	1½ Months	3 Months

ELECTRIC MOTOR:

Manuf: Lincoln	Service Factor: 1.15
Type: Card Drip Proof	Serial #: 1928093
Frame: 254I	Insulation: B
H.P.: 15	Max. Amb.: 40 Degrees C
Volts: 260/400	Ratings Cont.:
Hertz: 60	NEMA Code: G
LINCOLN CODE: 2562	NEMA Des: B
R.P.M.: 1750	Phase: 3
Amps.: 46/23	

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

PLANTUM:

2 Units
Unit VH-1
Our Order #: GO 649409-020
Your Order #: PO 71-77-234-3WM
Model #: LHD228CH
Tag #: HU1-T1-77-234-3-WMS

ELECTRIC CONTROL PANEL:

Cuttler and Hammer
E.V. –1
Air Controls:
Man Honeywell
System – HV- 1
Outside Air
Return Air
Supply Air
Water Supply:
1 ½ " Copper
Temp – 160 Degrees

WHITEFACE MOUNTAIN SKI CENTER
HEATING PLANT DATA

ENGINEER'S BUILDING: 1966
Hot Air: Oil Fired & Electric Heat
Manuf:: International
Model #: OL 95H-3
Serial #: 4493L
BTU'S: Unknown

OLYMPIC ACRE LODGE: (BUNNY HUTCH)

All Electric

MID-STATION LODGE:

All Electric

BUS LOT TICKET BOOTH:

All Electric

MAINTENANCE GARAGE: 1994

Oil Hot Water Blower System
Boiler: 3
Manuf: Utica Boilers
Model #: SFM6225W
Serial #: IR17500, 01, 02
Output: 222,000 BTU'S Each

Beckett Burner
Model #: SMG
Series: Oil Burner
Serial #: 940912-15582

TOLLHOUSE: 1935 Not Used. Electric Only

Oil Fired Steam
Manuf: Bethlehem Dynatherm
Model #: Unknown
Serial #: Unknown

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WHITEFACE MOUNTAIN SKI CENTER
HEATING DATA

<u>CASTLE:</u> 1995

Cast Iron Boiler
Manuf: Smith
Serial #: D94-1026P
Series: 8 S/W-6
G.P.H.: L. 1.75
H. 2.10
Pressure: 40 PSI Working Pressure

Oil Fired Burner
Manuf: H.B. Smith
Model #: AFG Series Burner
MP: 1102 0.5-3.0 G.P.H.
Volts: 120 5.8 Amps

WHITEFACE MOUNTAIN SKI CENTER

PRIMARY LINE AND TRANSFORMER INVENTORY

LOCATION	DESIGNATION	TYPE	NO.	SIZE	Φ	MANUFACTURER	PROTECTION	PROTECTION	YR.INSTALL.
SKI CENTER ENTRANCE	AUXILIARY	PTM	3	1900/4160 250 KVA	1	CAROLINA TRANS.			1979
CONTROLLED THRU RECLOSURE "A" ABOVE BASE TERMINAL LIFT 1A & 1B							PHASE TO PHASE	PHASE TO PHASE	
							240 AMP	170 AMP	
PUMPHOUSE 1	T1	PM	1	34.5 KV/480/227V 600 KVA	3	MCGRAW-EDISON	BFLS 12 AMP		
PUMPHOUSE 2	T2 &3	PM	2	34.5 KV/480/227V 2000KVA	3	MCGRAW-EDISON	EFLS 40 AMP		
PUMPHOUSE 2	T3A	PM	1	34.5 KV/480/227V 2500KVA	3	MCGRAW-EDISON	EFLS 50 AMP		1985
DRIVE D	T5	PM	1	34.5 KV/480/277V 150KVA	3	MCGRAW-EDISON	BFLS 6 AMP		
DRIVE 1B X	ISOLATION	PM	1	480/480/277V 250KVA	3	INTERNAT. TRANS.			
DRIVE 1A SPARE	TRANS.	PM	1	480/480/277V 250KVA	3	CALIFORNIA			
UNIT "A"	CONTROL POWER	PTM	1	34.5 KV/120/240V 15KVA	1				
LIFT C	T6	PM	1	34.5 KV/480/277V 150KVA/N/F	1	GENERAL ELECT.	P.M.F. 6 AMP		1989
OLYMPIC ACRES BLDG	T7	PM	1	34.5 KV/480/277V 150KVA	3	MCGRAW-EDISON	BFLS		
MAINTENANCE BLDG	T8	PM	1	34.5 KV 120/208V 150KVA	3	MCGRAW-EDISON			
POWER LINE POLE 9		PTM	1	19.9 KV 25KVA	1				
LIFT I	T9	PM	1	34.5 KV 120/208V 150KVA/N/F	3	MCGRAW-EDISON	P.M.F. 15 AMP		
DOWNHILL SCOREBRD		PTM	1	19.9 KV 120/208V 50KVA	1		T9		
				125 KV BIL ACT. LOAD 45KVA					
DOWNHILL FINISH BLDG		PTM	1	19.9 KV 120/240V 75KVA	1				
LIFT C (TOP) X	HEAT FOR TOP	PTM	1	19.9 KV 480/277V 50KVA	1				
PUMPHOUSE 3	T10	PM	1	34.5 KV 480/277V 2000KVA	3	MCGRAW-EDISON	BFLS 25 AMP PMF 15 AMP P/9		
MID-STATION LODGE	T11	PM	1	34.5 KV 208/120V 500KVA	3	MCGRAW-EDISON	BFLS AMP PMF 15A POLE 29		
LIFT G X		PM	1	34.5 KV 208/120V 250KVA/N/F	3	MCGRAW-EDISON	PMP 8 AMP POLE 31		1989
LIFT H X	T12	PM			3	MCGRAW-EDISON			
SLALOM FINISH BLDG		PTM	1	19.9 KV 120/240V 75KVA	1				

DIAGRAM OF POWER LINE AND **TRANSFORMER** INFO AND SIZE

THESE ARE THE TWO LINE/TRANSFORMERS THAT APPEARED TO BE CROSSED OFF THE ORIGINALS
I WROTE THEM IN HERE, IN CASE THAT WAS NOT CORRECT!!

BASE LODGE	T4	PM	1 34.5 KV/120/208V 500KVA	3 MCGRAW-EDISON	BFLS 12 AMP
ABC AREA	T9A	PM	1 34.5 KV/120/208V 150KVA/N/F	3 MCGRAW-EDISON	P.M.F. 5 AMP

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WHITEFACE MOUNTAIN SKI CENTER
ELECTRICAL PRIMARY LINE AND TRANSFORMER INVENTORY

LOCATION	DESIGNATION	TYPE	NO.	SIZE	O	MANUFACTURER	PROTECTION	PROTECTION	YR. INSTALL.
LIFT F	T13	PM	1	34.5 KV 480/277V 750KVA	3	MCGRAW-EDISON	EFLS 6 AMP		1986
LIFT E	T13A	PM	1	34.5 KV 480/277V 750KVA	3	MCGRAW-EDISON			
CONTROLLED THRU RECLOSURE "B"							PHASE TO PHASE	PHASE TO PHASE	
							200 AMP	140 AMP	
PUMPHOUSE 4 X	T14	PM	1	34.5 KV 480/277V 750KVA	3	ABB	BFLS 12 AMP		
MID-STATION LIFT F	WARMING HUT	PTM	1	19.9 KV 120/240V 50KVA	1				
TOP LIFT F	T15	PM	1	34.5 KV 480/277V 150KVA	3	MCGRAW-EDISON	BFLS 3 AMP		
TOP LIFT F	T16	PM	1	34.5 KV /4160V 150KVA	3	MCGRAW-EDISON			
TOP OF MOUNTAIN	T17	PM	1	41.60 KV 120/208V 150KVA	3	MCGRAW-EDISON	EFLS		
SPARES X	FOX POLE BARN	PM	1	480/480/227V ISOLATION TRANSFORMER	3	INTERN. TRANS.			
	LOT 5 POLE BARN	PM	1	34.5 KV 480/277V 750KVA	3	MCGRAW-EDISON			
TOP OF GONDOLA	T18	PM	1	34.5 KV 480/277V 1500KVA	3	PAUWELS			

(MODEL VM696GC1B3 5225 LBS. 321 GALS. LIQUID TOTAL 9634 LBS. HV BIL 95 KV LV BIL 3(BIL 30 KV

WHITEFACE MOUNTAIN SKI CENTER

TRANSFORMER DATA

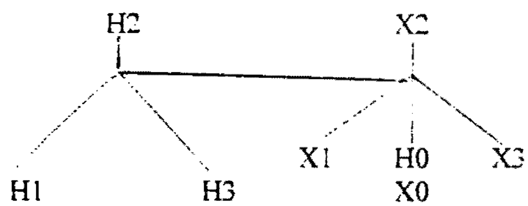
PUMPHOUSE #1 T-1

T & R Electric Supply Company, Coleman, S.D.

Serial #: 18,561

Three phase
KVA – 1000 Rise 65 degrees Celsius
Volts H WDG - 34.500 GRDY/19920
Volts X WDG - 480 GRDY/277
Impedance – 5.9
Weight – 13,300 lbs.

Volts %	Position
105	A
102.5	B
100	C
97.5	D
95	E



WYE - WYE
0 degree displacement

WHITEFACE MOUNTAIN SKI CENTER

TRANSFORMER DATA

PUMPHOUSE #1 – right side   T1A

McGraw-Edison Company, Zanesville, OH 43701

Serial #: 77ZJ05A00
Cat.#: POXP 116 345-150-L1

Three phase
KVA – 150   Rise 65 degrees

Voltage 34,500 GRD   Rating: 208/120
Y119920

% Imp. – 4.1   WDGLV – AL   BIL KV
Full Wave H.V. 150
L.V. – 30

Mat. – H.V. AL
Gallons of Oil – 161   Enclosure: 334 lbs.
Tank fittings: 831 lbs.
Total of – 3226
Untanking – 925 lbs. Oil
1176 total lbs.

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WHITEFACE MOUNTAIN SKI CENTER

TRANSFORMER DATA

PUMPHOUSE #3 T-10

Serial #: PAI-1059

KVA – 2000	OAI	65 degrees Celsius rise		
HV 34,500Y/19920	BIL:150 KV			
LV 480Y/277	BIL: 30 KV			
3 phase 60 hz.	Transformer	5.59% IZ at base rating		
Cond. HV CU LV	CU fluid: oil	gal. 415 lbs	3063	

Element Wt.: 5530 lbs. Total Wt.: 12,270 lbs
Fluid: 1350 IN. from upper edge of H/H at 25 degrees Celsius
Changes .50 in/10 degrees Celsius Max 7.0 PSI pos. 7.0 PSI neg.

Volts	Tap
36,225	A
35,363	B
34,500	C
33,638	D
32,775	E

WHITEFACE MOUNTAIN SKI CENTER

TRANSFORMER DATA

PUMPHOUSE #4 T-14
Class OA ABB

Serial #: 95J892337
Style: F92E264MCC
ID#: 764 015 90
Mfg. Date: July 1995

KVA – 2500	65 degrees Celsius continual rise	
HV 34,500 GRNDY/19920		HV BIL KV 150
HV MTL AV	Impedance % 6.40	Low volt 480Y/277
LV BIL KV 30	LV MTL AL	924 gal. Oil

Approx. Wt:

Core coils	6,276
Oil	3,180
Case	3,324
Total	12,780

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WHITEFACE MOUNTAIN SKI CENTER

TRANSFORMER DATA

+ DRIVE 1B Isolation transf.
  No Longer Active

LIFT 1B Became LIFT 'E' (T13A)

+ ABC AREA
  No longer any T9A

BASE LODGE T4 (no longer used)
  Relocated to Mid-lodge
+ Becomes T-11

LIFT C (TOP)
  Transformer, poles + wiring
  Removed, no loner active

LIFT G + H Same transf.
  No T12A only T12

WHITEFACE MOUNTAIN SKI CENTER

GONDOLA FILTER

The purpose of the Gondola filter is to improve the power factor, stabilize voltage, and improve efficiency.

The filter is controlled through a set of contacts from the lift 24 volt system. When the 24 volt is turned on this allows the contacts to close and bring the filter on line.

At this time two steps of seven will activate. As the load of the gondola increases more steps will activate in the filter. The power factor will change on the control panel. The closer to unity (1.00) the more efficient the lift is running.

There is a semi-mope switch, which takes over for control failure. Bypass is filter off line.

There are two-degree lights that illuminate when the temperature reaches 90 degrees and 120 degrees. The 90 degree is not a significant problem, however at 120 degrees it is recommended that the door be opened to look for anything that might be obvious to cause that much heat. Opening the doors for a couple of minutes usually takes care of the problem. "Caution" 480 volts is present.

If the gondola is not to be running for a period of time or if lightning is in the area the SW3 in the control box should be shut off to prevent electrical failures.

The filter is designed to operate automatically and internal failures such as blown fuses or a tripped breaker should not affect the running of the gondola. Again, SW3 can be switched off if any problem is detected until repairs can be completed. The filter can then go back on line by switching SW3 back on.

R. Mihill

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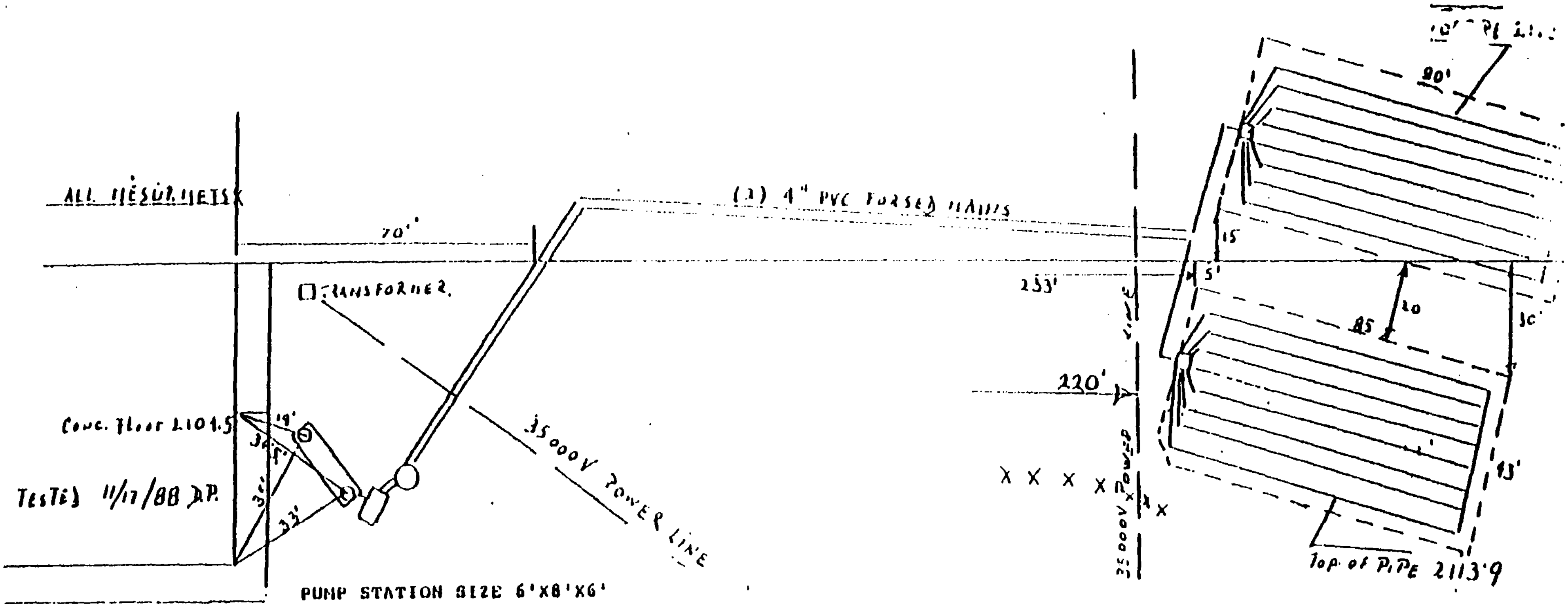
WHITEFACE MOUNTAIN SKI CENTER

WHITEFACE SEWAGE

SEWER SYSTEM PUMP INVENTORY

Base Lodge Plant	2 Bridge	20 hp	400 gpm	1998/99
Bunny Hutch Lodge	2 Bridge	? Hp	? Gpm	1979
Mid-Station Lodge	2 Gould 3"	3 hp	? Gpm	1988



PUMP STATION SIZE 6'X8'X6'	
MID-STA. LODGE REST.FLOOR	2114.0
BASEMENT FLOOR	2104.46
TOP SEPTIC TANK COVER	2101.2
SEPTIC TANK OUTLET	2101.8
PUMP STATION INLET	2099.8
BOTH PUMPS ON	2097.1
PUMP #1 ON	2096.8
PUMPS OFF	2095.0
LIFT ST. FLOOR	2094.8

WHITEFACE MOUNTAIN SKI CENTER
MID-STATION LODGE
SEPTIC SYSTEM SCHEMATIC
AS BUILT AND TESTED 11/17/87
DESIGN BY MORRIS ENG. GLENS FALLS
BUILT BY WHITEFACE STAFF

DESIGN CAPACITY 5,350 GPD

SPECS: NO. NY 012-8783
UPA # 5-1554-00013-00001-0
OUT FALL: NO. 002

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WHITEFACE MOUNTAIN SKI CENTER
FUEL TANK IDENTIFICATION AND INVENTORY
2001

LOCATION	TANK #	TANK SIZE	CONTENT	IN-GROUND	ABOVE-GROUND	COATING	PIPING TYPE	PIPING SIZE	IN USE	YEAR INSTALLED
MAIN GARAGE	1	10,000	NO.2	X		FIBERGLASS	BL. IRON	1 1/4	X	1978
MAIN GARAGE	2	2,000	NO.2	X		FIBERGLASS	BL. IRON	1 1/4	X	1978
MAIN GARAGE	3	4,000	REG.GAS	X		FIBERGLASS	BL. IRON	1 1/4	X	1978
MAIN GARAGE	5	2,000	NO.2	X		FIBERGLASS	BL. IRON		NO	1978
BASE LODGE	6	6,000	NO.2	X		ASPHALT	BL. IRON		X	1978
BASE LODGE	7	1,000	PROPANE		X	ALUMINUM	GAL. COPPER	5/8-1"	X	
BASE LODGE	8	1,000	PROPANE		X	ALUMINUM	GAL. COPPER	5/8-1"	X	
ALPINE TRAINING	9	500	NO.2	IN BLDG		LEAD PRIMER		3/8	X	
ENGINEER BLDG	10	275	NO.2	IN BLDG			COPPER	3/8	X	
ENGINEER BLDG	11	275	NO.2				COPPER	3/8	X	1966
TOLLHOUSE	12	1,000	NO.2	X					NO	1935
CASTLE	13	275	NO.2	IN BLDG	X		COPPER	3/8	X	1996?
CASTLE	14	275	NO.2	IN BLDG	X		COPPER	3/8	X	1996?
CASTLE	15	500	PROPANE		X	ALUMINUM	GAL. COPPER		X	
LIFT 2 TOP	ELECTRIC HEAT									
BUTLER BLDG								3/8	X	
BUTLER BLDG								3/8	X	
NO HOME									NO	
GONDOLA STORAGE	16	500	PROPANE				COPPER			

rev: 07/03/01
fueltank

WHITEFACE MOUNTAIN SKI CENTER
WATER SYSTEM PUMPS

BASE LODGE

Secondary Back-up – only in emergency – if well doesn't keep up with usage.
Water source is dammed-up brook above base lodge. From there, the water is being pumped to two, 20,000 g. each interconnected storage vessels. The water is being chlorinated at the dam pumphouse.
The water flows from these two storage vessels by gravity to the Base Lodge and Kid's Kampus Lodge to the Vehicle Maintenance Garage.

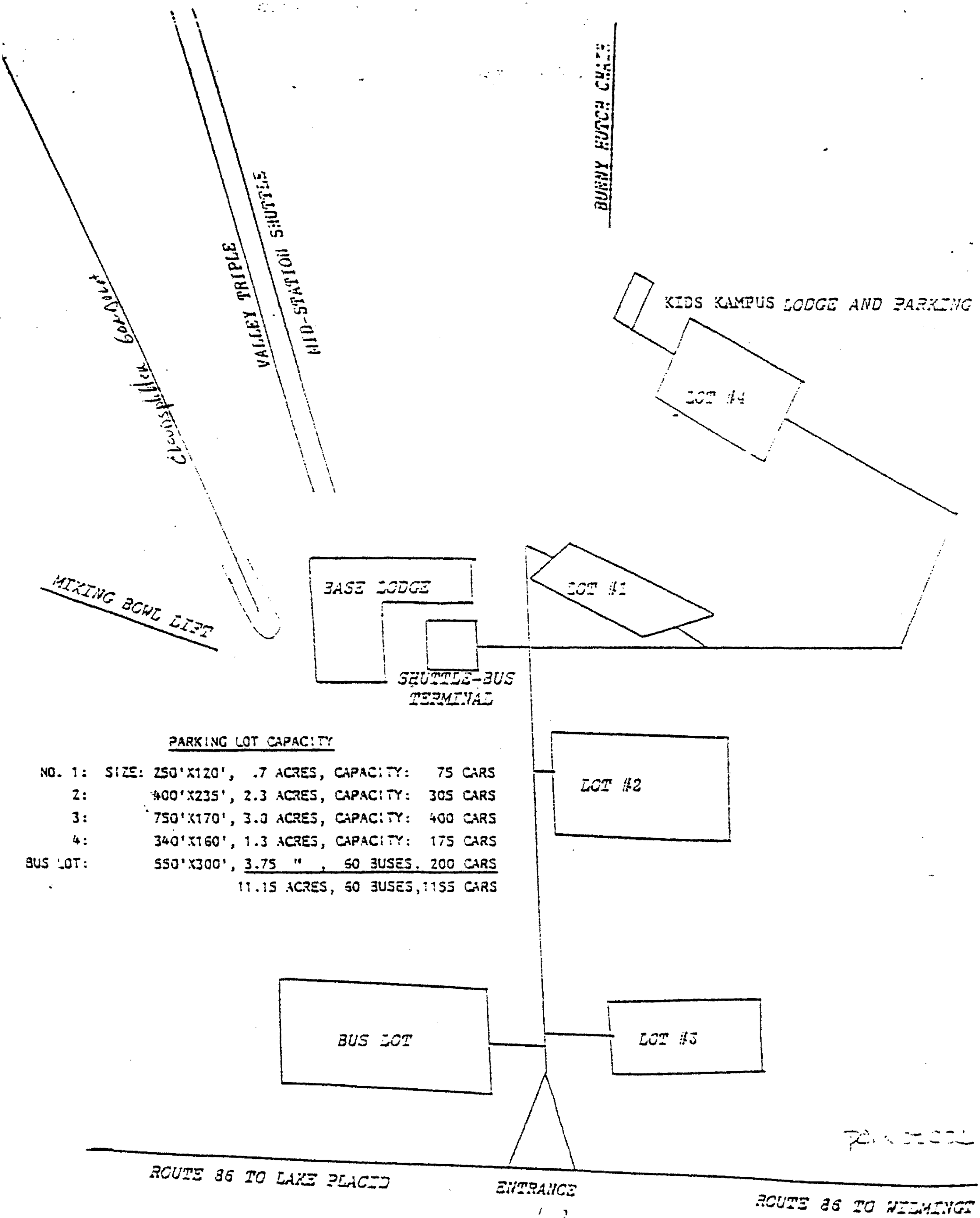
Pump Data: Base Lodge & Kid's Kampus Lodge 1933
From drilled well by road between base lodge & garage
Motor: Franklin Electric
Model #: 2343277004 5 H.P. 3.7 K.W. 3 Phase
Volts: 460/380
Amps: 8.0/9.0 3450/2875 R.P.M. 50 G.P.M.
Kid's Kampus Lodge: 1 ½ hp Emerson 30 SPM 30 TDH 1979

MID-STATION LODGE

Water source is a shallow dug well approximately 100' west of mid-station Lift E. From this well, the water flows by gravity into a 2,000 g. storage tank in the basement of the mid-station lodge where it is chlorinated and put under pressure.

Pump Data:
Manuf: Jacuzzi 5 H.P. 33 G.P.M. Prior to 1978
Model #: 5DB1-T
Serial #: 16NOV90
Amps: 13.4/6.7
Volts: 230/460 VAC 3450 R.P.M. 3 PH
Motor: Century AC by Magnetek

PARKING LOT INVENTORY



PARKING LOT CAPACITY

NO. 1:	SIZE: 250'X120', .7 ACRES,	CAPACITY:	75 CARS
2:	400'X235', 2.3 ACRES,	CAPACITY:	305 CARS
3:	750'X170', 3.0 ACRES,	CAPACITY:	400 CARS
4:	340'X160', 1.3 ACRES,	CAPACITY:	175 CARS
BUS LOT:	550'X300', 3.75 " ,	60 BUSES,	200 CARS
	11.15 ACRES,	60 BUSES,	1155 CARS

WHITEFACE MOUNTAIN SKI CENTER
TRAIL STATISTICS
08/01/2001
Revision

2001

#	TRAIL	DIFF	ACRES	ACRES ADDITION	PRESENT ACRES	%	FEET	MILES
(1)	UPPER CLOUDSPIN	EXP	8.4		8.4		2600	0.492
(3)	UPPER SKYWARD	EXP	5		5		800	0.151
(4)	LOWER SKYWARD	EXP	12.2		12.2		3800	0.719
(7)	ESSEX	EXP	1.9		1.9		1000	0.189
(8)	UPPER NORTHWAY	EXP	1.7		1.7		1000	0.189
(11)	APPROACH	EXP	2.8		2.8		1900	0.359
(12)	EMPIRE	EXP	1.8		1.8		1600	0.41
(13)	UPPER MACKENZIE	EXP	1.8		1.8		1000	0.189
(15)	UPPER WILDERNESS	EXP	0.9		0.9		500	0.094
(16)	LOWER WILDERNESS	EXP	5.5		5.5		1400	0.265
(17)	MOUNTAIN RUN	EXP	9.9		9.9		2400	0.454
(18)	UPPER PARKWAY	EXP	5		5		1800	0.34
(20)	UPPER THRUWAY	EXP	2.5	0.7	3.2		1000	0.189
(51)	CLOUDSPIN CUT	EXP	0.2		0.2		400	0.075
(52)	YELLOW BRICK ROAD	EXP	0.1		0.1		300	0.056
(61)	2200 RD.	EXP	0.4		0.4		300	0.056
(62)	HIGH COUNTRY GLADE	EXP	5.2		5.2		1550	0.293
(14)	LOWER MACKENZIE	EXP	3.4		3.4		1400	0.265
(32)	BEAR	EXP	5.9		5.9		1700	0.321
(65)	ON RAMP	EXP	0.3		0.3		600	0.113
(68)	BROOKSIDE	EXP	4.1		4.1		1,800	0.34
(69)	CLOUDSPLITTER GLADE	EXP	3.4		3.4		300	0.057
(39)	VALVEHOUSE RD.	EXP	0.3		0.3		300	0.056
(28)	DANNY'S BRIDGE	EXP	1.8		1.8		1100	0.208
(70)	10TH MT. DIV. GLADE	EXP	10		10		1,000	0.189
			94.5	0.7	95.2	44%	31550	6.069
(2)	LOWER CLOUDSPIN	INT	6.8		6.8		2500	0.473
(5)	PARON'S RUN	INT	5.1		5.1		2200	0.416
(6)	EXCELSIOR	INT	10.9		10.9		5600	1.06
(9)	LOWER NORTHWAY	INT	3.40		3.4		1700	0.321
(10)	CONNECTOR	INT	0.6		0.6		700	0.132
(19)	LOWER PARKWAY	INT	7.4		7.4		2700	0.511
(21)	LOWER THRUWAY	INT	3.5		3.5		1400	0.265
(22)	UPPER VALLEY	INT	4.1		4.1		2000	0.378
(25)	BROADWAY	INT	3.1		3.1		1700	0.321
(29)	RIVER RUN	INT	1.7		1.7		1000	0.189
(38)	FOLLIES	INT	3.3		3.3		2400	0.454
(47)	CALAMITY LANE	INT	0.6		0.6		400	0.075
(50)	RIVA RIDGE	INT	0.8		0.8		1400	0.265
(53)	UPPER SWITCH BACK	INT	0.3		0.3		600	0.113
(54)	LOWER SWITCH BACK	INT	0.3		0.3		600	0.113
(55)	CROSSOVER LOOP	INT	0.3		0.3		600	0.113
(56)	GLEN	INT	0.3		0.3		450	0.085
(57)	VICTORIA SHOOT	INT	0.6		0.6		250	0.047

# TRAIL	DIFF	ACRES	ACRES ADDITION	PRESENT ACRES	%	FEET	MILES
(58) LOWER EMPIRE	INT	0.6		0.6		350	0.066
(23) LOWER VALLEY	INT	12.7		12.7		4100	0.776
(59) WILDWAY	INT	1.1		1.1		400	0.075
(60) 1900 ROAD	INT	0.4		0.4		700	0.132
(63) LOW RD.	INT	0.3		0.3		200	0.037
(64) TOM CAT	INT	0.4		0.4		400	0.075
(67) SUMMIT EXPRESS	INT	1		1		550	0.104
(24) BURTON'S CUTOFF	INT	0.4		0.4		600	0.113
(46) UPPER BOREEN	INT	0.7		0.7		800	0.151
(71) DRAPER'S DROP	INT		5.1	5.1		1700	0.321
(72) PARKWAY EXIT	INT		0.5	0.5		200	0.037
(48) LADIES BRIDGE	INT	0.6		0.6		500	0.094
(49) LOWER GAP	INT	0.3		0.3		300	0.056
		71.6	5.6	77.2	36%	39000	7.368
(26) EASY STREET	NOV	3.5		3.5		2100	0.397
(27) BOREEN	NOV	11.1		11.1		5600	1.06
(30) MIXING BOWL	NOV	2.6		2.6		800	0.151
(31) WOLF	NOV	2.4		2.4		1800	0.34
(66) WOLF RUN	NOV	1		1		550	0.095
(33) DEER	NOV	4.2		4.2		1300	0.246
(34) SILVER	NOV	4.2		4.2		2150	0.407
(35) GOLD	NOV	5.1		5.1		2950	0.558
(36) BRONZE	NOV	3.3		3.3		1650	0.312
(37) HOME RUN	NOV	0.3		0.3		500	0.094
(40) SILVER SHOOT	NOV	0.5		0.5		700	0.132
(41) MAIN STREET	NOV	0.6		0.6		200	0.075
(42) RUNNER UP	NOV	0.6		0.6		800	0.151
(43) MEDALIST	NOV	1.7		1.7		1600	0.303
(44) ROUND A BOUT	NOV	1.3		1.3		1100	0.208
(45) EASY WAY	NOV	0.3		0.3		500	0.094
		42.7	0	42.7	20%	24300	4.623
	TOTAL	208.8	6.3	215.1		94850	18.06

WHITEFACE MOUNTAIN SKI CENTER
TRAIL STATISTICS
11/20/2000

#	TRAIL	DIFF	ACRES	ACRES ADDITION NOV. 00	PRESENT ACRES	%	FEET	MILES
1	UPPER CLOUDSPIN	EXP	9.65		9.65		2600	0.492
3	UPPER SKYWARD	EXP	2.5		2.5		800	0.151
4	LOWER SKYWARD	EXP	11.45		11.45		3800	0.719
7	ESSEX	EXP	1.9		1.9		1000	0.189
8	UPPER NORTHWAY	EXP	1.7		1.7		1000	0.189
11	APPROACH	EXP	2.8		2.8		1900	0.359
12	EMPIRE	EXP	1.8		1.8		1600	0.41
13	UPPER MACKENZIE	EXP	1.8		1.8		100	0.189
15	UPPER WILDERNESS	EXP	0.9		0.9		500	0.094
16	LOWER WILDERNESS	EXP	5.5		5.5		1400	0.265
17	MOUNTAIN RUN	EXP	9.9		9.9		2400	0.454
18	UPPER PARKWAY	EXP	5		5		1800	0.34
20	UPPER PARKWAY	EXP	2.5		2.5		1000	0.189
51	CLOUDSPIN CUT	EXP	0.2		0.2		400	0.075
52	YELLOW BRICK ROAD	EXP	0.1		0.1		300	0.056
61	2200 ROAD	EXP	0.4		0.4		300	0.056
62	HIGH COUNTRY GLADE	EXP	5.3		5.3		1650	0.312
14	LOWER MACKENZIE	EXP	3.4		3.4		1400	0.265
32	BEAR	EXP	5.9		5.9		1700	0.321
65	ON RAMP	EXP	0.3		0.3		600	0.113
68	BROOKSIDE	EXP		4.1	4.1		1800	0.34
69	CLOUDSPLITTER GLADE	EXP		3.44	3.44		300	0.057
39	VALVEHOUSE ROAD	EXP	0.3		0.3		300	0.056
28	DANNY'S BRIDGE	EXP	1.8		1.8		1100	0.208
70	10TH MTN. DIV. GLADE	EXP		10	10		1000	0.189
			75.1	17.54	92.64	46%	31650	6.088

2	LOWER CLOUDSPIN	INT	6.8		6.8		2500	0.473
5	PARON'S RUN	INT	4.6		4.6		2000	0.378
6	EXCELSIOR	INT	11.16		11.16		5600	1.06
9	LOWER NORTHWAY	INT	3.43		3.43		1700	0.321
10	CONNECTOR	INT	0.6		0.6		700	0.132
19	LOWER PARKWAY	INT	7.4		7.4		2700	0.511
21	LOWER THRUWAY	INT	3.5		3.5		1400	0.265
22	UPPER VALLEY	INT	4.1		4.1		2000	0.378
25	BROADWAY	INT	3.1		3.1		1700	0.321
29	RIVER RUN	INT	1.7		1.7		1000	0.189
38	FOLLIES	INT	3.3		3.3		2400	0.454
47	CLALMITY LANE	INT	0.6		0.6		400	0.075
50	RIVA RIDGE	INT	0.8		0.8		620	0.265
53	UPPER SWITCHBACK	INT	0.3		0.3		600	0.113
54	LOWER SWITCHBACK	INT	0.3		0.3		600	0.113
55	CROSSOVER LOOP	INT	0.3		0.3		600	0.113

WHITEFACE MOUNTAIN SKI CENTER
TRAIL STATISTICS - CONT'D
11/20/2000

#	TRAILS	DIFF	ACRES	ACRES ADDITION NOV.00	PRESENT ACRES	%	FEET	MILES
56	GLEN	INT	0.3		0.3		450	0.085
57	VICTORIA SHOOT	INT	0.6		0.6		250	0.047
58	LOWER EMPIRE	INT	0.6		0.6		350	0.066
23	LOWER VALLEY	INT	12.7		12.7		4100	0.776
59	WILDWAY	INT	1.1		1.1		400	0.075
60	1900 ROAD	INT	0.4		0.4		700	0.132
63	LOW ROAD	INT	0.3		0.3		200	0.037
64	TOM CAT	INT	0.4		0.4		400	0.075
67	SUMMIT EXPRESS	INT	1.04		1.04		550	0.104
24	BURTON'S CUTOFF	INT	0.4		0.4		600	0.113
46	UPPER BOREEN	INT	0.7		0.7		800	0.151
48	LADIES BRIDGE	INT	0.6		0.6		500	0.094
49	LOWER GAP	INT	0.3		0.3		300	0.056
			71.43	0	71.43	36%	36900	6.972
26	EASY STREET	NOV	3.5		3.5		2100	0.397
27	BOREEN	NOV	9.8		9.8		5600	1.06
30	MIXING BOWL	NOV	2.6		2.6		800	0.151
31	WOLF	NOV	2.4		2.4		1800	0.34
66	WOLF RUN	NOV	0.9		0.9		550	0.095
33	DEER	NOV	4.2		4.2		1300	0.246
34	SILVER	NOV	2.1		2.1		2150	0.407
35	GOLD	NOV	4.3		4.3		2950	0.558
36	BRONZE	NOV	2.2		2.2		1650	0.312
37	HOME RUN	NOV	0.3		0.3		500	0.094
40	SILVER SHOOT	NOV	0.5		0.5		700	0.132
41	MAIN STREET	NOV	0.2		0.2		200	0.037
42	RUNNER UP	NOV	0.6		0.6		800	0.151
43	MEDALIST	NOV	1.7		1.7		1600	0.303
44	ROUND ABOUT	NOV	1.3		1.3		1100	0.208
45	EASY WAY	NOV	0.3		0.3		500	0.094
			36.9	0	36.9	18%	24300	4.585
	TOTAL		183.43	17.54	200.97		92850	17.55

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APPENDIX G

SOLID WASTE REMOVAL

Subject: **Whiteface Mt. Ski Center - Existing Conditions**
Date: Tue, 7 Aug 2001 13:46:42 -0400
From: "Holly E. Elmer" <helmer@thelagroup.com>
To: Jrand@whiteface.net
CC: Chumber@segrp.com

Hello Jay - Please provide us with records of the amount of solid waste you have had hauled away (this is usually in tons or cubic yards). If you have weekly, biweekly or monthly information for the last few years that would be good. We can calculate the amount of solid waste based on the number of skiers and season pass holders, but the figure is more accurate if based on actual data and not a multiplier.

Also, if you have data on the number of people at the ski center in the off-season that would be useful.

Thank you. Holly

The attached figures are what we have in the office files. If you need further information we will have to go through past records in the file room. Let me know if this is enough information.

J

APPENDIX
Solid Waste Removal
2000 - 2001

DATE	TONNAGE
05/31/2000	7.47
08/08/2000	8.75
09/27/2000	8.04
11/27/2000	8.33
12/28/2000	8.71
01/08/2001	8.69
01/23/2001	8.65
02/13/2001	9.4
02/23/2001	8.84
03/12/2001	7.17
03/27/2001	8.88
	92.93
04/27/2001	8.27
07/14/2001	7.47
	15.74

The cost is $63.00 per ton. There is an additional $200.00 rolloff fee each time, as well as a $200.00 monthly rental fee.

APPENDIX H

LOG OF DAILY VISITORS

Whiteface Mt.

Log of Daily Visitors

Winter 1996-1997

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1		103	1266	1930	1693	490
2		43	1992	1846	695	715
3		49	1478	446	680	378
4		38	1711	492	693	628
5		83	707	523	610	1168
6		126	652	519	615	587
7		749	866	1435	1249	48
8		625	669	2355	2483	32
9		120	359	2108	2924	65
10		140	721	560	1376	104
11		102	1227	431	1681	154
12		145	1366	545	1923	240
13		322	526	555	1414	152
14		916	669	1093	932	0
15		843	852	3085	1312	0
16		262	628	3495	1514	0
17		200	693	2048	560	0
18		135	1781	2068	561	0
19		399	2154	1493	616	0
20		554	1356	1729	455	0
21		982	503	871	791	0
22		1137	393	1674	1440	0
23	194	1153	366	1537	1613	0
24	218	409	834	967	604	0
25	60	1015	1127	1000	450	0
26	67	1436	1196	843	241	0
27	178	2829	488	531	486	0
28	322	2877	509	1095	1847	0
29	825	1444	600		1197	0
30	929	2935	372		444	0
31		2648	783		462	0
	2793	24819	28844	37274	33561	4761

Season Total= 132,052

Total Season Passes Issued = 489

Whiteface Mt.

Log of Daily Visitors

Winter 1997-1998

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1		67	2418	1805	1028	48
2		7	3634	515	473	18
3		157	2106	426	494	31
4		72	745	624	650	256
5		266	393	388	449	250
6		701	615	1135	880	108
7		904	437	1978	2047	123
8		113	80	1878	1631	144
9		102	66	572	224	61
10		113	0	642	427	102
11		111	0	570	129	174
12		222	21	270	421	88
13		644	50	1058	1177	0
14		497	98	2813	2128	0
15		168	77	3141	2474	0
16		284	281	2583	1166	0
17		254	1594	1957	1622	0
18		405	1989	1548	1158	
19		477	1096	1540	641	
20		1020	359	1283	754	
21	59	1145	360	2020	1107	
22	228	901	278	1593	1379	
23	276	866	506	632	517	
24	64	1073	1373	595	466	
25	81	751	2336	786	732	
26	144	1598	432	689	275	
27	264	2653	370	1041	552	
28	738	2810	617	1972	1094	
29	927	3231	466		530	
30	413	2753	613		132	
31		2620	1538		70	
	3194	26985	24948	36054	26827	1403

Season Total= 119,411

Total Season Passes Issued = 903

Whiteface Mt.

Log of Daily Visitors

Winter 1998-1999

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1		26	2268	755	577	271
2		41	1187	275	653	559
3		28	265	474	560	632
4		30	561	407	356	315
5		74	443	1044	953	178
6		54	749	2136	1894	208
7		10	577	2102	1805	36
8		13	685	807	572	22
9		52	986	667	691	44
10		64	1522	531	672	109
11		85	584	609	675	101
12		442	403	1040	1057	0
13		333	388	3008	2179	0
14		129	155	3728	1699	
15		191	394	2647	1305	
16		218	2836	2606	1526	
17		203	3795	1939	1672	
18		307	999	1928	863	
19		740	442	2081	1134	
20		939	447	2565	1926	
21		500	583	1878	1488	
22	329	297	537	952	82	
23	85	619	1246	1043	392	
24	64	814	504	1081	390	
25	188	1081	333	965	361	
26	104	1500	427	1065	538	
27	410	2185	798	2486	1480	
28	598	2772	797	1658	961	
29	301	3020	1343	75	395	
30	38	916	2994		324	
31		2219	2481		350	
	2117	19902	31729	42552	29530	2475

Season Total= 128,305

Total Season Passes Issued = 3888

Whiteface Mt.

Log of Daily Visitors

Winter 1999-2000

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1		0	1910	686	958	489
2		101	1100	454	544	114
3		192	456	696	786	19
4		436	343	1009	2252	9
5		281	476	2432	1615	2
6		59	511	1567	568	0
7		32	635	643	507	0
8		116	1348	556	520	0
9		106	1578	495	458	
10		193	451	451	843	
11		740	377	912	1650	
12		520	309	1973	1260	
13		128	332	1579	1511	
14		129	204	395	1416	
15		167	2012	370	1385	
16		121	2883	339	682	
17		324	528	325	1078	
18		922	195	936	2004	
19		918	269	1676	1587	
20	423	449	315	1939	673	
21	183	244	292	2109	474	
22	111	405	350	2733	459	
23	61	655	1328	2168	372	
24	0	1127	293	1942	619	
25	0	1173	401	1149	1070	
26	0	1284	450	2439	356	
27	0	2160	506	1226	220	
28	0	2378	259	601	36	
29	0	3146	1895	997	90	
30	0	2783	2342		133	
31	0	2974	621		180	
	778	24263	24969	34797	26306	633

Season Total= 111,746

Season Passes issued = 2366

Whiteface Mt.

Log of Daily Visitors

Winter 2000-2001

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY.
1		184	1408	567	562	1920	115
2		562	905	940	954	204	
3		448	1256	1701	2318	228	
4		86	1056	1490	1796	392	
5		76	958	618	573	337	
6		80	1455	914	844	219	
7		76	3416	795	855	721	
8		203	487	718	749	377	
9		567	516	586	1245	309	
10		978	463	345	2289	272	
11		99	382	1534	2090	343	
12		37	802	675	2022	91	
13		109	2790	691	1713	476	
14		252	3054	401	1505	1255	
15		259	1075	605	1428	758	
16		824	397	1527	1428	0	
17		410	355	3213	2544	0	
18		175	317	3583	4131	0	
19		295	567	2880	808	0	
20		290	2001	2767	631	409	
21		423	1703	2228	656	569	
22	246	549	540	1948	299	280	
23	315	1263	524	2009	742	0	
24	779	1746	566	2450	1992	0	
25	900	1185	537	694	1607	0	
26	83	748	750	527	379	0	
27	30	2994	1966	559	310	60	
28	46	3577	4139	657	532	217	
29	50	4113	534		380	265	
30	78	3744	321		343	0	
31		3182	525		1138		
	2527	29534	35765	37622	38863	9702	115

Season Total = 154,128

Season Passes Issued = 3439

Whiteface Mt.

Log of Daily Visitors

Summer 1996

DAY	MAY.			JUN.			JUL.			AUG.			SEP.			OCT.		
	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE
1				264			1267	688	29	221	130	19	1860	1096	72	542	210	8
2				333			934	419	26	908	623	53	741	428	41	502	145	2
3				163			510	226	9	1030	521	49	245	138	7		26	4
4				144			32	36		1228	771	63	288	146	8			
5				203			1619	768	36	1050	733	32	210	130	2			
6				488			306	220	37	1243	802	40	207	121	3			
7							1010	455	39	800	560	38	511	213	12			
8				60			603	310	10	383	360	32	40	63	6			
9				214			814	348	22	937	607	34	8	41	7			
10				34			463	200	12	962	570	67	67	74	8			
11				142			862	474	20	1569	665	54	390	233	2			
12				170			740	430	14	1020	760	27	201	97	2			
13				66			98	24	7	992	667	28	31	25	2			
14				53			730	286	23	1174	649	40	412	271	11			
15				334	148		113	67	12	903	586	33	254	112	16			
16				429	114		616	265	11	238	379	17	58	23				
17				143	58		960	489	30	1122	655	29			2			
18	342			202	105		826	482	41	1206	521	36	412	119	4			
19	371			196	79		69	20	14	1342	597	18	388	128	3			
20	189			98	85		454	103	27	983	609	37	367	127	10			
21	74			160	99		1252	610	43	616	430	21	1045	444	36			
22	146			53			931	498	28	876	612	36	676	298	29			
23	152			212	191		721	418	24		57	6	367	138	3			
24	146			522	232		800	499	34	1284	527	35	397	102	3			
25	567			187	144		339	232	8	1318	602	49	55	35	5			
26	921			576	188		676	447	24	226	58	5	510	157	7			
27	472			332	113		528	200	10	325	341	19	63	160				
28	163			441	313		1201	636	37	973	585	31	469	291	19			
29	133			413	186	19	1040	489	10	903	454	25	352	187	6			
30					181	19	573	293	19	736	371	17	537	142	14			
31	156						200	137		1104	707	58						
	3832	0	0	6632	2236	38	21287	10769	656	27672	16509	1053	11161	5539	340	1044	381	14

Hwy Total = 71,628

Lift Total = 35434

Bike Total = 2101

Whiteface Mt.

Log of Daily Visitors

Summer 1997

DAY	MAY.			JUN.			JUL.			AUG.			SEP.			OCT.		
	HWY	LIFT	Bike	HWY	LIFT	Bike	HWY	LIFT	Bike	HWY	LIFT	Bike	HWY	LIFT	Bike	HWY	LIFT	Bike
1				76			705	337	24	742	376	29	684	334	25	0	14	0
2				159			455	136	22	609	520	42	133	106	4	139	278	6
3				184			0	27	0	230	341	37	65	4	3	159	97	15
4				259			258	165	3	1542	876	44	274	52	5	1581	1660	17
5				295			1795	800	43	673	246	34	401	141	17	1475	1613	32
6				391			1055	487	52	1394	750	38	456	157	30	578	279	7
7				427			606	308	15	1109	573	32	55	51	11	550	310	1
8				386			965	513	11	925	576	48	328	178	4	453	243	2
9				151			0	45	23	1221	614	132	382	164	5	218	241	7
10				201			900	484	11	963	595	139	203	110	4	520	197	12
11				135			744	381	34	138	301	40	90	34	5	1462	895	46
12				142			865	1120	32	1348	1022	9	103	107	0	1764	990	50
13				71			706	975	14	54	1	0	12	71	17	712	406	36
14				317	101	13	230	261	5	1107	706	33	589	292	31	194		
15				510	135	15	419	332	24	1159	623	35	246	133	3	82		
16				241	86	2	982	440	21	1344	649	33	282	151	3	302		
17				0	43		582	336	9	369	266	58	469	185	0	264		
18	289			20	60	4	668	409	24	1260	579	27	314	195	4	598		
19	7			264	146	2	154	75	25	1378	751	35	386	118	5	481		
20	34			327	175	1	1215	599	23	1167	612	41	0	0	0			
21	0			317	213	7	664	333	19	0	0	0	410	114	9			
22	0			175	153	4	1188	611	24	540	345	11	369	102	8			
23	0			253	129	4	946	401	14	686	356	27	0	0	0			
24	486			290	135	7	796	451	37	1096	486	35	436	102	6			
25	716			205	100	6	734	349	20	1003	503	15	293	97	5			
26	202			400	156	5	874	450	38	886	587	31	18	21	0			
27	154			438	270	2	530	308	45	231	95	4	1423	663	19			
28	140			693	355	8	522	245	3	548	316	14	1398	718	19			
29	141			786	345	19	1417	816	75	337	356	20	0	8	0			
30	58			782	399	38	967	704	37	1238	654	72	46	45	5			
31	142						879	551	12	1783	866	59						
Totals	2369	0	0	8895	3001	137	22821	13449	739	27580	15541	1224	9865	4453	247	11532	7223	231

Hwy Total = 83,062

Lift Total = 43667

Bike Total = 2578

Whiteface Mt.

Log of Daily Visitors

Summer 1998

DAY	MAY.			JUN.			JUL.			AUG.			SEP.			OCT.		
	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE
1	60			88			131	49	0	1151	743	56	553	234	9	0	5	0
2				161			778	347	22	1291	851	38	134	54	3	426	57	4
3	29			115			909	445	13	929	569	32	306	154	10	704	1031	24
4				114			557	146	24	1067	38	38	551	183	8	1333	1339	6
5				295			1126	511	35	1297	549	32	1140	343	30	498	239	9
6				84			801	392	17	524	27	27	1656	866	59	538	149	3
7				146			223	151	0	183	95	17	646	232	24	270	135	22
8	36			58			91	47	4	1390	745	43	30	56	0	0	24	0
9				221			627	419	4	966	583	38	0	13	1	0	59	0
10				212			396	226	14	111	321	17	225	49	5	0	145	16
11				154			153	89	14	565	482	21	435	137	5	138	333	9
12				25			1220	450	28	1136	850	36	4	53	14	731	393	27
13				90	6	6	639	240	5	1518	819	33	782	252	21	251		
14				128	0		930	476	12	911	471	53	302	83	7			
15	110			166	68		701	339	20	719	426	31	95	20	0			
16	409			27	20	2	448	552	8	608	493	42	362	208	6			
17	450			12	27	0	393	258	2	208	300	11	382	132	4			
18	478			72	32	0	1159	463	31	0	345	22	342	133	4			
19	119			148	103	2	1131	524	32	1326	694	44	1045	424	5			
20	75			450	163	17	352	241	9	1098	498	26	140	197	30			
21	360			637	182	7	1084	527	33	564	452	18	196	121	12			
22	36			246	132	5	771	454	26	885	428	39	217	65	3			
23	744			223	119	1	294	196	6	832	330	32	502	105	0			
24	1065			233	111	11	981	418	17	400	184	2	332	149	0			
25	486			271	182	2	1134	485	14	293	246	14	404	163	14			
26	121			117	61	12	979	465	35	832	559	35	961	621	17			
27	149			262	166	25	986	469	17	1059	484	52	353	269	5			
28	109			859	280	19	1098	544	14	731	364	23	309	161	3			
29	88			426	195	10	947	505	15	11	37	12	621	195	0			
30	346			232	120	8	511	307	13	1002	397	28	244	145	3			
31	59						757	445	15	471	239	6						
	5329	0	0	6272	1967	127	22307	11180	499	24578	13619	918	13269	5817	302	4889	3909	120

Hwy Total = 76,644

Lift Total = 36492

Bike Total = 1966

Whiteface Mt.

Log of Daily Visitors

Summer 1999

DAY	MAY.			JUN.			JUL.			AUG.			SEP.			OCT.		
	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE
1				77			448	283	11	965	432	26	629	289	17	555	105	11
2				73			411	216	20	1021	427	16	621	161	7	1297	1286	15
3				0			1074	551	59	1115	612	41	506	283	9	898	788	6
4				225			852	486	40	70	110	1	1369	548	40			
5				413			783	264	27	1094	513	33	1803	938	70		62	
6				256			94	105	10	626	231	19	256	74	4		28	
7				292			1341	411	21	1319	717	23	137	43		148	52	
8				173			728	360	10	0	31	2	84	70	3	537	101	7
9				0			484	167	9	1083	420	30	329	124	15	991	447	14
10				243			46	109	14	1323	556	60	118	49	2	265	679	40
11				417			1067	355	19	899	494	32	509	177	15	777	243	4
12				764	162	25	760	398	18	1282	590	20	689	203	16			
13				463	116	10	770	368	14	460	218	23	303	113	4			
14				153	84		927	353	14	0	297	6	116	25	3			
15	310			122	89		693	257	16	602	105	17	336	90	3			
16	312			312	77	4	464	238	9	1302	608	31	72	2				
17	89			203	23	12	790	309	15	970	420	21						
18	123			201	144	3	680	280	27	426	493	15	727	286	18			
19	0			445	172	17	325	154	12	1520	610	33	1041	306	12			
20	93			435	137	17	1373	526	29	1019	405	15	294	151	6			
21	136			232	75	0	959	417	12	842	313	25	23	4	1			
22	439			341	149	3	774	403	18	787	400	25						
23	424			321	160	14	624	255	5	1146	338	26	497	143				
24	0			366	115	12	330	303	15	1060	600	20	329	150	5			
25	26			76	98	1	911	391	56	765	400	34	390	231	17			
26	10			703	206	19	447	389	20	676	418	30	1224	426	16			
27	158			554	153	13	1045	531	30	320	176	7	421	158	6			
28	167			47	59		1125	553	15	892	419	30	429	154	1			
29	697			17	86	7	606	287	25	899	345	22		263				
30	###			804	355	31	831	414	19	594	225	10	27					
31	565						1140		20	749	273	15						
	4593	0	0	8728	2460	188	22902	10133	629	25826	12196	708	13279	5461	290	5468	3791	97

Hwy Total = 80,796

Lift Total = 34041

Bike Total = 1912

Whiteface Mt.

Log of Daily Visitors

Summer 2000

DAY	MAY.			JUN.			JUL.			AUG.			SEP.			OCT.		
	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE	HWY	LIFT	BIKE
1				102			761	523	44	176	545	2	361	332	7	1015	2538	17
2				53			1355	890	57	635	790	20	182	170	26	408	325	4
3				391	228		285	414	17	555	595	13	670	752	21	321	312	2
4				325	105		788	533	28	1135	597	27	280	290		227	137	
5				258			924	569	8	1047	1611	23	427	227	1	129	170	1
6				0			800	548	26	1047	1391	19	255	198	8	38	130	3
7				192			675	298	9	421	482	8	306	143	2	391	735	8
8				130			743	582	53	1174	374	6	214	132	1		1346	3
9				0			320	254	42	671	660	34	546	3011	18	24	635	
10				416	60		144	354	5	909	773	19	646	362	16			
11				0	0		984	580	18	182	77	5	20	57				
12				206			616	484	15	741	788	31	55	130	4			
13				159			649	425	15	1113	612	26	391	258	2			
14				70			533	445	13	669	729	15	335	215	7		1084	
15				181			128	361	14	994	809	12	2	36			350	
16				198			121	226	2	692	626	14	388					
17				153	244	15	385	505	11	448	728	6	460	88	14			
18				328	129	6	543	506	10	380	783	15	366	118	10			
19				259	169	4	528	623	17	961	771	31	350	212	3			
20	363			328	175	12	913	718	15	640	485	21	386	254	5			
21	103			94	80	1	288	295	9	991	735	24	177					
22	93			223	204	13	566	531	20	932	1065	26	419	306	11			
23	59			250	197	14	580	484	11	62	253	0	72	111	5			
24	56			577	386	20	747	581	15	613	671	24	83	219	16			
25	24			211	172	15	1084	726	17	716	607	18	421	298	5			
26				572	326	9	769	739	21	1086	806	31	395	232	4			
27	319	332		386	303	11	184	376	6	115	451	27	296	329	4			
28	550	580		579	408	10	485	575	20	842	625	22	349	244	2			
29	672	231		274	203	6	310	258	10	491	479	11	339	304	14			
30	139			155	174	5	348	183	19	407	368	11	1083	2771	16			
31	141						185	366	2	498	429	7						
	2519	1143	0	7070	3563	141	17741	14952	569	21843	20715	548	10274	11799	222	2553	7762	38

Hwy Total = 62,000

Lift Total = 59934

Bike Total = 1518

APPENDIX I

TRAFFIC ASSESSMENT

CREIGHTON MANNING ENGINEERING, LLP

4 AUTOMATION LANE ❖ ALBANY, NY 12205-1683
PHONE 518-446-0396 ❖ FAX 518-446-0397

Memo

To: Holly Elmer

From: Ken Wersted

CC:

Date: March 26, 2002

Re: Whiteface Mountain Traffic Assessment

Project: 01-073

Creighton Manning Engineering (CME) has completed a review of the traffic circulation and operations of the Whiteface Mountain Ski area, located in Wilmington New York, and operated by the Olympic Regional Development Authority (ORDA). Whiteface Mountain is located off Route 86, approximately 9 miles east of Lake Placid New York. Whiteface Mountain ski area provides approximately 70 trails with 11 lifts capable of processing over 13,000 people per hour.

1.0 - Traffic Volumes

Based on review of the latest available NYSDOT *Traffic Volume Report* (2000), the annual average daily traffic (AADT) on Route 86 between the entrance to Whiteface Ski Center and Route 431 is 3,350 vehicles per day. The AADT on Route 86 between the entrance to Whiteface and Lake Placid is 3,900 vehicles per day. When compared to the AADT volumes over the past decade (1991 and 1993 to 2000), both sections experienced decreases in traffic volumes through the mid 1990's reaching a low around 1997. Since then, traffic volumes have increased significantly. Neglecting the changes in the trends of traffic volumes on Route 86, there has been an overall increase in traffic volumes of approximately 0.6 percent per year west of Whiteface Mountain and 1.07 percent per year east of the mountain.

Existing turning movement traffic volumes were observed at the entrance to Whiteface Mountain ski area during the peak hours on Saturday February 16, 2002, from 8:00 AM to 10:00 AM and from 2:30 PM to 5:15 PM. These time periods represent the peak arrival and departure times for skiers. February 16 also marked the beginning of Presidents Day weekend and a week long winter recess for most grade schools in New York. Typically Presidents day weekend represents one of the busiest weekends during the season.

The AM peak hour occurred from 8:30 AM to 9:30 AM in which 617 vehicles were observed entering the ski area and 99 vehicles exited. The afternoon peak period occurred from 4:00 PM to 5:00 PM in which 88 vehicles were observed entering with 756 vehicles exiting.

2.0 - Future Traffic Volumes

Future traffic volumes were estimated by increasing the background traffic volumes on Route 86 and projecting future traffic growth from the mountain expansion. It is assumed that the project can be completed in 2003. Therefore, a one percent growth rate was added to the existing traffic volumes observed at the entrance to the ski mountain. Based on information contained in the Whiteface Unit Management Plan Update, dated March 2002, the comfortable carrying capacity (CCC, the number of skiers that can be accommodated at any given time) is expected to increase from 5,070 to 5,640, an 11% increase. This increase was also applied to the traffic volumes observed at the entrance to the ski mountain. The resulting future traffic forecasts represent an increase of approximately 12% in the traffic volumes observed on February 16, 2002.

3.0 - Levels of Service

The operational characteristics of the entrance to the ski area were evaluated based on the procedures contained in the 2000 Highway Capacity Manual, using the latest version of the Highway Capacity Software (HCS version 4.1b). An intersection analysis was performed for the existing 2002 traffic volumes and the future traffic volumes with the expansion. The following levels of service were calculated:

Table 1 – Level of Service Summary

Intersection			Control	AM Peak Hour		PM Peak Hour	
				2002 Existing	2003 Build	2002 Existing	2003 Build
Rt. 86/North entrance							
	NB	L	U	A (8.3)	A (8.5)	A (7.6)	A (7.6)
	EB	LR		C (15.0)	C (16.7)	C (20.5)	C (27.9)
Rt. 86/South entrance							
	NB	L	U	A (8.0)	A (8.2)	A (7.8)	A (7.8)
	EB	LR		B (11.0)	B (11.7)	D (27.9)	F (50.1)
Rt. 86/Single entrance							
	NB	L	U		B (10.1)		A (7.8)
	EB	L			E (45.8)		D (26.1)
		R			A (9.0)		C (16.3)

U= Unsignalized Intersection
X(Y.Y) = Level of Service (Delay, seconds per vehicle)

Based on the results shown above, the existing configuration of the entrance to the ski area operates well with AM peak hour exiting traffic operating at LOS C or better, and left turn entering traffic operating at LOS A. During the PM peak hour, the majority of traffic is exiting the mountain and utilizing the two entrances depending on which direction they are headed. Approximately 61% of the vehicles exiting the mountain use the south entrance to turn right onto Route 86 destined for Lake Placid, while 31% use the north entrance to turn left towards Wilmington. The exiting maneuvers from the ski area currently operate at LOS D or better during the PM peak hour.

With the increase in traffic volumes as a result of the expansion, AM peak hour levels of service will remain the same. However, as skiers attempt to leave the mountain in the afternoon, they will experience increases in delays and LOS F at the south entrance.

As one alternative (discussed in more detail later), combining the two entrances into a single entrance with the existing Whiteface Mountain sign located in the median, would improve traffic flow internally in this area and would result in LOS D or better operations during the PM peak hour. During the AM peak hour, LOS E will be experienced by drivers attempting to turn left from the mountain onto Route 86. This is considered acceptable however, due to the low traffic volume on this maneuver.

4.0 - Traffic Circulation

The current configuration of the mountain entrance reduces the conflicts between the major traffic streams as they enter during the AM peak hour. With approximately 294 vehicles turning left into the site at the south entrance and 218 vehicles turning right at the north entrance, ingress into the site is facilitated easily with this configuration. However, a short distance west of Route 86, the two entrances merge to form the main access road to parking lots and the base lodge. At this merge, no signing or traffic control exists with the exception of a ski area employee directing traffic and answering questions. This area of conflict results in congestion on the access road and may extend back along each entrance road onto Route 86. Due to the lack of pavement markings and signs at the entrances, some motorists were observed using the south entrance as a one-way exit only queuing side by side blocking access into the ski area from the left turn lane on Route 86.

Another traffic circulation issue is the pick up and drop off area at the ski lodge. Here, an area around a rectangular median is used as a loading area for skiers via passenger car and buses. The parking lot shuttle and the shuttle running to and from Lake Placid also use this area. During peak times, mountain employees direct passenger cars and buses through this area, sometimes queuing four vehicles wide in the loop. Inadequate loading areas for coach buses add to the congestion as employees stop traffic and direct buses to back into spaces along the shoulder areas.

Although more of a pedestrian safety issue rather than traffic circulation, pedestrians are required to walk in the road to and from parking lots and the lodges along the main access road and the road up to parking lot #4 and the Easy Acres area. Pedestrian activity along the main road reduces the effective width of the road thereby slowing traffic and increasing the pedestrian/vehicle conflicts.

5.0 - Sight Distance

Existing intersection sight distances were measured from each of the site driveways from the perspective of a driver exiting the ski area and looking in both directions. The available sight distances were then compared to the desirable sight distances for a 55-mph speed as published by the New York State Department of Transportation in *"Policy and Standards for Entrances to State Highways, February 1998"*. The following table illustrates the results of this evaluation:

Table 2 – Sight Distance Evaluation

Intersection	Distance	D_L	D_R	D_S
North Entrance	Available	>1,000	405	>1,000
	Desirable	845	875	610
South Entrance	Available	>1,000	350	>1,000
	Desirable	845	875	610

$D_{L,R,S}$ = Sight distance looking Left, Right, and Straight.

This table illustrates that there is a sight distance limitation looking right from both the site driveways. The sight distance is limited due to the horizontal and vertical curves of Route 86 as well as the guiderail located on the west side of the roadway. After heavy snowfalls, this sight distance may be further reduced due to larger snow banks just south of the ski area entrances.

Mitigating this situation is two large "Intersection Ahead" signs located north and south of the ski area entrance. Each sign includes a supplemental sign reading "Ski Area" and flashing beacons warning drivers of the intersection ahead. To further improve the sight distance looking right from the ski area entrances, realignment of Route 86 to the south would be required. This may not be feasible due to the severe rock cuts required. Although this is an existing condition, relocating the main entrance further north could improve the situation. Additionally, adding a supplemental distance sign to the "ski area ahead" signs may improve the awareness to approaching drivers to the conflict area ahead.

6.0 - Alternatives

Based on the preceding analysis, the following alternatives are identified to help improve the poor access and circulation of the ski area. They are as follows:

1. Provide proper signing and pavement markings at the two separate entrance points to the ski area. This will channelize traffic flow and improve operations to and from Route 86.
2. Add signing and intersection control to the merge point of the two entrances. Stop sign control should be installed on the westbound approach to this intersection from the north entrance due the lower traffic volumes on this leg.
3. Reconfigure the main entrance by reducing the median width between the north and south entrance, and create a standard entrance with one lane entering and two exit lanes on the eastbound approach to Route 86.
4. Provide means to allow buses (shuttle and coach) to turn around without turning out onto Route 86 and back into the site. This can be accomplished by installing a mini-roundabout at the entrance merge and parking lot intersections, or by some other means. This will improve the circulation on the main access road at the entrance and parking lot intersections.

5. Remove pedestrian conflicts along the main access road by providing a 10-foot wide sidewalk along one or both sides of the road.
6. Widen the access road (on the downhill side) from the base lodge to Easy Acres to provide approximately 30 feet from the edge of pavement and allow perpendicular parking on this side rather than parallel parking. This will increase the parking capacity along this access road and provide enough shoulder to allow pedestrians to walk and an area for vehicles to back out of a parking space without backing into the roadway completely.
7. Create a bus loading area and/or move the bus parking to lot #2. This will remove the need for buses to access the existing loading area next to the lodge but will require pedestrians to cross the bridge and will displace some vehicles currently using lot #2.
8. Minimize parking in the loading area to handicap vehicles only. This will create additional space for loading but will displace some employee vehicles.
9. Remove parking between the base lodge and the NYSEF building and modify the area to increase the size and performance of the current loading area. This will displace vehicles but could triple the loading area and improve traffic flow significantly.

7.0 - Conclusions and Recommendations

Currently, the entrance to the Whiteface Ski mountain area operates at good levels of service during the AM and PM peak hours. With the increase in traffic volumes as a result of the expansion, skiers will experience longer delays during the PM peak hour. Several circulation conflicts exist between Route 86 and the base lodge. Most significant is the merge of the main entrances and the main access road and the loading area at the base lodge. Several alternatives have been proposed which will improve circulation, and may be implemented in combination with others or as stand alone projects. However, it is recommended that the configuration of the entrance to the mountain be modified to provide a single access point with separate left and right turn lanes exiting onto Route 86. Additionally, it may not be feasible to increase the available sight distance looking right from the site driveway. Therefore adding a supplemental distance sign is recommended to supplement existing warning of the conflict area ahead for approaching drivers.

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APPENDIX J

VEGETATION SAMPLING DATA

The following tables list tree counts in 17 plots measuring 100 ft. long by 10 ft. wide (1000 square feet), sampled in the vegetation covertypes in the Whiteface Mountain Ski Center Intensive Use Area where vegetation clearing is proposed.

	Plot 1		Plot 2		Plot 3		Plot 4		Plot 5	
Forest Covertype[1]	**S**		**S**		**P**		**I**		**S**	
Species / Tree Size	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**
Abies balsamea	15	17	12	21	1		4	8	8	14
Acer pensylvanicum					2	3				
Acer rubrum										
Acer saccharum										
Betula alleghaniensis										
Betula cordifolia	1		1			3	2	11		
Betula papyrifera										
Fagus grandifolia										
Fraxinus americana										
Ostrya virginiana										
Picea rubens								3		4
Pinus resinosa										
Pinus strobus										
Populus grandidentata										
Prunus pensylvanica										
Sorbus americana			1	2						
Thuja occidentalis										
Tsuga canadensis										
number of trees/1000 s.f.	**16**	**17**	**14**	**23**	**3**	**6**	**6**	**22**	**8**	**18**

Source: Field surveys by the LA Group, P.C., December 2001.
[1]Key to covertypes: P = Pioneer Hardwood, S = Spruce-Fir, W = White Pine–Red Pine, I = Pioneer Hardwood Spruce-Fir, N = Northern Hardwood, R = Red Pine.

	Plot 6		Plot 7		Plot 8		Plot 9		Plot 10	
Forest Covertype[1]	W		R		R		N		W	
Species **Tree Size**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**
Abies balsamea	1	2								
Acer pensylvanicum										
Acer rubrum										
Acer saccharum							1	2		
Betula alleghaniensis										
Betula cordifolia										
Betula papyrifera										
Fagus grandifolia							1	2		
Fraxinus americana										
Ostrya virginiana							1			
Picea rubens	3	1	4	3	3	5			2	2
Pinus resinosa		1	4	12	1	7				
Pinus strobus		2				1				1
Populus grandidentata										
Prunus pensylvanica										
Sorbus americana										
Thuja occidentalis				1						4
Tsuga canadensis										1
number of trees/1000 s.f.	4	6	8	16	4	13	3	4	2	8

Source: Field surveys by the LA Group, P.C., December 2001

[1]Key to covertypes: P = Pioneer Hardwood, S = Spruce-Fir, W = White Pine–Red Pine, I = Pioneer Hardwood Spruce-Fir, N = Northern Hardwood, R = Red Pine.

		Plot 11		Plot 12		Plot 13		Plot 14		Plot 15	
	Forest Covertype[1]	N		N		I		I		N	
Species	**Tree Size**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**	**3-4" dbh**	**>4" dbh**
Abies balsamea						10	6	2	10		
Acer pensylvanicum											2
Acer rubrum											
Acer saccharum		2	1	1	6						1
Betula alleghaniensis			1		1						
Betula cordifolia						1	10	2	4		
Betula papyrifera			1		1					2	4
Fagus grandifolia			2								
Fraxinus americana											
Ostrya virginiana											
Picea rubens							1				12
Pinus resinosa											
Pinus strobus											
Populus grandidentata											
Prunus pensylvanica								1			
Sorbus americana						2	2		1		
Thuja occidentalis											
Tsuga canadensis											
number of trees/1000 s.f.		2	5	1	8	13	19	5	15	2	19

Source: Field surveys by the LA Group, P.C., December 2001

[1]Key to covertypes: P = Pioneer Hardwood, S = Spruce-Fir, W = White Pine–Red Pine, I = Pioneer Hardwood Spruce-Fir, N = Northern Hardwood, R = Red Pine.

		Plot 16		Plot 17		Plot 18	
	Forest Covertype[1]	N		N		H	
Species	Tree Size	3-4" dbh	>4" dbh	3-4" dbh	>4" dbh	3-4" dbh	>4" dbh
Abies balsamea							
Acer pensylvanicum							
Acer rubrum							44
Acer saccharum			5	1	2		
Betula alleghaniensis							44
Betula cordifolia							
Betula papyrifera							
Fagus grandifolia		3	7	1	1		
Fraxinus americana					1		
Ostrya virginiana							
Picea rubens							
Pinus resinosa							
Pinus strobus							
Populus grandidentata					4		
Prunus pensylvanica							
Sorbus americana							
Thuja occidentalis							
Tsuga canadensis					2	131	218
number of trees/1000 s.f.		3	12	2	10	131	305

Source: Field surveys by the LA Group, P.C., December 2001
[1]Key to covertypes: P = Pioneer Hardwood, S = Spruce-Fir, W = White Pine–Red Pine, I = Pioneer Hardwood Spruce-Fir, N = Northern Hardwood, R = Red Pine.

appendix – tree counts.doc

APPENDIX K

SNOWMAKING BUDGET ESTIMATES

SNOWMAKING SYSTEM IMPROVEMENTS
ENGINEERS BUDGET ESTIMATE

Item	Description	ct Budget Est	Phase	Comments
	Water System Improvements			
	Increase System Pumping Capacity			
	PH 1 Water Pressure Increase	$66,000	2	
	PH 2 Water, Electrical Revisions to achieve 6000 gpm	$191,880	1	
	PH 3 Water, Electrical Revisions to achieve 6000 gpm	$90,000	2	
	Monitoring and Control Revisions	$75,000	1	
	New Island Pod Pump House	$243,000	3	
	New Water Storage Reservoir2	$560,000	3	Based on 8MG Pond @ $0.07/gal
		$14,800	1	Closed Loop Cooling Water
	Air System Improvements			
	Replace Existing Rotary Screw Compressors	$482,000	1	
	Install New Centrifugal Compressor	$243,000	2	
	Install Additional Cooling Water System	$85,000	2	
	Air-to-Air Aftercooler Repair	$4,900	1	Does not Include Cooler Repair Costs
	Mountain Infrastructure			
	Piping--Phase 1	$339,450	1	
	Piping--Phase 2	$211,861	2	
	Piping--Phase 3	$733,669	3	
	VH--Phase 1	$77,500	1	
	VH--Phase 2	$47,500	2	
	VH--Phase 3	$32,500	3	
	Fan Support--Phase 1	$137,310	1	
	Fan Support--Phase 2	$71,550	2	
	Snowguns and Hose			
	Fan Guns--Phase 1	$120,000	1	
	Fan Guns--Phase 2	$40,000	2	
	Tower Guns--Phase 1	$225,000	1	
	Tower Guns--Phase 2	$225,000	2	
	Tower Guns--Phase 3	$225,000	3	
	Hose--Phase 1	$22,500	1	
	Hose--Phase 2	$22,500	2	
	Hose--Phase 3	$22,500	3	
	Subtotal Phase 1	$1,194,411	1	
	Contingency (15%)	$179,162	1	
	Engineering (5%)	$59,721	1	
	Total Phase 1	$1,433,293	1	
	Subtotal Phase 2	$1,102,411	2	
	Contingency (15%)	$165,362	2	
	Engineering (5%)	$55,121	2	
	Total Phase 2	$1,322,893	2	
	Subtotal Phase 3	$1,816,669	3	
	Contingency (15%)	$272,500	3	
	Engineering (5%)	$90,833	3	
	Total Phase 3	$2,180,003	3	

WHITEFACE SNOWMAKING 2002 UMP BUDGET

Trail #	Description/Location	Quantity	Units	Pipe Size & Description	Material & Install Costs $	Subtotal Costs $	Trenching Costs $	Item Cost $	Phase
31a	New Water feed to VH	3300	feet	12 W	$19.70	$65,010	$11,550		A
		2600	feet	6 A	$9.20	$23,920			
		25	sets	A/W Hydrants	$500	$12,500		$112,980	
34	Fan Gun feed on Silver/Medalist	0	feet	8 A	$9.20	$0	$29,000		
		2200	feet	10 W	$9.90	$21,780			
		22	sets	Water Hydrants	$500	$11,000		$61,780	A
	Boreen Water line Upgrade	3150	feet	12 W	$19.70	$62,055	$0		
		3250	feet	12 A	$18.50	$60,125	$0		
		3250	feet	Pipe Removal	$3.00	$9,750			
		32	sets	A/W Hydrants	$500	$16,000		$147,930	A
73a	Trail 73/73a	450	feet	8 W	$9.90	$4,455	$0		
		2800	feet	6 W	$9.90	$27,720	$0		
		3250	feet	10 A	$9.20	$29,900			
		32	sets	A/W Hydrants	$500	$16,000		$78,075	A
73	Trail 73 spur	450	feet	4 W	$9.60	$4,320	$0		
		450	feet	4 A	$9.60	$4,320			
		5	sets	A/W Hydrants	$500	$2,500		$11,140	A
6	Excelsior Air Connect	250	feet	10 A	$9.20	$2,300	$0	$2,300	C
12a	New 12A	1480	feet	6 W	$9.90	$14,652	$0		
	(connect air to L Excelsior 10")	1600	feet	10 A	$9.20	$14,720			
		15	sets	A/W Hydrants	$500			$29,372	B
12	Upper Empire Spur	1000	feet	6 W	$9.90	$9,900	$1,750		
		1000	feet	6 A	$9.20	$9,200	$5,000		
		10	sets	A/W Hydrants	$500	$5,000		$30,850	C
9	Lower Northway Water Upgrade	2250	feet	10 W	$9.90	$22,275	$0		
		2250	feet	Pipe Removal	$3.00	$6,750			
		23	sets	Water Hydrants	$500	$11,500		$40,525	A
11	New Approach Line	2230	feet	10 A	$9.20	$20,516	$0		
		2230	feet	6 W	$9.90	$22,077	$0		
		22	sets	A/W Hydrants	$500	$11,000		$53,593	B
73	Move Existing Approach Line	1150	feet	Pipe Relocation	$10	$11,500		$11,500	B
6	Upper Excelsior Air Upgrade	1000	feet	10 A	$9.20	$9,200	$0		
		1000	feet	Pipe Removal	$3.00	$3,000		$12,200	C
10	Connector Upgrade	2990	feet	10 A	$9.20	$27,508	$0		
		500	feet	12 A	$18.50	$9,250	$0		
		2990	feet	8 W	$9.90	$29,601			
		2990	feet	Pipe Removal	$3.00	$8,970			
		29	sets	A/W Hydrants	$500	$14,500		$89,829	C
5	Paron's Run	2600	feet	10 A	$9.20	$23,920	$0		
		1350	feet	6 W	$9.90	$13,365	$0		
		1250	feet	Pipe Removal	$3.00	$3,750			
		13	sets	A/W Hydrants	$500	$6,500		$47,535	B
38	Lower Follies	1350	feet	8 A	$9.20	$12,420	$0		
		1350	feet	6 W	$9.90	$13,365	$0		
		13	sets	A/W Hydrants	$500	$6,500		$32,285	B
3	Upper Skyward	3080	feet	10 A	$9.20	$28,336	$0		
		3080	feet	Pipe Removal	$3.00	$9,240		$37,576	B
74	Trail 74	2000	feet	8 A	$9.20	$18,400	$0		
		2000	feet	6 W	$9.90	$19,800	$0		
		20	sets	A/W Hydrants	$500	$10,000		$48,200	C
77	Trail 77	1550	feet	6 A	$9.20	$14,260	$0		
		1550	feet	6 W	$9.90	$15,345	$0		
		15	sets	A/W Hydrants	$500	$7,500		$37,105	C
75	Trail 75	1700	feet	8 A	$9.20	$15,640	$0		
		1700	feet	12 W	$19.70	$33,490	$0		
		17	sets	A/W Hydrants	$500	$8,500		$57,630	C
76	Trail 76	1950	feet	8 A	$9.20	$17,940	$0		
		1950	feet	6 W	$9.90	$19,305	$0		
		20	sets	A/W Hydrants	$500	$10,000		$47,245	C
74	Upper 74	2650	feet	8 A	$9.20	$24,380	$0		
		2650	feet	6 W	$9.90	$26,235	$0		
		27	sets	A/W Hydrants	$500	$13,500		$64,115	C
76	Upper 76	2700	feet	8 A	$9.20	$24,840	$0		
		2700	feet	10 W	$9.90	$26,730	$0		
		27	sets	A/W Hydrants	$500	$13,500		$65,070	C
81	Trail 81 Spur	650	feet	4 A	$9.60	$6,240	$0		
		650	feet	4 W	$9.60	$6,240	$0		
		6	sets	A/W Hydrants	$500	$3,000		$15,480	C
82	Upper 82	5050	feet	8 A	$9.20	$46,460	$0		
		2000	feet	8 W	$9.90	$19,800	$0		
		3050	feet	6 W	$9.90	$30,195	$0		
		50	sets	A/W Hydrants	$500	$25,000		$121,455	C
82	Lower 82	1900	feet	10 A	$9.20	$17,480	$0		
		1900	feet	8 W	$9.90	$18,810	$0		
		19	sets	A/W Hydrants	$500	$9,500		$45,790	C
83	Trail 83	4000	feet	8 A	$9.20	$36,800	$0		
		4000	feet	6 W	$9.90	$39,600	$0		
		40	sets	A/W Hydrants	$500	$20,000		$96,400	C
Total Mountain Piping C[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Valve Houses										
	Lower Valley VH Revisions					$7,500	$10,000		$17,500	A
	Upper Valley VH Revisions					$10,000	$15,000		$25,000	A
	U Mackenzie VH Revisions					$7,500	$10,000		$17,500	A
	L. Northway/Excelsior VH Revisions					$7,500	$10,000		$17,500	A
	Excelsior/Parons VH Revisions					$5,000	$7,500		$12,500	B
	Upper Mackenzie Drain VH					$5,000	$10,000		$15,000	B
	Tree Island POD summit VH					$10,000	$10,000		$20,000	C
	Trail 82/83 VH					$5,000	$7,500		$12,500	C
	Kids Campus VH Consolidation					$5,000	$15,000		$20,000	B
	Total VH Revisions									[illegible]
									[illegible]	[illegible]
									[illegible]	[illegible]
									[illegible]	[illegible]

Fan Gun Support			Circuit Feet	Number of Pedestals	Wiring Cost Per Circuit ft	Cost per Pedestal	Install Cost per Circuit ft		Total	
	Bronze (feed from base and summit)		2650	13	$2.00	$800	$5.00		$28,950	A
	Gold (feed from base)		1780	8	$2.00	$800	$5.00		$18,860	A
	Silver (feed from base and summit)		2500	13	$2.00	$800	$5.00		$27,900	A
	Medalist (feed from base)		2100	10	$2.00	$800	$5.00		$22,700	A
	Boreen (feed from base lodge and summit)		2500	13	$2.00	$800	$5.00		$27,900	A
	Mixing bowl (feed from PH 2)		1000	5	$2.00	$800	$5.00		$11,000	A
	Lower Valley (feed from PH2 and VH)		2300	12	$2.00	$800	$5.00		$25,700	B
	Bear (feed fromn PH 2)		1850	9	$2.00	$800	$5.00		$20,150	B
	Lower Valley (feed from VH and PH3)		2300	12	$2.00	$800	$5.00		$25,700	B
	Total Fan Gun Support									[illegible]
									[illegible]	[illegible]
									[illegible]	[illegible]
									[illegible]	[illegible]

APPENDIX L

WILDLIFE SPECIES AND HABITAT TYPES

WILDLIFE RESOURCE DESCRIPTION

Habitat Types

There are five major wildlife habitats or vegetation covertypes identified on the Whiteface Mountain Ski Center. They include Northern Hardwood, Pioneer Hardwood-Spruce Fir-Combination Hardwood, Krumholtz, grassland, and Alpine Zone. Each one of the five major habitats is treated as a distinct natural unit. None of the biotic communities represent closed systems that are completely independent of one another. The wildlife species of one community associate with other species within the same community. An overlap of species distribution also occurs where habitats exhibit a gradual change or continuum in vegetation types. Such a continuum exists in the successional changes occurring within the pioneer hardwood-spruce-fir habitat but may not exist between any of the forest types and grasslands.

Seasonal variations also play a major role in habitat preferences. For example, the woodchuck is a summer resident of the grasslands but hibernates in underground dens in open woodlands during the winter. Wildlife species utilizing one major habitat type for feeding may not use the same habitat for cover, nesting, rearing young, etc.

The habitat types listed in this section conform more closely to differences in wildlife habitat and are not intended to supercede the more technical description of forest cover types found in Volume I of the Whiteface Mountain Ski Center Unit Management Plan. Two of the habitat types existing at the Whiteface Mountain Ski Center site, grasslands and Alpine Zone, are important in the fact that they are not common habitats to be found within the Adirondack Park. A brief description of each of the five habitat types is listed next. This is followed by a Inventory List of wildlife which correlate wildlife species most closely identified with a particular habitat but implies neither species immobility nor species confinement within one particular habitat.

Northern Hardwood

This habitat occurs at elevations up to approximately 2,500 feet. Th type should be considered a climax community; one that exists in a relative of equilibrium within the environment. Shade intolerant species will die the forest canopy continues to mature and reduce light reaching the forest Available browse and cover for wildlife in the understory is minimal and w main at low levels as long as the competition for light exists.

Pioneer Hardwood-Spruce-Fir Combination

This habitat occurs at elevations from approximately 2,500 feet to 3, Two states of secondary succession are exhibited in this forest combination. early development states maintain a spruce-fir understory and thereby prov more wildlife cover than the mature hardwoods. However, as with the northe woods as natural succession continues, competition for light with the over eventually eliminate most of the existing protective understory, thereby r the numbers of wildlife which can inhabit this forest type.

Krumholtz

Spruce-fir predominate the uppermost slopes of Whiteface Mountain. The at this altitude are, for the most part, stunted, wind-shaped trees. This a of "crooked wood" or Krumholtz is characterized by severe climatic conditior The dense mat formed by the spruce-fir is so thick that walking on rather through this vegetation is often easier. Toward the very summit, the clim t conditions become so severe that the stunted trees give way to the more adap able alpine vegetation. Although a few sub-alpine wildlife species inhabi region, total wildlife diversity may be less than in similar spruce-fir habi of milder climates.

Grasslands

Established as a result of man's activities, one of the most unique of a the wildlife habitats on Whiteface Mountain are the grasslands. The grasslands, established on all the ski trails as a result of direct seeding to prevent erosion, provide a variety of foods for the herbivores of the area. These grasslands are unantural in the fact that they are man-made. Although common in most other areas of New York State, these grasslands are unique because they rarely occur naturally within the maturing forest types so abundant in the forever wild Adirondack Forest Preserve. In addition the openness of the grasslands afford excellent opportunities for mammalian and avian predators that cruise these slopes in search of food. The adjacent brushy edges in turn provide necessary fruits and weed seeds for a variety of small mammals, songbirds, ruffed grouse and black bears. It is within these grasslands and adjacent brushy habitats that wildlife, dependent on early stages of succession, can survive and prosper. The remaining vast acreages of climatic forest types still provide sanctuary for the more boreal species.

Alpine Zone

As noted in I.D. 1.g., the alpine habitat is very unique and fragile. However, the wildlife species listed in Table W-1 are apparently not totally dependent on the alpine habitat. Some species such as the grey cheeked thrush are dependent on habitat in the higher elevations and their mobility between the Krumholtz and alpine habitats may be essential.

Inventory of Wildlife Species

A wide variety of information on Adirondack wildlife is available. According to the report on Forestry in the Adirondacks (1961:35) 41 species of mammals, 146 species of birds, 7 species of reptiles and 16 species of amphibians are known to occur in the Adirondacks. These figures are, however, subject to debate depending on the source. For example, in the Wildlife Technical Report for the Temporary Study Commission on the Future of the Adirondacks it is estimated that 155-165 birc may nest in the Adirondacks while the total number of species, including accidentals, might number around 220.

The same report also lists 54 species of mammals, 13 spec e reptiles, and 17 species of amphibians that might possibl, Conversely, existing literature on the species of mammals confirmed as being on Whiteface gives the impression that t specific area is quite limited in mammal diversity with onl different species being identified visually and 10 physic l

The following tables identify those mammal, reptile, amph b and avian wildlife species, both resident and migrant, th t been physically or visually confirmed as well as those spec that one could reasonably expect to find on the site at o or another given the specific habitat and climatic conditio The list of breeding birds, compiled as part of the state Breeding Bird Atlas Project between DEC and the Federation York State Bird Clubs, have all been visually confirmed a at or in the close proximity of the site and, based on a standardized set of criteria, have further been rated as a possible, probable, or confirmed nesters. The list provi most recent and probably the most definitive list of nesting in the area of the Ski Center.

Endangered/Threatened/Species of Special Concern

The lists also identify those species which are considered endangered, threatened of special concern in New York. Th Environmental Conservation Law defines threatened species as species which are likely to become endangered in the forse e future throughout all or a significant portion of their rang Endangered species are those species of fish and wildlife h threatened with extinction. In addition, DEC maintains a i thirty-three species as being of special concern because the appear vulnerable or their present status in New York is u

There are no known mammal, reptile, or amphibian species a Whiteface which are listed as endangered, threatened, or of special concern. In addtion those avian species so listed mention must also be made of the bald eagle (Haliatus *leucocephalus*) and the golden eagle (*Aquila chrysaetos*) both of which have been observed in the immediate vicinity. Bald eagles have been seen cruising over the Ausable River and Wilmington whereas golden eagles had been seen over the grassy slopes of the Ski Center itself. However, there are no known active nesting sites of either eagle within or near the Ski Center. None of the activities associated with the Ski Center is expected is have any impact on any of the endangered, threatened or species of special concern listed.

BIRD

BREEDING LIST FOR WHITEFACE MT.

Name		Occu
Great Blue Heron	Ardea herodias	prob
Green-backed heron	Butorides striatus	prob
Wood Duck	Aix sponsa	prob
Common Merganser	Mergus merganser	poss
Cooper's Hawk ***	Accipiter cooperii	poss
Broad-winged Hawk	Buteo platypterus	prob
American Kestrel	Falco sparverius	poss
Osprey **	Pandion haliaetus	poss
Killdeer	Charadrius vociferus	conf
Spotted Sandpiper	Actitis macularia	prob
Mourning Dove	Zenaida macroura	prob
Great Horned Owl	Bubo virginianus	poss
Barred Owl	Strix varia	prob
Chimney Swift	Chaetura pelagica	prob
Ruby-throated Hummingbird	Archilochus colubris	poss
Belted Kingfisher	Megaceryle alcyon	conf
Northern Flicker	Colaptes auratus	prob
Pileated Woodpecker	Dryocopus pileatus	poss
Yellow-bellied Sapsucker	Sphyrapicus varius	prob
Downy Woodpecker	Picoides pubescens	prob
Eastern Kingbird	Tyrannus tyrannus	prob
Eastern Phoebe	Sayornis phoebe	conf
Yellow-bellied Flycatcher	Empidonax flaviventris	poss
Alder Flycatcher	Empidonax alnorum	poss
Least Flycatcher	Empidonax minimus	poss
Tree Swallow	Iridoprocne bicolor	conf
Bank Swallow	Riparia riparia	conf
Barn Swallow	Hirundo rustica	conf
Cliff Swallow	Petrochelidon pyrrhonota	prob
American Crow	Corvus brachyrhynchos	prob
Blue Jay	Cyanocitta cristata	prob
Northern Raven ***	Corvus corax	poss
Black-capped Chickadee	Parus antricapillus	prob
White-breasted Nuthatch	Sitta carolinensis	prob
Red-breasted Nuthatch	Sitta canadensis	conf
Brown Creeper	Certhia familiaris	prob
House Wren	Troglodytes aedon	prob
Winter Wren	Troglodytes troglodytes	prob
Gray Catbird	Dumetella carolinensis	prob
Brown Thrasher	Toxostoma rufum	conf
American Robin	Turdus migratorius	prob
Wood Thrush	Hylocichla mustelina	prob
Swainsons Thrush	Catharus ustulatus	prob
Hermit Thrush	Catharus guttatus	prob
Gray-cheeked Thrush (1)	Catharus minimus	prob

(1) Unique to the Adirondacks. Common only in high peaks areas.
As of 1995, former subspecies Bicknell's Thrush (Catharus bicknelli) is now a separate species, and occurrence reported as confirmed by Wildlife Conservation Society.

Veery	Catharus fuscescens	probable
Eastern Bluebird	Sialia sialis	confirmed
Golden-crowned Kinglet	Regulus satrapa	confirmed
Cedar Waxwing	Bombycilla cedrorum	confirmed
Solitary Vireo	Vireo solitarius	probable
Red-eyed Vireo	Vireo olivaceus	confirmed
Black and White Warbler	Mniotilta varia	possible
Northern Parula Warbler	Parula americana	probable
Black-throated Blue Warbler	Dendroica caerulescens	probable
Yellow-rumped Warbler	Dendroica coronata	probable
Black-throated Green Warbler	Dendroica virens	probable
Blackburnian Warbler	Dendroica fusca	probable
Chestunut-sided Warbler	Dendroica pensylvanica	probable
Black-poll Warbler	Dendroica striata	possible
Oven-bird	Seiurus aurocapillus	confirmed
Mourning Warbler	Oporornis philadelphia	probable
Common Yellowthroat	Geothlypis trichas	probable
Canada Warbler	Wilsonia canadensis	probable
American Redstart	Setophaga ruticilla	possible
Northern Oriole	Icterus galbula	probable
Common Grackle	Quiscalus quiscula	confirmed
Red-winged Blackbird	Agelaius phoeniceus	confirmed
Brown-headed Cowbird	Molothrus ater	confirmed
European Starling	Sturnus vulgaris	confirmed
House Sparrow	Passer domesticus	confirmed
Scarlet Tanager	Piranga olivacea	probable
Rose-breasted Grosbeak	Pheucticus ludovicianus	probable
Evening Grosbeak	Hesperiphona vespertina	confirmed
Purple Finch	Carpodacus purpureus	probable
Northern Junco	Junco hyemalis	probable
Chipping Sparrow	Spizella passerina	confirmed
Field Sparrow	Spizella pusilla	possible
White Throated Sparrow	Zonotrichia albicollis	probable
Indigo Bunting	Passerina cyanea	probable
American Goldfinch	Carduelis tristis	probable
Rufous-sided Towhee	Pipilo erythrophthalmus	possible
Lincoln's Sparrow	Melospiza lincolnii	probable
Song Sparrow	Melospiza melodia	probable
Peregrine Falcon *	Falco peregrinus	confirmed

* Endangered Species
** Threatened Species
*** Species of Special Concern

Wildlife Inventory

MAMMALS WITH HIGH PROBABILITY OF BEING FOUND AT WHITEFACE MOUNTAI[N]

Species	Seasonal Occurrence	Major Habitat Communi[ties] Associated with Spe[cies]
Masked Shrew Sorex cinerous	Permanent	Most communities on s
Smokey Shrew Sorex fumeus	Permanent	N. Hardwoods/Mixed a
Shorttail Shrew Blarina brevicanda	Permanent	Most communities on s
Hairytail Mole Parascalops breweri	Permanent	Most communities or s
Starnose Mole Condylura cristata	Permanent	Northern Hardwoods
Little Brown Myotis Myotis lucifugus	Permanent	Northern Hardwoods
Big Brown Bat Eptesious fuscus	Summer Breeder	Most communities or s
Keen Myotis Myotis keeni	Permanent	N. Hardwoods/Mixed Ha
Red Bat Lasiurus borealis	Permanent	Most communities or s
Eastern Pepistrel Pepistrellus subflavas	Permanent	Northern Hardwoods
Hoary Bat Lasiurus cinereus	Summer Breeder	Northern Hardwoods
Snowshoe Hare Lepus americanus	Permanent	Most communities or s
Eastern Chipmunk Tamias striatus	Permanent	Northern Hardwoods/ad
Red Squirrel Tamiasciurus hudsonicus	Permanent	Mixed Con./Mixed Cc .
Eastern Gray Squirrel Sciurus carolinensis	Permanent	Northern Hardwoods
Southern Flying Squirrel Glaucomys volans	Permanent	N. Hard./Mixed Harc -
No. Flying Squirrel Glaucomys subrinus	Permanent	N. Hard./Mixed Hard.-
Woodchuck Marmota monax	Permanent	Many communities or s
Beaver Castor canadensis	Permanent	Wetlands/Streams/Pc i
Deer Mouse Peromyscus maniculatus	Permanent	Most communities on s
White-footed mouse Peromyscus leucopus	Permanent	Open meadows/Hardwo i
Boreal Red back Vole Clethrionomys gapperi	Permanent	N. Hard./Mixed Hard.-
Yellownose Vole Microtus chrotorrhines	Permanent	Northern Hardwoods/ higher altitudes
Porcupine Erethizon dorsatum	Permanent	Mixed Conifers
Coyote Canis latrans	Permanent	N. Hardwoods/Mixed Co
Southern Bog Lemming Synaptomys cooperi	Permanent	Damp meadows &
House Mouse Mus musculus	Permanent	Buildings

Species	Seasonal Occurrence	Major Habitat Communities Associated with Species
Meadow Jumping mouse Zopus hudsonicus	Permanent	Meadows/shrub areas
Woodland Jumping mouse Napacozapus insignis	Permanent	Meadows shrub areas
Porcupine Erethizon dorsatum	Permanent	Mixed Conifers/Plantations
Coyote Canis latrans	Permanent	N. Hardwoods/Mixed Conifers
Red fox Vulpes fulva	Permanent	N. Hardwoods/Shrub areas
Black bear Urus americanus	Permanent	Most communities on site
Raccoon Procyon lotor	Permanent	N. Hardwoods/Wetlands
Fisher Martes pennanti	Permanent	Northern Hardwoods Wetlands
Short-tailed weasel Mustela erminea	Permanent	Shrubs/Northern Hardwoods
Long-tailed weasel Mustela frenata	Permanent	Most communities on site
Mink Mustela vison	Permanent	Wetlands/Ponds/Streams
River Otter Lutra canadenis	Permanent	Raquette River
Striped skunk Mephitis mephitis	Permanent	Most communities on site
Bobcat Lynx rufus	Permanent	Wetlands
White-tailed deer Odocoileus virginianus	Permanent	Most communities on site
Northern water shrew Sorex palustris	Permanent	N. Hardwoods/Mixed Hardwoods/ Ca[illegible] Small streams
Longtail shrew Sorex dispar	Permanent	N. Hardwoods/Mixed Hardwoods
Pigmy shrew Microsorex hovi	Permanent	Most communities on site
Moose Alces alces	Occasional Visitor	All communities on site

REPTILES AND AMPHIBIANS WITH HIGH PROBABILITY OF BEING FOUND WHITEFACE MOUN

Species	Seasonal Occurrence	Major Habitat Comm... Associated with Spec
Frogs and Toads		
Pickerel Frog Rana palustris	Permanent	Stream edges/wetland
Wood Frog Rana sylvatica	Permanent	Temporary pools/we...
Spring Peeper Hyla crucifer	Permanent	Temporary pools/we...
Gray Tree Frog Hyla versicolor	Permanent	Temporary pools/wetl...
American Toad Bufo americanus	Permanent	Most communities o...
Salamanders/Newts		
Red-spotted Newt Triturus viridescens v.	Permanent	Temporary pools/wetla
Red-backed Salamander Plethodon cinereus	Permanent	Northern Hardwoods
Spring Salamander Gyrinophilus porphyriticus	Permanent	Wetlands/Streams
Two-Lined Salamander Eurycea bislineata b.	Permanent	Streams
Mountain Salamander Desmognathus ochrophaes o.	Permanent	Wetlands
Turtles		
Snapping Turtle Choelydra serpentina	Permanent	Large ponds
Snakes		
Red-bellied Snake Storeria occipitomaculata	Permanent	Northern Hardwoods/We
Northern Water Snake Natarix sipedons	Permanent	Open Water/Wetlands
Eastern Garter Snake Thamnophis sirtalis s.	Permanent	Most communities on s
Northern Ring Neck Snake Diadophis punctatus edwardsi	Permanent	N. Hardwoods/Mixed Har

APPENDIX M

SNOWMAKING EQUIPMENT INVENTORY

Location	Equipment Mark	Description	Manufacturer	Capacity	Model	Serial Number	Comments
Pump House - 1 - River Pump House							
	P-1	Vertical Turbine Pump	Peobody Floway	2000 gpm/238' TDH	14 DOH	37159-1-2	Wet Well Application
		Motor Data	G.E.	150 Hp		wpd 9909528	
	P-2	Vertical Turbine Pump	Peobody Floway	2000 gpm/238' TDH	14 DOH	37159-1-1	Wet Well Application
		Motor Data	G.E.	150 Hp		wpd 9909527	
	P-3	Vertical Turbine Pump	Peobody Floway	2000 gpm/238' TDH	14 DOH	37159-1-3	Wet Well Application
		Motor Data	G.E.	150 Hp		wpd 9909529	
Pump House - 2 - Maintenance Facility							
	P-4	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1162' TDH	3CNTA-6	0877187	Booster Pump
		Motor Data	US Motors	250 Hp/460 V	CC2930204-391/Type R	88-03669	Frame: 447TI
	P-5	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6	0877194	Booster Pump
		Motor Data	US Motors	250 Hp/460 V	CC2930204-391/Type R	86-03674	Frame: 447TI
	P-6	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6	0877188	Booster Pump
		Motor Data	US Motors	250 Hp/460 V	CC2930204-391/Type R	88-03870	Frame: 447TI
	P-7	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6	0877189	Booster Pump
		Motor Data	US Motors	250 Hp/460 V	CC2930204-391/Type R	88-03673	Frame: 447TI
	P-8	Vertical Turbine Pump	Peobody Floway	900 gpm/1182' TDH	10 JKM	37186-1-2	Booster Pump
		Motor Data	G.E.	350 Hp		XPG432031	Frame: L449VP20
	P-9	Vertical Turbine Pump	Peobody Floway	900 gpm/1182' TDH	10 JKM	37186-1-1	Booster Pump
		Motor Data	G.E.	350 Hp		XPG432032	Frame: L449VP20
	P-10	Inline Submersible Pump	Pleuger	1200 gpm/135' TDH	QN 102	3338959505	Inline Cooling Water Pump
			Pleuger	60 Hp 3/60/460 V	M-082-48		
	C-1	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500 W	34992	
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 Volts		8408	Frame:449 TDZ
	C-2	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500 W	34991	
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 Volts		8404	Frame:449 TDZ
	C-3	Rotary Screw Compressor	Joy	1170 cfm @ 125 psi	TA-1170 BAN 4 AFD	TFB 240	
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7510	Frame:445TS
	C-4	Rotary Screw Compressor	Ingersoll Rand	1100 cfm @ 115 psi	PA 250	T 1572 U 78875	
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7802-D	Frame:445TS
	C-5	Rotary Screw Compressor	Ingersoll Rand	1100 cfm @ 115 psi	PA 250	T 1573 U 78875	
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7802-C	Frame:445TS
	C-6	Rotary Screw Compressor	Ingersoll Rand	1100 cfm @ 115 psi	PA 250	T 1574 U 78875	

Whiteface Mountain Resort
Snowmaking Equipment Inventory
Year 2001

Location	Equipment Mark	Description	Manufacturer	Capacity	Model	Serial Number	Comments
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7802-B	Frame:445TS
	C-7	Rotary Screw Compressor	Ingersoll Rand	1100 cfm @ 115 psi	PA 250	T 1571 U 78875	
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7802-E	Frame:445TS
	C-8	Rotary Screw Compressor	Ingersoll Rand	1100 cfm @ 115 psi	PA 250	T 1575 U 78875	
		Motor Data	Westinghouse	250 Hp/1775 RPM/460 Volts		7802-A	Frame:445TS
	C-9	Centrifugal Compressor	Ingersoll Rand	3934 cfm @ 139 psi	Centac 2 - CV35M3 EAC	M 95 - 8489	
		Motor Data	Siemens	800 Hp/3576 RPM/4160 V		E07495-01-2	Frame: 588-Y
	C-10	Centrifugal Compressor	Ingersoll Rand	3934 cfm @ 139 psi	Centac 2 - CV35M3 EAC	M 95 - 8489	
		Motor Data	Siemens	800 Hp/3576 RPM/4160 V		E07495-01-1	Frame: 588-Y
	C-11	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500H		
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 V		8408	Frame: 449 TDZ
	C-12	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500H	34994	
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 V		8409-B	Frame: 449 TDZ
	C-13	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500H	34990	
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 V		8408-A	Frame: 449 TDZ
	C-14	Rotary Screw Compressor	Ingersoll Rand	1500 cfm @ 125 psi	SSR-1500H	34989	
		Motor Data	Westinghouse	392 Hp/1770 RPM/460 V		8408-B	Frame: 449 TDZ
	WCT-1	Compressor Water Cooling	Marley	1000 gpm w/ 30 Hp Fan	ITA502E		
	WCT-2	Compressor Water Cooling	Marley	1000 gpm w/ 30 Hp Fan	ITA502E		
	AC-1	Adams Shell & Tube Aftercooler	RP Adams	15 deg appr @ 20,000 cfm	SAF9831640		
	ST-1	Strainer					
	ST-2	Strainer					
Maintenance Garage							
	C-15	DieselCentrifugal Compressor	Ingersoll Rand	5953 cfm @ 125 psi	Centac 2 - AC 115513	M97-9849	
		Motor Data	Catepiller	1480 Hp/3576 RPM/4160 V		27 Z 00776	Diesel Driven Motor
Pump House - 3 - Mid Mountain Booster							
	P-11	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6	0877193	
		Motor Data	U.S. Motors	250 Hp/3555 RPM/460 V		88-00492	Frame: 447 TS
	P-12	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6	0877191	
		Motor Data	U.S. Motors	250 Hp/3555 RPM/460 V		88-03672	Frame: 447 TS
	P-13	Split Case Horizontal Pump	Ingersoll Rand	600 gpm/1182' TDH	3CNTA-6		

Location	Equipment Mark	Description	Manufacturer	Capacity	Model	Serial Number	Comments
		Motor Data	U.S. Motors	250 Hp/3555 RPM/460 V		88-03671	Frame: 447 TS
	P-14	Vertical Turbine Pump	Ingersoll Rand	1000 gpm/1182' TDH	12L54-8TF18	85-70-110224-1	
		Motor Data	G.E.	400 Hp/3570 RPM/480 V		XK6401040	Frame: L445VP16
	P-14A	Vertical Turbine Pump	Peobody Floway	1000 gpm/1182' TDH	10JKM	37186-4-1	
		Motor Data	G.E.	400 Hp/3570 RPM/460 V		YP6451035	
Pump House - 4 - Upper Mountain Booster							
	P-15	Vertical Turbine Pump	Ingersoll Rand	950 gpm/1330' TDH	10M50-7	85-70-110223-2	
		Motor Data	G.E.	400Hp/3570 RPM/460 V		XKG 405040	Frame: L445VP16
	P-16	Vertical Turbine Pump	Ingersoll Rand	950 gpm/1330' TDH	10M50-7	85-70-110223-1	
		Motor Data	G.E.	400Hp/3570 RPM/460 V		XKG 401039	Frame: L445VP16
	P-17	Vertical Turbine Pump	Peobody Floway	950 gpm/1332' TDH	10JKH	37186-7-1	
		Motor Data	G.E.	400Hp/3570 RPM/460 V		VPG452035	Frame: L445VP20

APPENDIX N

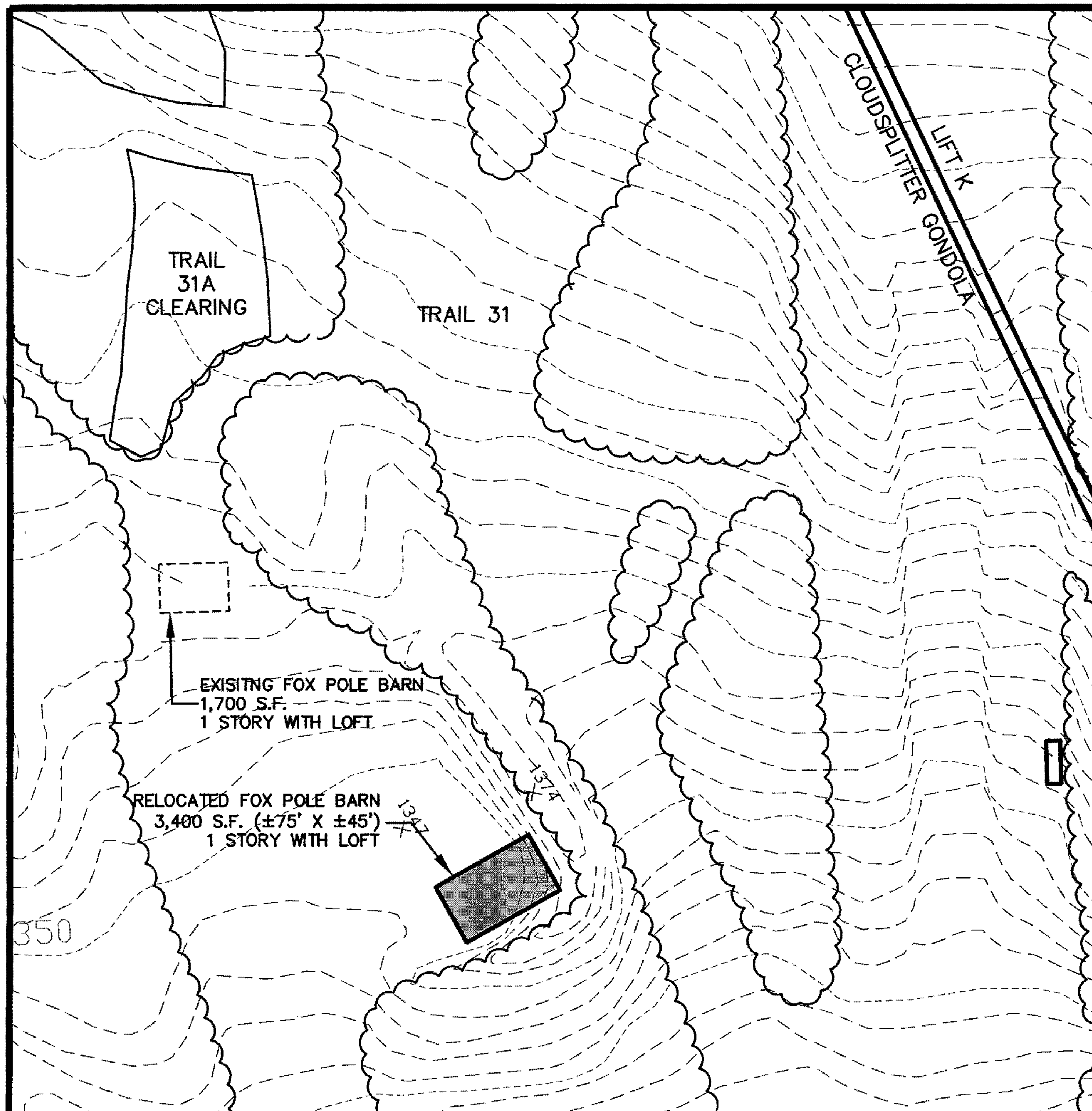
EXISTING AND PROPOSED SNOWMAKING ELECTRICAL LOADS

Existing and Proposed Whiteface Snowmaking Electrical Loads

	Existing			Proposed		
	Item	HP	Transformer	Item	HP	Transformer
PH 1 (T-1)	P1	150	500	P1	250	1000
	P2	150		P2	250	
	P3	150		P3	250	
	Total	450		Total	750	
PH 2 (T-2)	P4	250	2000	P4	250	2000
	P5	250		P5	250	
	P6	250		P6	250	
	P7	250		P7	250	
	P8	350		P8	350	
	C1	392		new P	400	
	Total	1742		Total	1750	
PH 2 (T-3)	C2	400	2000	new C	800	5000
	C3	250		new C	800	
	C4	250		new C	800	
	C5	250		new C	800	
	C6	250				
	C7	250				
	Total	1650		Total	3200	
PH2 (T-3a)	C11	392	2500	P9	350	1000
	C12	392		P10	60	
	C13	392				
	C14	392				
	P9	350				
	P10	60				
	Total	1978		Total	410	
PH2 (T-3b)	C9	800	3000	C9	800	3000
	C10	800		C10	800	
				new C	800	
	Total	1600		Total	2400	
PH3 (T-10)	P11	250	2000	P11	250	2500
	P12	250		P12	250	
	P13	250		P13	250	
	P14	400		P14	400	
	P14a	400		P14a	400	
				new P	400	
				new P	400	
	Total	1550		Total	2350	
PH4 (T-14)	P15	400	1000	P15	400	1000
	P16	400		P16	400	
	Total	800		Total	800	
TOTAL		9,770			11,660	

APPENDIX O

SKETCH PLANS FPB-1 AND MS-1



WHITEFACE

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

Prepared By:

SE GROUP — USA: BELLEVUE, WA; BURLINGTON, VT; FRISCO, CO; GREENWICH, CT; HANOVER, NH; PARK CITY, UT — JAPAN: TOKYO

the LA group, Landscape Architecture and Engineering, P.C.

IZA Engineering & Planning — Ivan Zdrahal Associates, PLLC

50 0 25 50 100 200

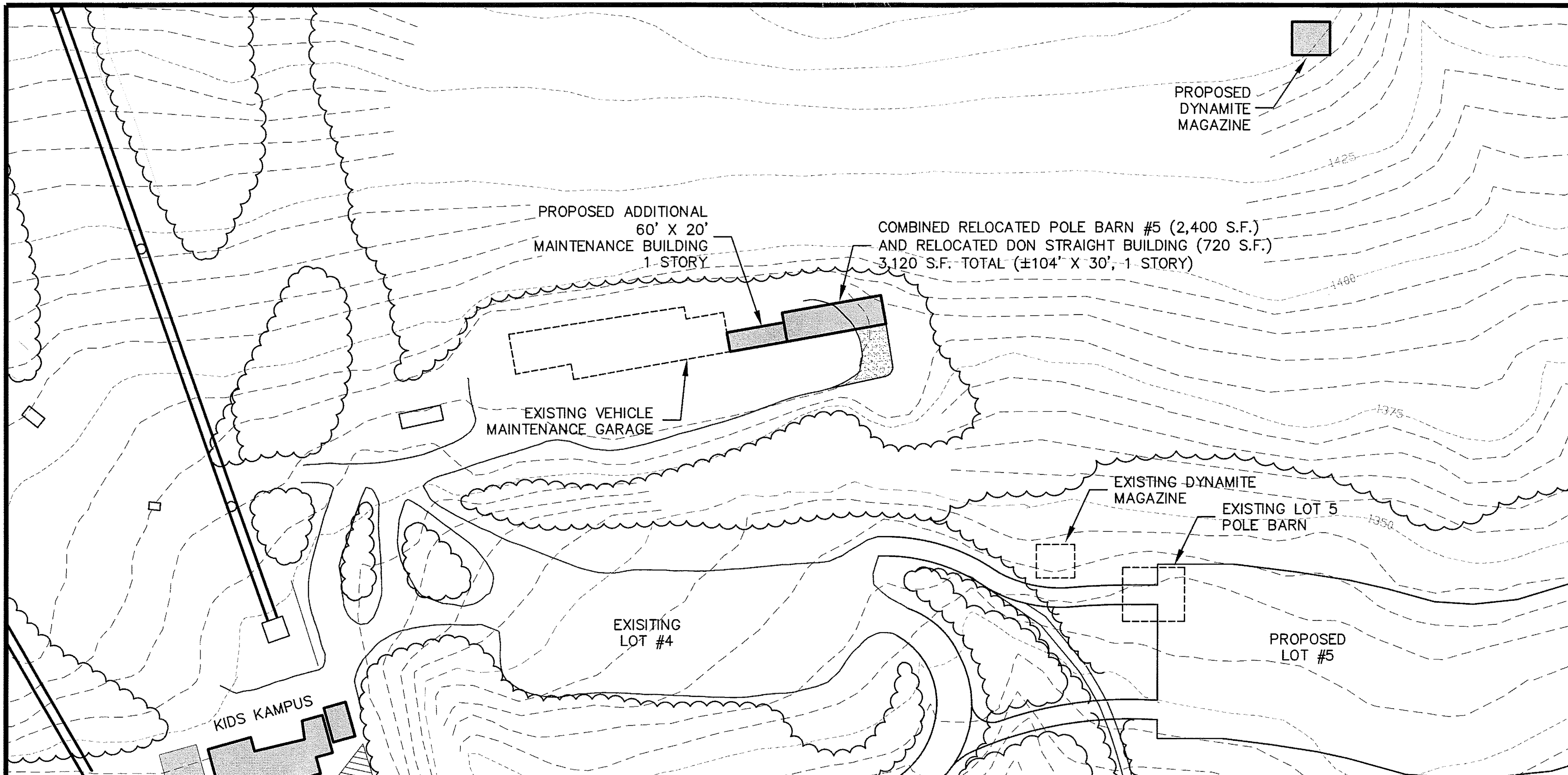
Scale: 1" = 100'   Contour Interval = 5 Feet   NORTH

TITLE: **WHITEFACE MOUNTAIN RELOCATED FOX POLE BARN**

DATE: FEBRUARY 2004

FIGURE #: **FPB-1**

PROJECT NUMBER: 01043   FILE: figIV-01\01043base



WHITEFACE

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

Prepared By:
SE GROUP
the LA group
IZA Engineering & Planning
Ivan Zdrahal Associates, PLLC

50 0 25 50 100 200

Scale: 1" = 100'

Contour Interval = 5 Feet

NORTH

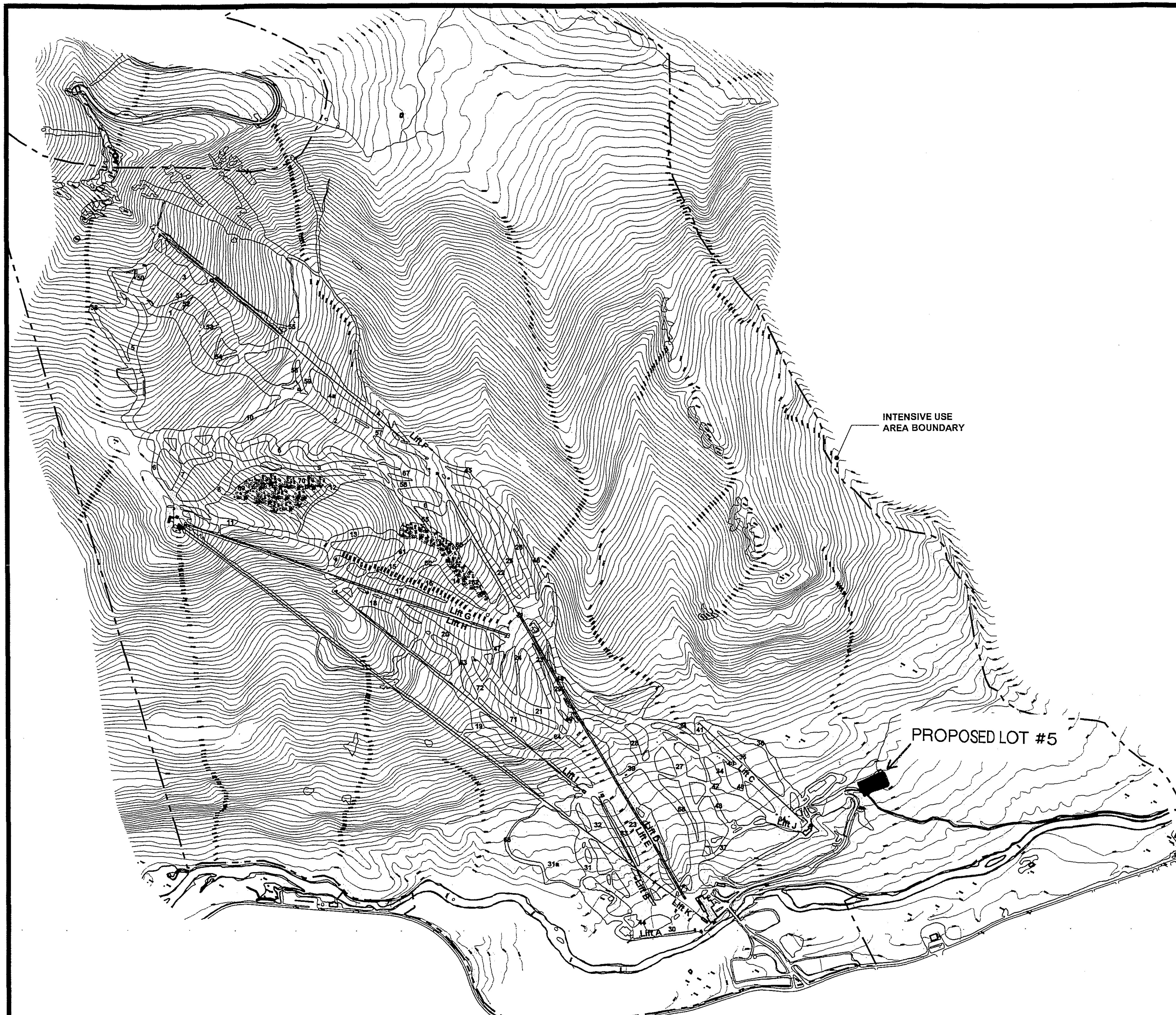
TITLE:
WHITEFACE MOUNTAIN
NEW MAINTENANCE
AND STORAGE

DATE: FEBRUARY 2004

FIGURE #: MS-1

PROJECT NUMBER: 01043

FILE: figIV-01\01043base



WHITEFACE

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

Prepared By:

SE GROUP — USA: BELLEVUE, WA; BURLINGTON, VT; FRISCO, CO; GREENWICH, CT; HANOVER, NH; PARK CITY, UT; JAPAN: TOKYO

the LA group — Landscape Architecture and Engineering, P.C.

IZA — Engineering & Planning — Ivan Zdrahal Associates, PLLC

COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

600 0 300 600 1200 2400

Scale: 1" = 1200'

Contour Interval = 5 Feet

NORTH

TITLE: **INTENSIVE USE AREA MAP**

DATE: MARCH 2002

FIGURE #: **I-2**

PROJECT NUMBER: 01102

FILE: [whiteface]

APPENDIX P

PARKING LOT #5 CONSTRUCTION POLLUTION PREVENTION PLAN
(includes grading, erosion control and stormwater management plans)

Notice of Intent ("NOI")

New York State Department of Environmental Conservation

Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NOTICE OF INTENT for Stormwater Discharges Associated with Construction Activity UNDER SPDES GENERAL PERMIT #GP-02-01

NYR __ __ __ __ __ __
(for DEC use only)

IMPORTANT: **All sections <u>must</u> be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this general permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to completing and submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.**

Section I. Applicant/Activity Information

1. Owner/Operator Name: Olympic Regional Development Authority/Whiteface Mountain Ski Center

2a. Mailing Address: 218 Main Street	2b. City Lake Placid	2c. State NY	2d. Zip 12946-0000
3. Contact Person: 3a. First Name: Jay 3b. Last Name: Rand (@ Whiteface Mountain)	3c. Phone: (518) 946-4201	3d. E-mail: jrand@whiteface.com	
4a. Site/Project Name: Whiteface Mountain Parking Lot #5		4b. Existing use of the site: ski area	
5a. Street Address: Route 86	5b. City: Wilmington	State: NY	5c. Zip 12997-0000
6. County: Essex	7. Site Location: 7a. X Coordinates: 73.8565 7b. Y coordinates: 44.3587		

Section II. Disturbance Activity/Discharge Characteristics

8. Future use of the site: ski area	9. Duration of disturbance activity (use mm/dd/yyyy) from: 08/01/2003 to: 12/01/2003
10. Total site acreage: 2,500.00 (acres)	11. Total acres of disturbed area of overall plan of development or sale: 06/17/2003
12. Soil (Hydrologic Soil Group): C	13. What is the maximum slope of disturbed area: % 20.00

14. What is the percentage of impervious area of the site? 14a. <u>before</u> commencement of the project % 0.00
14b. <u>after</u> completion of the project % 19.00

15. Will there be permanent stormwater management practices? ☑ yes ☐ no

16. Is this a phased project? ☐ yes ☑ no

Section III. Receiving System(s)

17. Does any part of the project lie within a regulated 100-year flood plain? ☐ yes ☑ no
18. Does the site/activity lie within the boundaries of the New York City watershed? ☐ yes ☑ no
19. Does runoff from site enter a storm sewer or ditch maintained by a local, Federal or State governmental unit (MS4)? ☐ yes ☑ no
If the answer to 19 is no, skip to question 20.
19a. Provide the name of the government owning the storm sewer system: ____________
19b. Is the MS4 a "regulated MS4" as defined under 40 CFR Section 122.32? ☐ yes ☐ no ☐ don't know
19c. Does the MS4 have a SPDES permit for their storm sewer system? ☐ yes ☐ no ☐ don't know
19d. Is the runoff from the site tributary to a Combined Sewer Overflow (CSO)? ☐ yes ☐ no
20. What is the name of the nearest surface water body into which the runoff will enter?: West Branch AuSable River
21. Does the runoff discharge to a receiving water identified as 303(d) listed segment ☐, or "TMDL" water ☐, or neither ☑?

Section IV. Stormwater Pollution Prevention Plan:

22. What components are required for the SWPPP? (Consult the SWPPP and Stormwater Permit Process flow chart and check all that apply): 22a. ☑ Erosion and Sediment Control Plan 22b. ☑ Water Quality and Quantity Controls

23. Is the Construction Sequence Schedule for the planned management practices prepared? ☑ yes ☐ no

Will the Stormwater Pollution Prevention Plan be in conformance with:
24a. local government requirements? ☑ yes ☐ no 24b. NYSDEC requirements? ☑ yes ☐ no
If the answer to 24b. is yes, skip to Section VI.

Section V. Supplemental Information (only if you answered "no" to question 24 b.)

25. **Before submitting this NOI, you must have your SWPPP certified by a licensed Professional.**
This certification must state that the SWPPP has been developed in a manner which will enssure compliance with water quality standards and with the substantive intent of this permit (see general permit for additional information).
Is your plan certified by a licensed Professional? ☐ yes ☐ no

- Do not submit your SWPPP to DEC unless requested.
- A copy of your SWPPP must be submitted to the local jurisdiction(s) as required under Part III, subsection B.2 (also see question #29 below).
- State each deviation from the Department's Technical Standards, reasons supporting each deviation request and an analysis of the water quality impacts in your SWPPP.
- Use Section VII below to summarize the justification statement in one paragraph.
- Allow sixty (60) days from the receipt of your completed application for permit coverage to provide DEC an opportunity to review the application and supporting information.

Section VI. Reviews and Approvals

Has your SWPPP been reviewed by: 26a. ☐ local Soil and Water Conservation District 26b. ☐ Professional Engineer
26c. ☑ Certified Professional Erosion Control Specialist 26d. ☑ Licensed Landscape Architect. 26e. ☐ None

27. Are there other DEC permits required or already obtained for this project? ☐ yes ☑ no
28. If the answer to 27 is no, skip to question 29.
28a. If this NOI is submitted for the purpose of continuing previous coverage under the general permit for stormwater runoff from construction activities (GP-93-06), please indicate the SPDES reference number assigned under GP-93-06: NYR1 0B109
28b. If there is another SPDES permit, please indicate the permit number: NY ________
28c. If there are other DEC permits, please provide one of the permit numbers: ________

29. Has a copy of your SWPPP been submitted to the governing jurisdiction as required by the permit? ☑ yes ☐ no

Section VII. Details (use this space, maximum of 650 characters, to further explain answers where necessary).

The proposed action consistes of constructing a new parking lot, Lot #5, at Whiteface Mountain. The gravel/stone surface lot will provide needed additional skier parking. Access to the new lot will be via and existing drive and parking lot. A sediment and erosion control plan has been prepared that includes temporary and permanent controls. Permaneant stormwater quality and quantity controls will be provided via a Micropool Extended Detention Pond.

Section VIII. Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I also certify under penalty of law that this document and the corresponding documents were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction. and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

30a. Printed Name:	30b. Title/Position:	30c. Phone:
Signature:	30d. E-mail:	30e. Date:

Reset All Fields

Stormwater Pollution Prevention Plan

Whiteface Mountain Parking Lot #5

Prepared By
The LA Group, P.C.
40 Long Alley
Saratoga Springs, NY 12866
Ph. (518) 587-8100

Owner
Olympic Regional Development Authority
218 Main Street
Lake Placid, NY 12946
Ph. (518) 523-1665

July 2003

PREPARER CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

This Construction Pollution Prevention Plan was prepared in accordance with the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-02-01), pursuant to Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. This SPDES General Permit implements the Federal Clean Water Act pertaining to stormwater discharges.

Construction will begin only after the requirements of SEQRA are met and any necessary Federal, State and local permits are issued.

Signature: ______________________

Name: ______________________

Title: ______________________

Date: ______________________

OWNER POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Signature: ______________________

Name: DANIEL P. SHEEHAN

Title: REGISTERED LANDSCAPE ARCHITECT NYS # 001171

Date: 4-28-04

CONTRACTOR AND SUBCONTRACTOR CERTIFICATION

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Signature: ______________________________

Company: ______________________________

Responsible For: ______________________________

Date: _________________________

Signature: ______________________________

Company: ______________________________

Responsible For: ______________________________

Date: _________________________

Signature: ______________________________

Company: ______________________________

Responsible For: ______________________________

Date: _________________________

Stormwater Pollution Prevention Plan

1. Regulatory Information

This Stormwater Pollution Prevention Plan (SWPPP) is prepared to inform the landowner and construction personnel of the measures to be implemented for controlling runoff and pollutants from the site during and after construction activities. The objective of this plan is to comply with the New York Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities, Permit No. GP-02-01 requirements. Any materials conflicts between this plan and the site plans, specification or instructions, must be brought to the attention of the design professional. The project may have other permits and it is the responsibility of the owner and contractor to know and understand all permits.

2. Project Information

Name Parking Lot #5 Whiteface Mountain
Location NY Route 86, T/O Wilmington, Essex County

3. Owner Information

Name Olympic Regional Development Authority
Address 218 Main Street, Lake Placid, NY 12946
Phone number 523-1655
email address bhammond@orda.org

4. SWPPP Review, Update

a. SWPPP Review

Applicable Federal, State, and local regulatory agencies that have jurisdiction may elect to review this SWPPP and notify the permittee in writing that the SWPPP does not meet the requirements of their regulations. If the SWPPP needs to be revised, the permittee and the site contractor will make the required modifications within seven days of such notification and submit written certification to the notifying agency that the changes have been implemented. A copy of the SWPPP will be kept available on site for review by regulatory agencies, engineers, and subcontractors.

b. SWPPP Update

The permittee identified in this SWPPP may amend the SWPPP when there is a change in one or more of the following project components which has an affect on the potential for discharge of pollutants from stormwater runoff associated with construction activities:

- Design
- Construction
- Operation
- Maintenance

The SWPPP shall also be updated or amended under the following conditions:

- If measures identified in the SWPPP become ineffective in eliminating or minimizing pollutants from sources identified, or in achieving the general objectives of controlling stormwater pollution from permitted construction activity.
- To identify a new subcontractor that will implement any part of the SWPPP.

5. Site Description

a. Project Description

i. Background Information and Pre-development Conditions

Whiteface Mountain is in need of additional public parking spaces to meet skier needs. A new parking lot, lot #5, is proposed to be constructed off of the existing internal roadway that currently provides access to parking lot #4. The area where parking lot #5 will be constructed is currently a mix of undeveloped wooded areas, an existing bike trail, and an open field area that contains an existing small outbuilding utilized by Whiteface.

ii. Scope of the Project

The project consists solely of the construction of parking lot #5, two short access drives off of the existing internal road and lot #4, and construction of the stormwater management basin (micropool extended detention pond). The gravel-surfaced parking lot is approximately 2.44 acres. The total area of proposed disturbance is approximately 6 acres.

b. Construction Sequence

Construction Activities (Identify name of planned practices)	Reference Sheet Number	Start → Stop
1. Install Downhill Work Limit Erosion Control Beginning at the existing bike path install silt fencing at the lower limit of construction disturbance. Clear a "work road" approximately 10 feet wide along the downhill disturbance limit. Install sections of silt fence at the downhill edge of disturbance and on the contours so that silt fence sections are not running uphill or downhill. Because the downhill edge of disturbance is not on the same contour, in some instances silt fence will not be continuous but will need to be staggered. When viewed from uphill there shall be overlap and no gaps between the sections of staggered silt fence. The northern 2/3 can be one continuous run of silt fence along the 1300 foot contour with ends of adjoining silt fence sections properly secured to the same post. If possible, the area of silt fence installation should include the existing bike path. However, if it is necessary to keep the existing bike path passable during construction, install a water bar across the bike trail just downhill of the work limit. The gap in the silt fence for the bike trail shall be as narrow as practical. At the end of each work day a row of hay bales shall be installed across the bike trail to span the gap in the silt fence. Temporarily stabilize the disturbed "work road" by seeding with ryegrass (annual rye is acceptable) at a rate of 4 pounds per 1,000 square feet.	1 & 2	

2. Improve/Construct Upper Driveway/Construction Access Road Cut and grub the areas that need to be cleared for upper driveway from Lot 4. Install silt fences along downhill edge. Grade driveway, including installation of 24 feet of 12" CMP culvert. Install flared end section and rip rap outfall at culvert (see detail). Surface driveway with six inches of bank run gravel or other appropriate crushed stone surface on top of geotextile fabric. Stabilize disturbed areas outside the limits of the driveway by seeding with the Adirondack Seed Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.	1 & 2
3. Install Culvert Under Bike Path Install 16 foot 12" CMP culvert under bike path as shown, including flared end section and rip rap outfall. Backfill culvert with excavated materials. Remove any excess backfill material to an area already protected by silt fence. Stabilize disturbed areas outside the limits of the bike path by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.	1 & 2

4. Install Diversion Swale Uphill Side of Parking Lot

Construct the drainage swale that will divert runoff from uphill around the parking lot. Clear and grub the area to be disturbed uphill of the parking lot. Grade the area uphill of the parking lot to final grades. (Fine grading of the diversion swale itself should be done after the uphill area is graded and stabilized.) Immediately after grading this area stabilize by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.

Fine grade diversion swale making sure to create positive grades from the high point. Seed the diversion swale with the Adirondack Seed Mix at a rate of 5 pounds per acre. Line bottom of diversion swale with suitable erosion control blanket such as North American Green S75®, American Excelsior Curlex 1® or suitable equivalent. Install riprap level spreader on north side of parking lot. 1 & 2

In order to grade in the swale it may be necessary to clear and grub the upper portion of the parking lot. Care should be taken to clear and grub only that portion of the parking lot absolutely necessary to grade the diversion swale. Any area of the parking lot that is cleared and grubbed for swale construction, but will remain undisturbed for a period of more than fourteen days, shall be temporarily stabilized by seeding with ryegrass at a rate of 4 pounds per 1,000 square feet (annual ryegrass is acceptable).

<u>5. Grade Detention Basin and Area Downhill</u> Excavate detention basin and grade slopes downhill to the previously installed silt fence. Stabilize all disturbed areas by seeding with Adirondack Mix at a rate of 5 pounds per 1,000 square feet and mulch with straw at a rate of 3 bales per thousand square feet. Install detention basin outlet structure (see attached detail). Temporarily block off the outlet structure holes so that detention basin will collect and hold any runoff. Install detention basin outlet pipe and level spreader. Repair any previously stabilized areas that were disturbed by reseeding and mulching at the same rates given above. Keep outlet structure holes blocked until parking lot construction is complete and surface is stabilized.	1 & 2
<u>6. Construct Remainder of Parking Lot</u> Clear and grub remaining area of parking lot. Final grade parking lot including surfacing with bank run gravel or appropriate crushed stone on top of geotextile fabric. Stabilize all disturbed areas outside the limits of the parking lot by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch all seeded areas with straw at a rate of 3 bales per thousand square feet. After stabilization of the parking lot area is complete open detention basin outlet structure holes.	1 & 2
<u>7. Construct Lower Driveway</u> Clear and grub lower driveway installing silt fence at downhill side as shown. Install 12" 24 foot CMP culvert with flared end section and riprap outfall. NOTE: This culvert shall be installed only when there is no flow in the drainage in which it is placed ("in the dry"). Backfill culvert, install geotextile and surface driveway with bank run gravel or suitable crushed stone. Permanently stabilize all other disturbed areas along the driveway by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet and mulching with straw at the rate of 3 bales per thousand square feet.	1 & 2

c. Receiving Water(s) (include identification of any TMDL or 303(d) waters)

West Branch AuSable River

d. Soils (include general description and Hydrologic Soil Group)

Becket Bouldery Fin Silt Loam and Skerry Bouldery Silt Loam, both Hydrologic Group C Soils

e. Attachments – considered part of this SWPPP

These documents include plans, details, and technical specifications that include, but are not limited to, the following (unless otherwise specified, these documents have been prepared by The LA Group, P.C.):

- General site map.
- Construction drawings, Sheets 1 and 2.
- Phasing plan, on Sheet 1.
- Grading plans with existing and proposed contours that indicate slopes and drainage patterns prior to and after the grading activities on Sheet 1 and attached Stormwater Management Report.
- Location of sediment and erosion control devices, catch basins, etc. that will be or have been implemented, Sheet 1.
- Stormwater Management Report
- Simple Method Pollutant Removal Calculation Spreadsheet
- Maintenance schedule.

6. Stormwater Controls

a. Stormwater Management Objectives

The concept for stormwater management is to control the increased volume and rate of surface runoff caused by the development of roads and parking areas. The increased volumes and rates will be reduced to existing or pre-development levels by using measures to slow surface runoff from developed areas and increase infiltration.

The proposed stormwater facilities are designed to control a one hundred (100) year event. Water quality treatment, including treatment of the Water Quality Volume (WQV) is attained via micropool extended detention.

The objectives of the stormwater management plan are:

- Prevent increased runoff from developed land to reduce potential flooding and flood damage.
- Minimize the erosion potential from new construction.
- Increase water recharge.
- Enhance the quality of stormwater runoff to prevent water quality degradation in receiving water bodies.

b. Erosion and Sediment Controls – Structural Practices

i. Temporary

Silt fences, a water bar geotextile fabric in "cutoff swale". See attached Sheets 1 and 2, and construction sequencing plan above.

ii. Permanent

Micropool Extended Detention and level spreaders, cutoff swale above parking lot, rip rap culvert outfalls. See attached Sheets 1 and 2 and Stormwater Management Report.

c. Stabilization Practices (including vegetative practices)

i. Temporary

Temporary seeding with annual rye. See construction sequencing description above.

ii. Permanent

Permanent Seeding with Adirondack Mix and surfacing parking lot with gravel. See attached Sheets 1 and 2 and the construction sequencing above.

d. Additional Controls (if necessary)

None proposed in addition to those already described.

e. Supporting Materials – for construction activities meeting conditions A, B, or C in Part III.A.1.b of GP-02-01.

- Hydrologic/hydraulic analysis for all structural components of the stormwater control system for the applicable design storm(s).
- Comparison of post-development stormwater runoff conditions with pre-development conditions.
- Dimensions, material specifications and installation details for each post-construction stormwater control practice.
- Maintenance schedule to ensure continuous and effective operation of each post-construction stormwater control practice.

See Attached Stormwater Management Report.

7. Comparison of Pre- and Post-Construction Stormwater Runoff

a. Stormwater Quantity

Site Area:	13.125 acres
Total Area of Disturbance:	5.25 acres
Total Acres of New Impervious:	2.44 acres*

*gravel parking lot considered impervious for design purposes

Weighted CN: 76
☒ If HydroCAD, then A.
☐ If Rational, then B.

A.

Design Year Storm	Pre-construction	Post-construction
1. 1-year	1.46 cfs	1.48 cfs
2. 10-year	7.61 cfs	7.50 cfs
3. 100-year	15.38 cfs	15.16 cfs

B.

Design Year Storm	Pre-construction	Post-construction
1.	cfs	cfs
Weighted CN		

b. Stormwater Quality

Water Quality Storage Volume WQ_v = 0.114 acre-feet of storage

Table 1. Pre-development and post-development pollutant loadings.*

	SMP Pollutant Reductions						
	TSS	TP	TN	Cu	Pb	Zn	Bacteria
SMP reduction	80%	50%	35%	60%	60%	60%	70%

*See attached spreadsheet – Stormwater Pollutant Loading – General Simple Method

Spreadsheet For Stormwater Pollutant Loading - General Simple Method

Simple Method Calculations		**Project:**	Whiteface Lot #5
1. General Loading Formula			
L=0.226*R*C*A			
where L = annual load (lbs), R= annual runoff (inches), C = pollutant concentration (mg/l), A =area (acres)			
Note: C should Use National Median Concentrations (DEC Manual Table A.1)			
Note: A (area) should only be the area where covertype/land use is changed			
2. Calculating R			
R=P(annual rainfall in inches)*Pj (fraction of rainfall producing runoff=0.9)*Rv(runoff coefficient)			
where Rv = 0.05+0.9Ia (impervious fraction)			
P=	44	annual rainfall in inches	
Ia=	19	percent impervious	
R=	679.14		
3. Project Specifics - Loading Calculation Inputs			
R=	679.14	inches	
C=	54.5	mg/l	TSS
C=	0.26	mg/l	TP
C=	2	mg/l	TN
C=	11.1	mg/l	Cu
C=	50.7	mg/l	Pb
C=	129	mg/l	Zn
A=	2.44	acres	(affected area only - not entire site)
3. Annual Loading for Solids, Nutrients and Metals (Calculated)			
L-TSS=	20410.52	lbs	
L-TP=	97.37129	lbs	
L-TN=	749.00992	lbs	
L-Cu=	4157.0051	lbs	
L-Pb=	18987.402	lbs	
L-Zn=	48311.14	lbs	
4. Annual Loading for Bacteria (Calculated)			
L=103*R*C*A		billion colonies	
L=	256022.2	billion colonies	
5. Pollutant Loading (L) to Different SMPs			
5.a Areas Contributing to Different SMPs			
A=	2.44	total area (acres)	
A1=	2.44	area draining to wet ponds (acres)	
A2=		area draining to stormwater wetlands (ares)	
A3=		area draining to filtering practices (acres)	
A4=		area draining to infiltration practices (acres)	
A5=		area draining to water quality swales (acres)	
A6=	0	area not served by A1 through A5 (acres)	**Explain:**

Spreadsheet For Stormwater Pollutant Loading - General Simple Method

5.h Zn Loading (LZn) To Different SMPs								
L1Zn=	48311.14	loading treated by wet ponds (lbs)						
L2Zn=	0	loading treated by stormwater wetlands (lbs)						
L3Zn=	0	loading treated by filtering practices (lbs)						
L4Zn=	0	loading treated by infiltration practices (lbs)						
L5Zn=	0	loading treated by water quality swales (lbs)						
L6Zn=	0	loading treated by others (lbs)						
5.i Bacteria Loading (LB) To Different SMPs								
L1B=	256022.2	loading treated by wet ponds (billion colonies)						
L2B=	0	loading treated by stormwater wetlands (billion colonies)						
L3B=	0	loading treated by filtering practices (billion colonies)						
L4B=	0	loading treated by infiltration practices (billion colonies)						
L5B=	0	loading treated by water quality swales (billion colonies)						
L6B=	0	loading treated by others (billion colonies)						
6. Pollutant Removal Efficiencies (from DEC Table A.4)								
	Wet Ponds	Wetlands	Filtering	Infiltration	Swales	Other		
TSS	0.8	0.8	0.85	0.9	0.85			
TP	0.5	0.5	0.6	0.7	0.4			
TN	0.35	0.3	0.4	0.5	0.5			
Pb	0.6	0.4	0.7	0.9	0.7			
Cu	0.6	0.4	0.7	0.9	0.7			
Zn	0.6	0.4	0.7	0.9	0.7			
Bacteria	0.7	0.8	0.35	0.9	0			
7. Pollutant Export (E) Post-Treatment by SMP								
7.a TSS								
E1TSS=	4082.1041	wet ponds						
E2TSS=	0	wetlands						
E3SS=	0	filtering						
E4TSS=	0	infiltration						
E5TSS=	0	swales						
E6TSS=	0	other						
7.b TP								
E1TP=	48.685645	wet ponds						
E2TP=	0	wetlands						
E3TP=	0	filtering						
E4TP=	0	infiltration						
E5TP=	0	swales						
E6TP=	0	other						
7.c TN								
E1TN=	486.85645	wet ponds						
E2TN=	0	wetlands						
E3TN=	0	filtering						
E4TN=	0	infiltration						
E5TN=	0	swales						
E6TN=	0	other						

7.d Cu		
E1Cu=	1662.802	wet ponds
E2Cu=	0	wetlands
E3Cu=	0	filtering
E4Cu=	0	infiltration
E5Cu=	0	swales
E6Cu=	0	other
7.e Pb		
E1Pb=	7594.9606	wet ponds
E2Pb=	0	wetlands
E3Pb=	0	filtering
E4Pb=	0	infiltration
E5Pb=	0	swales
E6Pb=	0	other
7.f Zn		
E1Zn=	19324.456	wet ponds
E2Zn=	0	wetlands
E3Zn=	0	filtering
E4Zn=	0	infiltration
E5Zn=	0	swales
E6Zn=	0	other
7.g Bacteria		
E1B=	76806.659	wet ponds
E2B=	0	wetlands
E3B=	0	filtering
E4B=	0	infiltration
E5B=	0	swales
E6B=	0	other
8. Total Post-Treatment Export		
TSS	4082.1041	lbs
TP	48.685645	lbs
TN	486.85645	lbs
Cu	1662.802	lbs
PB	7594.9606	lbs
Zn	19324.456	lbs
Bacteria	76806.659	billion colonies
9. Overall SMP Treatment Efficiency (Percent Removal)		
TSS	80.00%	
TP	50.00%	
TN	35.00%	
Cu	60.00%	
PB	60.00%	
Zn	60.00%	
Bacteria	70.00%	

Appendix 1
Other Controls

Waste Materials: All waste materials generated during construction will be disposed at a suitable landfill, transfer station or C and D landfill.

Hazardous Waste: The project will not be a generator of hazardous waste and it is not anticipated that any hazardous waste will be generated during construction. If there are any materials generated, a licensed hazardous waste carrier will be contracted to dispose the hazardous material at a suitable disposal site. If hazardous materials are discovered during construction, the work will be stopped until the issue is resolved.

Sanitary Waste: Sanitary facilities will be available to construction personnel at existing Whiteface Mountain facilities.

Offsite Vehicle Tracking: Project construction will be self-contained within Whiteface Mountain. Off site vehicle tracking is not anticipated to occur. If any significant off-site vehicle tracking begins to occur, the contractor will be directed to institute an as-needed street sweeping program in the immediate vicinity of the site.

Timing of Measures/Controls

- Temporary structural erosion controls will be installed prior to earthwork as per the attached plans.

- A qualified professional shall conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in the SWPPP and required by Part III.D of GP-02-01 have been adequately installed to ensure overall preparedness of the site for commencement of construction.

- Structural erosion controls and non-stabilized areas shall be inspected once a week or within 24 hours after a rainfall of 0.5 inches or more. Copies of the Stabilization Inspection Forms and Structural Inspection Forms located at the end of this report shall be completed in full for every inspection performed.

- Areas to be undisturbed for more than 14 days will be temporarily stabilized by seeding.

- Disturbed areas will be reseeded and mulched immediately after final contours are re-established and no more than 14 days after the completion of construction at that site.

- Temporary erosion control devices will not be removed until the area served is stabilized by the growth of vegetation and the area is certified as being stabilized by the inspecting qualified professional.

- Any areas that cannot be seeded to turf by October 1 or earlier will receive a temporary seeding. The temporary seeding will consist of winter rye seeded at the rate of 120 pounds per acre (2.5 pounds per 1,000 square feet).

The operator shall prepare a summary of construction status using the Construction Sequence Form at the end of this document once every month. Significant deviations to the sequence and reasons for those deviations (i.e. weather, subcontractor availability, etc.), shall be noted by the contractor. The schedule shall be used to record the dates for initiation of construction, implementation of erosion control measures, stabilization, etc. A copy of this table will be maintained at the construction site and be updated in addition to the individual Stabilization Inspection Forms and Structural Inspection Forms completed for each inspection.

Appendix 2
Maintenance/Inspection Procedures

Erosion and Sediment Control Inspection and Maintenance Practices
These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls.

A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached in Appendix 4. Reports should be compiled and maintained on-site.

- The inspecting qualified professional will supervise erosion control activities on the site. Weekly inspections of erosion control devices will be made, as well as inspections following any storm event of 0.5 inches or greater.

- All measures will be maintained in good working order; if repair is necessary, it will be initiated within 24 hours of report.

- Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.

- Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in ground.

- All temporary sediment basins should be inspected for stability and integrity once a week or after a storm event of 0.5 inch or more. Any structural failure in sediment basins or trenches that serve them will be repaired within 24 hours after detection.

- All temporary sediment basins or trenches shall be cleaned out when one foot of sediment or half the design depth of the trap has accumulated. All spoils shall be removed to a stabilized upland area.

- Seeded and planted areas will be inspected for bare spots, washouts, and healthy growth. If necessary, spot reseeding or sodding will be implemented.

Appendix 3
Spill Prevention Practices

Good Housekeeping and Material Management Practices
The following good housekeeping and material management practices will be followed on site during the construction project to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

- Materials will be brought on site in the minimum quantities required.
- All materials stored on site will be stored in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposal.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The construction manager or his designee will inspect daily to ensure proper use and disposal of materials on site.
- The contractor shall prohibit washing of tools, equipment, and machinery in or within 100 feet of any watercourse or wetland.
- All above grade storage tanks are to be protected from vehicle damage by temporary barriers.

Inventory for Pollution Prevention Plan
The materials and substances listed below are expected to be on-site during construction.

- Petroleum for fueling vehicles will be stored in above ground storage tanks. Tanks will either be steel with an enclosure capable of holding 110% of the storage tank volume or of a Con-Store, concrete encased type typically employed by NYSDOT. Hydraulic oil and other oils will be stored in their original containers. Concrete and asphalt will be stored in the original delivery trucks.
- Fertilizer may be stored on site in its original container for a short period of time prior to seeding. Original containers will be safely piled on pallets or similar devices to protect from moisture.
- Paints and other similar materials will be stored in their original containers and all empty containers will be disposed of in accordance with label directions.

Hazardous Products
These practices are used to reduce the risks associated with hazardous materials.

- Products will be kept in original containers unless they are not resealeable.

- Original labels and material safety data sheets will be retained; they contain important product information.

- If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

Spill Prevention – Product Specific Practices
The following product specific practices will be followed on site.

Petroleum Products:
- Construction personnel should be made aware that emergency telephone numbers are located in this SWPPP.
- The contractor shall immediately contact NYSDEC in the event of a spill, and shall take all appropriate steps to contain the spill, including construction of a dike around the spill and placing absorbent material over this spill.
- The contractor shall instruct personnel that spillage of fuels, oils, and similar chemicals must be avoided.
- Fuels, oils, and chemicals will be stored in appropriate and tightly capped containers. Containers shall not be disposed of on the project site.
- Fuels, oils, chemicals, material, equipment, and sanitary facilities will be stored/located away from trees and at least 100 feet from streams, wells, wet areas, and other environmentally sensitive sites.
- Dispose of chemical containers and surplus chemicals off the project site in accordance with label directions.
- Use tight connections and hoses with appropriate nozzles in all operations involving fuels, lubricating materials or chemicals.
- Use funnels when pouring fuels, lubricating materials or chemicals.
- Refueling and cleaning of construction equipment will take place in parking areas to provide rapid response to emergency situations.
- All on-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Any vehicle leaking fuel or hydraulic fuel will be immediately scheduled for repairs and use will be discontinued until repairs are made.

Fertilizers:
- Fertilizer will be stored in its original containers on pallets with water resistant coverings.
- Proper delivery scheduling will minimize storage time.
- Any damaged containers will be repaired immediately upon discovery and any released fertilizer recovered to the fullest extent practicable.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup. The construction manager responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least one other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the onsite construction office or trailer.

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies. Any spill in excess or suspected to be in excess of two gallons will be reported to the NYSDEC Regional Spill Response Unit. Notification to the NYSDEC (1-800-457-7362) must be completed within two hours of the discovery of the spill.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to absorbent pads, brooms, dust pans, mops, rags, gloves, goggles, activated clay, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with spilled substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.

SPILL RESPONSE REPORT

Within 1 hour of a spill discovery less than 2 gallons in volume the following must be notified:
Jay Rand, Whiteface 946-4201
Bob Hammond, ORDA 523-1655

Within 1 hour of a spill discovery greater than 2 gallons and the following must be notified:
Jay Rand, Whiteface 946-4201
Bob Hammond, ORDA 523-1655
NYSDEC Spill Response Hotline 1-800-457-7362
Spill Response Contractor

Material Spilled: ____________________
____
____

Approximate Volume: ____________________
____
____

Location: ____________________
____
____

Distance to nearest down gradient drainage: ____________________
____
____

Distance to nearest down gradient open water: ____________________
____
____

Temporary control measures in place: ____________________
____
____

Appendix 4
Forms for the Stormwater Pollution Prevention Plan

Whiteface Mountain Lot #5
SWPP INSPECTION REPORT

Inspector Name	Signature	Date of Inspection

Inspection #________

YES	NO		
☐	☐	Routine Inspection.	Date of last inspection:__________
☐	☐	Inspection following rain event.	Date/time of storm ending:__________
			Rainfall amount:__________
			Recorded by:__________
☐	☐	Is this a final site inspection?	
☐	☐	Has site undergone final stabilization?	
☐	☐	If so, have all temporary erosion and sediment controls been removed?	

REPORT CHECKLIST

Complete the following report checklist and key issue items to attached site plan.

1. Site Disturbance (Indicate Locations on Plan)

YES	NO		
☐	☐	1.1	Areas previously disturbed, but have not undergone active site work in the last 14 days?
☐	☐	1.2	Areas disturbed within last 14 days?
☐	☐	1.3	Areas expected to be disturbed in next 14 days?
☐	☐	1.4	Do areas of steep slopes or complex stabilization issues exist? If "YES" explain__________

Additional Comments: __________

2. Inspection of Control Devices

YES	NO		
☐	☐	2.1	Perimeter controls (silt fences) installed? Type__________
☐	☐	2.2	Silt accumulation? Amount (%)__________
☐	☐	2.3	Inlet protection? Type__________
☐	☐	2.4	Silt accumulation? Amount (%)__________

Additional Comments: ______________________________

____

____

3. Stabilization

YES	NO		
☐	☐	3.1	Are all existing disturbed areas contained by control devices? Type of devices______________________
☐	☐	3.2	Are there areas that require stabilization within the next 14 days? Specify Area______________________
☐	☐	3.3	In recently or previously stabilized areas, is there evidence of permanent or temporary stabilization measures that have been implemented where work has ceased for 14-21 days?
☐	☐	3.4	Is there current snow cover or frozen ground conditions?
☐	☐	3.5	Rills or gullies?
☐	☐	3.6	Slumping/deposition?
☐	☐	3.7	Loss of vegetation?
☐	☐	3.8	Lack of germination?
☐	☐	3.9	Loss of mulching?

☐ ☐ Action Items: ______________________________

____

____

4. Receiving Structures/Water Bodies

Indicate locations where runoff leaves the project site on the site plan.

____

YES	NO		
☐	☐	4.2	Surface water swale or stream?
☐	☐	4.3	Municipal or community system?
		4.4	Indicate drainage pathways.

____

Inspect locations where runoff from project site enters the receiving waters and indicate if there is evidence of:

☐	☐	4.5	Rills or gullies?
☐	☐	4.6	Slumping/deposition?
☐	☐	4.7	Loss of vegetation?
☐	☐	4.8	Undermining of structures?

☐ ☐ Action Items: ______________________________

____

____

5. General Site Condition

YES	NO		
☐	☐	5.1	Have action items from previous reports been addressed?
		5.2	Contractors summary on pertinent progress last 7 days. ____________ ____________
		5.3	Anticipated work to be begun in the next 7 days. ____________ ____________
☐	☐	5.4	Does routine maintenance of protection components occur on a regular basis?
☐	☐	5.5	Does cleaning and/or sweeping affected roadways occur, at minimum, daily?
☐	☐	5.6	Is debris and litter removed on a monthly basis, or as necessary?
☐	☐	5.7	Is the site maintained in an orderly manner?

Additional Comments: ____________________
____
____

SUMMARY OF ACTION ITEMS

____
____
____
____
____

Construction Sequence Form

Construction Activities (Identify name of planned practices)	Date Complete
1.	
2.	
3.	
4.	

STORM WATER POLLUTION PREVENTION PLAN
PLAN CHANGES, AUTHORIZATION, AND CHANGE CERTIFICATION

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

____
____
____
____

REASONS FOR CHANGES:

____
____
____
____

REQUESTED BY: ____________________

DATE: ____________________

AUTHORIZED BY: ____________________

DATE: ____________________

CERTIFICATION OF CHANGES:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the penal code.

SIGNATURE: ________________________

DATE: ________________________

Whiteface Mountain Parking Lot #5 Construction Sequencing and Erosion Control

1. Install Downhill Work Limit Erosion Control

Beginning at the existing bike path install silt fencing at the lower limit of construction disturbance. Clear a "work road" approximately 10 feet wide along the downhill disturbance limit. Install sections of silt fence at the downhill edge of disturbance and on the contours so that silt fence sections are not running uphill or downhill (installation detail attached).

Because the downhill edge of disturbance is not on the same contour, in some instances silt fence will not be continuous but will need to be staggered. When viewed from uphill there shall be overlap and no gaps between the sections of staggered silt fence (see schematic below).

SLOPE
⇓

uu---------S---------
uuuuuuuuuuuuu----------S----------------
uuuuuuuuuuuuuuuuuuuuu ----------------S----------uuuuuuuuuuu
uuuuuuuuuuuuu uuuuuuuuuuuuuuuuuuuu

uuu = clearing/disturbance limit
----S---- = silt fence

The northern 2/3 can be one continuous run of silt fence along the 1300 foot contour with ends of adjoining silt fence sections properly secured to the same post.

If possible, the area of silt fence installation should include the existing bike path. However, if it is necessary to keep the existing bike path passable during construction, install a water bar across the bike trail just downhill of the work limit. The gap in the silt fence for the bike trail shall be as narrow as practical. At the end of each work day a row of hay bales shall be installed across the bike trail to span the gap in the silt fence.

Temporarily stabilize the disturbed "work road" by seeding with ryegrass (annual rye is acceptable) at a rate of 4 pounds per 1,000 square feet.

2. Improve/Construct Upper Driveway/Construction Access Road

Cut and grub the areas that need to be cleared for upper driveway from Lot 4. Install silt fences along downhill edge. Grade driveway, including installation of 24 feet of 12" HPDE culvert. Install flared end section and rip rap outfall at culvert (see detail). Surface driveway with six inches of bank run gravel or other appropriate crushed stone surface on top of geotextile fabric. Stabilize disturbed areas outside the limits of the driveway by seeding with the Adirondack Seed Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.

3. Install Culvert Under Bike Path

Install 16 foot 12" HPDE culvert under bike path as shown, including flared end section and rip rap outfall. Backfill culvert with excavated materials. Remove any excess backfill material to an area already protected by silt fence. Stabilize disturbed areas outside the limits of the bike path by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.

4. Install Diversion Swale Uphill Side of Parking Lot

Construct the drainage swale that will divert runoff from uphill around the parking lot. Clear and grub the area to be disturbed uphill of the parking lot. Grade the area uphill of the parking lot to final grades. (Fine grading of the diversion swale itself should be done after the uphill area is graded and stabilized.) Immediately after grading this area stabilize by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch seeded areas with straw at a rate of 3 bales per thousand square feet. Anchor mulch in place by crimping with tracked vehicle driven up and down the mulched area slope or other suitable physical means, or secure with non-asphaltic tackifier.

Fine grade diversion swale making sure to create positive grades from the high point. Seed the diversion swale with the Adirondack Seed Mix at a rate of 5 pounds per acre. Line bottom of diversion swale with suitable erosion control blanket such as North American Green S75®, American Excelsior Curlex 1® or suitable equivalent. Install riprap level spreader on north side of parking lot.

In order to grade in the swale it may be necessary to clear and grub the upper portion of the parking lot. Care should be taken to clear and grub only that portion of the parking lot absolutely necessary to grade the diversion swale. Any area of the parking lot that is cleared and grubbed for swale construction, but will remain undisturbed for a period of more than seven days, shall be temporarily stabilized by seeding with ryegrass at a rate of 4 pounds per 1,000 square feet (annual ryegrass is acceptable).

5. Grade Detention Basin and Area Downhill

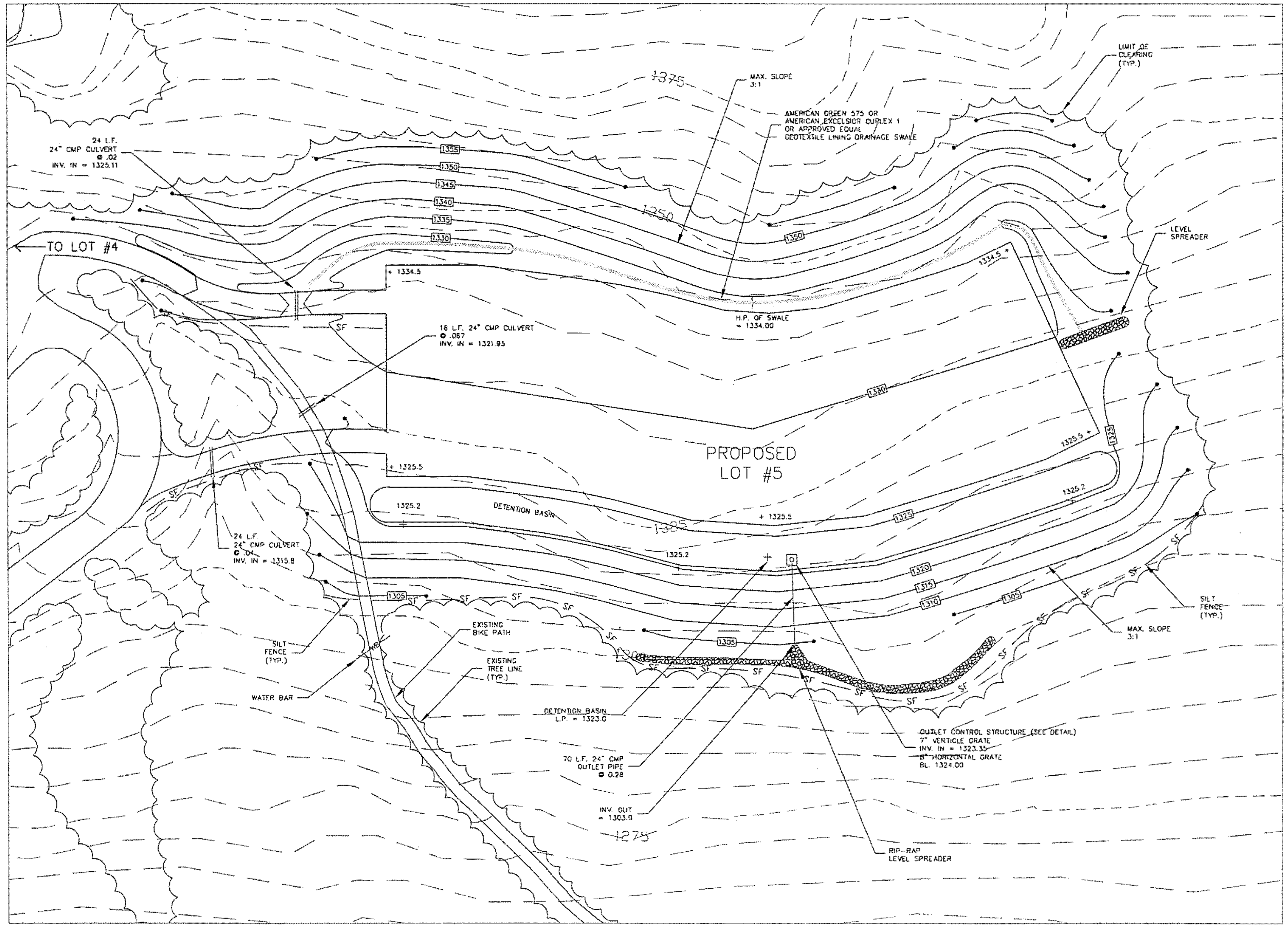
Excavate detention basin and grade slopes downhill to the previously installed silt fence. Stabilize all disturbed areas by seeding with Adirondack Mix at a rate of 5 pounds per 1,000 square feet and mulch with straw at a rate of 3 bales per thousand square feet. Install detention basin outlet structure (see attached detail). Temporarily block off the outlet structure holes so that detention basin will collect and hold any runoff. Install detention basin outlet pipe and level spreader. Repair any previously stabilized areas that were disturbed by reseeding and mulching at the same rates given above. Keep outlet structure holes blocked until parking lot construction is complete and surface is stabilized.

6. Construct Remainder of Parking Lot

Clear and grub remaining area of parking lot. Final grade parking lot including surfacing with bank run gravel or appropriate crushed stone on top of geotextile fabric. Stabilize all disturbed areas outside the limits of the parking lot by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet. Mulch all seeded areas with straw at a rate of 3 bales per thousand square feet. After stabilization of the parking lot area is complete open detention basin outlet structure holes.

7. Construct Lower Driveway

Clear and grub lower driveway installing silt fence at downhill side as shown. Install 12" 24 foot HPDE culvert with flared end section and riprap outfall. NOTE: This culvert shall be installed only when there is no flow in the drainage in which it is placed ("in the dry"). Backfill culvert, install geotextile and surface driveway with bank run gravel or suitable crushed stone. Permanently stabilize all other disturbed areas along the driveway by seeding with the Adirondack Mix at a rate of 5 pounds per 1,000 square feet and mulching with straw at the rate of 3 bales per thousand square feet.



THIS PLAN IS BASED UPON AERIAL PHOTOGRAPHY (DATE UNKNOWN) PROVIDED BY OLYMPIC REGIONAL DEVELOPMENT AUTHORITY. THE LA GROUP ASSUMES NO RESPONSIBILITY FOR HORIZONTAL OR VERTICAL INACCURACIES IN FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION, OR ADDITIONAL COSTS INCURRED AS A RESULT OF UTILIZING THIS INFORMATION.

WHITEFACE

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

Prepared By:
SE GROUP

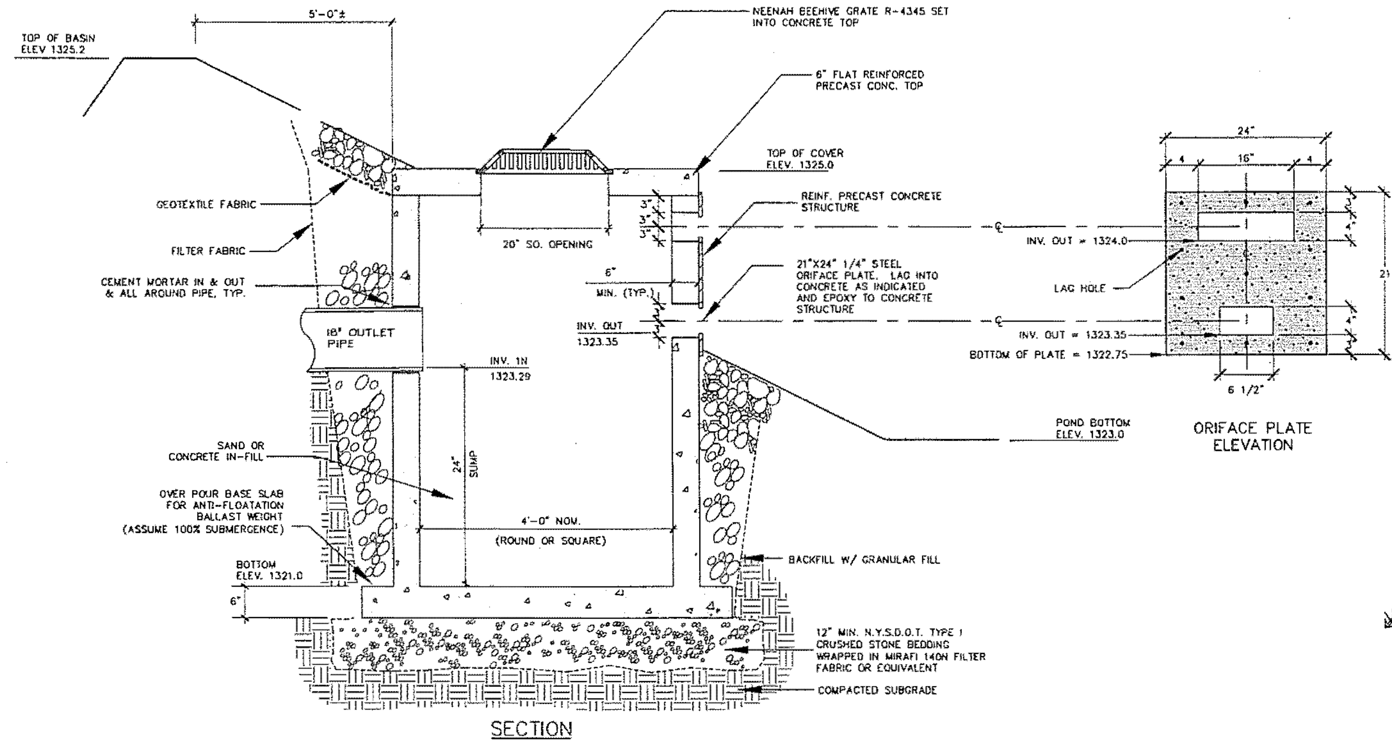
COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

25 0 25 50 100
Scale: 1" = 50' Contour Interval = 5 Feet NORTH

TITLE: PROPOSED LOT #5 PHASING AND SEDIMENT & EROSION PLAN

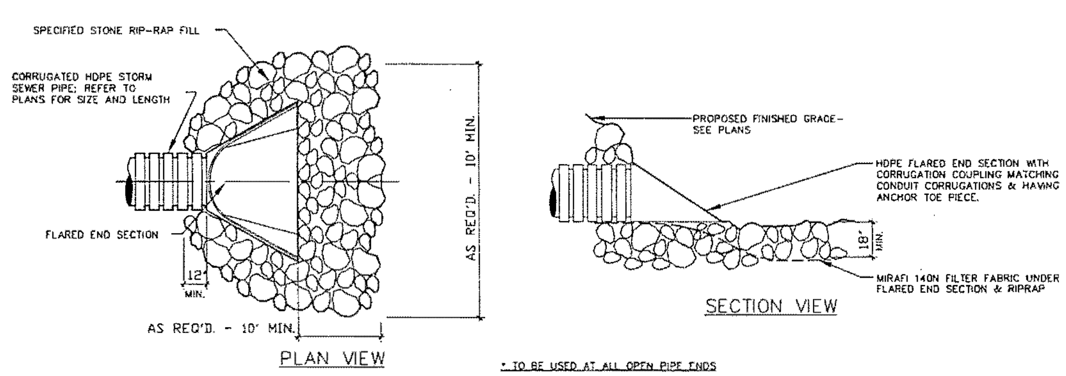
DATE: JUNE 2003
FIGURE #: 1

PROJECT NUMBER: 01043 FILE: 01043BASE



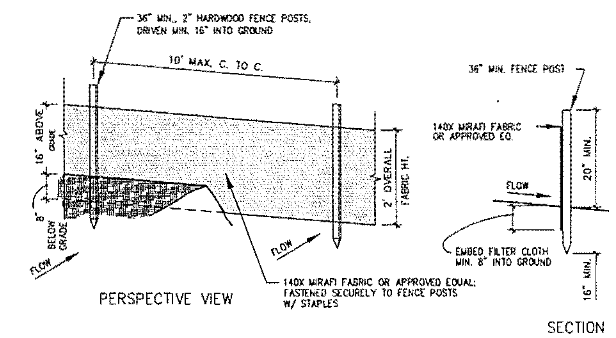
1 CONTROLLED RELEASE STRUCTURE

N.T.S.



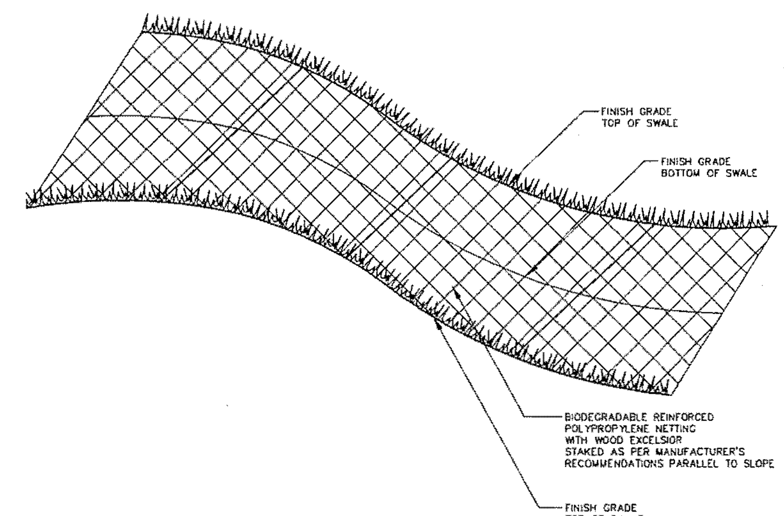
2 FLARED-END SECTION DETAIL

N.T.S.



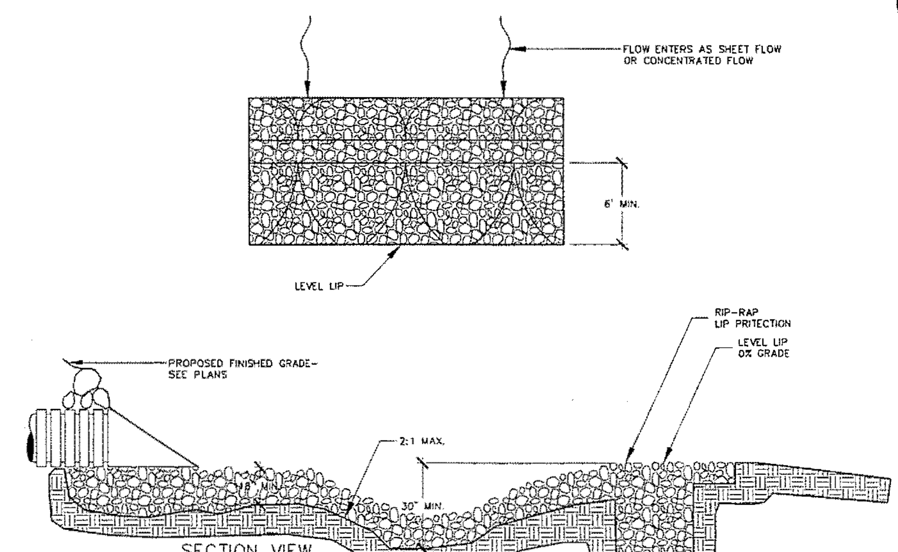
3 SILT FENCE DETAIL

N.T.S.



4 EXCELSIOR EROSION CONTROL BLANKET

N.T.S.



5 RIP-RAP LEVEL SPREADER DETAIL

*VARIATION ON NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL

N.T.S.

STANDARD AND SPECIFICATIONS FOR WATER BAR

Definition

A ridge or ridge and channel constructed diagonally across a sloping road or utility right-of-way that is subject to erosion.

Purpose

To limit the accumulation of erosive volumes of water by diverting surface runoff at predesigned intervals.

Conditions Where Practice Applies

Where runoff protection is needed to prevent erosion on sloping access right-of-ways or either long, narrow sloping areas generally less than 100 feet in width.

Design Criteria

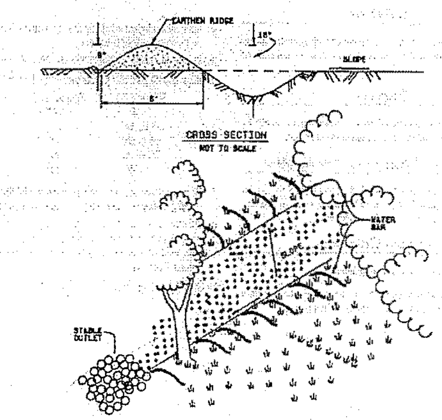
Design computations are not required.

1. The design height shall be a minimum of 18 inches measured from channel bottom to ridge top.
2. The side slopes shall be 2:1 or flatter; a minimum of 4:1 where vehicles cross.
3. The base width of the ridge shall be six feet minimum.
4. The spacing of the water bars shall be as follows:

Slope (%)	Spacing (ft)
<5	125
5 to 10	100
10 to 20	75
20 to 35	50
> 35	25

5. The positive grade shall not exceed 2%. A crossing angle of approximately 60 degrees is preferred.
6. Water bars should have stable outlets, either natural or constructed. Site spacing may need to be adjusted for field conditions to use the most suitable areas for water disposal.

Water Bar Details



CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

6 WATER BAR DETAIL

N.T.S.

WHITEFACE

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

Prepared By:
SE GROUP

COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

25 0 25 50 100
Scale: 1" = 50' Contour Interval = 5 Feet
NORTH

TITLE: PROPOSED LOT #5 DETAIL SHEET
DATE: JUNE 2003
FIGURE #: 2
PROJECT NUMBER: 01043
FILE: 01043BASE

STORMWATER MANAGEMENT REPORT
For
WHITEFACE MOUNTAIN
PARKING LOT #5

Prepared by:

The LA Group, P.C.
40 Long Alley
Saratoga Springs, NY 12866

June 2003

STORMWATER MANAGEMENT REPORT

WHITEFACE MOUNTAIN
PARKING LOT #5
WILMINGTON, NEW YORK

Introduction:

Stormwater computations for a proposed parking lot (Parking Lot #5) at Whiteface Mountain were conducted using the USDA Soil Conservation Service Technical Release No. 20. The program used was the HydroCAD Stormwater Modeling System produced by Applied Microcomputer Systems of Chocurua, New Hampshire. The design storms studied were the one (1) year event (Channel Protection, CP_v), ten (10) year event (Overbank Flood Control, QP), and one hundred (100) year event (Extreme Flood Control, QF). The 24 hour Type II storms produce a total rainfall of 2.1, 3.5 and 4.8 inches respectively. Calculations were also completed for the treatment of the required Water Quality Volume (90% rainfall event, WQ_v) measuring 0.8 inches in northern Essex County.

Design Concept:

The concept for stormwater management is to control the increased volume and rate of surface runoff caused by the development of buildings, roads and parking areas. The increased volumes and rates will be reduced to existing or pre-development levels by using measures to slow surface runoff from developed areas and increase infiltration.

The proposed stormwater facilities are designed to control a one hundred (100) year event. Water quality treatment is attained via extended detention.

The objectives of the stormwater management plan are:

- Prevent increased runoff from developed land to reduce potential flooding and flood damage.
- Minimize the erosion potential from new construction.
- Increase water recharge.
- Enhance the quality of stormwater runoff to prevent water quality degradation in receiving water bodies.

Existing Conditions:

The project site is made up of approximately 13.125 acres of land located within Whiteface Mountain Ski Center, 2.44 acres of which will be developed as a gravel surface overflow parking area. Currently the land is primarily wooded. The soils are a mix of Becket Bouldery Fine Silt Loam and Skerry Bouldery Silt Loam. The Soil Conservation Service classifies the soils on site as Hydrologic Group C.

Under existing conditions the site is within a single 13 acre watershed (Subcatchment 1), which begins at a high point approximately 1000 ft. upgradient of the parking area site. The run-off consists of sheet flow through a wooded area with light underbrush and shallow concentrated flow thru woods with heavy litter. It eventually drains into the west branch of the Ausable River. Table 1 summarizes the pre-development runoff volumes and rates. See figure A, "Existing Drainage Plan."

Table 1
Pre-development Runoff

Design Storm	Subcatchment 1	
	Volume	*Rate*
1-Year	.255 af	1.46 cfs
10-Year	.969 af	7.61 cfs
100-Year	1.849 af	15.38 cfs

Proposed Conditions:

Proposed conditions include a 2.4 acre gravel parking lot. Run-off from the undeveloped portion of the existing watershed (Subcatchments 1 & 2) have been diverted via grass swales (Reach 1 & 2) and culverts around the proposed parking lot. Run-off from the proposed parking lot (Subcatchment 3) drains into a detention basin (Pond 1), which overflows into an outlet control structure through a culvert into a rip-rap level spreader, where overflow is dispersed and allowed to sheet flow downgradient. Pond 2 has been used to sum the flows of reaches 1 and 2. See figure B, "Proposed Drainage Plan."

The proposal for management of stormwater is to collect, detain and treat the water quality volume (WQ_v) of all runoff attributed to the proposed parking lot (Subcatchment 3). This runoff will be collected and treated by extended detention within the proposed basin. Modeling of the 90% WQ_v event, with no release from Pond 1, causes the WQ volume to rise to elevation 1323.32. The 7 inch vertical orifice that will moderate the 1 year (CP_v) and 10 year (QP_v) will be set at elevation 1323.35, above the WQ_v elevation. The following table summarizes the WQ_v event in Pond 1.

Table 2
Summary of 90% WQ_v Event from Subcatchment 3

Area	Flow	Volume	Peak Storage	Peak Elevation
2.435 AC	2.65 cfs	0.144 af	4963 cf	1323.32'

As stated previously, Pond 2 has been created to sum reaches 1 and 2, subtracting this summed rate from the pre-development rate provides the release rate for Pond 1, the parking area detention facility. The table below summarizes the release rates for Pond 1.

Table 3
Pond 1 Release Rate

Design Storm	Pre-development Rate	-	Sum of Reach 1 and 2	=	Pond 1 Release Rate
1	1.46 cfs	-	1.11 cfs	=	.35 cfs
10	7.61 cfs	-	6.31 cfs	=	1.30 cfs
100	15.38 cfs	-	12.98 cfs	=	2.40 cfs

In addition to the 7 inch vertical orifice, which will moderate the 1 and 10 year events, an 8 inch horizontal grate has been set at elevation 1324.0 to assist in matching the release rates up to the 100 year (Q_F) event storm.

Conclusion:

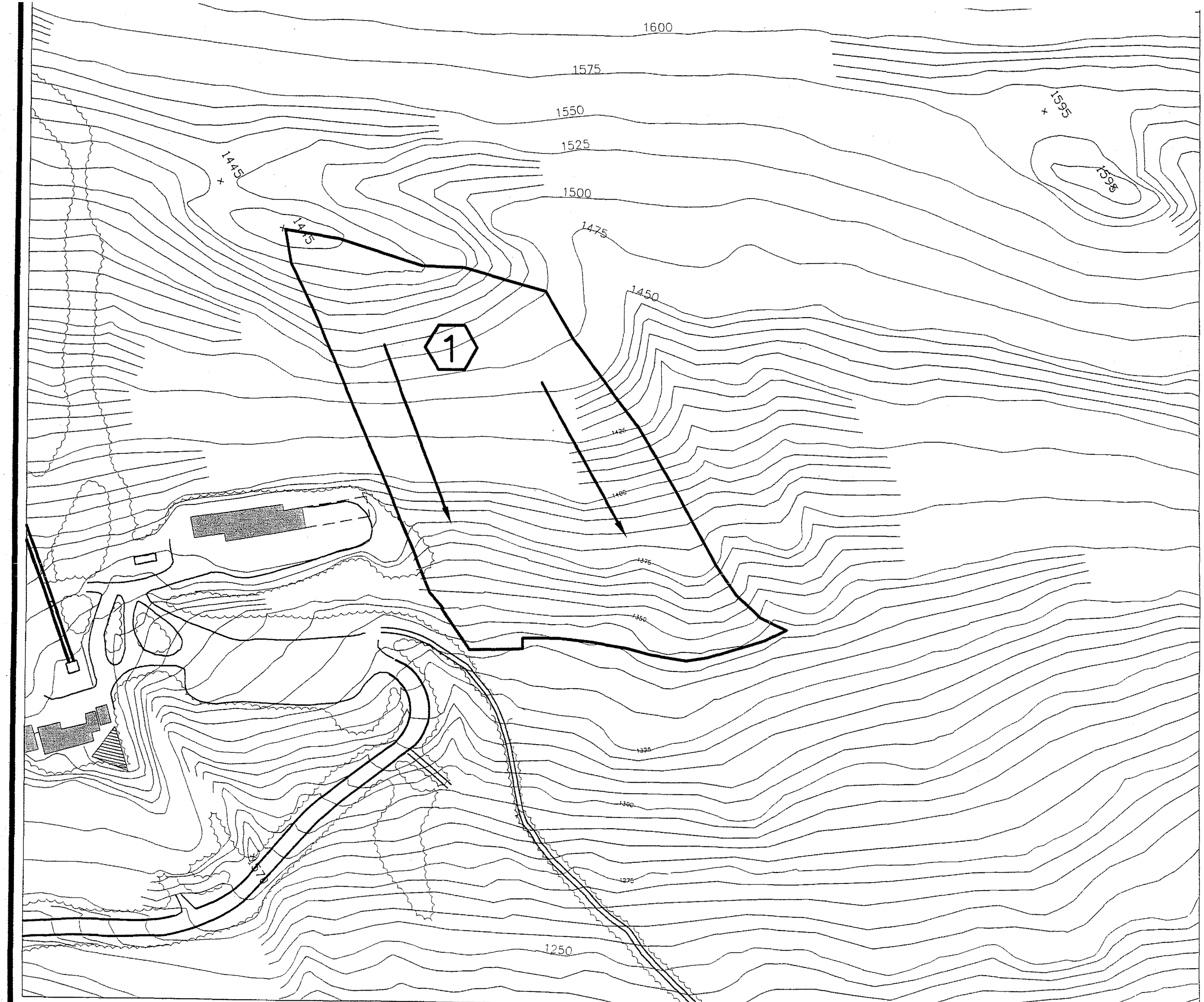
The design intent of limiting the proposed runoff rate to a level less than existing has been met by directing stormwater into a detention basin and controlling the rate of release. The quality of the runoff is improved by allowing sediments to settle out in the stormwater management area before releasing it. The following table includes a comparison of the total runoff for each storm event in the pre-development and post-development condition.

Total pre-development flows for the project site have been summed in Pond 3 in order to place all flows in the same timeline.

Table 4
Pre-Development/Post-Development

	Pre-development		Post-development	
	Runoff	*Runoff R1+R2 (P2)*	*Runoff Pond 1*	*Total Pond 3*
1-Year	1.46 cfs	1.11 cfs	.39 cfs	1.48 cfs
10-Year	7.61 cfs	6.31 cfs	1.24 cfs	7.50 cfs
100-Year	15.38 cfs	12.98 cfs	2.27 cfs	15.16 cfs

Computer generated calculations of the drainage analysis follow in this report.
1043\WP\STORM REPORT.DOC



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

Scale: 1" = 200'

Contour Interval = 5 Feet

NORTH

TITLE: EXISITNG DRAINAGE PLAN	DATE: FEBRUARY 2003
	FIGURE #: A
PROJECT NUMBER: 01102	FILE: (whiteface)

Pre-Development Calculations

Subcatchment 1S: S #1

Runoff = 1.46 cfs @ 12.57 hrs, Volume= 0.255 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.10"

Area (ac)	CN	Description
13.125	70	Woods, Good, HSG C

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.6	300	0.1333	0.2		**Sheet Flow, Sheet Flow thru woods** Woods: Light underbrush n= 0.400 P2= 2.30"
17.4	1,100	0.1772	1.1		**Shallow Concentrated Flow, thru woods** Forest w/Heavy Litter Kv= 2.5 fps
46.0	1,400	Total			

Subcatchment 1S: S #1

Runoff = 7.61 cfs @ 12.49 hrs, Volume= 0.969 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.50"

Area (ac)	CN	Description
13.125	70	Woods, Good, HSG C

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.6	300	0.1333	0.2		**Sheet Flow, Sheet Flow thru woods** Woods: Light underbrush n= 0.400 P2= 2.30"
17.4	1,100	0.1772	1.1		**Shallow Concentrated Flow, thru woods** Forest w/Heavy Litter Kv= 2.5 fps
46.0	1,400	Total			

Subcatchment 1S: S #1

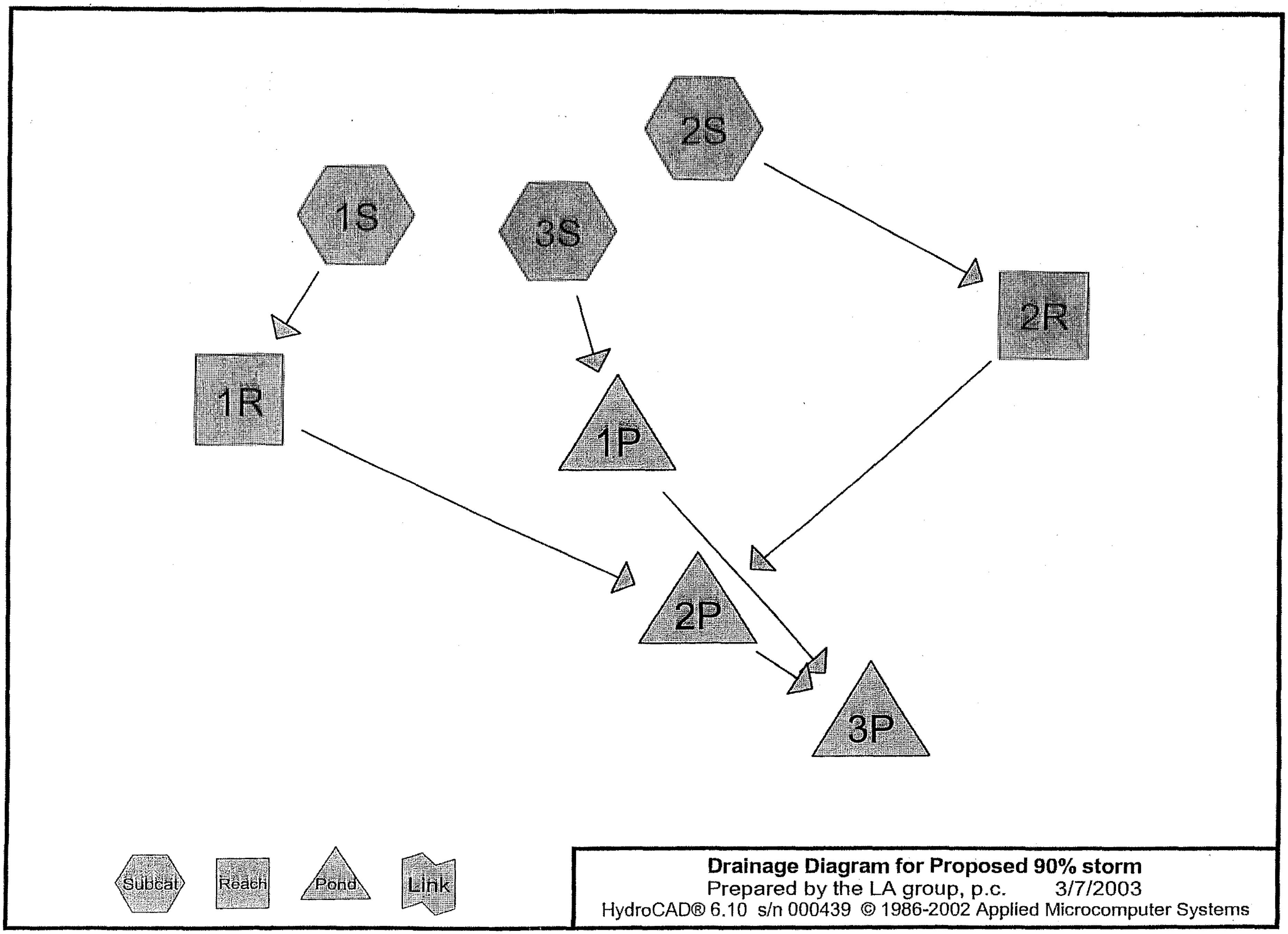
Runoff = 15.38 cfs @ 12.47 hrs, Volume= 1.849 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=4.80"

Area (ac)	CN	Description
13.125	70	Woods, Good, HSG C

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.6	300	0.1333	0.2		**Sheet Flow, Sheet Flow thru woods** Woods: Light underbrush n= 0.400 P2= 2.30"
17.4	1,100	0.1772	1.1		**Shallow Concentrated Flow, thru woods** Forest w/Heavy Litter Kv= 2.5 fps
46.0	1,400	Total			

Post Development Calculations



Drainage Diagram for Proposed 90% storm
Prepared by the LA group, p.c. 3/7/2003
HydroCAD® 6.10 s/n 000439 © 1986-2002 Applied Microcomputer Systems

Time span=1.00-20.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=0.80"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC #1 Runoff Area=5.693 ac Runoff Depth=0.00"
Length=1,120' Tc=45.5 min CN=70 Runoff= 0.00 cfs 0.000 af

Subcatchment 2S: SC #2 Runoff Area=4.997 ac Runoff Depth=0.00"
Length=950' Tc=33.9 min CN=71 Runoff= 0.00 cfs 0.000 af

Subcatchment 3S: SC #3 Runoff Area=2.435 ac Runoff Depth=0.56"
Length=180' Tc=1.6 min CN=98 Runoff= 2.65 cfs 0.114 af

Reach 1R: R #1 Peak Depth= 0.00' Max Vel= 0.0 fps Inflow= 0.00 cfs 0.000 af
n=0.130 L=407.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 0.00 cfs 0.000 af

Reach 2R: R #2 Peak Depth= 0.00' Max Vel= 0.0 fps Inflow= 0.00 cfs 0.000 af
n=0.130 L=233.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 0.00 cfs 0.000 af

Pond 1P: Pond 1 Peak Storage= 4,963 cf @ 1,323.32' Inflow= 2.65 cfs 0.114 af
Primary= 0.00 cfs 0.000 af Outflow= 0.00 cfs 0.000 af

Pond 2P: Sum R1 + R2 Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Pond 3P: Total Post Devel. Runoff Inflow= 0.00 cfs 0.000 af
Primary= 0.00 cfs 0.000 af

Total Runoff Area = 13.125 ac Runoff Volume = 0.114 af Average Runoff Depth = 0.10"

Pond 1P: Pond 1

Inflow Area =	2.435 ac, Inflow Depth = 0.56"		
Inflow =	2.65 cfs @ 11.91 hrs, Volume=	0.114 af	
Outflow =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,323.32' Storage= 4,963 cf
Plug-Flow detention time= (not calculated)

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,323.00	0	0
1,324.00	15,363	15,363
1,325.00	19,370	34,733

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=1,323.00' (Free Discharge)
—**1=Orifice/Grate** (Controls 0.00 cfs)
—**2=Orifice/Grate** (Controls 0.00 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	1,323.35'	**7.0" Vert. Orifice/Grate** C= 0.600
2	Primary	1,324.00'	**8.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Pond 2P: Sum R1 + R2

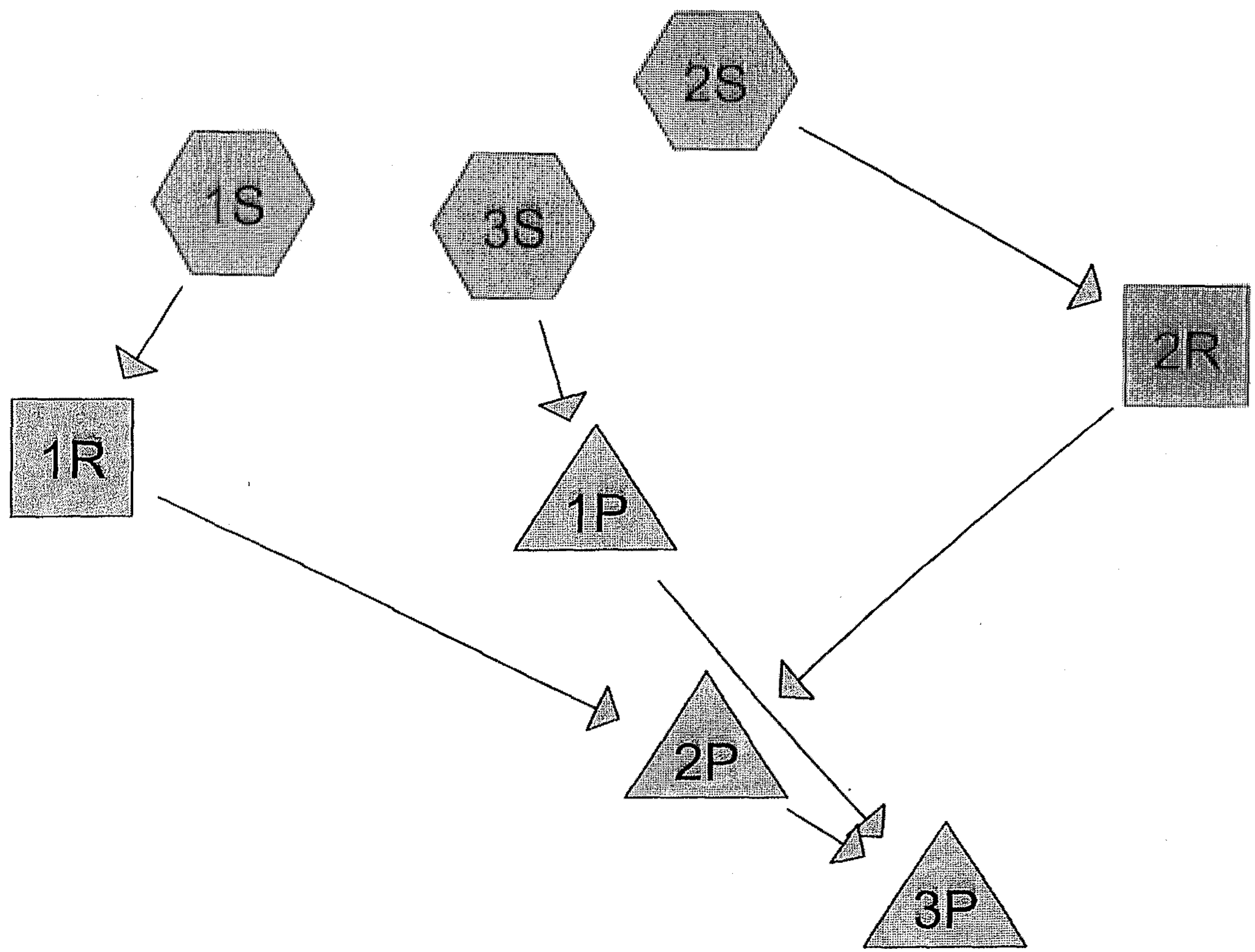
Inflow Area =	10.690 ac, Inflow Depth = 0.00"		
Inflow =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af	
Primary =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

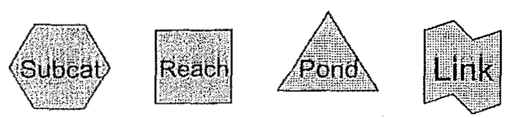
Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Pond 3P: Total Post Devel. Runoff

Inflow Area =	13.125 ac, Inflow Depth = 0.00"		
Inflow =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af	
Primary =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs





Drainage Diagram for Proposed 1-year storm
Prepared by the LA group, p.c. 3/7/2003
HydroCAD® 6.10 s/n 000439 © 1986-2002 Applied Microcomputer Systems

Time span=1.00-20.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=2.10"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC #1 Runoff Area=5.693 ac Runoff Depth=0.23"
Length=1,120' Tc=45.5 min CN=70 Runoff= 0.64 cfs 0.110 af

Subcatchment 2S: SC #2 Runoff Area=4.997 ac Runoff Depth=0.26"
Length=950' Tc=33.9 min CN=71 Runoff= 0.80 cfs 0.108 af

Subcatchment 3S: SC #3 Runoff Area=2.435 ac Runoff Depth=1.77"
Length=180' Tc=1.6 min CN=98 Runoff= 7.69 cfs 0.360 af

Reach 1R: R #1 Peak Depth= 0.21' Max Vel= 0.5 fps Inflow= 0.64 cfs 0.110 af
n=0.130 L=407.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 0.58 cfs 0.107 af

Reach 2R: R #2 Peak Depth= 0.25' Max Vel= 0.6 fps Inflow= 0.80 cfs 0.108 af
n=0.130 L=233.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 0.76 cfs 0.106 af

Pond 1P: Pond 1 Peak Storage= 11,030 cf @ 1,323.72' Inflow= 7.69 cfs 0.360 af
Primary= 0.37 cfs 0.164 af Outflow= 0.37 cfs 0.164 af

Pond 2P: Sum R1 + R2 Inflow= 1.11 cfs 0.213 af
Primary= 1.11 cfs 0.213 af

Pond 3P: Total Post Devel. Runoff Inflow= 1.48 cfs 0.377 af
Primary= 1.48 cfs 0.377 af

Total Runoff Area = 13.125 ac Runoff Volume = 0.578 af Average Runoff Depth = 0.53"

Pond 1P: Pond 1

Inflow Area = 2.435 ac, Inflow Depth = 1.77"
Inflow = 7.69 cfs @ 11.91 hrs, Volume= 0.360 af
Outflow = 0.37 cfs @ 12.81 hrs, Volume= 0.164 af, Atten= 95%, Lag= 54.4 min
Primary = 0.37 cfs @ 12.81 hrs, Volume= 0.164 af

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,323.72' Storage= 11,030 cf
Plug-Flow detention time= 287.4 min calculated for 0.163 af (45% of inflow)

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,323.00	0	0
1,324.00	15,363	15,363
1,325.00	19,370	34,733

Primary OutFlow Max=0.37 cfs @ 12.81 hrs HW=1,323.72' (Free Discharge)
1=Orifice/Grate (Controls 0.37 cfs)
2=Orifice/Grate (Controls 0.00 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	1,323.35'	**7.0" Vert. Orifice/Grate** C= 0.600
2	Primary	1,324.00'	**8.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Pond 2P: Sum R1 + R2

Inflow Area = 10.690 ac, Inflow Depth = 0.24"
Inflow = 1.11 cfs @ 12.78 hrs, Volume= 0.213 af
Primary = 1.11 cfs @ 12.78 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

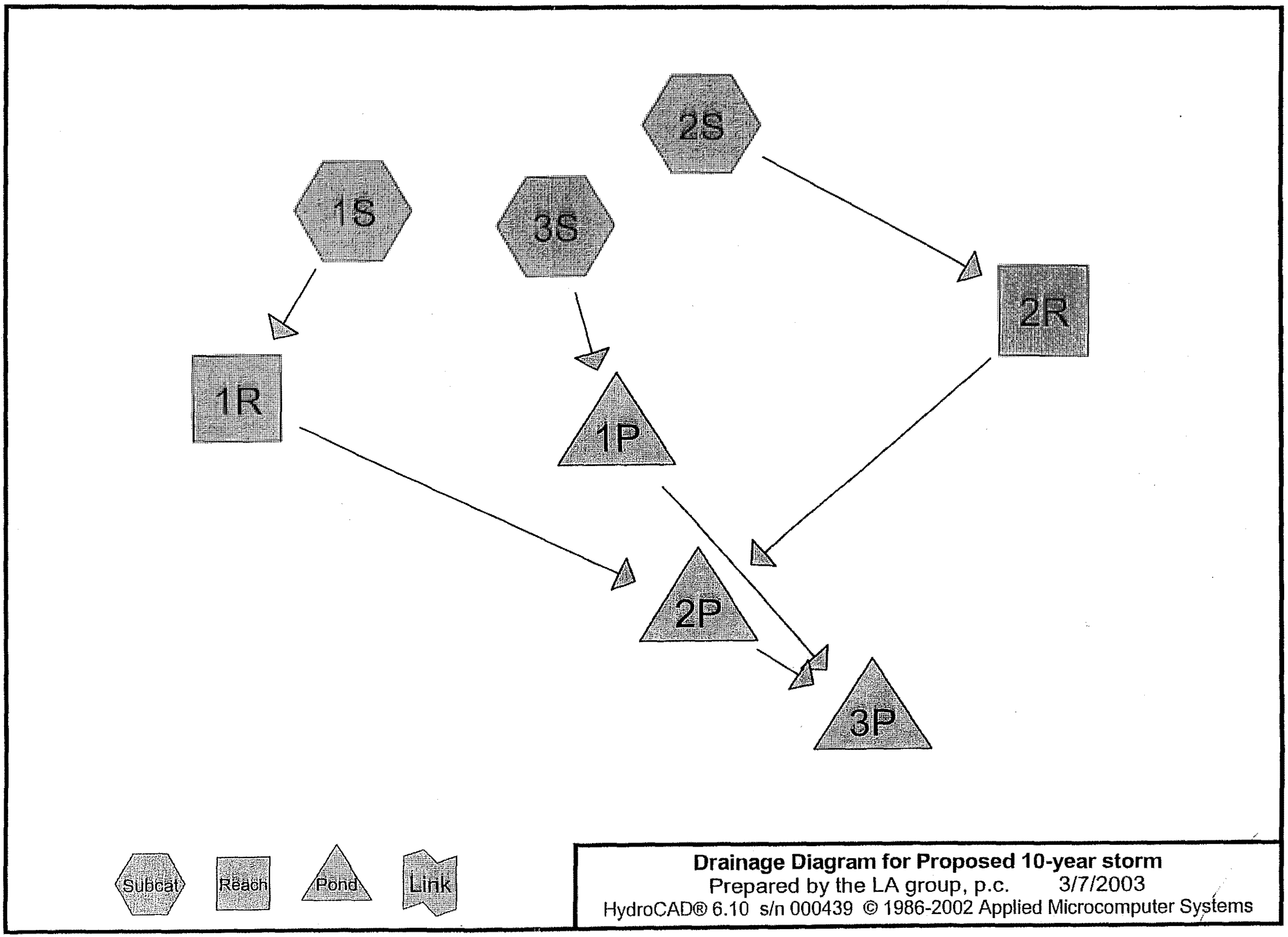
Pond 3P: Total Post Devel. Runoff

Inflow Area = 13.125 ac, Inflow Depth = 0.34"
Inflow = 1.48 cfs @ 12.78 hrs, Volume= 0.377 af
Primary = 1.48 cfs @ 12.78 hrs, Volume= 0.377 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Time span=1.00-20.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=2.10"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 2P: Sum R1 + R2 Inflow= 1.11 cfs 0.213 af
Primary= 1.11 cfs 0.213 af


2S
1S
3S
2R
1R
1P
2P
3P
Subcat
Reach
Pond
Link
Drainage Diagram for Proposed 10-year storm
Prepared by the LA group, p.c. 3/7/2003
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Time span=1.00-20.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=3.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC #1
Runoff Area=5.693 ac Runoff Depth=0.89"
Length=1,120' Tc=45.5 min CN=70 Runoff= 3.33 cfs 0.420 af

Subcatchment 2S: SC #2
Runoff Area=4.997 ac Runoff Depth=0.94"
Length=950' Tc=33.9 min CN=71 Runoff= 3.87 cfs 0.393 af

Subcatchment 3S: SC #3
Runoff Area=2.435 ac Runoff Depth=3.10"
Length=180' Tc=1.6 min CN=98 Runoff= 13.01 cfs 0.629 af

Reach 1R: R #1
Peak Depth= 0.61' Max Vel= 1.0 fps Inflow= 3.33 cfs 0.420 af
n=0.130 L=407.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 3.22 cfs 0.414 af

Reach 2R: R #2
Peak Depth= 0.68' Max Vel= 1.1 fps Inflow= 3.87 cfs 0.393 af
n=0.130 L=233.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 3.80 cfs 0.390 af

Pond 1P: Pond 1
Peak Storage= 17,979 cf @ 1,324.14' Inflow= 13.01 cfs 0.629 af
Primary= 1.24 cfs 0.407 af Outflow= 1.24 cfs 0.407 af

Pond 2P: Sum R1 + R2
Inflow= 6.31 cfs 0.803 af
Primary= 6.31 cfs 0.803 af

Pond 3P: Total Post Devel. Runoff
Inflow= 7.50 cfs 1.210 af
Primary= 7.50 cfs 1.210 af

Total Runoff Area = 13.125 ac Runoff Volume = 1.442 af Average Runoff Depth = 1.32"

Pond 1P: Pond 1

Inflow Area =	2.435 ac, Inflow Depth = 3.10"		
Inflow =	13.01 cfs @ 11.90 hrs, Volume=	0.629 af	
Outflow =	1.24 cfs @ 12.27 hrs, Volume=	0.407 af,	Atten= 90%, Lag= 21.8 min
Primary =	1.24 cfs @ 12.27 hrs, Volume=	0.407 af	

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,324.14' Storage= 17,979 cf
Plug-Flow detention time= 246.9 min calculated for 0.406 af (64% of inflow)

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,323.00	0	0
1,324.00	15,363	15,363
1,325.00	19,370	34,733

Primary OutFlow Max=1.24 cfs @ 12.27 hrs HW=1,324.13' (Free Discharge)
└─**1=Orifice/Grate** (Controls 0.90 cfs)
└─**2=Orifice/Grate** (Controls 0.34 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	1,323.35'	**7.0" Vert. Orifice/Grate** C= 0.600
2	Primary	1,324.00'	**8.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Pond 2P: Sum R1 + R2

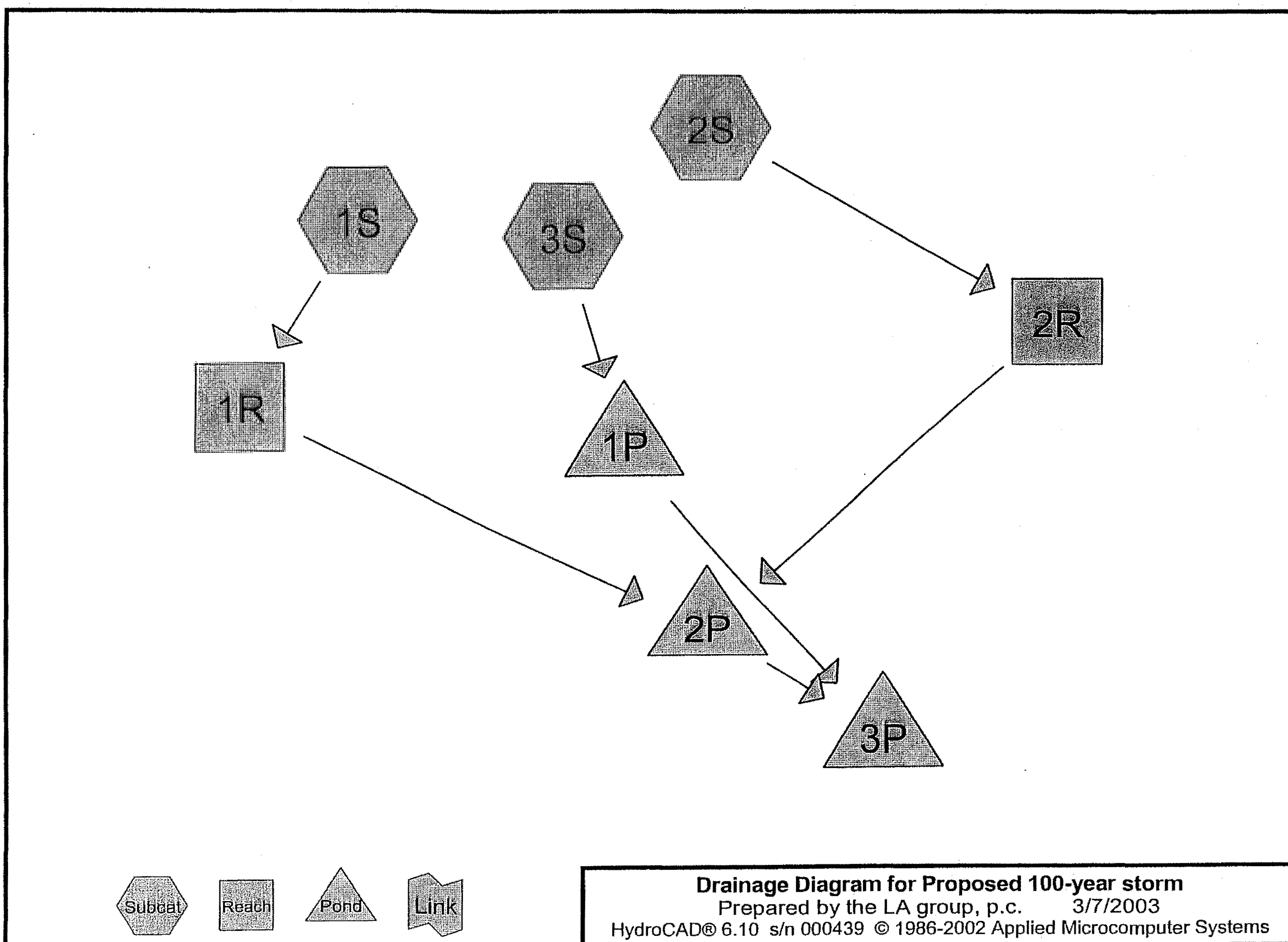
Inflow Area =	10.690 ac, Inflow Depth = 0.90"		
Inflow =	6.31 cfs @ 12.54 hrs, Volume=	0.803 af	
Primary =	6.31 cfs @ 12.54 hrs, Volume=	0.803 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Pond 3P: Total Post Devel. Runoff

Inflow Area =	13.125 ac, Inflow Depth = 1.11"		
Inflow =	7.50 cfs @ 12.53 hrs, Volume=	1.210 af	
Primary =	7.50 cfs @ 12.53 hrs, Volume=	1.210 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs



Drainage Diagram for Proposed 100-year storm
Prepared by the LA group, p.c. 3/7/2003
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Time span=1.00-20.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=4.80"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC #1 Runoff Area=5.693 ac Runoff Depth=1.69"
Length=1,120' Tc=45.5 min CN=70 Runoff= 6.71 cfs 0.802 af

Subcatchment 2S: SC #2 Runoff Area=4.997 ac Runoff Depth=1.77"
Length=950' Tc=33.9 min CN=71 Runoff= 7.62 cfs 0.738 af

Subcatchment 3S: SC #3 Runoff Area=2.435 ac Runoff Depth=4.33"
Length=180' Tc=1.6 min CN=98 Runoff= 17.92 cfs 0.879 af

Reach 1R: R #1 Peak Depth= 0.96' Max Vel= 1.3 fps Inflow= 6.71 cfs 0.802 af
n=0.130 L=407.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 6.58 cfs 0.793 af

Reach 2R: R #2 Peak Depth= 1.04' Max Vel= 1.4 fps Inflow= 7.62 cfs 0.738 af
n=0.130 L=233.0' S=0.0200 '/' Capacity=7.06 cfs Outflow= 7.53 cfs 0.734 af

Pond 1P: Pond 1 Peak Storage= 23,968 cf @ 1,324.44' Inflow= 17.92 cfs 0.879 af
Primary= 2.27 cfs 0.640 af Outflow= 2.27 cfs 0.640 af

Pond 2P: Sum R1 + R2 Inflow= 12.98 cfs 1.527 af
Primary= 12.98 cfs 1.527 af

Pond 3P: Total Post Devel. Runoff Inflow= 15.16 cfs 2.167 af
Primary= 15.16 cfs 2.167 af

Total Runoff Area = 13.125 ac Runoff Volume = 2.420 af Average Runoff Depth = 2.21"

Pond 1P: Pond 1

Inflow Area =	2.435 ac,	Inflow Depth = 4.33"	
Inflow =	17.92 cfs @	11.90 hrs, Volume=	0.879 af
Outflow =	2.27 cfs @	12.08 hrs, Volume=	0.640 af, Atten= 87%, Lag= 10.7 min
Primary =	2.27 cfs @	12.08 hrs, Volume=	0.640 af

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,324.44' Storage= 23,968 cf
Plug-Flow detention time= 222.5 min calculated for 0.640 af (73% of inflow)

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,323.00	0	0
1,324.00	15,363	15,363
1,325.00	19,370	34,733

Primary OutFlow Max=2.27 cfs @ 12.08 hrs HW=1,324.44' (Free Discharge)
├─**1=Orifice/Grate** (Controls 1.15 cfs)
└─**2=Orifice/Grate** (Controls 1.12 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	1,323.35'	**7.0" Vert. Orifice/Grate** C= 0.600
2	Primary	1,324.00'	**8.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Pond 2P: Sum R1 + R2

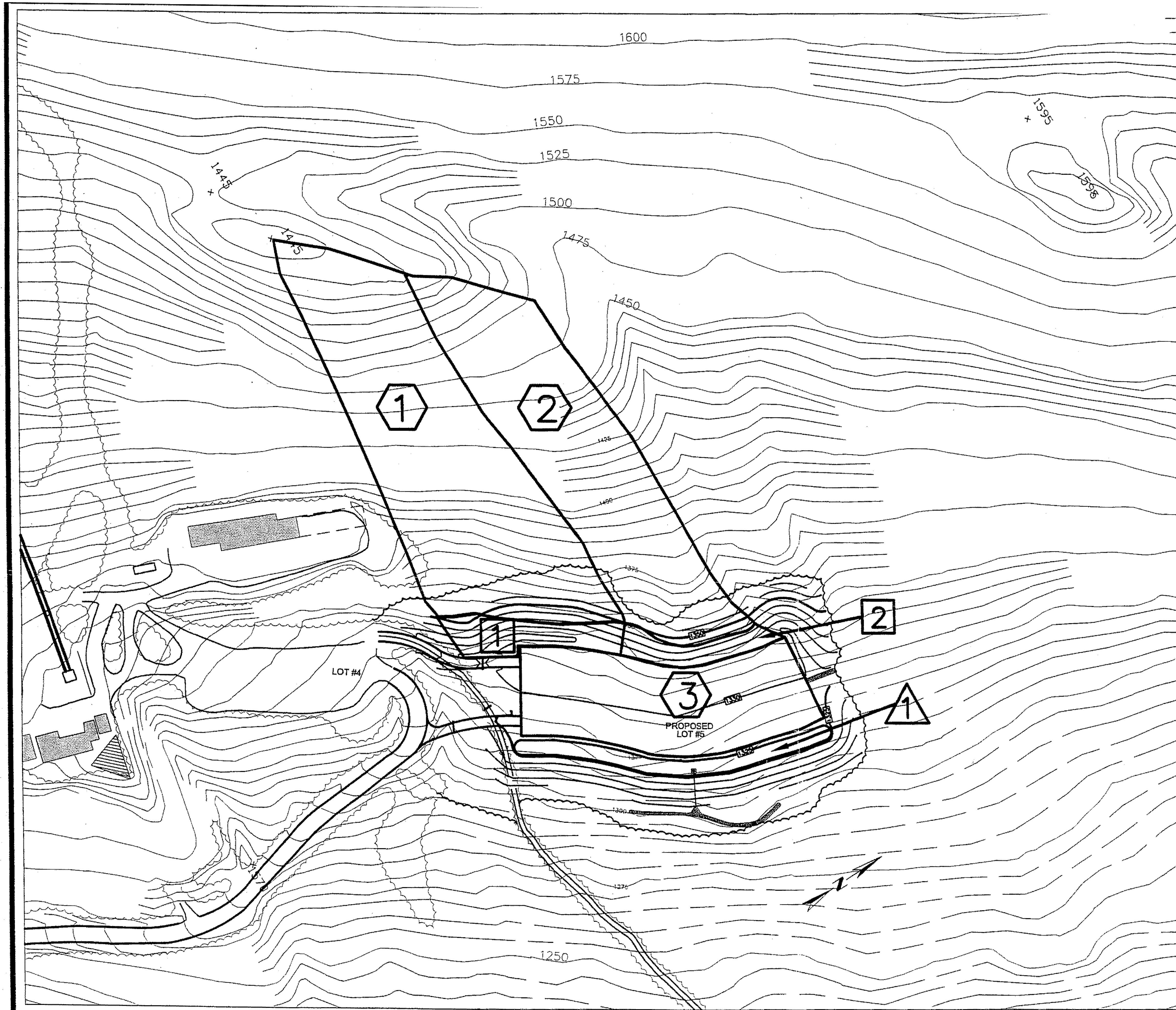
Inflow Area =	10.690 ac,	Inflow Depth = 1.71"	
Inflow =	12.98 cfs @	12.48 hrs, Volume=	1.527 af
Primary =	12.98 cfs @	12.48 hrs, Volume=	1.527 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs

Pond 3P: Total Post Devel. Runoff

Inflow Area =	13.125 ac,	Inflow Depth = 1.98"	
Inflow =	15.16 cfs @	12.48 hrs, Volume=	2.167 af
Primary =	15.16 cfs @	12.48 hrs, Volume=	2.167 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs



WHITEFACE

Prepared For:

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

SE GROUP

the LA group

Engineering & Planning

Ivan Zdrahal Associates, PLLC

COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

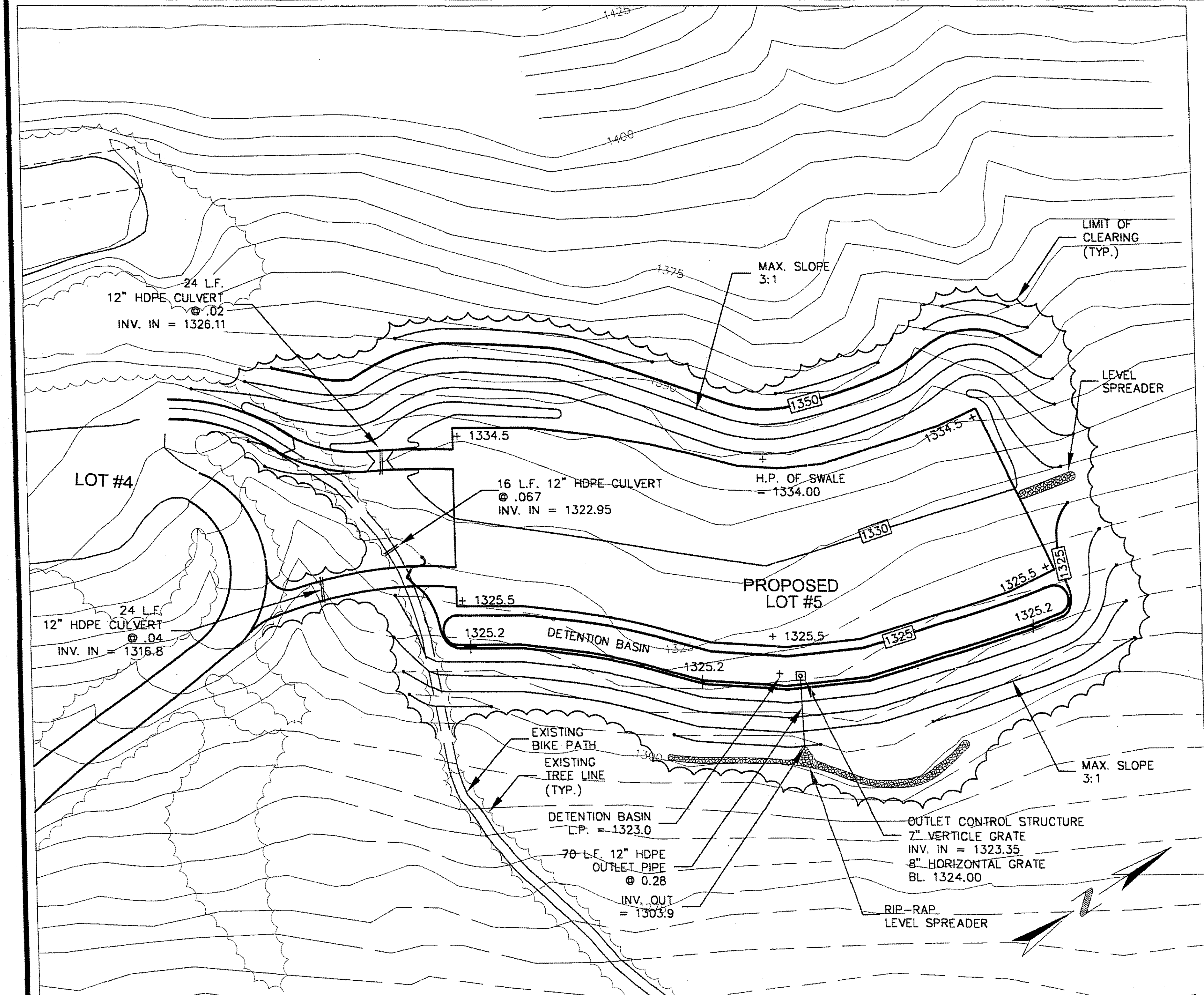
100 0 50 100 200 400

Scale: 1" = 200'

Contour Interval = 5 Feet

NORTH

TITLE:	DATE: FEBRUARY 2003
PROPOSED DRAINAGE PLAN	FIGURE #: B
PROJECT NUMBER: 01102	FILE: [whiteface]



WHITEFACE

Prepared For:

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
LAKE PLACID, NEW YORK

Prepared By:

SE GROUP — the LA group — Ivan Zdrahal Associates, PLLC, Engineering & Planning

COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

50 0 25 50 100 200

Scale: 1" = 100' Contour Interval = 5 Feet NORTH

TITLE:

PROPOSED LOT #5 GRADING & DRAINAGE PLAN

DATE: FEBRUARY 2003

FIGURE #: **C**

PROJECT NUMBER: 01102 FILE: [whiteface]

APPENDIX Q

VINS STUDY WORK SCOPE

VERMONT INSTITUTE OF NATURAL SCIENCE

Evaluating the Use of Vermont Ski Areas by Bicknell's Thrush – Applications for Whiteface Mountain, New York

A proposal submitted to:
Olympic Regional Development Authority
218 Main Street
Lake Placid, NY 12946

Submitted by:
Christopher C. Rimmer
Conservation Biology Department
Vermont Institute of Natural Science
27023 Church Hill Road
Woodstock, VT 05091
802-457-2779 ext. 120
crimmer@vinsweb.org

Executive Summary: As part of the unit management plan and permitting process for the proposed Tree Island Pod expansion project on Whiteface Mountain, concerns have been raised about the impacts of construction and habitat alteration on Bicknell's Thrush *(Catharus bicknelli)*. The Vermont Institute of Natural Science (VINS) has studied the ecology and population dynamics of this species since 1995 on two Vermont ski areas, the Stowe Mountain Resort (Mt. Mansfield) and Stratton Mountain. VINS proposes to analyze its extensive data on ski area use by Bicknell's Thrush and to apply its findings as a means to assess potential impacts of the proposed Tree Island Pod project on Bicknell's Thrush. Data to be analyzed will include those on movements and behavior, nest site selection, reproductive success, and demography. Findings from Mt. Mansfield and Stratton Mountain will be compared between study areas within the developed part of each mountain and areas that are currently undeveloped for skiing. The final report will include recommendations for design, mitigation, and management measures that will minimize both short- and long-term potential project impacts to Bicknell's Thrush.

Project Cost:

Introduction and Justification: 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, in the region (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 Northeasteam U.S. 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 has been made (but see Rimmer and McFarland 2000). A careful assessment of existing information is needed to guide future ski area development in the region, and to direct planning for site-specific proposals such as the Tree Island Pod project on Whiteface Mountain.

The Vermont Institute of Natural Science (VINS) has spearheaded ecological studies of Bicknell's Thrush in the Northeast since 1992. A key component of VINS' research has been focused investigations of the use by Bicknell's Thrush of two established Vermont ski areas, Stowe Mountain Resort (Mt. Mansfield) and Stratton Mountain. From 1995-2001, VINS conducted studies on three 10-20 hectare plots on Mansfield. One of these was in an area developed for skiing around the Octagon, the other two in areas of relatively undisturbed habitat on the Mansfield ridgeline and Ranch Brook watershed. On Stratton, VINS established two study plots in 1997 and has since annually collected field data on each. One plot is on the developed north peak, the other on the undeveloped south peak.

Field methods on both mountains have been standardized from year to year and have included: (1) constant-effort mist-netting and banding (including unique color banding of each individual thrush); (2) intensive resighting of color-marked individuals; (3) radio telemetry of adult males and females, and in 2001 on Mansfield of fledged juveniles; (4) videography at nests; (5) monitoring of nests and reproductive success; and (6) detailed characterization of vegetation and macrohabitat variables around nests. Each mountain thus provides a 7-year data base that can be used to examine within- and between-year variation in Bicknell's Thrush life history parameters on habitat blocks that are developed for skiing and on similar, undeveloped blocks. These data afford a valuable opportunity to address important questions, such as those posed by the Tree Island Pod project, relating to the impacts of ski area development on this species.

To date, constraints of funding have prevented VINS Conservation Biology staff from undertaking a complete analysis of these data. A preliminary analysis and summary through 1999 (Rimmer and McFarland 2000) suggested that, on Mt. Mansfield and Stratton Mountain, existing ski areas provide suitable Bicknell's Thrush nesting habitat and that nesting success did not significantly differ between developed and undeveloped areas. However, it must be emphasized that these findings should be considered tentative, as they were based on small sample sizes collected over a relatively short timeframe. VINS' recent discoveries of a complex, variable mating system and biannual patterns of reproductive success in Bicknell's Thrush underscore the need for more detailed analyses of data collected over the entire 1995-

2003 study period. Many questions remain about adult and juvenile survivorship, site fidelity and settlement patterns, daily and seasonal movements, behavior, nest site selection, reproductive success, and the influence of different habitat patch sizes and configurations. Understanding the extent to which these and related variables differ on ski areas and in undeveloped habitats is crucial to yield meaningful insights on how Bicknell's Thrush uses existing ski areas, and how the species might respond to proposed habitat modification. Such an assessment would require a significant investment of VINS staff time, but is feasible, especially as most data through 2002 have been computerized.

Methods: VINS proposes to undertake a detailed analysis of its 1995-2003 field data from Mansfield and Stratton. We further propose to report our findings in a summary document that will specifically relate them, to the extent possible, to the proposed Tree Island Pod project on Whiteface Mountain. Our analysis and evaluation will combine (1) site-specific information collected during a field visit by VINS Conservation Biology staff to the project area in the fall of 2003, (2) our examination of GIS and other existing data from the proposed project, and (3) our own ecological and behavioral field data from Mt. Mansfield and Stratton Mountain. We believe that this approach will enable us to generate predictions about likely short-term (1-2 years post-construction) and medium-term (3-5 years) impacts of the Tree Island Pod project on breeding Bicknell's Thrushes. More importantly, we plan to use our data to construct a generally applicable model of how Bicknell's Thrushes use habitat within developed ski areas, and how new construction and ongoing management can minimize impacts to, and in some cases enhance breeding habitat for, Bicknell's Thrush.

Our proposed analysis will consist of three primary components, each of which will be addressed and coalesced in the final report. Specifically, we propose to:

1. Analyze nest site selection by Bicknell's Thrush. VINS has monitored over 150 active nests on both mountains since 1995, distributed nearly equally on ski area and non-ski area plots. At each nest, we have collected a detailed series of data on nest location, vegetation, landform characteristics, and other site-specific variables. We have also collected comparable data at randomly selected "non-use" sites at a distance of 30 meters from each nest, for > 50% of the nests. These data will be used to develop a model of Bicknell's Thrush nest site selection in ski-developed areas versus undeveloped habitats. Using GIS vegetation data from Whiteface Mountain, this model will be applied to the Tree Island Pod project to generate predictions about the viability of the project area for Bicknell's Thrush nesting, both in its current condition and after the proposed development. Results may yield insights about measures that can be adopted to mitigate proposed habitat alterations, and ultimately to enhance Bicknell's Thrush habitat in the Tree Island Pod area. More generally, a model of nest site selection relative to ski area development should help guide future planning and conservation efforts at Whiteface Mountain and throughout the Northeast.
2. Analyze movements and behavioral ecology of Bicknell's Thrush. VINS has an extensive data set on movements of adult male and female Bicknell's Thrushes in both ski area and undeveloped habitats. Using radio telemetry, we have recorded daily movements and locations of approximately 50 individual adults for 4-6 week periods. In 2000, we also monitored post-breeding movements and habitat use of adults and

juveniles on Mansfield. Telemetry data will be plotted and analyzed on GIS maps of Mansfield and Stratton study areas, and related to various vegetation and terrain characteristics. Results will enable documentation of movements and home range characteristics relative to physical variables such as ski trail width, size and configuration of habitat islands, spacing and density of trails per unit area, and extent of gladed versus open trails. These results should provide valuable information about exactly how Bicknell's Thrushes use (or avoid) specific areas within ski areas. Findings from undeveloped habitats will provide a contextual baseline.

As a complement to telemetry data on movements and habitat use, videographic data on adult thrushes are available to examine behavioral attributes of birds on ski areas versus natural forest habitats. From 1998-2000 on Mansfield and 1998-2002 on Stratton, we videotaped all known nests during the chick-feeding stage. Because nearly all adult Bicknell's Thrushes were uniquely color-banded on each study plot, we have a large data set on the behavioral ecology of individual birds and nests. Preliminary analysis of these data has shown that Bicknell's Thrush has a very unusual and complex mating system. Remarkably, most nests are attended by 2-4 males, and paternity is almost invariably mixed in such nests. An important and unanswered question relates to the role of habitat and landscape features in shaping this complex, variable system. We propose to analyze our videotape data to examine behavioral differences among breeding thrushes on ski area versus undeveloped habitats. This will enable documentation of factors such as nest attentiveness of females, numbers of male feeders, quantity and types of food delivered to nestlings, and reaction to auditory or visual disturbance. Results could illuminate whether and how ski area fragmentation and activity influence adult behavior, and what variables may be most crucial determinants of any differences that exist. Again, findings could help mitigate proposed construction activities and suggest maintenance protocols that enhance habitat and/or minimize adverse impacts of nesting thrushes.

3. Analyze multi-year demographic data on Bicknell's Thrush. VINS has amassed an extensive data set on known-identity Bicknell's Thrushes, based on banding of adults and nestlings on Mansfield since 1995 and on Stratton since 1997. Using mark-recapture software, and incorporating data from original banding captures, within- and between-year recaptures, and resighting of color-banded individuals, we propose to construct a detailed species demographic profile. On both ski area and natural forest study plots, we will examine age- and sex-specific survivorship, reproductive success, site fidelity, population turnover, recruitment, and other key life history variables. We will also examine indices of individual health such as subcutaneous body fat, weight, feather wear, and mercury levels between the two habitat types. Mark-recapture analyses will further yield statistically robust estimates of population density, which are otherwise difficult to obtain. Results will provide a powerful tool to evaluate the population viability of Bicknell's Thrushes on existing ski areas compared to nearby relatively undisturbed montane forest. Documenting habitat features that influence nest success may provide important insights into designing the Tree Island Pod project so as to minimize potentially adverse impacts and/or enhance habitat suitability for successful breeding.

Expected Products and Outcomes: VINS will produce a detailed final report outlining its findings. This report will include results of the three component analyses described above, each presented and interpreted independently, as well as in relation to one another. There is likely to be considerable overlap in how findings from any one analysis contribute to an overall understanding of how Bicknell's Thrushes use ski areas in general, and to specifically evaluating potential impacts of the Tree Island Pod project. Findings will be presented in a technically robust, statistically defensible, and completely objective manner. We will make a special effort to limit use of technical jargon, realizing that some of our proposed analyses involve sophisticated methods. While methods will be presented in sufficient detail to justify their use, we will provide non-technical summaries of our findings, and we will attempt to interpret them clearly. It must be emphasized, however, that ecological data do not invariably yield unambiguous results, regardless of the rigor with which the data were collected, so answers to some questions addressed by our analyses may not be unequivocal. In such cases, we will highlight the weaknesses of our conclusions and carefully interpret them in light of the specific situation.

A key element of our final report will be a section that presents specific recommendations for designing and implementing the Tree Island Pod project so as to minimize potential short- and long-term impacts to Bicknell's Thrush. Included will be guidelines for trail design and construction, retention or creation of features that may enhance habitat or mitigate habitat loss/alteration elsewhere, daily and seasonal timing of construction activities, post-construction habitat maintenance, opportunities for conservation education of visitors to Whiteface Mountain throughout the year, and general operational procedures. Where possible, we will reference specific sites within the Tree Island Pod project area, but many of our recommendations are likely to apply more generally to the entire project area than to discrete locations within it.

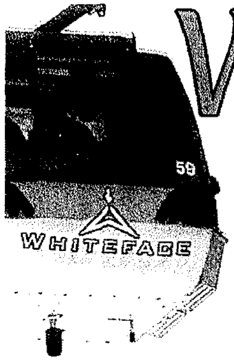
Timeframe: We have carefully assessed the amount of staff time that we believe will be necessary to complete these analyses and to prepare a final report. We conservatively estimate three full months of work by one VINS Conservation Biology FTE staff person (in reality, three VINS staff will be involved with various aspects of this proposed work). Because of our numerous other responsibilities at VINS, a completion date earlier than 15 April 2004 is not feasible. We therefore propose to begin the above analyses on 1 September 2003 and to deliver a final report to ORDA no later than 15 April 2004.

Budget:

Staff time: 12 weeks @ $1000 ($25/hr)	$12,000
FICA and benefits (20%)	$2,400
Site visit to Whiteface Mountain (Sept 2003): 285 mi x $0.35	$100
Office supplies, phone/fax, computer support	$500
Total	**$15,000**

APPENDIX R

WHITEFACE WILDLIFE BROCHURE



WHITEFACE WILDLIFE

Nature and Animal Guide to Whiteface Mountain

THE RIDE UP

As you ride to the top of Little Whiteface, look for alternating bands of live and dead balsam fir on Whiteface Mountain. These areas are called "fir waves." The waves on Whiteface Mountain have been studied by scientists worldwide.

Fir waves develop when winter winds sweep up the mountain. These winds are laden with tiny ice crystals that gradually kill the first tree needles and branches they hit. Leeward trees (which on Whiteface are upslope) are protected from the wind.

As you ride the gondola up the mountain, you will notice a gradual transition in the forest from broadleaf trees (primarily sugar maple, American beech, and yellow birch) to needle-leaf trees (primarily balsam fir and red spruce) mixed with mountain and paper birch (which are distinguished by their bright white bark). This change occurs because at higher elevations summers are cooler and cloudier, and winters are colder and windier, than seasons in the valley. At the summit look for trees that have grown above the surrounding tree canopy, and note how they are "flagged," meaning their upwind branches have been killed and broken away by blasting ice-filled winds.

The summit of Little Whiteface (3,676 ft.) is about 2,500 feet above the gondola base station (1,220 ft.). So the uphill gondola ride is like traveling 500 miles north.

And you don't even have to go through customs.

THE ADIRONDACK FOREST PRESERVE

The diverse system of State lands in the Adirondack Mountain region of New York is known collectively as the Adirondack Forest Preserve. Along with similar lands in the Catskills, the Adirondack Forest Preserve was created in 1885 by an act of the New York State Legislature.

It was the culmination of a preservation movement that grew out of concern about widespread tree cutting to support the lumber, paper, leather tanning, and iron mining industries in the Adirondacks that began in earnest in the 1850's. Preservation advocates like Verplanck Colvin, Charles Sprague Sargent, and Franklin B. Hough championed the protection of the Adirondack region as a vast public park.

In the words of the New York State Constitution:

"The lands of the state, now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."

The Adirondack Forest Preserve has grown over the past century to more than 2.6 million acres including Whiteface, making it the largest complex of wild public lands in the eastern United States.

Today the Forest Preserve is still important for protecting the headwaters of many of New York's major rivers. As an undisturbed natural landscape, it is a haven for a host of distinctive plants, fish, and wildlife, some of which live nowhere else in the state.

The ***white-tailed deer*** is named for its most distinctive feature, the large white tail or "flag" that is often all you see as the animal bounds away through tall grass. The color of the deer's upper body and sides changes with the season, from a generally reddish-brown in summer to buff in winter. Its belly and the underside of its tail are completely white, and it has a white patch on the throat.

Fawns are born in late spring and summer and by early November a male fawn weighs about 85 pounds and a female about 80 pounds. Yearling bucks average 150 pounds, while does of the same age average about 20 percent less, or about 120 pounds. Some older bucks weigh 200 pounds or more when field dressed (about 250 pounds live weight). The deer sheds its hair twice a year, its heavy winter coat giving way to a lighter one in spring which is replaced again in early fall. A fawn's coat is similar to the adult's but has several hundred white spots which gradually disappear when the deer is three to four months old. Large "typical" bucks can have seven or more points on a side.

Ursus americanus is one of the most familiar wild animals in North America today. To many campers it is both a nuisance and an exciting part of their outdoor experience. Believe it or not, there are visitors to national parks, like the Adirondack Park, that are disappointed if they fail to catch a glimpse of a bear.

Black bears are members of the family Ursidae, which has representatives throughout most of the northern hemisphere and in northern South America. Other members of this family that occur in North America are grizzly bears and polar bears. Both of these species are considerably larger than the black bear.

Widely distributed in North America, the black bear occurs from the east to the west coast, as far north as Alaska and as far south as Mexico. It is not found on Prince Edward Island, in Southern Saskatchewan, or in Southern Alberta.

GOVERNOR DESIGNATES THREE NEW BIRD CONSERVATION AREAS

Governor George E. Pataki announced the designation of three new Bird Conservation Areas (BCA's), expanding the state's effort to protect critical habitats that are essential to supporting diverse and endangered bird populations.

The Adirondack Sub-alpine forest BCA is comprised of summits above 3,000 feet in the Adirondack High Peaks Wilderness Area, covering approximately 69,000 acres of land. The area includes dense, sub-alpine coniferous forests, including thickets of stunted and young balsam fir and red spruce, which provide critical habitats and nesting areas for Bicknell's Thrush, a species of special concern, as well as the Blackpoll Warbler and Swainson's Thrush. DEC will maintain existing management practices for these lands, while also studying the effects of human visitation/intrusion and elements such as acid rain on nesting seasons.

The Bird Conservation Area program was signed into law by Governor Pataki in September 1997. Modeled after the National Audubon Society's Important Bird Areas Program, the law authorizes the commissioners of DEC, State Department of State (DOS), and the State Office of Parks, Recreation and Historic Preservation (OPRHP) to designate areas of state lands and waters that are particularly important to bird conservation.

OLYMPIC REGIONAL
NEW YORK
DEVELOPMENT AUTHORITY

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY
GEORGE E. PATAKI, GOVERNOR
CHARLES A. GARGANO, CHAIRMAN
TED BLAZER, PRESIDENT/CEO

If you see these or any other Adirondack wildlife, please tell your lift attendant. They are logging wildlife sightings and will add yours to the list. Thank you for your help.

Department of Environmental Conservation

Adirondack park agency

HIS BROCHURE IS PRODUCED BY ORDA IN CONJUNCTION WITH THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND THE ADIRONDACK PARK AGENCY

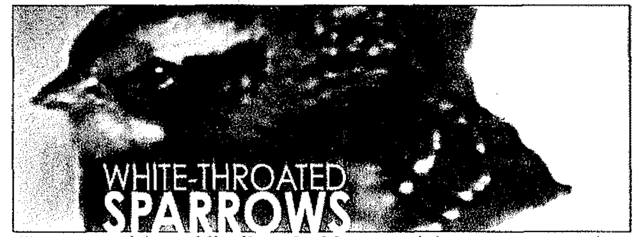
The coyote has been present in New York State for about 70 years. As with its western cousin, the eastern coyote has been the object of much controversy as well as curiosity.

The eastern coyote is considerably larger than its southwestern cousin. The largest individuals are as big as smaller timber wolves. Adults may range from 35-45 pounds and some large males may exceed 50 or 60 pounds in body weight.

Eastern coyotes have a German shepherd-like appearance, which sometimes leads to confusion about their identity. Typically-colored coyotes are grizzled gray on their back, upper sides and neck. This distinguishes them from most dogs, which are usually a solid color. A small percent are black or reddish-blond, the latter being the more common deviation. Coyotes can be distinguished from most dogs based on their habit of carrying their tail at or below a horizontal level when traveling. At a distance it is more difficult to tell coyotes from wolves, but up close, wolves have a more massive head, less pointed muzzle and ears, and larger feet.

The peregrine falcon (Falco peregrinus) is a majestic bird of prey, with slate blue upper parts and cream-colored underparts. Its underparts are distinguished by horizontal black barring and spotting. The peregrine's elegant head pattern makes this species very distinctive, even from a distance. Male peregrines weigh an average of 611 grams and females 952 grams. The peregrine falcon once bred throughout Canada. However its range has become much more restricted in recent years as populations have undergone declines. North American peregrines from areas in the northern United States, southwestern British Columbia, and southern Ontario winter in such places as — the coast of the Gulf of Mexico, Latin America and South America.

Note: Located along Route 86 west of Whiteface Mountain in the ledge area known as the "Notch," one will find a home to this magnificent falcon.



The song of the **White-throated Sparrow** is known to many by the mnemonic Old Sam Peabody. It is a long, clear whistle starting with one or two low tones, followed by three or four higher wavering tones. On the breeding grounds in brushy or semi-open mixed woods, males sing throughout the day, especially early in the morning and again at dusk.

The strikingly patterned head has a central white crown stripe and supercilium (both of which are pale tan in tan-striped birds), separated by a black (or dark brown) lateral crown stripe. The supercilium is yellow in front of the eye. Below the supercilium is a thin black or dark brown eye stripe. The throat is white, sharply delineated from the gray cheek and upper breast by a very thin black moustachial stripe and lower edge. The back and slightly notched tail are brown, and the rump is gray brown and faintly streaked. The wings are brown with two narrow whitish wingbars. The belly is dull white and unstreaked. The bill is horn-colored (dark tan), and the legs are pale pinkish brown.

Size of a large sparrow, olive-brown back, buffy throat, gray-to-white underparts with chin and flanks spotted with blackish spots. Can be distinguished from the Gray-cheeked Thrush by its size (Bicknell's is considerably smaller) and a longer yellow color at the base of the lower bill. A chestnut coloring on the upper tail is evident in most Bicknell's Thrushes.

The breeding range extends from New York's Catskill Mountains north to the lower north shore of the Gulf of St. Lawrence and east to Cape Breton Island in Nova Scotia. The habitat is almost exclusively in montane forests, primarily those dominated by stunted balsam fir and red spruce at elevations ranging from 450 meters (1450 feet) in Cape Breton to more than 915 meters (3000 feet) in Vermont. These high elevation forests consist of nearly impenetrable thickets on steep, rugged slopes. Bicknell's appears to prefer the dense regenerating growth that often characterizes the edges of ski slopes and mountain roads.

Whiteface Mountain is currenlty studying the Bicknell's Thrush in conjunction with several interested environmental groups

APPENDIX S

LITTLE WHITEFACE CLOUDSPLITTER LODGE
(Conceptual Only, Not Proposed at This Time)

Lodge Site Photograph 1:

View to the west showing existing building to be replaced on Little Whiteface. Note Pump House building on the right to remain. Note Gondola unloading station to the left. Existing observation deck is located to the left, beyond the Ski Patrol building.

Lodge Site Photograph 2:

View to southwest of two lift unloading stations on Little Whiteface. Little Whiteface Quad Chairlift is to the left, and the Cloudsplitter Gondola unloading station is to the right. New lodge to be placed to the right.

Lodge Site Photograph 3:

View to the east showing existing Ski Patrol building to be replaced is located to the right. Little Whiteface Quad unloading station is to the right. Ski trail directional sign is located to the left. The proposed lodge to replace the existing Ski Patrol building will be set back from the topographic edge of Little Whiteface in order to minimize the potential visibility of the structure.

Lodge Site Photograph 4:

View from Cloudsplitter Gondola unloading station to the west to the existing observation deck.

Lodge Site Photograph 5:

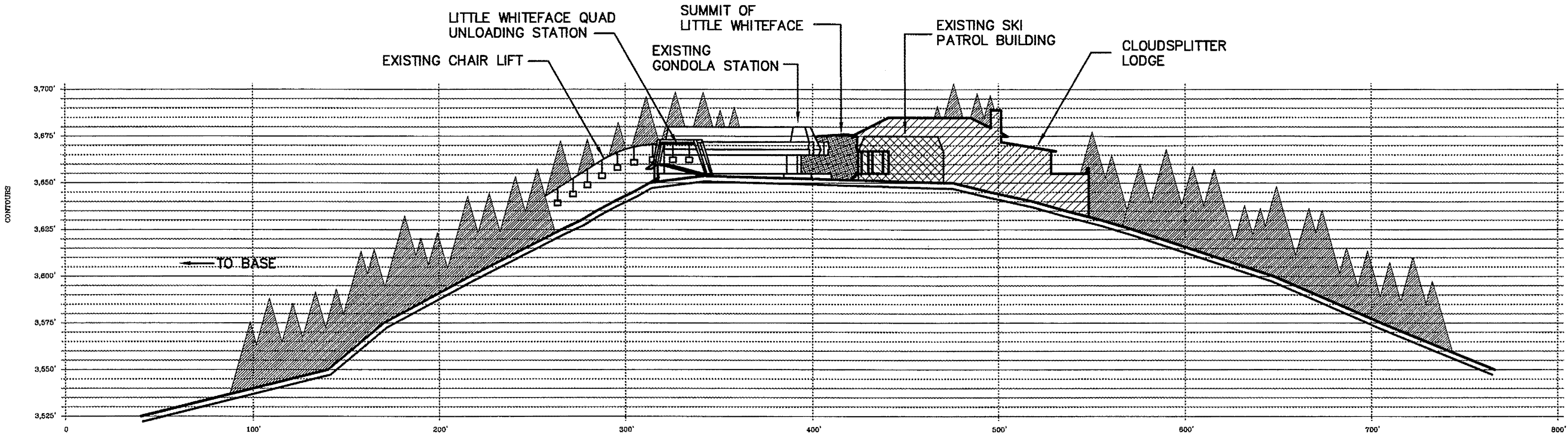
View from existing observation deck to the east of the existing Ski Patrol building and the two lift unloading stations at the top of Little Whiteface.

Cloudsplitter Gondola Towers Photograph 6:

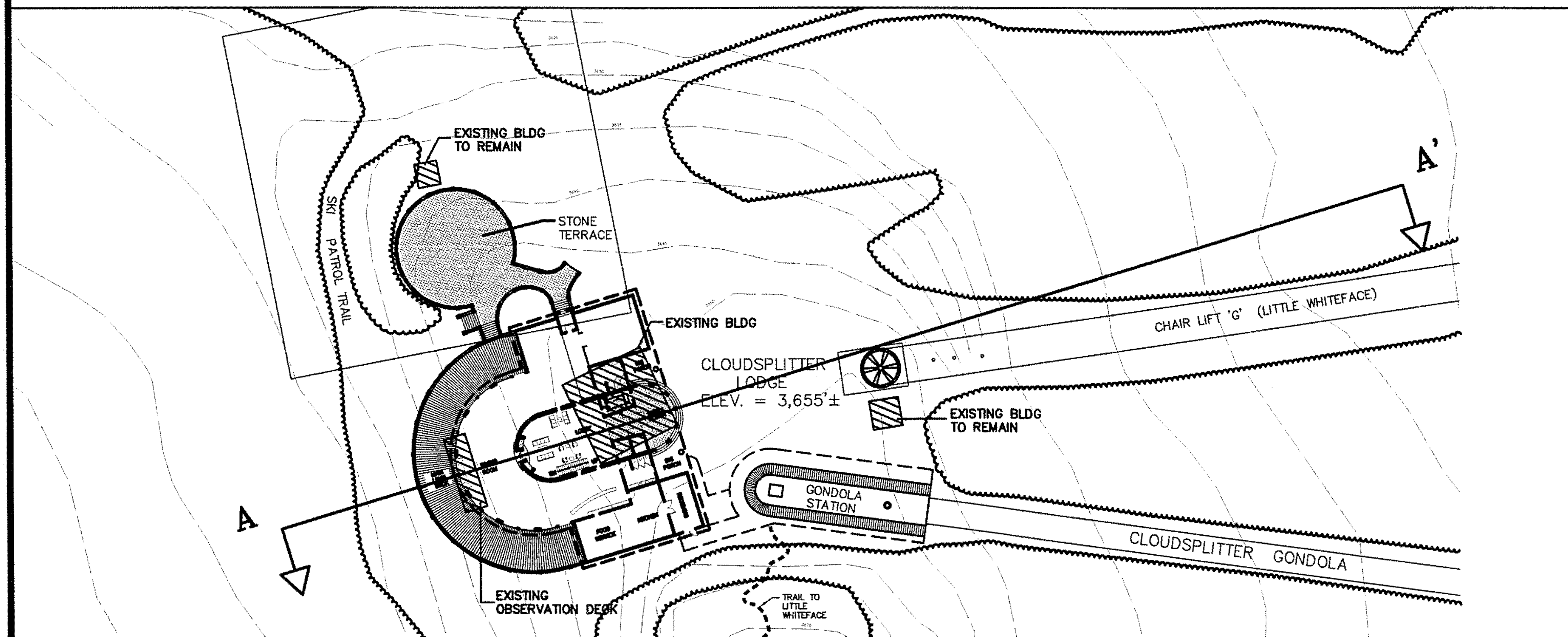
Photograph taken looking west, ascending the Gondola. A portion of the Gondola unloading station is an element in the view at the base of the topmost tower. The new lodge will be located behind and to the west of the existing Gondola unloading station, and will not be visible.

Cloudsplitter Gondola Towers Photograph 7:

Photograph taken looking west, with Little Whiteface Mountain located in the center. The Cloudsplitter Gondola lift line clearing and topmost towers are visible in the context of the existing Ski Center. The new lodge will be located further to the west and away from the topographic edge of the mountain and will not be visible.



SECTION–ELEVATION A–A'



MAP SOURCE:
BASE MAP FROM MAP "S-1", TITLED "LITTLE WHITEFACE CLOUDSPLITTER LODGE, WHITEFACE SKI CENTER, PREPARED FOR OLYMPIC REGIONAL DEVELOPMENT AUTHORITY", DATED FEBRUARY 2000 AND PREPARED BY IVAN ZDRAHAL ASSOCIATES, PLLC, ENGINEERING AND PLANNING.

PROPOSED LAYOUT

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

COMPREHENSIVE MANAGEMENT AND PLANNING REVIEW AND UNIT MANAGEMENT PLAN

30 0 30 60 120
Scale: 1" = 60'
Contour Interval = 5 Feet

TITLE:
LITTLE WHITEFACE CLOUDSPLITTER LODGE
CROSS–SECTION

DATE: OCTOBER 26, 2002
OCTOBER 4, 2002
FIGURE:

PROJECT NUMBER: 01011
FILE:

CAD DWG. FILE NAME: CLOUDSPLITTER.DWG

FEASIBILITY ANALYSIS REPORT

LITTLE WHITEFACE
CLOUDSPLITTER LODGE
WHITEFACE SKI CENTER

PREPARED FOR:

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

JANUARY 28, 2000

PREPARED BY

IVAN ZDRAHAL ASSOCIATES, PLLC
ENGINEERING AND PLANNING
959 ROUTE 146
CLIFTON PARK, NY 12065
(518) 383-0769

CONSULTANTS

- **ENGINEERING AND PLANNING**
  Ivan Zdrahal Associates, PLLC
  Engineering and Planning
  959 Route 146
  Clifton Park, NY 12065
  Contact: Ivan Zdrahal, P.E.
  (518) 383-0769

- **ARCHITECTURAL**
  TruexCullins & Partners Architects
  209 Battery Street
  Burlington, VT 05401
  Contact: Rolf Kielman, AIA
  (802) 658-2775

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SECTION **PAGE NO.**

1. INTRODUCTION

This study presents results of a several month long process of evaluating and assessing various ideas and approaches for the planning of Cloudsplitter Lodge near the top of Little Whiteface.

It was recognized by everyone involved in the planning process, that a day lodge on top of Little Whiteface in connection with the present new gondola lift will be one of the most desirable year-around destination points on the mountain. The proposed site near the top of Little Whiteface is a special place. With unsurpassed panoramic mountain views it will offer everyone an opportunity to see the beauty of these mountains throughout the year.

Realization of this plan will require considerable resources but its lasting benefit in terms of long-range future enjoyment for everyone will certainly make it a worthwhile public investment.

It was a great pleasure to work on this project because of my personal knowledge of this mountain and the people associated with it. I want to thank everyone who provided assistance and suggestions.

2. BUILDING FUNCTION, SPACE/CAPACITY ALLOCATION

The Unit Management Plan identified the following seating capacity and guest services upgrades as follows:

- Little Whiteface: Restaurant with 200 seats at a time when gondola lift is constructed

To assure a satisfactory level of guest service at the proposed Little Whiteface Day Lodge, it is felt that the proposed 200-seat capacity will not be adequate and it should be expanded. The presented plan is for a restaurant/cafeteria on the first floor level and a bar/lounge on the second level. In addition to the restaurant function of this building, the building will also provide space for the Ski Patrol and First Aid which will be located on the basement level of the building.

We estimate that the space in the day lodge will be allocated as follows:

Function	Area (SF)	Seating Capacity
Circulation Areas	2,000	---
Restaurant/Cafeteria	4,300	275
Bar/Lounge	1,900	80
Kitchen Space/Scramble	2,000	---
Storage/Mechanical	1,000	---
Restrooms	500	---
Ski Patrol/First Aid	800	---
Observation Decks	4,500	---
Storage Space	1,000	

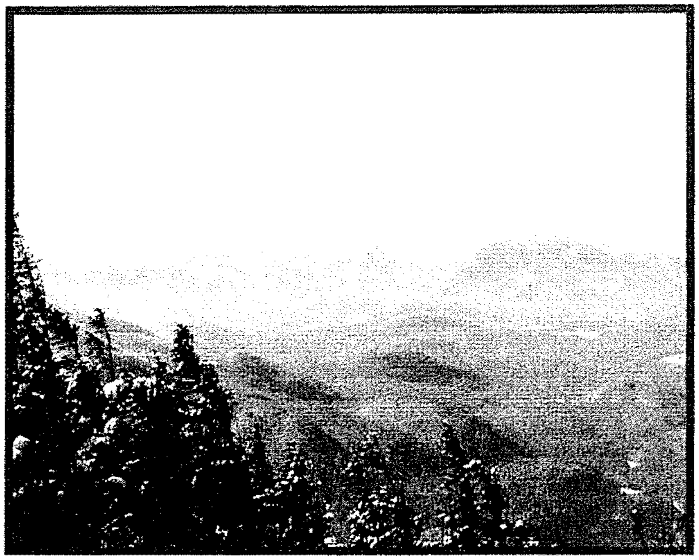
The use of the building will be year-round with guest services provided during the normal daytime operations. However, it will also offer an opportunity to provide services for special functions (wedding, conferences, etc.). The convertibility of the interior space for such functions will be an important design factor which will need to be addressed in the final design phase.

With a projected turnover of 3 persons per seat, the potential daily number of guests served by this facility is estimated at 1,000.

3. BUILDING DESIGN

The building orientation and its design elements will maximize views and convenience of access to all functional elements. Outside decks will be in areas for maximum enjoyment of views and sun and sited in such a way as to prevent areas where wind would deposit excessive drifts.

The roof top observation deck will offer a 360° panoramic view of the mountains.



Due to the high wind exposure of the building site, the exterior of the building will consist of durable maintenance-free materials (stone, concrete, metal) with special high wind-resistant windows.

A large fireplace located in the center core of the building will provide an interior focal point.

The proposed improvements will provide for a sheltered pedestrian and service connection from the gondola station. In fact, consideration should be given to enclose the entire gondola station completely to make its operation safer and more trouble-free during the periods of severe weather conditions.

The building elevation will follow closely the existing mountain ridge to reduce visual impact on the view shed from Lake Placid Lake.

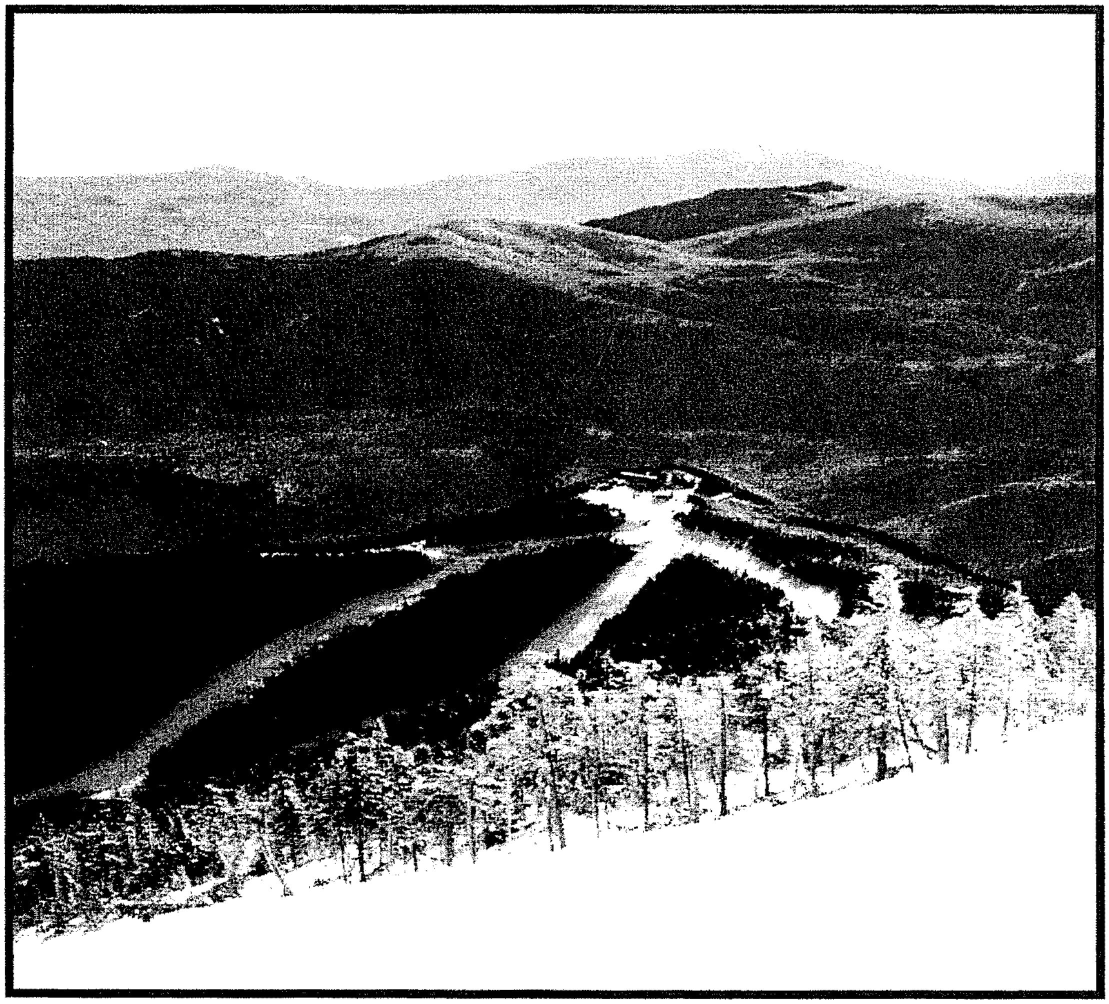
Reference: Appendix A, Architectural Plans
Appendix B, Site Plan

4. SITING

The proposed building will be located adjacent to the existing gondola station and in the area of the existing observation deck and ski patrol building, both of which will be removed.

The building will be anchored to the bedrock. Its layout will utilize the existing sloping ground of the site for the proposed two-floor and walkout basement level layout.

Reference: Appendix A, Architectural Plans
Appendix B, Site Plan



5. UTILITIES SERVICE

5.1 Water Supply

Two alternatives are available for providing development of water supply for the lodge.

Alternative A – Drilled Well

This alternative would involve undertaking a hydrogeological study to establish potential sites for drilling. After a development of a well with adequate yield, a piping will need to be constructed from the well to a storage tank at the lodge site.

Alternative B – Filtration of Water from Ausable River

Water from Ausable River will be pumped through the existing snow-making lines to a storage tank near or within the day lodge building. Filtration equipment will be installed to produce potable water of acceptable quality as approved the New York State Department of Health. Before this alternative is given a serious consideration, a determination will need to be made that the Ausable River water is treatable.

Reference: Appendix C, Study Map
Appendix F, Proposal for Development of Groundwater Source of Potable Water
Appendix G, Product Information

5.2 Wastewater Disposal

To provide a safe, reliable and environmentally safe wastewater disposal system will be a considerable challenge. A soil investigation conducted during the summer revealed one suitable site located in the existing gravel pit near Lift 7.

It is suggested that a grinder pump will convey wastewater from the lodge through a steel pipe to this disposal area. Where pipe could not be buried below frost level due to rock conditions, an aboveground insulated pipe with a tracer wire will be required.

The wastewater disposal system will need to satisfy design criteria of the New York State Department of Environmental Conservation and its operation will require a SPDES permit. Every effort will need to be made to minimize water consumption at the lodge to control the size of this wastewater disposal system.

For informational purposes we are including in this study data on composting toilets. This alternative was investigated as a possible solution for wastewater disposal. Since composting toilets cannot handle grey water, we feel that its use is not appropriate for this installation with the presented functions.

Reference: Appendix C, Study Map
Appendix E, Soil Report
Appendix G, Product Information

5.3 Electric, Telephone

Adequate electric and telecommunication service exists at the site of the proposed lodge building.

6. FIRE PROTECTION

To ensure adequate fire protection for the lodge building, adequate water storage will need to be constructed in order to satisfy fire flow for a predetermined time period. The water storage facility will also be used in conjunction with the building's potable water system. It will be located underground within the building or in the outside area. Outside location will require adequate cover for frost protection.

7. PROJECT DEVELOPMENT SCHEDULE

The presented project development schedule assumes occupancy by Thanksgiving 2001. In order to accomplish that, the following schedule of project development should be considered.

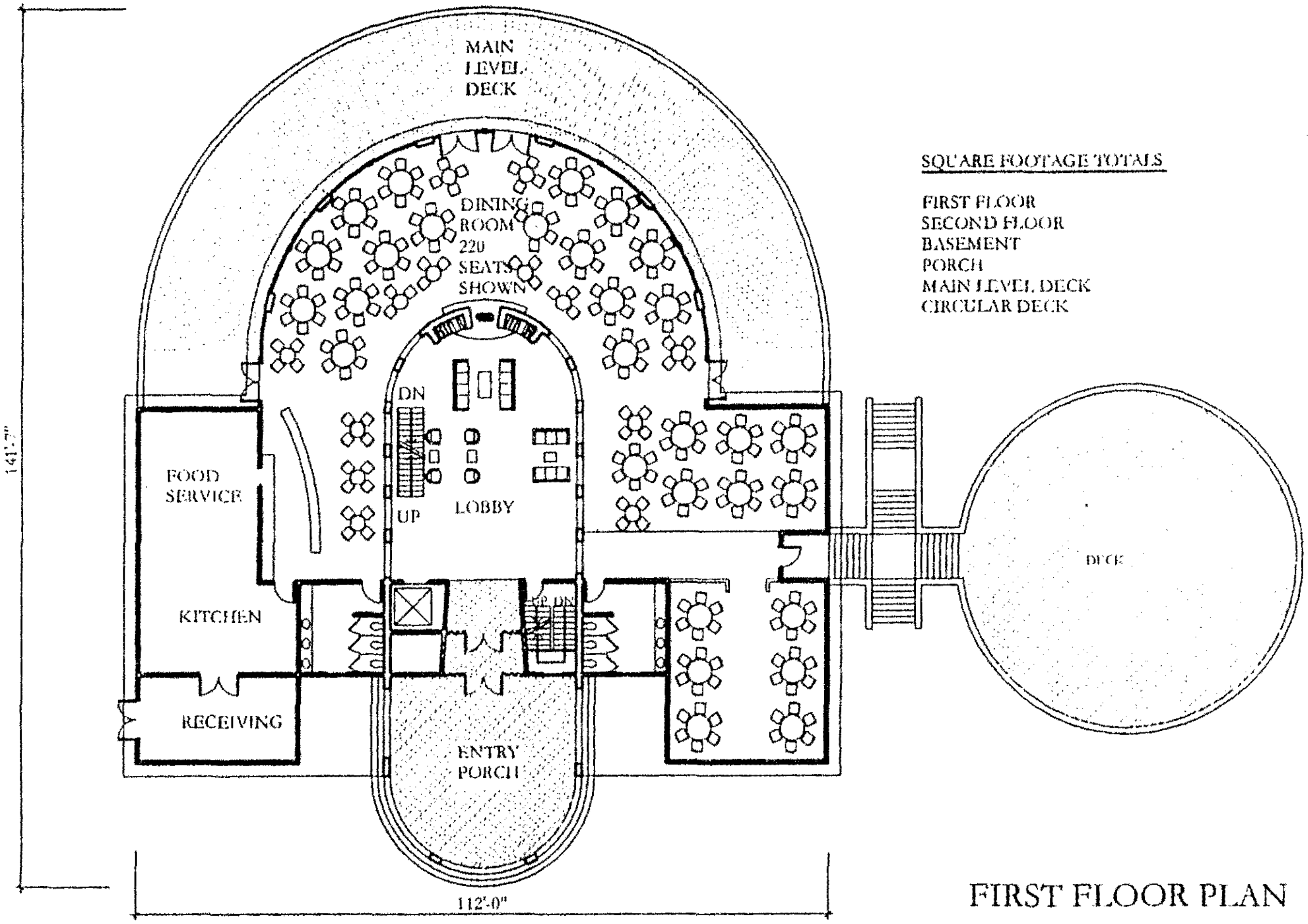
- Complete design and construction document by October 28, 2000.
- Advertise for construction bid by November 27, 2000.
- Award contract by December 22, 2000.
- Commence construction period by January 15, 2001.

This is a very challenging and demanding schedule. To achieve a better end product it is strongly recommended that completion of the building be done in phases.

- Phase 1 completion: Thanksgiving 2001
- Phase 2 completion: Summer 2002

APPENDIX A

ARCHITECTURAL PLANS



SQUARE FOOTAGE TOTALS

FIRST FLOOR	8300SF
SECOND FLOOR	1860SF
BASEMENT	4000SF
PORCH	950SF
MAIN LEVEL DECK	3200SF
CIRCULAR DECK	2450SF

FIRST FLOOR PLAN

LITTLE WHITEFACE CLOUDSPLITTER LODGE

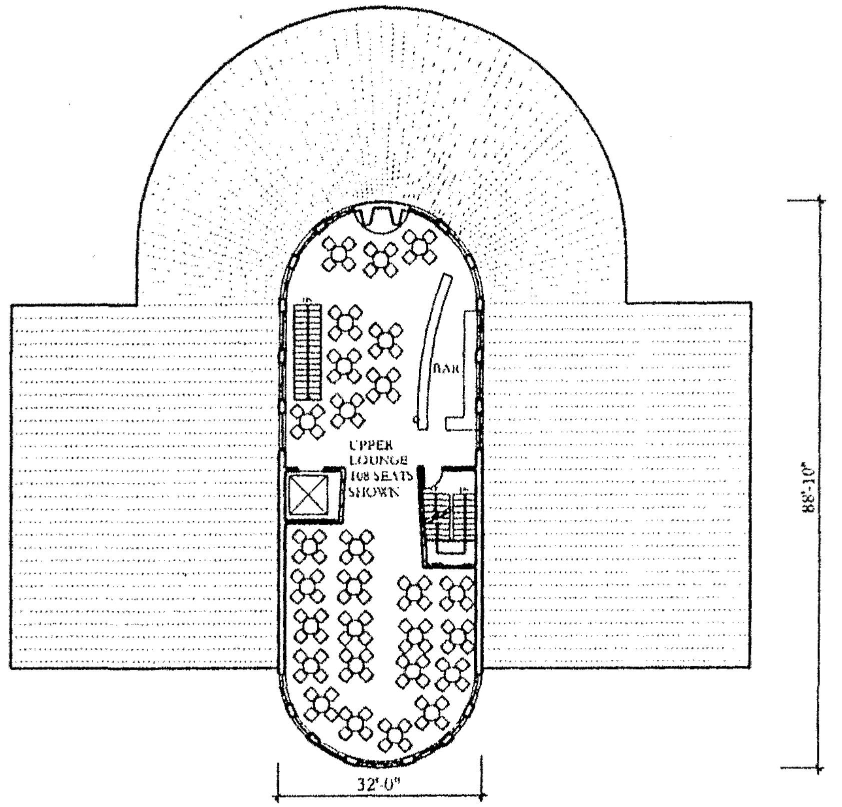
1

WILMINGTON
SCALE: 1" = 30'

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

NEW YORK
FEBRUARY 2, 2000

IVAN ZDRAHAL ASSOCIATES
TRUEX CULLINS & PARTNERS ARCHITECTS



SECOND FLOOR PLAN

L I T T L E W H I T E F A C E C L O U D S P L I T T E R L O D G E

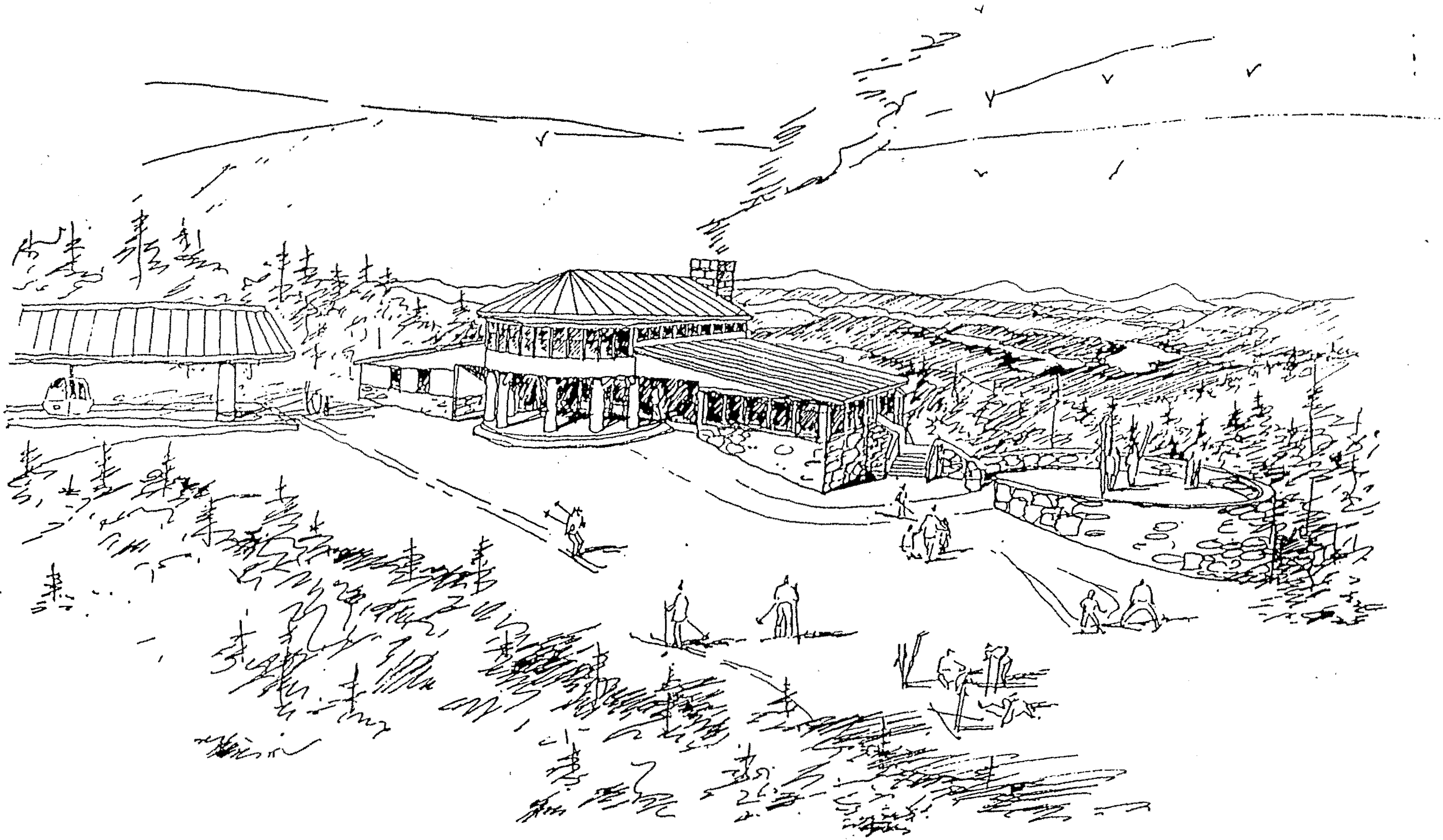
2

WILMINGTON
SCALE: 1" = 30'

OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

NEW YORK
FEBRUARY 2, 2000

IVAN ZDRAHAL ASSOCIATES
TRUEX CULLINS & PARTNERS ARCHITECTS



PERSPECTIVE

LITTLE WHITEFACE CLOUDSPLITTER LODGE

3

WILMINGTON

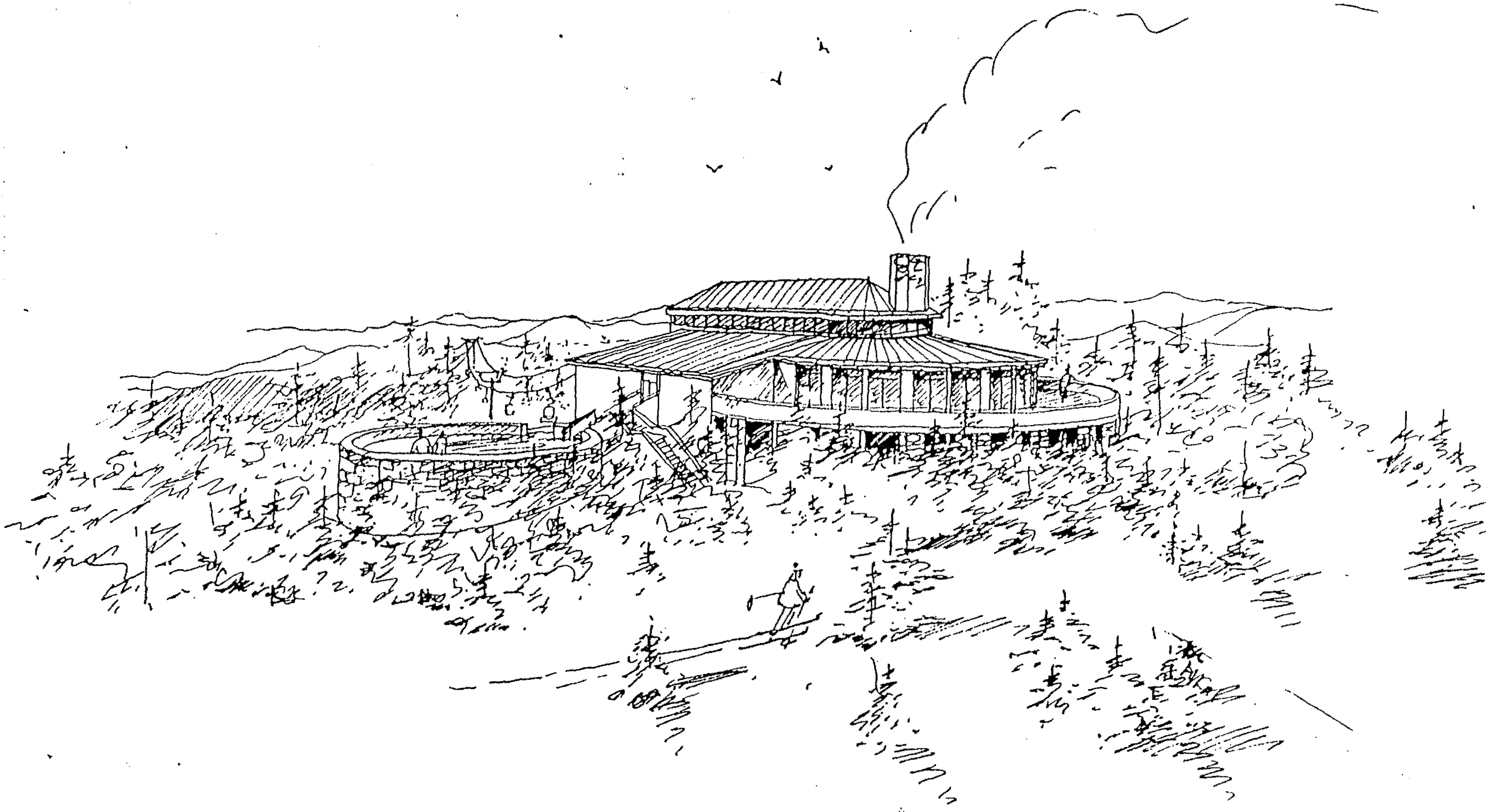
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

NEW YORK

FEBRUARY 2, 2000

IVAN ZDRAHAL ASSOCIATES

TRUEX CULLINS & PARTNERS ARCHITECTS



PERSPECTIVE

LITTLE WHITEFACE CLOUDSPLITTER LODGE

4

WILMINGTON   OLYMPIC REGIONAL DEVELOPMENT AUTHORITY   NEW YORK

FEBRUARY 2, 2000

IVAN ZDRAHAL ASSOCIATES

TRUEX CULLINS & PARTNERS ARCHITECTS

APPENDIX B

SITE PLAN

RECORD OF WORK

ISSUED APR 1 1 2001
Ivan Zdrahal Associates

IVAN ZDRAHAL
LICENSE NO. 55,307

IVAN ZDRAHAL ASSOCIATES, PLLC
ENGINEERING AND PLANNING
959 ROUTE 146
CLIFTON PARK, NEW YORK 12065
PHONE : (518)383-0769 FAX : (518)371-4356
email : Zdrahal@aol.com

LITTLE WHITEFACE
CLOUDSPLITTER LODGE
WHITEFACE SKI CENTER
PREPARED FOR
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

TOWN OF WILMINGTON — ESSEX COUNTY, NEW YORK

DATE: FEBRUARY 2000 | SCALE: 1" = 20' | SHEET 1 OF 1 | MAP NUMBER: 00-02-L

S-1

APPENDIX C

STUDY MAP

RECORD OF WORK

DENOTES EXISTING SNOWMAKING LINE

DENOTES PROPOSED WASTEWATER DISPOSAL SYSTEM LINE
APPROX. LENGTH = 7000 L.F.

ISSUED APR 1 1 2001
Ivan Zdrahal Associates

IVAN ZDRAHAL
LICENSE NO. 55,307

IVAN ZDRAHAL ASSOCIATES, PLLC

ENGINEERING AND PLANNING
959 ROUTE 146
CLIFTON PARK, NEW YORK 12065
PHONE : (518)383-0769 FAX : (518)371-4356
email : Zdrahal@aol.com

STUDY MAP

PROPOSED CLOUDSPLITTER LODGE
TOP OF LITTLE WHITEFACE

PREPARED FOR
OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

TOWN OF WILLMINGTON — ESSEX COUNTY, NEW YORK

DATE: SEPTEMBER 1999 | SCALE: 1" = 200' | SHEET 1 OF 1 | MAP NUMBER: 99-62-L

S-1

APPENDIX D

CONSTRUCTION MANAGEMENT COMPANY EVALUATION

mlb

General Contractors and
Construction Managers

January 27, 2000

Mr. Ivan Zdrahal
Zdrahal Associates
959 Route 146
Clifton Park, New York 12065

Dear Ivan,

We at MLB Industries, Inc. appreciate very much the opportunity to review and discuss with you the conceptual plans for the Little Whiteface Mountain Summit Restaurant and Day Lodge, and are pleased to offer the following observations, comments and opinions regarding its construction.

Building this mountaintop facility will obviously require a thoughtful and aggressive approach to climate and accessibility factors. Seasonal weather conditions and mountain operations will clearly drive the schedule, and it will be imperative that project team members work in perfect unison if construction is to be completed in a single window of opportunity. Pre-planning, pre-purchasing and perhaps pre-fabrication of certain components will be critical to success. Accordingly, this particular project is probably best served by the Construction Management delivery system.

With respect to structure and materials, schedule, and budget, we submit to you these thoughts.

STRUCTURE & MATERIALS

In consideration of location, exposure to the elements, usage, durability and maintenance factors, it is our opinion that the structure should consist of cast-in-place footings and foundations with a steel structure and appropriate wood finishes for aesthetic purposes with extensive use of triple pane, low-e glass to facilitate optimal views.

MLB Industries, Inc.
3 Northway Lane
Latham, NY 12110
(518) 785-1371
Fax (518) 785-3865

MLB Industries, Inc.
at North Hills
Raleigh, NC 27619
(919) 786-0031
Fax (919) 571-1377

email: mlbind@global2000.net

The possibility of improving the existing haul road should be considered in determining the main structure and mechanical components. The significant cost of hauling via helicopter could be applied to a usable road for construction and future maintenance use.

Use of pre-cast structural or architectural units could save considerable time and expense associated with the on-site placing of concrete, and should be investigated thoroughly. This same technique could also apply to the underground water storage tank. The roofing system used will need to be carefully studied as well to minimize potential expansion and contraction related problems that could be caused by the extreme temperature differentials. We would envision considerable use of stone on the exterior to maintain architectural integrity with existing structures on "big" Whiteface.

SCHEDULE

Based on the assumption that construction cannot start until the conclusion of the ski season, early to mid April, and that ORDA will want the facility to be in full operation by the following Christmas holiday period, the construction phase will necessarily be limited to eight (8) months. Since design is not yet underway, construction during 2000 would seem unlikely and completion by December 2001 would appear to be the prudent objective. With that in mind, we would propose that preliminary engineering and design move forward promptly so that rock excavation and other site and infrastructure work (i.e. water reservoir and septic system) can be accomplished during the spring/summer/fall of 2000. Meanwhile design development and completion of construction documents can progress through the summer and fall to facilitate October or November 2000 bidding with subsequent pre-purchasing and perhaps some pre-fabrication in preparation for a hit-the-ground-running start in Spring 2001. Such a scenario would seem the most realistic to allow for thoughtful planning and design, resolutions of important water and sewer issues, and thorough preparation for a timely and orderly construction process.

MLB INDUSTRIES, INC.
FIRM PROFILE

Mission Statement: "MLB Industries, Inc. is committed to providing our clients with financially responsible leadership to build their projects and to supply our people with the resources necessary to accomplish this objective".

Shortly after World War II, **John McManus** and **Frederick Longe** convinced Union College classmate **Donald Brockwehl** to relocate from New York City and form **McManus, Longe & Brockwehl** in 1947. By the 1970s, and after 25 years in business, their company had a portfolio of impressive projects throughout the Capital District and New York State. In 1995, MLB opened a second office in Raleigh, North Carolina and has been executing significant projects in the Raleigh-Durham and Richmond, Virginia markets as well.

Now, after more than fifty years in the construction business, **MLB** has delivered major projects for a number of Fortune 500 companies from New York, Massachusetts, Vermont, and as far south as Florida. Some of these successful projects include: the **Fleet/Norstar Bank headquarters**, (the revitalized and award-winning **Union Station** project), the state-of-the-art **GE Plastics Technology Center** in Pittsfield, Mass., and the **Pepsi Arena** in downtown Albany. In addition, MLB has become well known for its work on public and private colleges including **Skidmore College, Rensselaer Polytechnic Institute, Hamilton College, SUNY Albany, Adirondack Community College, Williams College and The University Heights Association.**

MLB Industries, Inc. is now in its **second generation of leadership**. Its principal team of executives are: **Thomas M. Eckert**, President and **Bryan F. Fox**, Executive Vice President of Estimating. Mr. Eckert, who joined MLB in 1979, possesses a strong background in both construction engineering and business management. Mr. Fox, a professional engineer, joined the team in 1984 and has over 25 years of estimating experience.

MLB operates in various capacities: as a **General Contractor**, a **Construction Manager**, and as a **Design/Build Contractor**. Our client base includes corporate, industrial, institutional, retail and healthcare markets. MLB is committed, from top management down, to serve the client well. The optimum project partnership brings all the essential parties together as early as possible, preferably during the design phase. This allows the client the greatest benefit from the entire construction team.

The primary benchmark of MLB service is customer satisfaction. This is evidenced by the number of referrals and requests from previous clients impressed by the quality of MLB's work and our attention to budgets and scheduling. Our talents in team development, mechanical/electrical coordination and project delivery allow us to say: **"No one can build better - faster than MLB".**

mlb

THOMAS M. ECKERT, P.E
Principal and President/CEO

EXPERIENCE:

1979 - Present — **MLB Industries, Inc.**
3 Northway Lane
Latham, New York

January 1987 - Present — President/CEO

Oversees all field/office operations, working with the Executive Vice President in resolving problems and maintaining client ties. Monitors the activities of outside consultants and develops budgets and plans for future operations. Final negotiations with owners concerning contract awards and close outs are performed by the President.

Other positions held:
Vice President of Operations 1983 - 1986
Manager - Industrial Division 1981 - 1983
Project Manager 1979 - 1981

1978 - 1979
Sweet Associates, Inc.
Construction Coordinator

1976 - 1978
Assistant Professor - Civil Technology
Rochester Institute of Technology
Rochester, New York

EDUCATION /TRAINING:

1976 - 1978
Union College
Schenectady, New York
Degree: M.S. Industrial Administration and Management

1968 - 1971
Rutgers University
New Brunswick, New Jersey
Degree: B.S. Civil Engineering

REGISTRATIONS /AFFILIATIONS:

New York State General Building Contractors – Committee Member
Eastern Contractors Association – Board Member
American Arbitration Association – Construction Case Arbitrator
New York State Professional Engineer – License #053744

mlb

BRYAN F. FOX, P.E.
Principal and Executive Vice President

EXPERIENCE:

1984 - Present **MLB Industries, Inc.**
3 Northway Lane
Latham, New York

As Executive Vice President, Mr. Fox is responsible for directing estimating functions for the Northeast and Southeast offices of MLB Industries, Inc. He directs a staff that prepares lump sum bids and construction management estimates. Mr. Fox's duties include contact with clients and subcontractors, quantity takeoffs, and bid preparations and closings. Projects under Mr. Fox's direction have ranged up to 35 million dollars and include commercial, institutional, industrial and waste treatment projects in New York, New England, North Carolina, Virginia and Florida.

1973 - 1984
Sweet Associates, Inc.
Schenectady, New York

As manager of Estimating, Mr. Fox's primary responsibilities included preparation of lump sum, negotiated, and Construction Management estimates. He was responsible for project start-up, subcontract negotiations, purchasing and scheduling. Mr. Fox provided engineering overview and support for less technically trained personnel on active projects. He assumed the position of Project Manager for many projects and assisted Project Managers assigned to major fixed price, and Construction Management contracts. Estimating duties also included supervising 2 to 4 staff members and training intern Project Engineers in procedures and methods.

EDUCATION /TRAINING:

1979
Union College
Schenectady, New York
Degree: Bachelor of Science-Civil Engineering

1965
Hudson Valley Community College
Troy, New York
Degree: Associate in Applied Science-Civil Technology

REGISTRATIONS /AFFILIATIONS:

New York State Professional Engineer Lic. # 058677
National Society of Professional Engineers
Corporate Representative - Local Chapter of American Concrete Institute

APPENDIX E

SOIL REPORT

DIVERSIFIED SOIL SERVICES, LTD.
POST OFFICE BOX 489, CLAVERACK, NY 12513

Telephone: 518-851-7953
Fax: 518-851-6300
E-mail: www.cptdirt@valstar

August 2, 1999

TO: IVAN ZDRAHAL
959 ROUTE 146
CLIFTON PARK, NY 12065

RECEIVED
AUG 0 9 1999
IVAN ZDRAHAL ASSOCIATES

RE: DEEP SOIL TEST PITS
LITTLE WHITE FACE MOUNTAIN
WILMINGTON, NY

At your request and in response to a request from the ORDA administrators at the Whiteface Mountain ski facility, I witnessed deep soil test pits in various locations on the slopes of Little Whiteface Mountain. The purpose of the investigation was to find suitable soil that would allow the construction of a septic disposal area for the proposed ski lodge at the peak of Little Whiteface, overlooking Lake Placid.

The soils at Whiteface Mountain are mainly shallow and moderately deep; coarse textured glacial till soils over hard crystalline bedrock. There are inclusions of some deep, bouldery soils with very firm fragipans (hardpan). There are also some narrow well defined drainage corridors coming down off the mountain that have either perennial or intermittent streams.

The shallow soils classify as well drained Lyman soils with inclusions of very shallow organic Ricker soils and similar thin "smears" of folists at high elevations and on steep and very steep slopes. Moderately deep soils are Tunbridge and the deep soils are typically Becket soils

The soil test pits were excavated by backhoe in areas where slopes were not prohibitive, but typically included some areas that were slightly steeper than ideal and in some cases were adjacent to some very steep slopes. Wetlands were avoided.

Test pits were excavated in three locations on the mountainside along the existing ski trails. The first set of test pits were dug near the Excelsior trail. The second set of pits were excavated near the Connector and the remaining test pits examined up on the mountain were near the Easy Street trail. The folist soils at the peak were examined with hand tools.

The following soil conditions were witnessed at the Excelsior test pit:

The surface layer from 0 to 21 inches is brown very gravelly loamy fill.
BC horizon – 21 to 45 inches, olive brown (2.5Y 5/4) very gravelly sand; weak, coarse subangular blocky structure; firm; 40 percent gravel and small boulders.
Cd horizon - 45 to 72 inches, olive (5Y 4/3) very gravelly sand; massive; very firm; 40 percent gravel and small and medium boulders; few, medium and coarse, distinct strong brown (7.5YR 5/6) mottles in the upper part.

There are no seeps or even moist conditions in the soil pit. There is a boundary condition at 45 inches due to the very firm fragipan seasonally perching the water table.

The Adirondack Park Agency HIS symbol for this soil is B2RC/DA

The test pit was at the edge of an active ski trail. It appears the area had been excavated, graded and groomed to create the trail. Most of the surface layer was removed in initial construction and the fill was put in place when the final grade was established. The thickness and composition of the surface fill may vary slightly throughout the immediate location. There was a natural exposure of the soil on the opposite side of the ski trail where the undisturbed soil profile could be observed. It appeared to be a typical soil profile of Becket soils.

The following soil conditions were witnessed at the upper pit at the Connector trail:

The surface layer from 0 to 16inches is brown very gravelly loamy fill.
(buried) Bhs horizon – 16 inches, (discontinuous) dark reddish brown (5YR 3/2) fine sandy loam very gravelly sand; friable.
Bs horizon -- 16 to 38 inches, yellowish brown (10YR 5/6) gravelly loamy sand; weak, medium subangular blocky structure; 20 percent gravel and small boulders; friable.
BC horizon – 38 to 47 inches, light olive brown (2.5Y 5/4) gravelly loamy sand; weak, coarse subangular blocky structure; 30 percent rock fragments and small boulders; slightly firm.
Cd horizon - 47 to 72 inches, olive (5Y 4/3) very gravelly sand; massive; very firm; 45 percent gravel and small and medium boulders;

There are no seeps or even moist conditions in the soil pit. Although there are no mottles it is likely that the very firm fragipan at 47 inches would result in a boundary condition.

The soil series is typical Becket loamy fine sand.
The Adirondack Park Agency HIS symbol for this soil is B2RCA

The test pit is at the edge of an active ski trail. The existing ski trail has been realigned and two levels of the existing trail now exist. There are steep slopes vertically adjacent to the test pits. Horizontally, the slopes are tolerable.

The following soil conditions were witnessed at the lower pit at the Connector trail:

There is a smear of gravelly fill over the surface layer ranging from 0 to 16 inches thick, but generally it is quite thin, but may be more significant in other locations near the pit.

Oi horizon (includes E horizon mixed): 0 to 14 inches, black (10YR 2.5YR 2/1) Fibric material, mostly from decomposed leaves.

Bs horizon -- 14 to 38 inches, yellowish brown (10YR 5/6) gravelly loamy sand; weak, medium subangular blocky structure; 20 percent gravel and small boulders; friable.

BC horizon – 38 to 53 inches, light olive brown (2.5Y 5/4) gravelly loamy sand; weak, coarse subangular blocky structure; slightly firm.

Cd horizon – 53 to 72 inches, olive (5Y 4/3) very gravelly sand; massive; very firm; 40 percent gravel and small and medium boulders.

There are no seeps or even moist conditions in the soil pit. Although there are no mottles it is likely that the very firm fragipan at 53 inches would result in a boundary condition.

The soil series is typical Becket loamy fine sand.
The Adirondack Park Agency HIS symbol for this soil is B2RCA

The test pit was at the edge of an active ski trail. The existing ski trail has been realigned and two levels of the existing trail now exist. There are steep slopes vertically adjacent to the test pits. Horizontally, the slopes are tolerable.

The following soil conditions were witnessed at the upper pit at the Easy Street trail:

Oi horizon (includes E horizon and Bh horizon mixed): 0 to 14 inches, black (10YR 2.5YR 2/1)Fibric material, mostly from decomposed leaves mixed with some mineral layers.

Bs horizon -- 14 to 31 inches, yellowish brown (10YR 5/6) gravelly loamy sand; weak, medium subangular blocky structure; 20 percent gravel and small boulders; friable.

BC horizon – 31 to 53 inches, light olive brown (2.5Y 5/4) gravelly loamy sand; many, medium and coarse, distinct reddish yellow (7.5YR 6/6) mottles; weak, coarse subangular blocky structure; slightly firm.

Cd horizon – 53 to 72 inches, olive (5Y 4/3) very gravelly sand; massive; very firm; 40 percent gravel and small and medium boulders.

There are no seeps or even moist conditions in the soil pit. The boundary condition is at 31 inches, mottles from perched, seasonal high water table.

The soil series is Udorthents/Becket loamy fine sand.
The Adirondack Park Agency HIS symbol for this soil is B2RCA

The test pit is within an active ski trail.

The following soil conditions were witnessed at the gravel pit near the base lodge. The gravel has been mined, obviously for a long time and some rock ledge has been exposed in the steep side slopes of the pit. The test pits are in the bottom of the excavated pit.

Surface layer 0 to 72 inches, alternating layers of very gravelly (skeletal) sand and fine gravel.

There are no seeps or even moist conditions in the soil pit. The undisturbed soil is Hinckley loamy sand, very gravelly. The existing condition is Udorthent, sandy, excavated, smoothed.

The second test pit in the gravel pit is similar to the first except that the soil becomes moist at refusal at 66 inches. There may be ledge at just below the bottom of the pit.

The Adirondack Park Agency HIS symbol for this soil is A1NBA.

Either slope or boundary condition, typically impervious layer, limited all of the test pits observed on the mountainside. The soil conditions in the test pits in the gravel pit at the base of the mountain were unrestricted, but there are engineering, design and logistic issues involved in transporting effluent from the lodge at the top of Little Whiteface to the disposal area more than a mile away at the base of the mountain.

Roger J. Case, CPSC, CPSS (ARCPACS)
Professional Soil Scientist, ESP-NY, SSSSNE
President, DSS, Ltd.

LOCATION BECKET NH+MA ME NY VT

Established Series
Rev. HRM-RJK-SHG
06/1999

BECKET SERIES

The Becket series consists of very deep, well drained soils that formed in a loamy mantle overlying dense, sandy till on drumlins and glaciated uplands. They are moderately deep to a densic contact. Permeability is moderate in the solum and moderately slow to slow in the dense substratum. Slope ranges from 3 to 60 percent. Mean annual precipitation is about 40 inches and mean annual temperature is about 43 degrees F.

TAXONOMIC CLASS: Coarse-loamy, isotic, frigid Oxyaquic Haplorthods

TYPICAL PEDON: Becket fine sandy loam, on a 9 percent west-southwest facing slope in a stony, forested site. (Colors are for moist soil.)

Oi--0 to 2 inches; fibric material comprised of partially decomposed leaves and pine needles. (0 to 4 inches thick)

E--2 to 4 inches; pinkish gray (7.5YR 6/2) fine sandy loam; weak fine granular structure; very friable; many medium and fine roots; 5 percent gravel; very strongly acid; abrupt wavy boundary. (0 to 3 inches thick)

Bhs--4 to 5 inches; dark reddish brown (5YR 3/2) fine sandy loam; weak fine granular structure; very friable; many medium and fine roots; 10 percent gravel; very strongly acid; abrupt wavy boundary. (0 to 5 inches thick)

Bs1--5 to 7 inches; reddish brown (5YR 4/4) fine sandy loam; weak fine granular structure; very friable; many medium and fine roots; 10 percent gravel; very strongly acid; abrupt irregular boundary.

Bs2--7 to 14 inches; strong brown (7.5YR 5/6) fine sandy loam; weak fine granular structure; very friable; common medium and fine roots; 10 percent gravel; very strongly acid; clear irregular boundary.

Bs3--14 to 24 inches; yellowish brown (10YR 5/6) gravelly sandy loam; weak medium granular structure; friable; common fine roots; 15 percent gravel; very strongly acid; clear wavy boundary. (Combined thickness of the Bs horizon is 3 to 25 inches)

BC--24 to 33 inches; light olive brown (2.5Y 5/4) gravelly sandy loam; moderate medium granular structure; friable; few fine roots; 20 percent gravel, 5 percent cobbles; strongly acid; abrupt smooth boundary. (0 to 17 inches thick)

Cd--33 to 67 inches; mixed olive (5Y 4/3) gravelly sandy loam and olive yellow (2.5Y 6/6) sand, composite texture of gravelly loamy sand; massive; firm and brittle; few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; 20 percent gravel, 10 percent cobbles; horizon consists of firm gravelly sandy loam with horizontally oriented lenses and pockets of loose sand; rock fragments coated with olive yellow (2.5Y 6/6) sand; strongly acid.

LOCATION HINCKLEY MA+CT NH NY RI VT

Established Series
Rev. WHT-CAW-SMF
10/97

HINCKLEY SERIES

The Hinckley series consists of very deep, excessively drained soils formed in water-sorted material. They are nearly level to very steep soils on terraces, outwash plains, deltas, kames, and eskers. Permeability is rapid in the solum and very rapid in the substratum. Slope ranges from 0 to 60 percent. Mean annual precipitation is about 45 inches and the mean annual temperature is about 50 degrees F..

TAXONOMIC CLASS: Sandy-skeletal, mixed, mesic Typic Udorthents

TYPICAL PEDON: Hinckley loamy sand - Red pine plantation, in an old abandoned field. (All colors are for moist soil.)

Oe--0 inch to 1; hemic material formed from moderately decomposed red pine needles and twigs.

Ap--1 to 8 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; 5 percent fine gravel; very strongly acid; abrupt smooth boundary. (5 to 10 inches thick)

Bw1--8 to 11 inches; strong brown (7.5YR 5/6) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 20 percent gravel; very strongly acid; clear smooth boundary.

Bw2--11 to 16 inches; yellowish brown (10YR 5/4) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 25 percent gravel; very strongly acid; clear irregular boundary. (Combined thickness of the Bw horizon is 3 to 16 inches.)

2BC--16 to 19 inches; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; common fine and medium roots; 40 percent gravel; strongly acid; clear smooth boundary. (0 to 5 inches thick)

2C--19 to 65 inches; light olive brown (2.5Y 5/4) extremely gravelly sand consisting of stratified sand, gravel and cobbles; single grain; loose; common fine and medium roots in the upper 8 inches and very few below; 60 percent gravel and cobbles; moderately acid.

TYPE LOCATION: Worcester County, Massachusetts; Town of Petersham, Harvard Forest, 0.4 miles east of the western edge of Harvard ("Brooks") Pond and 0.75 miles north of Route 122. Lat. 42 degrees 30 minutes 14 seconds N., and 72 degrees 12 minutes 04 seconds W., NAD 27.

RANGE IN CHARACTERISTICS: Solum thickness ranges from 12 to 30 inches. Rock fragment content of the solum ranges from 5 to 50 percent gravel, 0 to 15 percent cobbles, and 0 to 3 percent stones. Rock fragment content of individual horizons of the substratum ranges from 10 to 50 percent gravel, 5 to 25 percent cobbles, and 0 to 5 percent stones. The soil ranges from extremely acid through moderately acid except where limed.

LOCATION LYMAN MA+ME NH NY VT

Established Series
Rev. DGG-WHT-CAW
6/98

LYMAN SERIES

The Lyman series consists of shallow, somewhat excessively drained soils formed in glacial till. They are on rocky hills and high plateaus. Permeability is moderately rapid. Slope ranges from 3 to 80 percent. Depth to bedrock ranges from 10 to 20 inches. Mean annual precipitation is about 40 inches and mean annual temperature is about 43 degrees F.

TAXONOMIC CLASS: Loamy, isotic, frigid Lithic Haplorthods

TYPICAL PEDON: Lyman loam, in a very rocky, forested area. (Colors are for moist soil.)

Oe--0 to 1 inches; hemic material. (0 to 3 inches thick)

A--1 to 3 inches; black (N 2/0) loam; weak fine granular structure; very friable; many fine and medium roots; extremely acid; abrupt wavy boundary. (0 to 4 inches thick)

E--3 to 5 inches; reddish gray (5YR 5/2) fine sandy loam; very weak fine granular structure; very friable; many fine and medium roots; 10 percent gravel; extremely acid; abrupt broken boundary. (0 to 10 inches thick)

Bhs--5 to 7 inches; very dusky red (2.5YR 2/2) loam; very weak fine granular structure; friable; many fine and medium roots; 10 percent fine gravel; extremely acid; abrupt broken boundary. (0 to 4 inches thick)

Bs1--7 to 11 inches; dark red (2.5YR 3/6) loam; weak fine and medium granular structure; friable; many fine and medium roots; 10 percent fine gravel; few mica flakes; very strongly acid; clear wavy boundary.

Bs2--11 to 18 inches; dark brown (7.5YR 4/4) grading with depth to brown (10YR 5/3) channery loam; weak coarse subangular blocky structure parting to medium and fine granular; friable; many fine and medium roots; 15 percent channers of schist and quartzite; common flakes of mica; very strongly acid; abrupt smooth boundary. (Combined thickness of the Bs horizon is 5 to 17 inches.)

R--18 inches; dark gray mica schist bedrock.

TYPE LOCATION: Franklin County, Massachusetts; Town of Monroe, about 1/2 mile west of the village of Monroe Bridge and about 25 feet south of River Road; lat. 42 degrees 43 minutes 15 seconds N. and long. 72 degrees 57 minutes 05 seconds W., NAD 27.

RANGE IN CHARACTERISTICS: Solum thickness ranges from 10 to 20 inches and corresponds to the depth to bedrock. Rock fragments are schist with lesser amounts of phyllite, granite, and gneiss. Fragments smaller than 3 inches range from 5 to 25 percent throughout the soil. Fragments 3 to 10 inches in size range from 0 to 10 percent throughout. Fragments larger than 10 inches range from 0 to 15 percent in the A and from 0 to 3 percent in the B horizon. The soil ranges from extremely acid to moderately acid

LOCATION RICKER VT+ME NH NY

Established Series
Rev. DLY-SHG-CAW
1/99

RICKER SERIES

The Ricker series consists of very shallow and shallow, well drained to excessively drained organic soils on mountains and hills. They formed in thin organic deposits underlain in most places by a very thin mineral horizon over bedrock. Permeability is moderately rapid in the organic layers and moderate or moderately rapid in the mineral horizon. Slope ranges from 3 to 80 percent. Mean annual precipitation is about 50 inches and mean annual temperature is about 40 degrees F.

TAXONOMIC CLASS: Dysic Lithic Cryofolists

TYPICAL PEDON: Ricker peat, 15 to 80 percent slopes, in a very rocky wooded area. (Colors are for moist soil unless otherwise noted.)

Oi--0 to 2 inches; dark reddish brown (2.5YR 2/4) broken face peat (fibric material), dark reddish brown (5YR 2/2) crushed and rubbed; about 90 percent fiber, 75 percent rubbed; massive; loose; many roots; 5 percent twigs; extremely acid; clear wavy boundary. (1 to 6 inches thick)

Oe--2 to 4 inches; black (N2/0) broken, crushed and rubbed mucky peat (hemic material); about 60 percent fiber, 20 percent rubbed; weak thin platy structure; friable; many roots; extremely acid; clear wavy boundary. (0 to 10 inches thick)

Oa--4 to 7 inches; black (N2/0) broken, crushed and rubbed muck (sapric material); about 30 percent fiber, 15 percent rubbed; massive; friable; common roots; extremely acid; abrupt wavy boundary. (0 to 10 inches thick)

E--7 to 9 inches; dark bluish gray (5B 4/1) very channery silt loam; massive; friable; common roots; 50 percent schist fragments; extremely acid; abrupt irregular boundary. (0 to 4 inches thick)

R--9 inches; micaceous schist.

TYPE LOCATION: Lamoille County, Vermont; Town of Stowe, Mt. Mansfield, 100 yards down Butler Lodge Trail from TV access road; 30 feet to the south. Latitude 44 degrees, 31 minutes, 33 seconds N., Longitude 72 degrees, 49 minutes, 00 seconds W., NAD 27.

RANGE IN CHARACTERISTICS: The depth to bedrock ranges from 1 to 20 inches. Very thin mineral layers are at the bedrock interface in most pedons. Rock fragments range from 0 to 50 percent in the mineral layers. The organic material is extremely acid and the mineral layers are extremely or very strongly acid.

The Oi horizon is neutral or has hue of 2.5YR to 10YR, value of 2 to 4, and chroma of 0 to 4. It is slightly decomposed leaves, needles, twigs, and moss (fibric material).

LOCATION TUNBRIDGE VT+MA ME NH NY

Established Series
Rev. RLM-GWS-SHG
7/98

TUNBRIDGE SERIES

The Tunbridge series consists of moderately deep, well drained soils on glaciated uplands. They formed in loamy glacial till. Permeability is moderate or moderately rapid. Slope ranges from 0 to 75 percent. Mean annual precipitation is about 40 inches, and mean annual temperature is about 44 degrees F.

TAXONOMIC CLASS: Coarse-loamy, isotic, frigid Typic Haplorthods

TYPICAL PEDON: Tunbridge fine sandy loam, on a south-facing slope of 4 percent, in a rocky wooded area. (Colors are for moist soil.)

A--0 to 2 inches; dark brown (7.5YR 3/2) fine sandy loam; weak fine granular structure; very friable; many roots; 5 percent rock fragments; extremely acid; abrupt wavy boundary. (0 to 6 inches thick)

E--2 to 3 inches; grayish brown (10YR 5/2) fine sandy loam; weak fine granular structure, friable; many roots; 5 percent rock fragments; very strongly acid; abrupt broken boundary. (0 to 4 inches thick)

Bh--3 to 9 inches; dark reddish brown (5YR 3/4) loam; moderate medium angular blocky structure; friable; many roots; 10 percent rock fragments; very strongly acid; clear wavy boundary. (0 to 4 inches thick)

Bs--9 to 14 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; many roots; 10 percent rock fragments; very strongly acid; clear wavy boundary. (0 to 16 inches thick.)

C--14 to 28 inches; dark grayish brown (2.5Y 4/2) gravelly fine sandy loam; massive; friable; common roots; 15 percent rock fragments; moderately acid; abrupt irregular boundary. (0 to 16 inches thick)

R--28 inches; mica schist and gneiss bedrock.

TYPE LOCATION: Lamoille County, Vermont; Town of Stowe; 0.25 mile east of Town Road #23 and 2.50 miles north of junction of Town Road #23 and Vermont Route 108; approximate latitude 44 degrees, 31 minutes, 00 seconds N., longitude 72 degrees, 42 minutes, 00 seconds W., NAD 27.

RANGE IN CHARACTERISTICS: The thickness of the solum ranges from 14 to 38 inches. The depth to bedrock ranges from 20 to 40 inches. Reaction ranges from extremely acid through moderately acid in the solum and from strongly acid through slightly acid in the substratum. Rock fragments are mostly gravel, channers, and cobbles and range from 5 to 35 percent throughout the soil. The thickness of spodic horizon (Bh, Bs, and Bhs horizon, where present) ranges from 4 to 16 inches and is weakly smeary or not smeary. The silt content in the solum and substratum is typically less than 50 percent. The fine-earth is typically fine sandy loam, sandy loam, very fine sandy loam or loam, but horizons of silt loam are allowed. Stony and bouldery phases of the Tunbridge series are recognized.

APPENDIX F

PROPOSAL FOR DEVELOPMENT OF GROUNDWATER SOURCE OF POTABLE WATER

Jacques Whitford Company, Inc.

Consulting Engineers
Environmental Scientists
Information Consultants

RR1 Box 36
Pike Hill Road
West Topsham, VT
U.S.A. 05086

Tel: 802 439 5220
Fax: 802 439 6282

E-mail: info@jacqueswhitford.com
Web Site: www.jacqueswhitford.com

Geotechnical Engineering
Site Investigations
Blasting Control
Earthworks
Foundations
Rock Mechanics

Materials Engineering & Research
Mining Engineering
Environmental Sciences
Environmental Engineering
Air Quality
Hydrogeology

Dartmouth, NS
Sydney, NS
Port Hawkesbury, NS
Saint John, NB
Fredericton, NB
Moncton, NB
Bathurst, NB
Charlottetown, PE
St. John's, NF
Corner Brook, NF
Goose Bay, LAB
Hull, PQ
Ottawa, ON
Toronto, ON
Regina, SK
Calgary, AB
Lethbridge, AB
Vancouver, BC
Freeport, ME
Winslow, ME
Portsmouth, NH
Port of Spain, Trinidad
Mexico, DF
Moscow, Russia
Buenos Aires, Argentina

August 16, 1999

RECEIVED
AUG 2 3 1999
IVAN ZDRAHAL ASSOCIATES

Mr. Ivan Zdrahal, P.E.
Ivan Zdrahal Associates
959 Route 146
Clifton Park, New York 12065

Re: Proposed Day Lodge at Whiteface Mountain
Groundwater Source

Dear Mr. Zdrahal:

This is a proposal to assist you with development of a potable groundwater source to serve the proposed day lodge at the top of Little Whiteface. My involvement will be to locate one or more favorable well sites, and then, if desired by you, to assist with well construction, pump testing, hydraulic analysis, and report preparation that may be needed to gain regulatory approval of the new water source.

SCOPE OF SERVICES

1. Identification of Favorable Well Sites

The key to finding water at the top of Little Whiteface is interpretation of aerial photographs for identification of water-bearing fracture zones in the bedrock (ledge). I will purchase copies of available stereo aerial photographs, enlarge one or more of these as necessary, and study them in plan and stereo view to map so called "fracture traces" that are indicative of underlying cracks and crevices in the bedrock. Additionally, I will consider available geologic and topographic maps of the area.

Once apparently favorable well sites are mapped, I will come to the mountain top in the company of you or others to verify the photo-interpretations and to consider the practical aspects of the identified favorable well sites. Practical aspects include drilling rig access, contaminant sources, availability of electrical power, and transmission pipeline distance.

Following the on-site inspection, I will make my recommendations in a report that will document my findings and conclusions. Selected well sites will be prioritized where possible, and will be located on a topographic map of the area, as well as on copies of the aerial photographs.

2. Well Construction and Pump Testing

It is most helpful if I can be present during the drilling to evaluate the geologic nature of the fractures encountered at depth. This permits me to determine how deep the well should be drilled, and if necessary, where a subsequent well should be drilled. If you desire this service, I will mobilize to the selected well site with the drilling contractor and overseen his work. I will maintain a geologic log of the well including fracture depths and yields. Based on my observations, I will determine well depth and subsequent well location as necessary to locate the desired supply of potable groundwater.

If pump testing is needed to determine the hydraulic characteristics of the well, or to gain approval of the water source, I will work with the drilling contractor to complete a step-drawdown pumping test followed by a 3-day constant rate pumping test. Water samples will be collected for laboratory analysis of all required parameters. I will analyze the pumping test and water quality data and prepare a report that meets the engineering and regulatory requirements.

COSTS

The work required to complete task 1, as described above, is well enough defined at this point for me to give a lump sum charge of $3,500. The remaining work will be completed on a time & materials basis using our standard rates. My estimated charge for the well construction, pump testing, and hydraulic analysis tasks are as follows:

-Oversee well construction (assume two wells drilled in one week)	$6,800
-Assist with pumping test	$2,300
-Analysis and report	$2,400

An alternative approach is for me to do just a "desk top" job with you furnishing the necessary topographic maps and aerial photographs, and you doing the on-site inspection work yourself. I will do this limited scope for a lump sum of $1,200.

QUALIFICATIONS

I have completed numerous groundwater supply development projects over the last 25 years. This experience has given me a good degree of expertise in locating high-yielding wells in the crystalline rocks that underlie much of the Northeast and most definitely Whiteface Mountain. I also have years of experience in the location of high-capacity wells in glacial sand & gravel deposits.

Attached you will find a list of projects, almost all of which were completed by me, and a list of project references, including several from New York State who you may wish to contact. I am currently working in Wilmington, NY to locate a new municipal supply. We are about to initiate test drilling at a gravel aquifer location. In Keeseville, I just completed the 6-inch diameter test drilling phase of an effort to locate a new municipal well to replace or supplement their current reservoir source. The effort was successful with the location of a 6-inch test well yielding 200 gpm. Also in Black Brook we are about to construct a second production well in a deep gravel deposit where a 6-inch diameter screen well I located yields more than 100 gpm.

Specifically for work at ski areas, I have located the high-capacity pubic water supply wells up on the mountain at Sugarloaf USA, and several condominium wells at Sunday River, both of which are in northwest Maine. Closer to you, I located the new municipal wells that will serve Lyon Mountain up on the side of Lyon Mountain itself. All of these mountain wells are drilled into fractured crystalline bedrock.

Thank you for requesting this proposal. Please call me with any questions you or others may have.

Sincerely yours,
Jacques Whitford Company, Inc.

Brad Caswell

Brad Caswell, Ph.D.
Senior Scientist

American Institute of Hydrology
Certificate Number
195
W. Bradford
Caswell
Professional Hydrogeologist

APPENDIX G

PRODUCT INFORMATION

1. Water Filtration Equipment
2. Grinder Pump
3. Effluent Filters by "Zabel"
4. Effluent Piping by "Poly-Therm"
5. Composting Toilets by "Clivus"

1. WATER FILTRATION EQUIPMENT

FAX - 518. 371. 4356

From: chuck kolstad <kolstad@frontiernet.net>
To: rochester@powers.com <rochester@powers.com>
Cc: kolstad2@frontiernet.net <kolstad2@frontiernet.net>
Date: Sunday, November 28, 1999 4:10 PM
Subject: White Face Mountain Gondola Station

---

28 Nov '99
Ivan ,

For surface water (or, under the influence of...), I would recommend that a two train, each 100% (at 20 gpm process flow rate) filtration system; process train to consist of:

Twin 30" diameter multi layer, backwashable pressure filters
series installed, twin 24" diameter, pressure, backwashable, diatomite (DE) filters
then, series installed, twin cartridge type barrier filters.
Budget for the preceding equipment, no installation is ~$35,000.00

The above system to supply a finished water storage tank with chlorination and retention provisions. The potable water pumping system to be capable of backwashing the multi layer filters and supplying the facility. In addition to finished water storage, you may want a storage for the filter waste water as well.

If you are able to locate a good source of ground water, it may only require iron and manganese removal; budget ~ $15,000.00 for the manganese greensand filtration; you'll still require the finished water storage and backwash systems.

Ivan, let me know if you would like more information.

Chuck Kolstad

SEPARMATIC FILTER COMPANY
DIVISION OF SEC CORPORATION
7628 WEST FLORIST AVENUE
MILWAUKEE, WISCONSIN 53218-1796
(414) 466-5200
FAX 414-466-5258

FILTRATION THEORY

The diatomite filter depends on a mechanically formed mat of interlaced diatomaceous earth particles. This mat is supported on filter elements constructed of interlocking high impact thermoplastic discs covered with a fine mesh fabric screen with stainless steel end pieces.

Water velocity and the tendency of diatomite particles to interlace, hold the mat on the filter elements. Design and construction of the diatomite filter require continuous flow through the filter once the mat of diatomaceous earth has been applied to elements. If this is not done, the mat (or cake) will not adhere to the elements and they will be left unprotected. Suspended solids (hereafter referred to as turbidity) will then either pass through or be deposited on elements. Eventually elements will become clogged due to build-up of turbidity within the element openings and will require cleaning.

An initial filtering mat of diatomaceous earth, known as precoat, is placed on the elements at the start of a filter run. A predetermined amount of diatomaceous earth is placed in the open water filled precoat tank with mixer and the solution is allowed to mix well. The precoat pump is started, the precoat valve opened, and the mixture is pumped into the bottom of the filter vessel. When the filter tank is full, water will flow back into the precoat tank.

The water is then recirculated through the filter and precoat tank until the diatomite is caught on the surface of the elements and builds up an initial porous mat of interlaced diatomite particles presenting a surface composed of a great number of microscopic openings.

At the beginning of a filter run, the precoat surface is porous. However, if turbid water is passed through continuously, turbidity will accumulate on the precoat outer surface forming a impervious surface, gradually stopping the flow of water. The rate at which pores will clog depends upon the amount and type of turbidity in the water being filtered and the filtration rate. In most cases, pores will clog in a short time.

To keep the coat porous and permit much longer filter runs at equal flow rates, additional diatomite is introduced into the water continuously throughout the run. This continuous feed of filter-aid slurry is known as body feed.

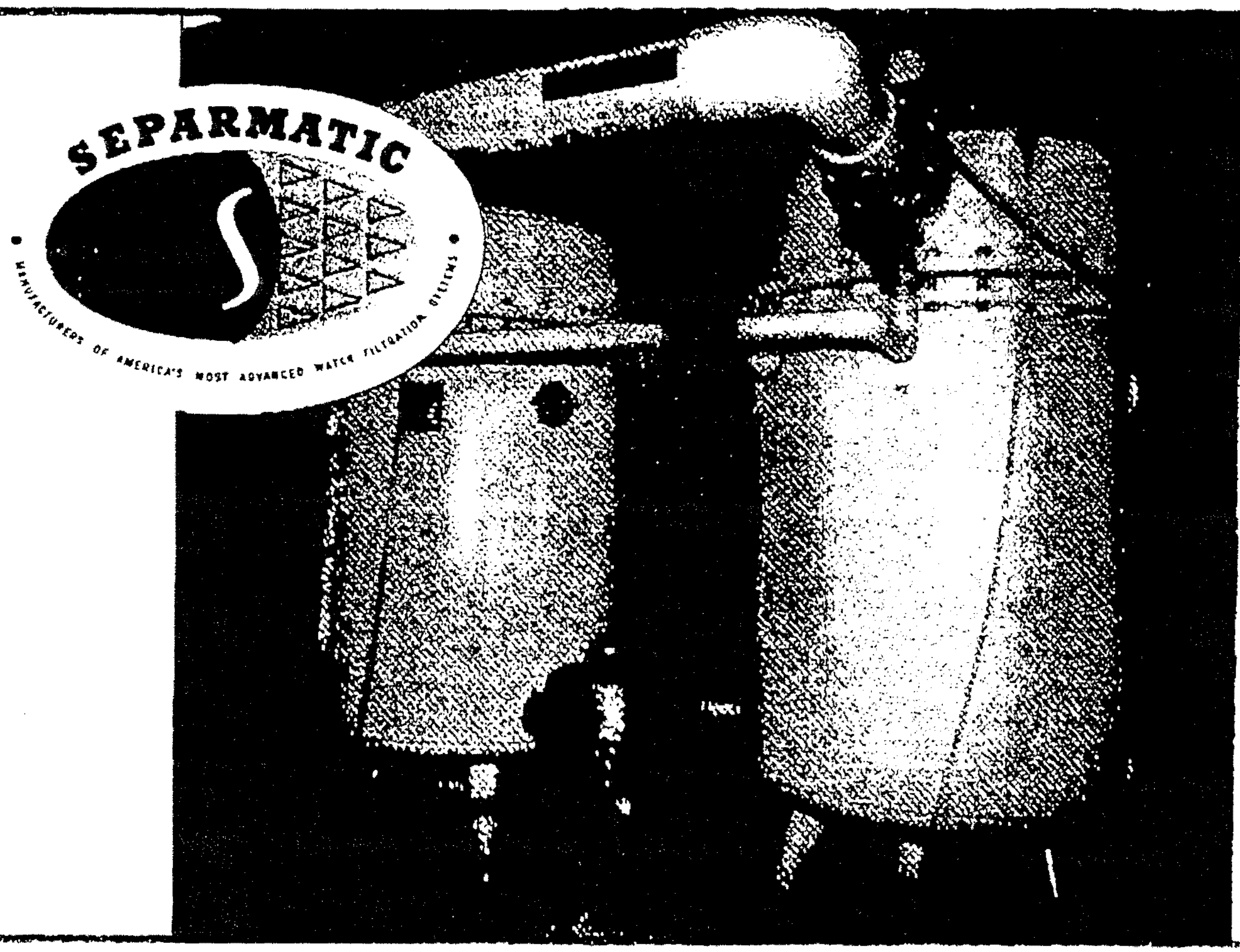
As water flows through the filter, it encounters resistance in passing through the many small openings between diatomaceous earth particles. As filter cake increases in thickness during the filter run, this resistance (known as pressure loss) also increases.

Pressure differential, measured in pounds per square inch, is read directly from the two pressure gauges on the influent and effluent of the filter. Depending upon the particular system, this pressure loss should not be allowed to exceed approximately 25 PSI. When this pressure differential is reached, it is time to clean the filter.

SEPARMATIC

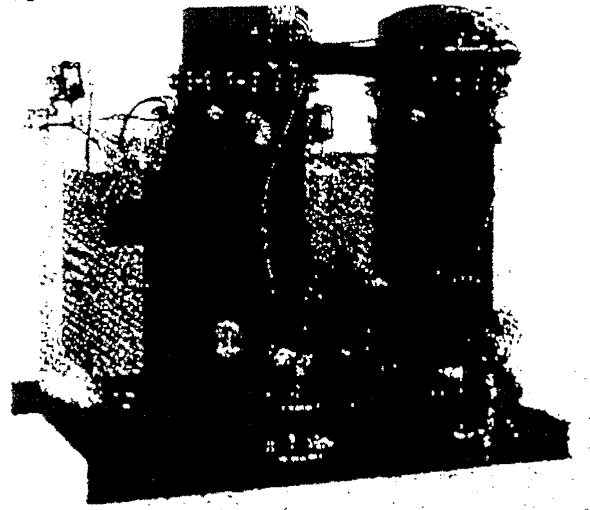
DIATOMITE PRESSURE

WATER FILTERS



APPLICATIONS

- SWIMMING POOLS . . . for Top Efficiency
- PROCESS WATER . . . for High Polish Water
- CONDENSATE . . . for removal of Oil and Suspended Metal Oxides
- OIL FIELD FLOODING . . . for High Clarity Injection Water
- COOLING TOWERS . . . to Remove Suspended Solids
- POTABLE WATER . . . for Consistent Quality



TYPICAL FILTER INSTALLATIONS

Serving faithfully wherever top quality filtered water is needed.

For attention-free operation, any system may be automated with special automatic controls

OPERATING FEATURES AND "HOW IT WORKS"

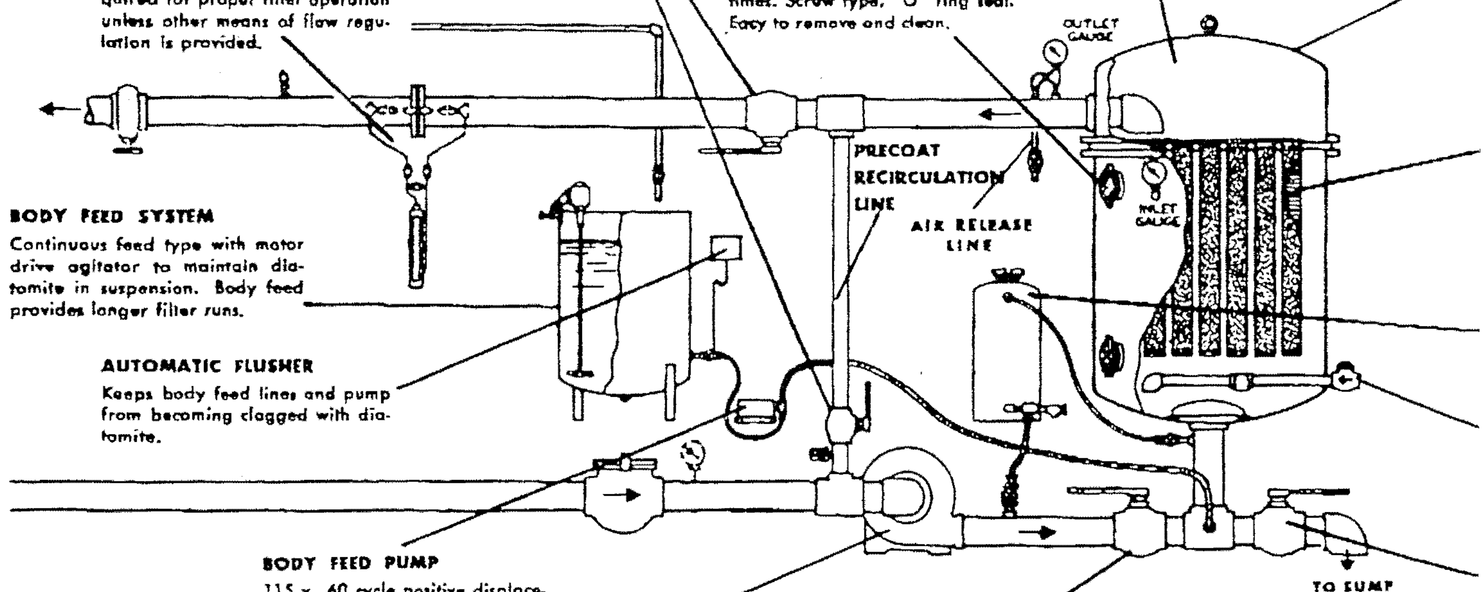
PRECOAT VALVE
Single lever valve open only during the precoat recirculation period.

FILTER OUTLET VALVE
Single lever valve normally used to regulate flow through filter. Fully closed during precoating, "air-bump", backwashing and cleaning the filter.

AIR DOME
Air, trapped here under pressure, supplies the energy for a vigorous "Air-bump" backwash that ejects the filter cake from the septum. A very high reverse flow is obtained that is many times more effective than an ordinary water backwash.

FLOW METER
For an accurate visual measurement of the filtration rate. Required for proper filter operation unless other means of flow regulation is provided.

INSPECTION PORT
Permits seeing into filter at all times. Screw type, "O" ring seal. Easy to remove and clean.



BODY FEED SYSTEM
Continuous feed type with motor drive agitator to maintain diatomite in suspension. Body feed provides longer filter runs.

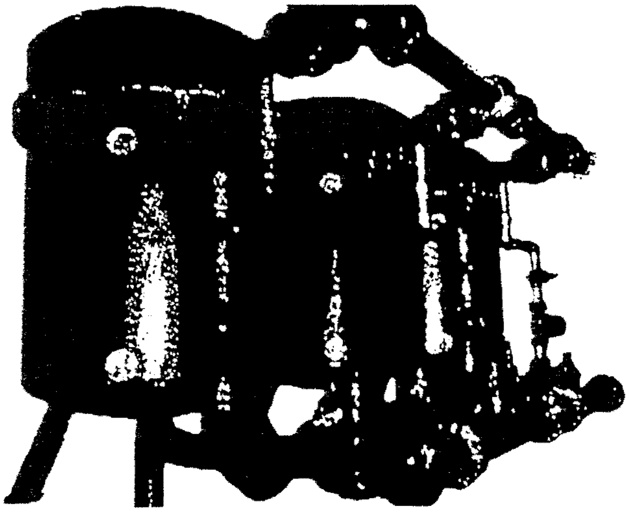
AUTOMATIC FLUSHER
Keeps body feed lines and pump from becoming clogged with diatomite.

BODY FEED PUMP
115 v., 60 cycle positive displacement type with adjustable feed.

HOLDING PUMP (not shown)
On filter installations where the raw water is entering the system under pressure greater than 40 p.s.i., the filter pump may not be necessary. For this type of installation a holding pump is installed in the pre-coat recirculation line to assist in pre-coating and in maintaining flow through the filter at all times. The latter is necessary to hold the filter cake intact on the septum when there is no flow demand.

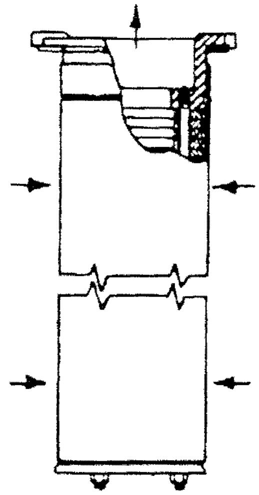
FILTER PUMP
Centrifugal pump sized for 60 foot minimum total head at filter design flow and 90 foot minimum head at shut-off.

FILTER INLET VALVE
A single lever valve, wide open during filtering, closed during backwashing. With a pressure type precoat tank this valve is partially closed for a few minutes to force water through the precoat tank and then into the filter.



Multiple units may be combined to provide flexibility for any requirement.

DURABLE PLASTIC TUBULAR ELEMENTS (SEPTUM)



LIFETIME PLASTIC DISC CORE — Tough, durable, will not corrode. Lasts a lifetime.

PLASTIC CLOTH SLEEVE — Seamless orlon or polyethylene. Flexible, strong, woven inert materials that will not corrode, rot or mildew. Flex in tight against the core during the filter run, then flex out with the air bump backwash. This vigorous action "pops-off" the filter cake and keeps the fabric mesh open and clear. This means longer filter runs.

REMOVABLE — Each septum removable without moving the tube sheet.

LIGHT WEIGHT — Only 10 lbs. for a 3 foot length. Easy to handle. Lower shipping costs.

STAINLESS STEEL TIE RODS — Eliminates corrosion and rust.

LONGER, MORE EFFICIENT FILTER RUNS

FILTER TANK
Heavy gauge steel, 100 psi working pressure, 150 psi test pressure. Interior and exterior sandblasted, then three coats of epoxy resin for temperatures up to 140° F. Above 140° F. special coatings are available.

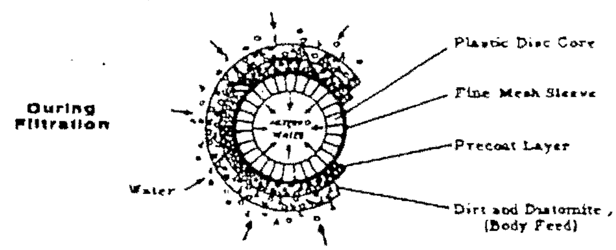
SEPTUM
Features a patented, rigid, lifetime plastic disc core covered with a fine mesh polyethylene sleeve. These plastic materials will not corrode and are easily cleaned. Sleeve may be easily removed and replaced when required.

PRECOAT TANK
By means of this tank diatomite is introduced into the filter to precoat the septum before actual filtration begins.

AIR-VAC SYSTEM
Vigorous air agitation while draining the tank after the "air-bump" provides additional cleaning and flushing action.

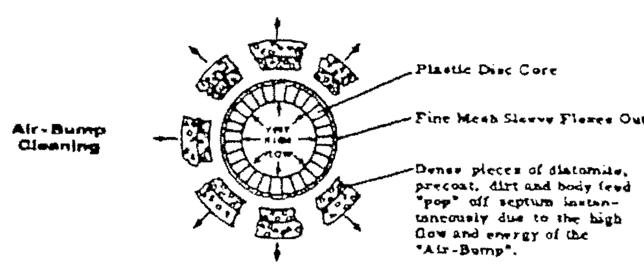
AIR-BUMP BACKWASH VALVE
Quick opening lever operated valve allowing an explosive reverse flow to the drain. Results in rapid, effective septum cleaning.

THE FILTER ACTION



The filter elements are given a diatomite precoat before the filter run. Water pumped into the filter flows through the precoat layer, into the element, then out the top - filtered and crystal clear. To obtain maximum filter runs, additional "body feed" diatomite is fed continuously into the filter. This prevents plugging and keeps the diatomite layer porous for proper filtering action.

AIR-BUMP AND AIR-VAC CLEANING



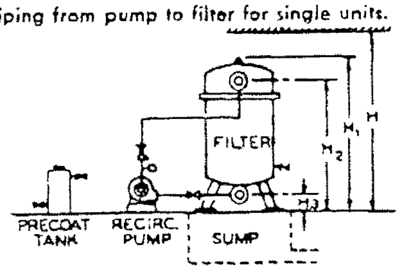
Instead of ordinary backwashing, which is often ineffective, Separmatic filters use the "AIR-BUMP" principle. Air, trapped in the filter dome, is released suddenly to provide a high energy, reverse flow through the filter. This action effectively pops off the dirty filter cake. During cleaning, the "AIR-VAC" system allows air to enter the tank, producing a vigorous scrubbing action on the surface of each filter element.

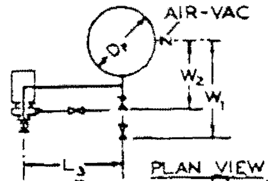
STANDARD SIZES

FILTER INCLUDES:
1. Filter tank complete with tubular elements (type must be specified).
2. Operating valves.
3. Air-Vac system.
4. Pressure gauges, air relief line, sight gauge.
5. One pre-coat tank with piping.
6. Piping from pump to filter for single units.

ITEMS NOT FURNISHED
1. Connecting pipe headers for multiple units.
2. Interconnecting piping for precoat recirculation lines on multiple units.

ADDITIONAL ITEMS AVAILABLE
1. Filter pump (minimum total head not less than 60 ft. at design flow and 90 ft. at shut-off). Power 3/60/208, 220-440 Vac.
2. Holding Pump and automatic flow controller. Power 1/60/110 Vac.
3. Body Feed System. Power 1/60/110 Vac.
4. Flow meter.

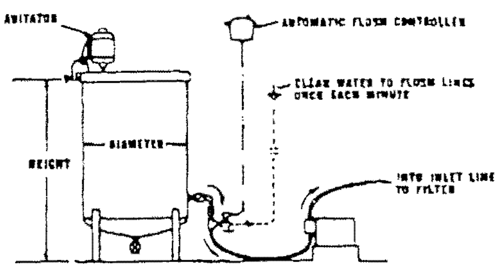




NOTES:
* May be arranged in multiple systems.
† Add 6 in. to D_T to obtain overall diameter.
‡ Sump should be located as close to filter drain as possible. Depth should not be less than filter diameter D_T.

Single Pressure Filter *	Total Filter Area Sq. Ft.	Septum Length Inches	Septum Number	Filter Tank Dia. D_T† Inches	Minimum Head Room H Ft.-In.	Approximate Dimensions in Ft.-In. H_1	H_2	H_3 Inches	L_3	W_1	W_2	Valve Size Inches (S-Screwed, F-Flanged) No. 1 Outlet	No. 2 Precoat	No. 4 Drain	Precoat Tank Dia. x Ht. Inches	Precoat Tank Volume Gal.	Approx. Shipping Wt. Lbs.	[illegible]
18P-24	24	36	8	18	7-9	5-10	4-10	3½	2-3	1-9	2-0	2S	1S	2S	8 x 12	2.6	360	
24P-36	36	36	12	24	8-0	6-5	5-2	5	2-6	2-3	2-7	2½S	1¼S	2½S	10 x 18	6	695	
24P-45	45	36	15	24	8-0	6-5	5-2	5	2-6	2-3	2-7	2½S	1¼S	2½S	10 x 18	6	695	
30P-69	69	36	23	30	8-3	6-9	5-4	5½	3-0	2-8	2-11	3S	1½S	3S	10 x 18	6	960	1
36P-90	90	36	30	36	8-5	7-0	5-8	6	3-6	3-6	3-0	4F	2S	4F	12 x 24	12	1425	2
36P-111	111	36	37	36	8-5	7-0	5-8	6	3-6	3-6	3-0	4F	2S	4F	12 x 24	12	1425	2
42P-132	132	36	44	42	8-9	7-5	6-1	7	3-9	4-1	3-6	5F	2S	6F	14 x 30	20	2175	2
42P-144	144	36	48	42	8-9	7-5	6-1	7	3-9	4-1	3-6	5F	2S	6F	14 x 30	20	2175	2
48P-171	171	36	57	48	8-10	7-7	6-3	7	3-9	4-4	3-9	6F	2½S	6F	14 x 30	20	2810	3
48P-192	192	36	64	48	8-10	7-7	6-3	7	3-9	4-4	3-9	6F	2½S	6F	14 x 30	20	2810	3
48P-224	224	42	64	48	9-10	8-1	6-9	7	3-9	4-4	3-9	6F	2½S	6F	14 x 30	20	2990	4

BODY FEED SYSTEM



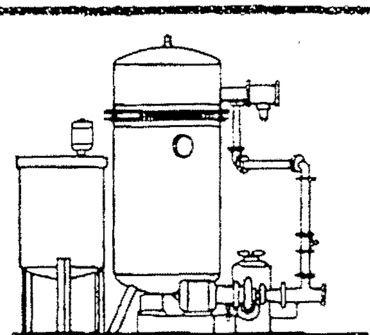
BODY FEED SYSTEM INCLUDES:
1. Body Feed Tank
2. Agitator
3. Body Feed Pump
4. Automatic Flush System
5. Necessary Tubing

SELECT the BODY FEED TANK and BODY FEED PUMP based on the TOTAL FILTER FLO

SIZING BODY FEED TANK AND BODY FEED PUMP

Total Flow of Filter System GPM	Use Body Feed System	Body Feed Tank Dia.	Body Feed Tank Ht.	Body Feed Pumping Rate * G.P.H.
35 to 500	C-474-1	24″	48″	1.8
505 to 1000	C-482-2	30″	54″	3.5
1005 to 1430	C-482-3	36″	54″	5.1
1435 to 2000	C-482-4	42″	54″	7.0

*Feed pump selected must have this capacity or greater.



AVAILABLE SKID MOUNTED FOR PORTABILITY

ALSO AVAILABLE FROM SEPARMATIC . . . A COMPLETE LINE OF VACUUM DIATOMITE AND PRESSURE SAND WATER FILTERS.

Write or call for information.

Manufactured and sold by:
SEPARMATIC FILTER COMPANY
DIVISION OF SEC CORP.
7628 W. Florist Ave., Milwaukee, WI 53218 (414) 466-5200 FAX (414) 466-5258

NOV-29-1999 14:40 FROM

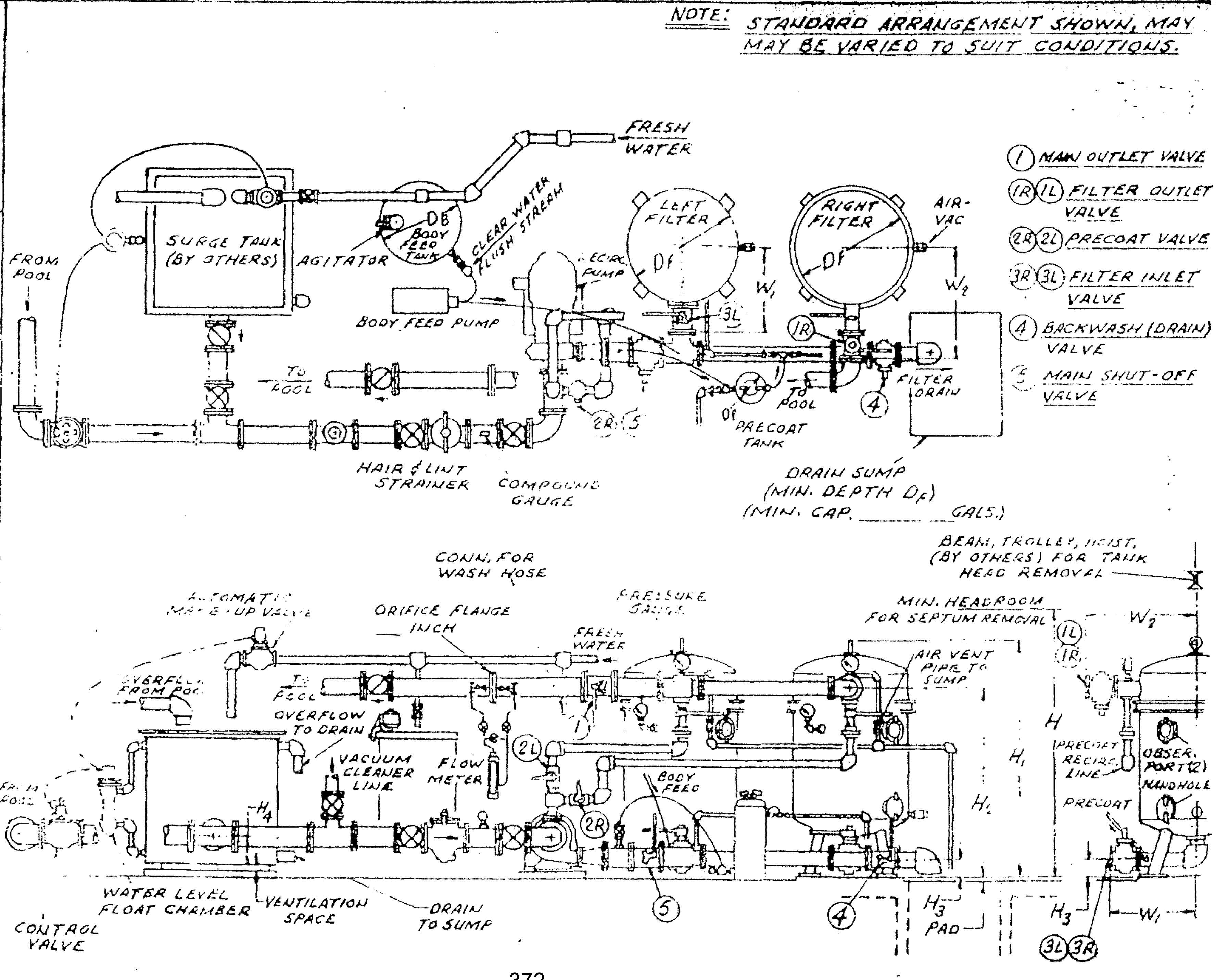
SURGE TANK SYSTEM
ELECTRICALLY
ACTUATED
FLANGED PIPING
PROPOSAL NO.

TWIN UNIT
PRESSURE DIATOMITE FILTER SYSTEM

SEPARMATIC FILTER COMPANY
MILWAUKEE WISCONSIN

DWG. NO.
A. 770 1?7

TOTAL P.007



2. GRINDER PUMP

EMMONS PUMP & CONTROL, INC

Emmons Pump & Control, Inc.

14 Arch Street, Watervliet, NY 12189
Telephone: 518-271-2580 Fax: 518-271-2582

DISTRIBUTORS / REPRESENTATIVES OF QUALITY PUMP PRODUCTS

FAX TRANSMISSION

DATE: 12-22-99

COMPANY: ____________

TO: Ivan

FROM: TIM SWAISGOOD

PAGES: 3

381-4356

---

re:.

EMMONS PUMP & CONTROL INC

14 ARCH STREET
WATERVLIET, NY 12189
TELEPHONE 518-271-2580
FACSIMILE 518-271-2582

QQQQQQQQQQQQQQQ
Q I N V O I C E Q
QQQQQQQQQQQQQQQ

Quote Number: 949902

Date: 12/22/99

Page: 1

To: IVAN ZORAHAL ASSOCIATES
959 ROUTE 146
CLIFTON PARK, NY
12065

White Face Lodge
Job Name: IVAN ZORAHAL ASSOCIATES
959 ROUTE 146
CLIFTON PARK, NY
12065

Cust I.D.....: PC0055

Ship Via.: BEST WAY

Job/Order No.: 949902
Salesperson..: 1

Terms....: NET 30

Item I.D./Desc.	Quantity	Unit	Price	Net
51636-010-7 HYDROMATIC EXPLOSION PROOF GRINDER PUMP G2FX300JC, 230/460/3/60, 3 HP	2.00	EA	2950.0000	5900.00
EZ-OUT RAIL SYSTEM STEEL 0-RING TYPE SEALING FLG W/ GALV. STEEL RAIL GUIDE PLATE, C.I. BASE ELBOW W/ LOWER GUIDE RAIL SUPPORTS, UPPER & INTERMEDIAT RAIL SUPPORTS, LIFTING CHAIN	2.00	EA	656.0000	1312.00
GUIDE RAILS STAINLESS STEEL GUIDERAIL PIPING	40.00	EA	5.0000	200.00
CONTROL PANEL INTRINSICALLY SAFE DUPLEX CONTROL PANEL, AS DISCUSSED	1.00	EA	2900.0000	2900.00
CON2900-4FB FLOAT BRACKET-4-S.S.	1.00	EACH	45.0000	45.00
J-BOX INTRINSICALLY SAFE	1.00	EA	915.0000	915.00
OECJBS16/3 JUNCTION BOX SIMPLEX	1.00	EACH	47.0000	47.00

Continued ..

Subtotal: 11319.00

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Q Q
Q I N V O I C E Q
Q Q
QQQQQQQQQQQQQQQ

EMMONS PUMP & CONTROL INC

14 ARCH STREET
WATERVLIET, NY 12189
TELEPHONE 518-271-2580
FACSIMILE 518-271-2582

Quote Number: 949902

Date: 12/22/99

Page: 2

To: IVAN ZDRAHAL ASSOCIATES
959 ROUTE 146
CLIFTON PARK, NY
12065

Job Name: IVAN ZDRAHAL ASSOCIATES
959 ROUTE 146
CLIFTON PARK, NY
12065

Cust I.D.....: PC0055

Ship Via.: BEST WAY

Job/Order No.: 949902
Salesperson..: 1

Terms....: NET 30

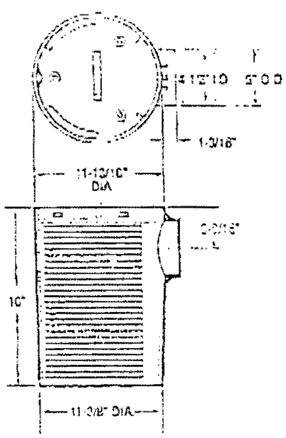
Item I.D./Desc.	Quantity	Unit	Price	Net	T
Freight				200.00	
START-UP ONE DAY OF PUMP START UP	1.00	EA	250.0000	250.00	

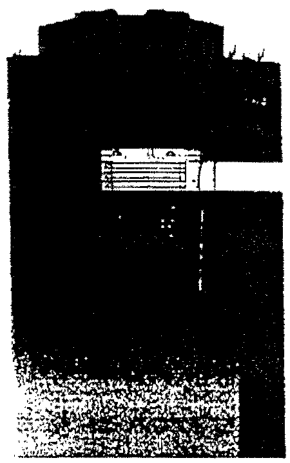
THESE PRICES ARE BASED UPON PREVIOUS DIS
CUSSIONS AND ARE AN ESTIMATE. PRECISE
BIDDING WILL BE PERFORMED AT LATER DATE

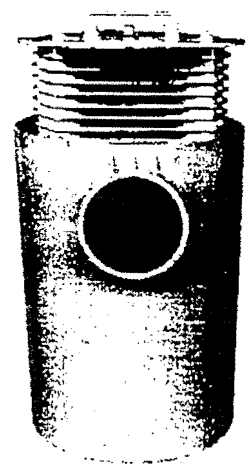
Subtotal: 11769.00
Tax......: 0.00
Total...: 11769.00

3. EFFLUENT FILTERS BY "ZABEL"

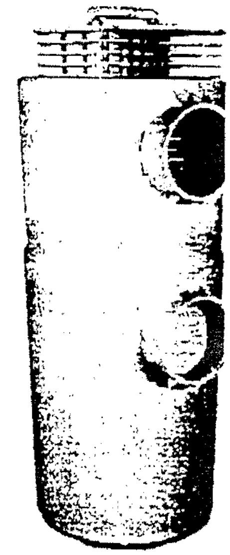
A100s



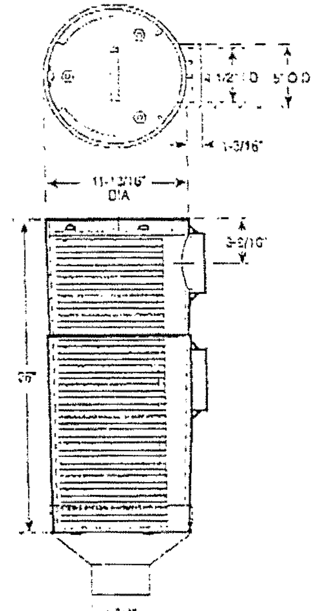


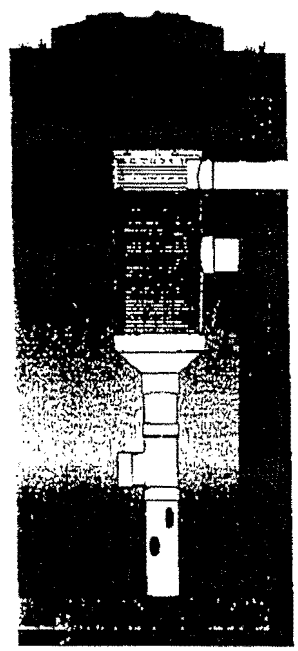


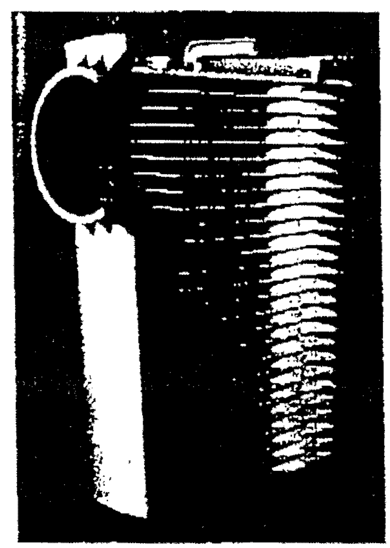
A100



A100-HIP







Zabel™ Recommendation: Any configuration of Risers used **should not** exceed 48" in height.

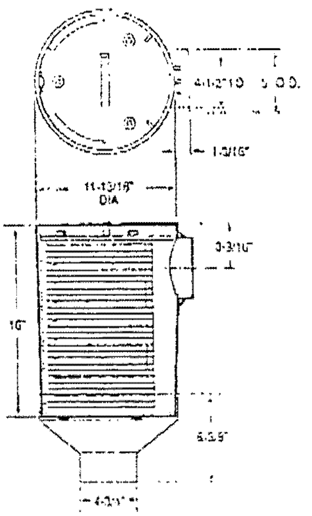
The product(s) shown are covered by one or more of the following patents:
U.S. 5,382,357, 5,482,621, 5,683,577, 5,580,453, 5,582,716, 5,591,331, 4,710,295, 5,593,584,
U.S. Des. 386,241,349067, 4605501,5098563, Des. 309007, Canadian: 2,135,937 New Zealand: 2648
Other Patents Pending

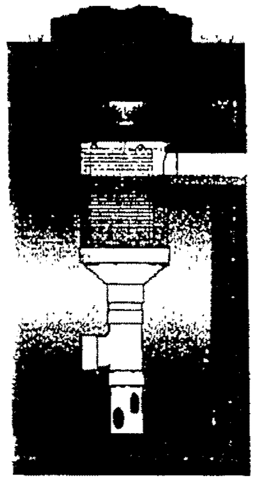
Zabel™ A100 Series
Commercial & Residential Effluent Filter
Product Specification

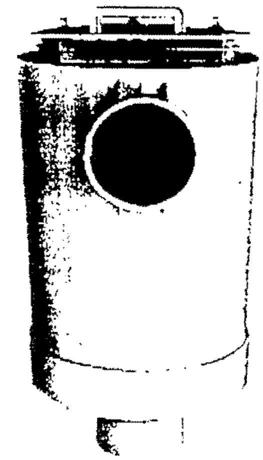
1. Product Name: Zabel™ A100 Commercial & Residential Effluent Filter, U.S. Patent: 4,710,295
2. Model Numbers: A100 Case & Cartridge; A101 Cartridge Only; A100-HIP Case & Cartridge; A101-HIP Cartridge Only
3. Applications: Apartments, trailer parks, schools, churches, shopping centers, and offices; Septic dump stations and community treatment plants; Single and Multi-family homes
4. Performance Specification
   - 4.1. Model A100: 3,000 gpd
   - 4.2. Model A100-HIP: 4,500 gpd
   - 4.3. Multiple filters may be installed in manifolds to handle larger flows. Use a Zabel Flow Control Plate Model FC100 to set the effluent flow to predetermined limits.
   - 4.4. TSS: Reductions in TSS within six months of installation - 50 to 90 percent. The higher the pre-filtered TSS the greater the percentage of reduction.
   - 4.5. BOD_5: Reduction in BOD_5 within six months of installation - 20 to 45 percent is dependent on the make-up of the wastewater.
5. Materials: All materials are non-corrosive. Case & Lid - PVC; Filter discs - Polystyrene; Rods and Nuts-Stainless Steel
6. New System Installation: Center the top of the 12 inch Filter Case under an outlet access opening at least 16 inches in diameter. PVC solvent weld the bell coupling to the 4 inch Schedule 40 PVC exit pipe of the tank as required by local code. The PVC outlet pipe should extend at least 18 inches beyond the outside face of the tank wall. If required to meet depth requirements, install a Zabel™ Extension Reducer and 4-inch Schedule 40 pipe to the bottom of the filter case. A riser to grade is recommended. High performance double stack (Model A100-HIP) filters and multiple filters installed in manifolds will require additional support and access.
7. Existing System Installation: The filter may be installed in an existing septic tank if an outlet access opening already exists and the filter can be installed without damaging the existing tank. If a 4-inch Schedule 40 PVC pipe does not extend into the tank, the filter can be installed utilizing a plumbing flange. If the existing septic tank cannot be used, the filter can be installed using a Zabel™ Container Assembly Model CA100 or Zeus™ Basin System.
8. Service: A professional onsite service company should perform all onsite system service.
9. Service Method: Grasp the filter handle and pull the filter cartridge upward. A Zabel™ 36" T-Handle is available if required to reach filters more than 12 inches below grade. Hose off the cartridge into the tank and reinsert into the case. If required, the filter may be disassembled for further cleaning.
10. Service Frequency: The filter requires cleaning when the septic tank is normally inspected and pumped as required by local regulation. The A100s are designed to slough most normal solids off the inside of the vertical disc dam walls and back into the tank when the effluent flow is in a resting state. Installation of an effluent filter may increase the frequency of service if the homeowner discharges materials that are harmful to the system.
11. Warranty: The A100s are warranted to be free from defects in material and workmanship for the life of the original purchaser. Zabel's™ liability is limited to repair or replacement of the part and in no event shall Zabel™ be liable for any consequential damages of any kind.
12. Dimensions:

Model	Diameter	Height	Filtration	Settling Area	Total Filter Surface	Lineal Feet of Weir
A100	12"	16"	1/16"	596.16 in²	1,857.6 in²	198
A100-HIP	12"	26"	1/16"	1,018.08 in²	2,908.8 in²	297

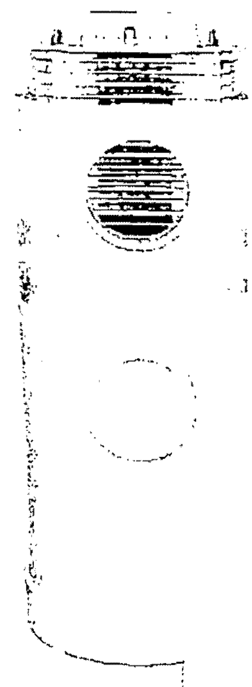
A300s



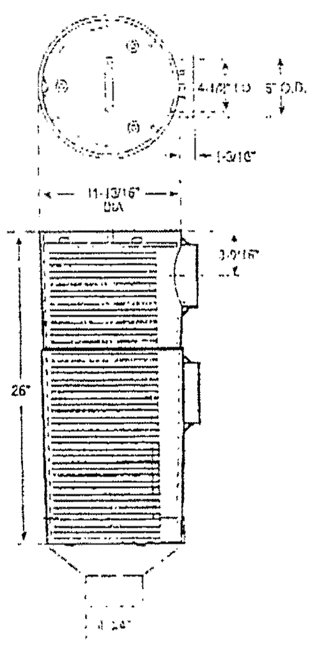


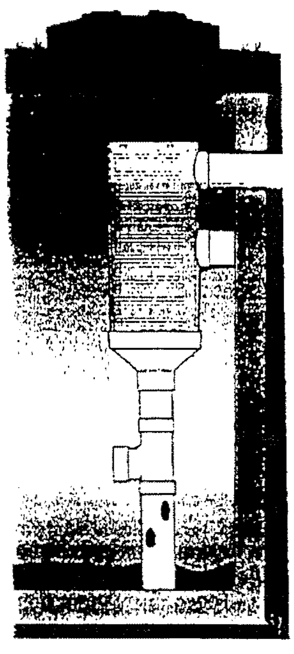


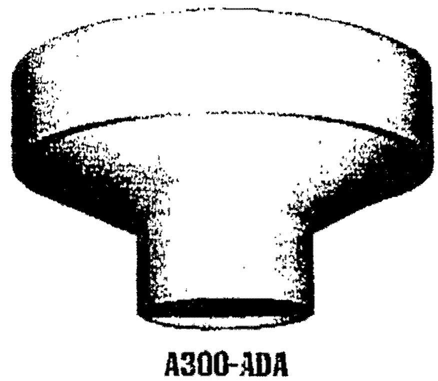
A300



A300-HIP







A300-ADA

Zabel™ Recommendation: Any configuration of Risers used **should not** exceed 48" in height.

The product(s) shown are covered by one or more of the following patents:
U.S. 5,382,357, 5,482,621, 5,683,577, 5,580,453, 5,582,716, 5,591,331, 4,710,295, 5,593,584,
U.S. Des. 386,241,349067, 4605501,5098568, Des. 309007, Canadian: 2,135,937 New Zealand: 26482
Other Patents Pending

Zabel™ A300 Series High Strength Industrial & Commercial Effluent Filter Product Specification

1. Product Name: Zabel™ A300 Industrial & Commercial Wastewater Filter, U.S. Patent: 4,710,295
2. Model Numbers: A300 Case & Cartridge & Reducer; A301 Cartridge Only; A300-HIP Case & Cartridge & Reducer; A301-HIP Cartridge Only
3. Applications: Grease: restaurants; Hair: dog kennels, beauty shops, zoo facilities; Lint: Laundromats; Food processing: wineries, bakeries; Animal wastes: poultry, hog & cattle farms; Apartments, trailer parks, schools, churches, shopping centers, and offices; Septic dump stations and community treatment plants; Single and Multi-family homes
4. Performance Specification
   - 4.1. Model A300: Maximum daily flow - 3,000 gpd
   - 4.2. Model A300-HIP: Maximum daily flow - 4,500 gpd
   - 4.3. Multiple Filters may be installed in manifolds to handle larger flows than those shown above. A Zabel™ Flow Control Plate Model FC100 is available to set the effluent flow of a single filter to pre-determined limits.
   - 4.4. TSS: Reductions in TSS within six months of installation - 50 to 90 percent. The higher the unfiltered TSS, the greater the percentage of reduction.
   - 4.5. BOD_5: Reduction in BOD_5 within six months of installation - 20 to 45 percent is dependent on the make up of the wastewater.
5. Materials: All materials are non-corrosive. Case & Lid - PVC; Filter discs - Polystyrene; Rods and Nuts-Stainless Steel.
6. New System Installation: Center the top of the 12 inch Filter Case under an outlet access opening at least 16 inches in diameter. PVC solvent weld the bell coupling to the 4 inch Schedule 40 PVC pipe of the tank as required by local code. Add 4 inch Schedule 40 pipe to the bottom of the reducer as needed. The PVC outlet pipe should extend at least 18 inches beyond the outside face of the tank wall. A riser to grade is recommended for all commercial and industrial installations. All filters installed in grease interceptor tanks **will require** additional support.
7. Existing System Installation: The filter may be installed in an existing tank if an outlet access opening already exists and the filter can be installed without damaging the existing tank. The filter can also be installed utilizing a plumbing flange. If the existing tank cannot be used, the filter can be installed in existing systems using a Zabel™ Container Assembly Model CA100 or ZEUS™ Basin System.
8. Service: A professional onsite service company should perform all onsite system service.
9. Service Method: Grasp the filter handle and pull the filter cartridge upward. A Zabel™ 36" T-Handle is available if required to reach filters below grade. The filter may be cleaned with a steam wand, chemical degreaser or disassembled for further cleaning.
10. Service Frequency: The A300s are designed to be installed in high strength waste applications. Each application will have to be monitored to determine proper service cycles. See article on "Restaurant Applications for Zabel™ Filters" for recommended guidelines in the Spring/Summer 97' issue.
11. Warranty: The A300s are warranted to be free from defects in material and workmanship for the life of the original purchaser. Zabel's™ liability is limited to repair or replacement of the part and in no event shall Zabel™ be liable for any consequential damages of any kind.

10. Dimensions:

	Diameter	Height	Filtration	Settling Area	Total Filter Surface	Total Flow Area
A300	12"	18"	1/32"	624.69 in²	1,857.6 in²	206
A300-HIP	12"	28"	1/32"	1,067.04 in²	2,908.8 in²	312

55

A100/A300

Zabel™ Filter Installation

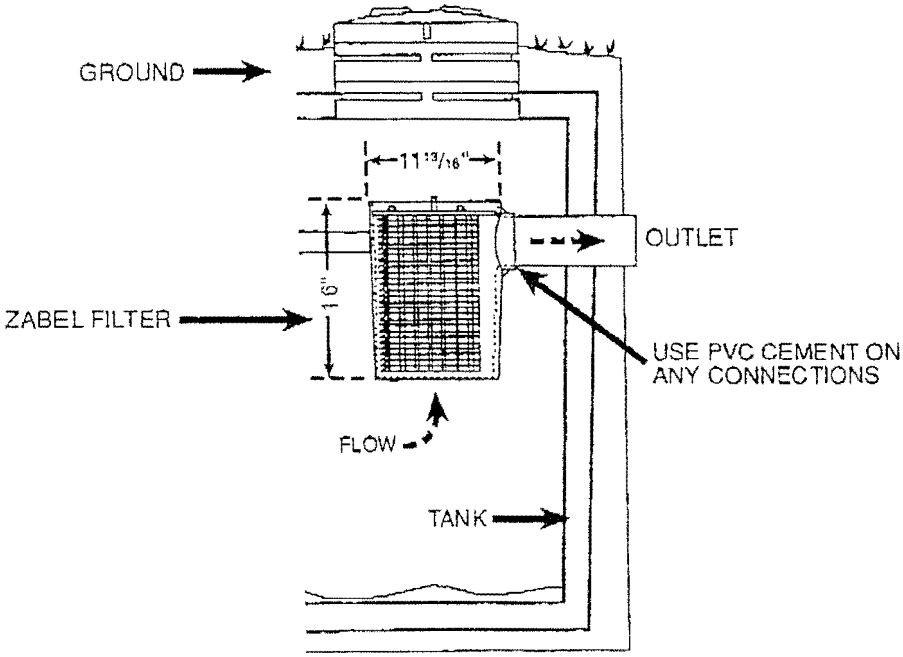
The Model A100/A300 Zabel Filter for commercial/industrial septic tanks is installed in place of the standard outlet tee.

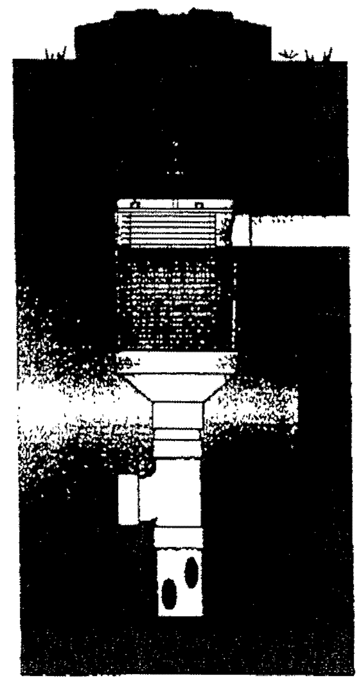
Securely fasten the bell coupling on the side of the filter case by a solvent weld connection to the Schedule 40 PVC plastic pipe which extends through the outlet opening of the septic tank. The Schedule 40 PVC pipe extending through the outlet opening of the tank should be at least 12" or more beyond the tank before being connected by an adaptor to the remainder of the system. This will suspend the filter inside the septic tank by the bell housing on the side of the filter case.

The top of the tank must have an opening 12" in diameter or larger to allow easy removal of the disc dam cartridge for cleaning. If the tank opening over the filter is the only access to the tank for pumping, it should be large enough in diameter to allow the tank to be pumped prior to removing the cartridge for cleaning.

Supplementary Support Method for Installing Zabel Filters:
Installing two or more Zabel Filters in one tank, 18 inches or more from the end of the tank or in high strength waste applications such as restaurants or dog kennels sometimes requires additional support to handle the weight of the filter. Supplementary support can be achieved by following these directions.

Solvent weld the reducer to the bottom of the filter case. Using two pieces of Schedule 40 pipe with an inverted Sanitary Tee located at the clear zone level, extend to the bottom of the tank for support. Make sure the pipe exiting the filter and extending through the tank wall is level. Cut four or more two inch holes in the PVC pipe below the Sanitary Tee to prevent sludge build up in the pipe.





A100/A300

Maintenance

The interval for servicing septic tanks is set by state and local code. Throughout the United States there is a wide divergence of opinion on what this interval ought to be, but most regulatory agencies suggest two to five years. The filter does not increase the frequency of servicing for the tank.

To service the filter, remove the tank cover located over the filter. Pump the tank prior to removing the disc dam cartridge for cleaning to prevent any solids from escaping to the field when the cartridge is removed.

Pull sharply on the lid handle and the disc dam cartridge will slide out of the case. In order to prevent contamination of the ground with septage, turn the cartridge sideways and lay it back in the opening. Now rinse off the cartridge with a garden hose or a fresh water tank hose from the truck, being careful to rinse all septage material back into the tank. It is not necessary that the filter be cleaned "spotless". The biomass growing on the filter aides in the pretreatment process and should be left on the discs.

On rare occasion then it will be necessary to dismantle the cartridge. If required, remove the nuts on the three bolts at the top of the lid and the cartridge can be easily disassembled for cleaning. After the cartridge is cleaned, and reassembled if necessary, place it back in the filter case. Be sure it is all the way in the case until it snaps into place. Replace the septic tank cover.

Easy to maintain • Ecologically Sound

• The filter is virtually self cleaning. The continued action of the anaerobic organisms on the filter discs causes lodged particles to disintegrate and fall to the bottom of the tank.

• The filter only requires servicing at the normal inspection and pumping intervals required of a standard septic installation.

• The filter cartridge is safely hosed off back into the tank by a qualified septic tank pumper.

The product(s) shown are covered by one or more of the following patents:
U.S. 5,382,357, 5,482,621, 5,683,577, 5,580,453, 5,582,716, 5,591,331, 4,710,295, 5,593,584,
U.S. Des. 386,241,349067, 4605501,5098568, Des. 309007, Canadian: 2,135,937 New Zealand: 264824,
Other Patents Pending

4. EFFLUENT PIPING BY "POLY-THERM"

L.J. EARLY CO., INC.

P.O. BOX 11059
ALBANY, NY 12211

MANUFACTURER'S REPRESENTATIVES

TELEPHONE: (518)-465-3566
FAX: (518)-465-9474

November 22, 1999

To: Ivan

From: Denis

Re: Whiteface Mountain

Ivan,

Per your request, we offer the following budget price.

Perma Pipe Polytherm Preinsulated Pipe with following Features and accessories:

- **2" Schedule 40 steel carrier pipe with 2" polyurethane foam insulation in a FRP jacket with special UV inhibitors**
- **Heat Trace**
- **Field Supervision**
- **Based on 40' lengths**

Budget Price $: 27/LF

Please call with any questions.

Thanks

POLY-THERM

**Fiberglass Jacketed
Polyurethane Insulated Piping System**

The premium quality performance piping system for the distribution of liquids from −250°F to 250°F.

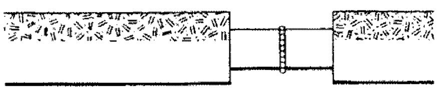
PERMA-PIPE

Standard Piece Option for Copper or Steel Piping
In the event that time constraints or field conditions prohibit the use of a fully pre-engineered piping system, POLY-THERM can be provided in standard straight lengths, and prefabricated fittings with fixed length tangents. Contact PERMA-PIPE for further information on this option.

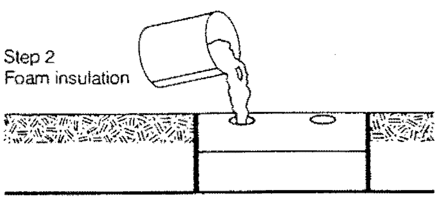
Electric Heat Trace (optional)

FIELD CLOSURE

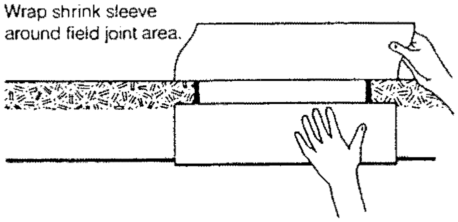
Step 1
Complete carrier pipe joint.

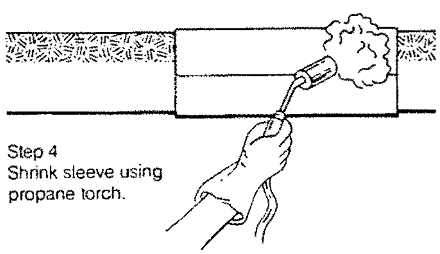


Step 2
Foam insulation



Step 3
Wrap shrink sleeve around field joint area.





Step 4
Shrink sleeve using propane torch.

RECOMMENDED POLY-THERM INSULATION AND JACKET THICKNESS

PIPE SIZE - (In)	1	1.5 - 3	4 - 6	8 - 14	16 - 18	20	22- 24
INSULATION THICKNESS - (In)	1	1.5	2	2.5	3	3	3.5
MINIMUM JACKET THICKNESS - (In)	.055	.055	.055	.085	.085	.110	.110

PHYSICAL PROPERTIES OF POLYURETHANE AND FILAMENT WOUND FRP

POLYURETHANE		FILAMENT WOUND FRP	
Flexural Strength ASTM D-790	25 PSI	Flexural Strength ASTM D-790	25,000 PSI
Compressive Strength ASTM D-1621		Compressive Strength ASTM D-695	60,000 PSI
a) Parallel to rise	17 PSI		
b) Perpendicular to rise	25 PSI	Tensile Strength ASTM O-638	20,000 PSI
K-factor ASTM C-518	.13 BTU-in / hr-sq ft-°F	Heat Distortion Temp ASTM D-648	250°F
Closed Cell ASTM C-2856	90–95% Min	Izod Impact	40-60 ft-lb / in-notch

COMPARISON OF HEAT TRANSFER FOR POLYURETHANE VERSUS OTHER INSULATIONS*

PIPE SIZE (in)		2	4	6	8	10	12	16	20	30	36
RECOMMENDED INSULATION THICKNESS (in)		1.5	2	2	2.5	2.5	2.5	3	3	3.5	4
HEAT TRANSFER BTU/HR/FT	URETHANE	14	18	24	25	30	35	36	43	54	57
	FIBERGLASS	23	30	40	40	48	54	59	71	87	92
	FOAMGLASS	36	47	62	62	75	84	91	108	134	141
	BARE PIPE	304	356	397	429	460	487	526	569	663	713

*Based on 200°F Service Temp. and 40°F ambient.

POLY-THERM®
SYSTEM FEATURES

Domestic Hot Water Systems
Geothermal Collection & Distribution
Waste Heat Recovery
Cryogenic Gas Piping
Solar Collection & Distribution
District Heating & Cooling
Process Fluid Transport
Fuel & Heavy Oil Transport
Condensate Return
Chilled Water Distribution

Filament-Wound Fiberglass Jacket

PERMA-PIPE's multi-directional filament winding process produces a high strength fiberglass-reinforced polyester resin jacket over the insulation for maximum insulation protection from the environment. PERMA-PIPE applies this high strength fiberglass jacket to systems having an outside insulation diameter as large as 48 inches. The POLY-THERM jacket is excellent for both belowground and aboveground installations as ultraviolet inhibitors can be added to the resin to retard U.V. degradation for aboveground applications.

Insulation Integrity

In contrast to poured in place insulated piping systems, the POLY-THERM spray process assures void-free insulation. By applying insulation before the jacket is applied, complete visual inspection of the insulation is performed, thus assuring void-free insulation and therefore maximum thermal efficiency to provide optimum performance of cryogenic and heat thermal distribution systems.

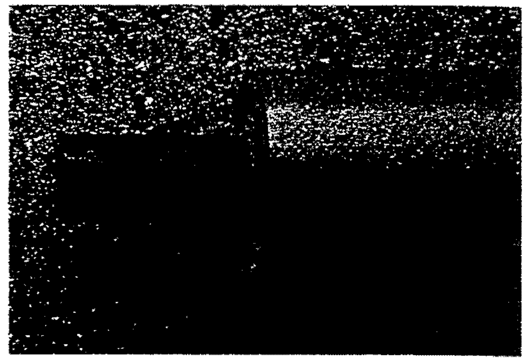
Piping Materials For Any Application

Steel, stainless steel, copper, ductile iron, HDPE, PVC, and FRP can all be supplied in the POLY-THERM system. These materials can be supplied in a wide range of sizes with your exact insulation thickness requirement to meet the need of your application.

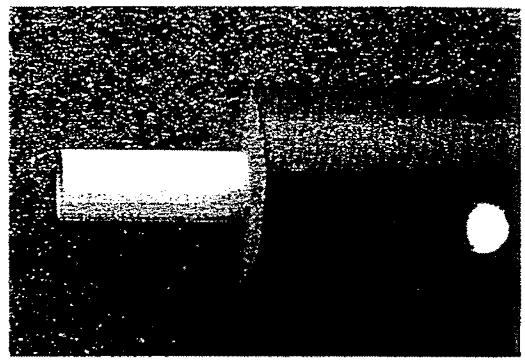
Fully Engineered

The POLY-THERM piping system is completely engineered by PERMA-PIPE's experienced engineering staff. Thermal stress, heat loss/gain, soil loading, and piece part layout are all completed by PERMA-PIPE. The POLY-THERM system is engineered to reduce field costs by providing custom made, factory fabricated, fittings to reduce field connections as compared to the field kit method. By using a factory engineered system, the contractor's time is spent installing pipe; not figuring out where the fitting should be installed and how much pipe to cut.

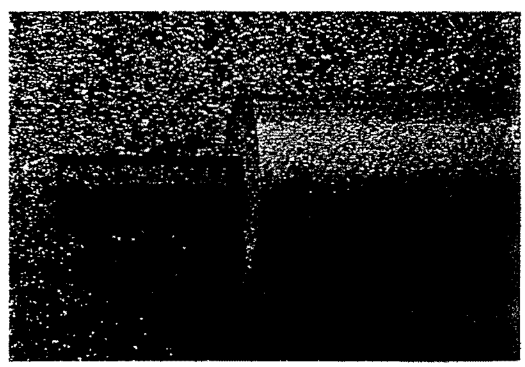
Steel POLY-THERM
The POLY-THERM steel system can be custom fabricated to job site dimensions.



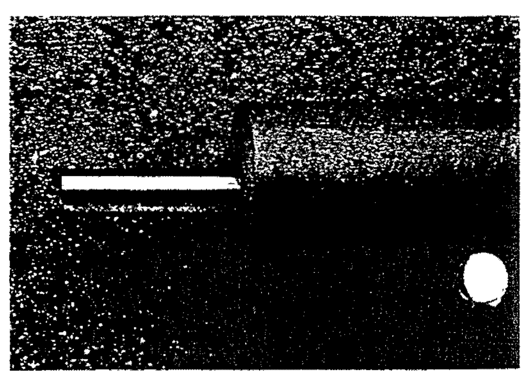
PVC POLY-THERM
POLY-THERM can be supplied with PVC pipe for chilled water applications



FRP POLY-THERM
For condensate return and low temperature hot water, POLY-THERM can be furnished with FRP carrier pipe.



Copper POLY-THERM
The POLY-THERM system can be supplied with Type K or L copper carrier pipe.



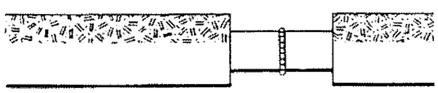
Standard Piece Option for Copper or Steel Piping

In the event that time constraints or field conditions prohibit the use of a fully pre-engineered piping system, POLY-THERM can be provided in standard straight lengths, and prefabricated fittings with fixed length tangents. Contact PERMA-PIPE for further information on this option.

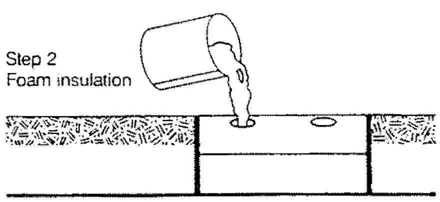
Electric Heat Trace (optional)

FIELD CLOSURE

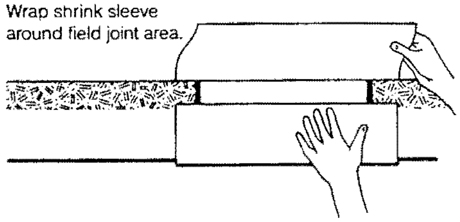
Step 1
Complete carrier pipe joint.



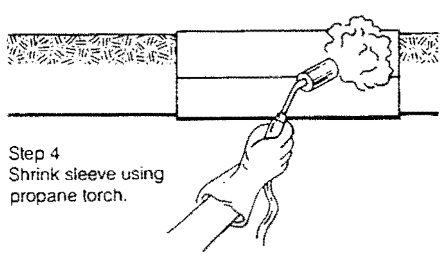
Step 2
Foam insulation



Step 3
Wrap shrink sleeve around field joint area.



Step 4
Shrink sleeve using propane torch.



RECOMMENDED POLY-THERM INSULATION AND JACKET THICKNESS

PIPE SIZE - (In)	1	1.5 - 3	4 - 6	8 - 14	16 - 18	20	22- 24
INSULATION THICKNESS - (In)	1	1.5	2	2.5	3	3	3.5
MINIMUM JACKET THICKNESS - (In)	.055	.055	.055	.085	.085	.110	.110

PHYSICAL PROPERTIES OF POLYURETHANE AND FILAMENT WOUND FRP

POLYURETHANE		FILAMENT WOUND FRP	
Flexural Strength ASTM D-790	25 PSI	Flexural Strength ASTM D-790	25,000 PSI
Compressive Strength ASTM D-1621		Compressive Strength ASTM D-695	60,000 PSI
a) Parallel to rise	17 PSI		
b) Perpendicular to rise	25 PSI	Tensile Strength ASTM O-638	20,000 PSI
K-factor ASTM C-518	.13 BTU-in / hr-sq ft-°F	Heat Distortion Temp ASTM D-648	250°F
Closed Cell ASTM C-2856	90–95% Min	Izod Impact	40–60 ft-lb / in-notch

COMPARISON OF HEAT TRANSFER FOR POLYURETHANE VERSUS OTHER INSULATIONS*

PIPE SIZE (in)		2	4	6	8	10	12	16	20	30	36
RECOMMENDED INSULATION THICKNESS (in)		1.5	2	2	2.5	2.5	2.5	3	3	3.5	4
HEAT TRANSFER BTU/HR/FT	URETHANE	14	18	24	25	30	35	36	43	54	57
	FIBERGLASS	23	30	40	40	48	54	59	71	87	92
	FOAMGLASS	36	47	62	62	75	84	91	108	134	141
	BARE PIPE	304	356	397	429	460	487	526	569	663	713

*Based on 200°F Service Temp. and 40°F ambient.

GENERAL

All underground and aboveground chilled water, condensate return, and hot water lines with fluid temperatures up to 250° shall be the POLY-THERM type, as manufactured by PERMA-PIPE. All straight sections, fittings, anchors and other accessories shall be factory fabricated to job dimensions and designed to minimize the number of field welds. Each system layout shall be computer analyzed by the piping system manufacturer to determine stress on the carrier, pipe, and anticipated thermal movement of the service pipe. The system design shall be in strict conformance with ANSI B31.1, latest edition. Factory trained field technical assistance shall be provided for critical periods of installation; unloading, field joint instruction, and testing.

SERVICE PIPING*

Internal piping shall be standard weight carbon steel, except for condensate return lines which shall be Schedule 80. All joints shall be butt-welded for 2½" and greater, and socket or butt-welded for 2" and below. Where possible, straight sections shall be supplied in 40 foot random lengths with piping exposed at each end for field joint fabrication.

ACCESSORIES

End seals, gland seals and achors shall be designed and factory fabricated to prevent the ingress of moisture into the system.

INSULATION

Service pipe insulation shall be spray applied nominal 2 pound per cubic foot density, polyurethane foam for straight sections and preformed polyurethane foam for all fittings. To ensure no voids are present, all insulation shall be inspected by one of the following three methods: visually checked prior to application of the protective jacket; infrared inspection of the entire length; or x-ray inspection of the entire length. The insulation shall be applied to the minimum thickness specified below. The insulation thickness shall not be less than indicated in these specifications.

Pipe Size (in.)	Insulation Thickness (in.)
1	1
1½ - 3	1.5
4 - 6	2
8 - 14	2.5
16 - 20	3
22 - 30	3.5

PROTECTIVE JACKET

All straight sections of the insulated piping system shall be filament wound, polyester resin/fiberglass reinforcement composite directly applied on the insulating foam. Thermoplastic casing material, e.g., PVC or PE, shall not be allowed.

The minimum thickness for FRP jacket shall be as follows: For jacket diameter up to 15.5 inches–thickness = .055 inches; jacket diameter between 15.6 and 24.5 inches–thickness = .085 inches; jacket diameter between 24.6 and 31.0 inches–thickness = .110 inches; and jacket diameter between 31.1 and 40.0 inches–thickness = .140 inches.

All fittings of the insulated piping system shall be prefabricated to minimize field joints and jacketed in a chopped spray-up, polyester resin/fiberglass reinforcement composite, directly applied onto the insulating foam to a thickness related to the filament wound jacket thickness.

FIELD JOINTS

The internal pipe shall be hydrostatically tested to 150 PSIG or 1½ times the operating pressure, whichever is greater. Insulation shall then be poured in place into the field weld area. All field applied insulation shall be placed only in straight sections. Field insulation of fittings shall not be acceptable. The mold for the polyurethane shall be made of clear adhesive backed polyester film. The installer shall seal the field joint area with a heat shrinkable adhesive backed wrap or with wrappings of glass reinforcement fully saturated with a catylzed resin identical in properties to the factory-applied resin. Backfilling shall not begin until the heat shrink wrap has cooled or until the FRP lay-up has cured. All insulation and coating materials for making the field joint shall be furnished by PERMA-PIPE.

BACKFILL

A 4" layer of sand or fine gravel shall be placed and tamped in the trench to provide a uniform bedding for the pipe. The entire trench width shall be evenly backfilled with a similar material as the bedding in 6 inch compacted layers to a minimum height of 6 inches above the top of the insulated piping system. The remaining trench shall be evenly and continuously backfilled in uniform layers with suitable excavated soil.

* For alternate service pipe selections contact PERMA-PIPE for specification details.

PERMA-PIPE®

Your Authorized PERMA-PIPE Representative Is:

PERMA-PIPE, INC.
A Subsidiary of MFRI, Inc.
7720 North Lehigh Avenue
Niles, Illinois 60714-3491
Phone (708) 966-2235
Fax (708) 470-1204

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5. COMPOSTING TOILETS BY "CLIVUS"

Clivus Multrum®, Inc.
15 Union Street
Lawrence, MA 01840-1823
(978) 725-5591 • Fax (978) 557-9658
(800) 4-CLIVUS or (800) 425-4887

clivus® Eco-Logical Resource Retrieval Technology

November 11, 1999

Ivan Zdrahal Associates
959 Route 146
Clifton Park, NY 12065

Re: Day Lodge on Top of Little Whiteface

Dear Mr. Zdrahal

Let me review the considerations for using the compost toilet in a project such as is being planned for Little Whiteface.

Composter Sizing
In order to determine the number and size of compost tanks for this project, we would assume that guests might use the toilet once during a four hour period. The turn-over of guests, assuming the lodge is open longer than four hours, would also have to be taken into account. To this figure, we would add staff at the rate of 3 uses per day. In addition, if there were a large number of special events which would affect the use over time, we would take this into account. With these calculations in hand, we could determine the average uses per day and the uses per day during peak events. We would then compare this information with any requirements for a certain number of fixtures. And if the design called for restrooms in different locations within the structure, i.e., a separate bathroom for staff, etc., this would come into play. For example, if we assume that the total seats (restaurant and cocktail lounge) is 400, with no turn-over, and a staff of 20, the total uses per day would be 460. This number of uses could be handled by three of our largest model, the M35 (see attached specification sheet). The M35 can accommodate 2 toilet fixtures and 2 urinals. So, this number of units might offer a bathroom with 4 toilet fixtures for women, two for men with several urinals.

Building Design
The fundamental requirement for the compost toilet is the need for two levels: a lower level for the compost tank and an upper level for the toilet fixture. I would assume that in a project such as this, excavation for a lower level below grade would be difficult and expensive. Thus, the available height in the lower space may influence the choice of composter model. The M35, as you see from the specification sheet, is 89". I've enclosed other specification sheets for comparison. The lower space should have direct access to the outside of the structure for easy of maintenance. There must be at least 48" in front of the compost tank in order for maintenance to be easily performed. The compost system requires a temperature of approximately 65°F to perform at the rated capacities.

The composter fan is intended to operate continuously to ensure odorlessness. There may be no conventional exhaust fans in the bathroom which might compete with the composter ventilation system. In a large, multi-use space such as a restaurant/lounge in which there are many pieces of equipment with cooling or heating devices, we would suggest that a HVAC engineer determine what is the best method to achieve the minimum 50 CFM per toilet fixture for the compost system. This might call for roof-mounted fans.

Composter End-Products

The compost toilet produces two end-products. Compost liquid fertilizer is a stable, high-nitrogen, nearly odorless liquid, which is generated at the rate of approximately 1 gallon for every 25 uses. Typically, Clivus provides a storage tank (or tanks) to hold this liquid until it can be removed. This liquid can be stored indefinitely. In most cases, unfortunately, regulations prohibit the use of this material as fertilizer. In such cases, the liquid is either put into an on-site septic system or it is hauled away by a septage hauler.

The second product of the Clivus is the solid compost. This material is generated at a much less frequent rate and volume. No solid compost is removed within the first year of operation. In many cases, it is several years before any solid compost is removed. When the volume inside the composter reaches its maximum, only then is material removed, and only a small portion of the total volume is ever taken out at one time. The volume of material would not exceed approximately 30 cu. ft. per removal. Again, although this material has value as a fertilizer and soil amendment, regulations often require that it be disposed of according to septage or sewage regulations.

Budgetary Pricing

Were the bathroom to be configured as I have suggested above, the budgetary price for the compost equipment is $40,000 (FOB job). This includes the composters with necessary components, and all toilet fixtures.

Greywater System

Because in almost every state in the U.S. greywater systems which are not compatible with the compost toilet are not viewed favorably, Clivus Multrum deals primarily with the compost toilet technology. Moreover, such experience as we do have with greywater systems is mostly in residential applications, where the flows are relatively small. However, I'd like to make a couple of observations on the subject of greywater for this project.

With the removal of the conventional toilet system from the facility, the remaining greywater represents a considerable challenge. In a residential application of the Clivus Multrum, it is often the case that a 40% reduction is assumed by regulators. If we were to use this as a benchmark in this case, the GPD of greywater would be approximately 6,000.

Obviously, this volume of water calls for a discharge system, such as a septic system. If a septic system is not possible due to site restrictions, an alternative which might have a chance of being approved is a re-circulating sand filter. My understanding is that these systems have been used successfully in cold climates and that they are not expensive compared with alternatives. If such a system were acceptable to the NYDEC, it would, in all likelihood, require a stream in which the treated greywater could be discharged. I would be glad to provide information on this type of system.

I hope this preliminary information is helpful. Please let me know if you believe I can be of further assistance.

Sincerely,

Don Mills

Don Mills
Sales Director

clivus® Eco-Logical Resource Retrieval Technology

M35 SPECIFICATION SHEET

CAPACITY

M35 Volume	234 cubic feet	1747 US gallons
Capacity for daily use at avg. temp. $\geq$ 65°F:		180 visits
Capacity for annual use at avg. temp. $\geq$ 65°F:		65,000 visits

SPECIFICATIONS AND MATERIALS

Dimensions

Length: 103" Width: 70.5" Height: 89"
Working Area on Top of Composter: 53"x53"
Waste Access Door: 10"x30" on composter front wall
Compost Access Lid: 34.5"x70.5" on composter front at bottom
Polyethylene Wall Thickness: 3/8" nominal Weight 800 lbs.

Materials

The M35 Composter and its internal Liquid Storage Tanks are rotationally molded using high density cross-link polyethylene resin that conforms with the following specifications:

Density (ASTM TEST D 1505):	0.941 g/cm^3
Tensile Strength at Yield (ASTM D 638):	2600 psi
Impact Brittleness Temperature (ASTM D 746):	<-180°F
Dart Impact (-40°C, 250 mils thickness):	190 ft-lbs.
Envt. Stress Crack Resistance (D 1693)	>1,000 hrs.

Ventilation

AC: 115V, 93w, 60 Hz, .8 amp fan with 243 cfm at free air. Fan made of GE Noryl plastic, totally enclosed, ball-bearing motor, in-line, direct drive. UL and CSA approved. Diameter: 11.75", Inlet/Outlet Diameter: 5.87", Length: 7.757".
DC (optional): 24V available.

Interior Vent Ducting

Wire-reinforced, 6" diameter PVC multi-ply tape construction. One 25' long section is provided; additional sections may be required. 6" Rigid ABS or Schedule 40 PVC may also be used.

Liquid Removal Pump

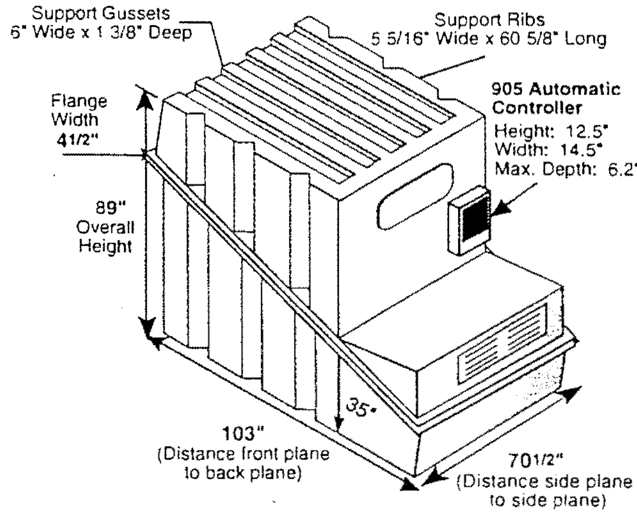
AC: Submersible, 115V, 5 amp, with 18', 3-conductor, oil-resistant cord. UL and CSA approved. 1" NPT liquid discharge outlet. Capacity is 20.4 gallons per minute at 1' with a maximum pumping height of 26.3'.
DC (optional): 24V available.

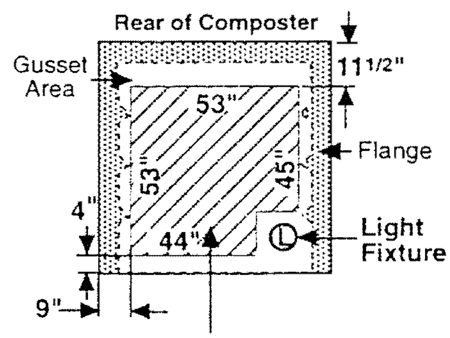
905 Automatic Controller

Monitors liquid levels, air flow, temperature, pump operation, and composter usage. Controls pump operation in response to liquid levels, automatic daily compost mass moistening, automatic filling of fresh water supply tank, automatic fire suppression and internal chamber light. The 905 Automatic Controller operates on 115VAC electricity. It utilizes 5VDC inputs from switches and sensors, and requires a 20-amp circuit breaker. Outputs for controlling pumps and ventilation systems are 115VAC. The 905 displays information through an LCD panel and provides maintenance alerts through an audible alarm.

ASSEMBLED DIMENSIONS

DRAWING NOT TO SCALE





Top Working Area For Toilet Connection

(Note: Light Fixture may be moved if necessary)

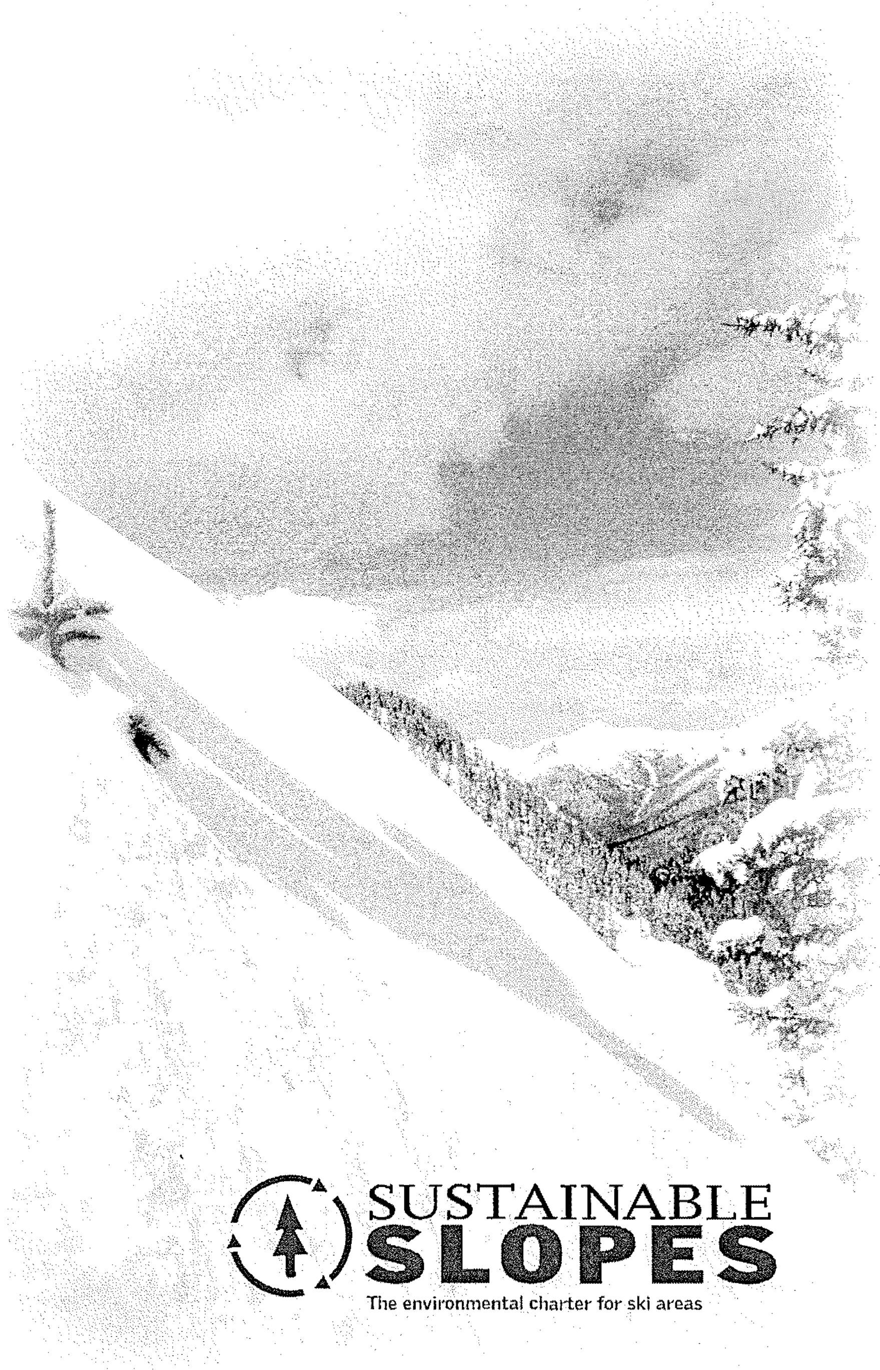
Fresh Water Storage Tank (internal): (90 gallons)
Supplies fresh water to the Automatic Moistening and Fire Suppression System. Built-in moistening system adds moisture to the compost mass at timed intervals. Fire suppression feature engages if internal temperatures reach 165°F.

Liquid End-Product Storage Tank (internal): (45 gallons)
Stores the liquid separately from the compost to enhance decompostion and to facilitate the removal of the liquid end-product by the automatic pump.

Clivus Multrum®, Inc., 15 Union St., Lawrence, MA 01840
Toll Free: 800-425-4887 Tel: 978-725-5591 Fax: 978-557-9658

APPENDIX T

SUSTAINABLE SLOPES CHARTER


SUSTAINABLE
SLOPES
The environmental charter for ski areas

INTRODUCTION

1

The environment is a ski area's number one asset. The founders of the ski industry recognized that fact 60 years ago in choosing some of the most spectacular terrain for establishing ski areas. The natural surroundings are awe inspiring and provide a backdrop unmatched in any other sport. The premier alpine recreation sites we have today were made possible through the vision, pioneering spirit and hard work of our industry's founders. The value of those efforts holds today, as resorts are showcases of quality recreation opportunities for skiers, snowboarders, and countless summer guests as well. Although many forces may draw us to the slopes—the thrill and excitement of sliding down a mountain, the chance to reconnect with family and friends—we can never underestimate the value of the natural surroundings in renewing the human spirit.

As a society, we now find ourselves needing more than ever to escape every day pressures by heading for the outdoors. With that increasing demand comes impacts and a number of emerging environmental concerns that must be addressed proactively. As an industry, we need to apply the same vision and pioneering spirit of our founders to this new set of challenges. It is not enough to simply provide opportunities for fun and recreation; we must also be part of the solution.

We are taking this collective step of adopting our Environmental Charter to demonstrate our commitment to good environmental stewardship. We do so for a number of reasons. We respect the natural settings that we call home and want the same experience to be available for future generations. We are also keenly aware that our guests take the environment seriously and want us to be the most sustainable operations we can be. This means making efforts in all facets of our operations to use natural resources wisely and ensure that similar opportunities are available for future generations. Individual resorts have made great strides on this front in areas such as water and energy conservation, water quality protection, waste reduction, habitat protection, forest and vegetative management, and air and visual quality protection. This Charter will provide guidance for doing so collectively in the years to come.

This document represents a great deal of input, hard work, and energy from people inside and outside our industry. The National Ski Areas Association's (NSAA) Environmental Committee was instrumental in guiding the development of the Charter over the past year. NSAA's Board of Directors adopted the Mission and Vision statements in October of 1999. The Preamble was developed to convey the context of this Charter, provide background on our industry, and identify the purpose, goals, and limits of the Principles. The industry hosted four regional meetings on the Principles during the

1999/2000 season in Colorado, Oregon, Utah, and Vermont to gain input from stakeholders, including federal, state and local government officials, environmental groups, resorts, other recreation groups and academia. The Keystone Center, an independent non-profit public policy and education organization based in Colorado, facilitated these meetings. Our process was inclusive. In total, we invited more than a thousand individuals to participate, of which 200 provided us input over a nine-month period. A sampling of the Participating Organizations is provided on page 5. The Charter reflects this input, and is a much-improved document because of it.

The Principles are the heart of this Environmental Charter. They provide a framework for resorts across the country to implement best practices, assess environmental performance, and set goals for improvement in the future. Undoubtedly the implementation of these Principles may be more difficult for some resorts than others, as resorts vary greatly in their technical expertise and financial resources. Although we have chosen to use the term "ski area" throughout the Principles, the term encompasses a variety of winter and summer resort operations, from large destination resorts to small, local ski hills. Some of the smaller ski areas, in particular, may need more time to fully implement the Principles. Although there are many differences among ski areas, each shares in common a commitment to improved environmental performance and sound environmental stewardship.

We are fortunate to have a solid group of Partnering Organizations—those organizations that support the development of the Principles and are committed to working with us in the future—on board with this Charter. The Partnering Organizations are listed on page 4. In addition to participating in the stakeholder meetings, the Partnering Organizations attended a meeting in Washington, D.C. in March to provide final input on the Principles. They helped make this process a successful one, and we look forward to working with them in their areas of interest in the future.

The Charter also includes an Environmental Code of the Slopes in recognition of the high priority that our guests place on environmental concerns. The Code was developed with input from the stakeholder process to provide snowsports participants and other guests a role in this Charter. We are committed to heightening their awareness of the industry's efforts and educating them on what they can do to help us make sustainable use of natural resources. An outreach campaign on the Code will be developed and implemented at ski areas beginning next season.

The ski industry has an opportunity to be leaders among outdoor recreation providers and other businesses in promoting environmental awareness and striving to be a model of sustainable development. It is our hope that all ski areas will take advantage of that opportunity by endorsing this Charter, committing to implementing it, and helping us provide information to the public on our collective progress under it.

On behalf of NSAA, we are grateful to all of the individuals, organizations and agencies outside the industry that provided input, and the Keystone Center for their superb facilitation of this process. This is truly a beginning, and we look forward to working with all of you in the years to come.

—Michael Berry, National Ski Areas Association President
June 14, 2000

ENVIRONMENTAL VISION STATEMENT

To be leaders among outdoor recreation providers through managing our businesses in a way that demonstrates our commitment to environmental protection and stewardship while meeting the expectations of the public.

ENVIRONMENTAL MISSION STATEMENT

Ski areas across North America provide a quality outdoor recreation experience in a manner that complements the natural and aesthetic qualities that draw all of us to the mountains. We cherish the outdoors and respect the alpine environment in which we live and work. We are committed to improving environmental performance in all aspects of our operations and managing our areas to allow for their continued enjoyment by future generations.

PARTNERING ORGANIZATIONS

The Principles were developed through a stakeholder process facilitated by the Keystone Center. Input was sought from a wide variety of interests, including federal, state and local governmental agencies, environmental and conservation groups, other outdoor recreation groups, and academia. The "Partnering Organizations" listed below support the ski industry's development of the Principles and are committed to working with the industry on their particular areas of expertise and interest as the industry moves forward to implement the Principles.

Colorado Department of Public Health & Environment
Conservation Law Foundation
U.S. Department of Energy
U.S. Environmental Protection Agency
USDA Forest Service
Leave No Trace Inc.
The Mountain Institute
National Fish & Wildlife Foundation
National Park Service Concession Program
2002 Olympics Salt Lake City Organizing Committee
Teton County, Wyoming
Trust For Public Land

This list will be revised periodically. Please check www.nsaa.org for updates.

The Mountain Institute

CLF Conservation Law Foundation

PARTICIPATING ORGANIZATIONS

Individuals from the following organizations and agencies provided input on the Principles through the stakeholder process. Participation does not imply that these individuals or organizations support the Principles.

The Alford Design Group, Inc.	(Peter Alford, Jr., Peter Alford Sr.)
Cirrus Ecological Solutions	(Neal Artz, Scott Evans)
Citizens Allied for Responsible Growth	(Dana Williams)
Colorado Department of Public Health & Environment	
Colorado Mountain College - Ski Area Operations	(Curtis Bender, Paul Rauschke)
Colorado Ski Country USA	(Melanie Mills)
Conservation Law Foundation	(Mark Sinclair)
Economics Research Associates	(Greg Cory)
Environmental Defense	(Jennifer Pitt)
Green Mountain Club	(Ben Rose)
Innovation Works	(Mary Lou Krambeer)
Jack Johnson Company	(Brooke Hontz, Lauren Loberg)
Kimley-Horn & Associates, Inc.	(Jim Fletcher)
Leave No Trace Inc.	(Amy Mentuck)
Lyndon State College	(Catherine DeLeo, Ph.D.)
National Environmental Trust	(Jan Pendlebury, Kevin Curtis, Laura Culberson, Paul Blackburn, Susan Sargent)
National Fish and Wildlife Foundation	(Cinda Jones)
National Park Service	(Wendy Berhman)
The Nature Conservancy	(Liz Schulte, Angela Koloszar)
Normandeau Associates	(Al Larson, P.G.)
North Fork Preservation Alliance/Sundance Resort	(Mary Morrison)
Northwest Colorado Council of Governments Q/Q Committee	(Lane Wyatt)
ORCA - Trade Association of the Outdoor Industry	(Myrna Johnson)
Pacific Northwest Ski Areas Association	(Doug Campbell)
Park City Municipal Corporation	(Richard Lewis, Myles Rademan)
Pioneer Environmental Services, Inc.	(Roy Hugie)
Outward Bound USA	(Craig Mackey)
Salt Lake Organizing Committee for the Olympic Winter Games of 2002	(Diane Conrad, David Workman)
s.e. group	(Ted Beeler)
Sierra Club - Utah	(Jock Glidden)
Sierra Club - West Virginia	(Paul Wilson)
Ski Areas of New York	(Rob Megnin)
SKI Magazine	(Andy Bigford)
Ski Maine Association	(Greg Sweetser)
The Citizens Committee to Save Our Canyons	(Gavin Noyes)
Surfrider Foundation/Snowrider	(Jen Ader, Darryl Hatheway)
Teton County, Wyoming	(Ann Stephenson)
The Groswold Ski Company	(Jerry Groswold)
The Mountain Institute	(Jane Pratt)
Town of Mammoth Lakes	(Bill Taylor, Mike Vance)
Trout Unlimited - Colorado Chapter	(Melinda Kassen)
Trout Unlimited - Oregon Chapter	(Jeff Curtis)
Trout Unlimited - Utah Chapter	(Paul Dremann)
Trust for Public Land	(Doug Robotham)
University of Colorado - Center for Sustainable Tourism	(Charles Goeldner)
U.S. Department of Energy	
U.S. Environmental Protection Agency	
U.S. Forest Service	
Vermont Natural Resources Council	(Stephen Holmes)
Vermont Ski Areas Association	(Bill Scheer)

PREAMBLE

OUR VALUES

- Like their guests, ski area operators and employees enjoy the outdoors, appreciate the alpine environment and consider it their home. A strong environmental ethic underlies our operations, makes us stewards of the natural surroundings, and is the basis for our commitment to constant improvement in environmental conditions.

- The recreation opportunities that ski areas provide contribute to improving the quality of life for millions of people each year, and the natural surroundings greatly enhance those experiences. In providing quality, outdoor recreation opportunities, we strive to balance human needs with ecosystem protection.

- Ski areas are well suited to accommodate large numbers of visitors because of their infrastructure and expertise in managing the impacts associated with those visits. By providing facilities for concentrated outdoor recreation in limited geographic areas, ski areas help limit dispersed impacts in more remote, wild areas.

- Ski areas operate within and are dependent on natural systems including ecological, climatic and hydrological systems. These dynamic systems can affect our operations, just as we have effects on them. We are committed to working with stakeholders to help understand and sustain the diversity of functions and processes these systems support.

- In addition, ski areas operate within rural and wild landscapes that are valued for their scenic, cultural, and economic characteristics. We are committed to working with stakeholders to understand and help maintain those characteristics which make these landscapes unique.

- Given the ski industry's dependence on weather, climate changes that produce weather patterns of warmer temperatures or decreased snowfall could significantly impact the industry. Accordingly, the industry is committed to better understanding the actual and potential impacts of climate change, reducing its own, albeit limited, emission of greenhouse gases, and educating its customers and other stakeholders about this issue.

- Along with environmental concerns, ski area operators are deeply concerned with the safety of our guests. We take safety into account in the design and operation of ski areas, and in some situations need to place the highest priority on safety.

BACKGROUND ON THE PRINCIPLES

- The ski industry is composed of a diverse group of companies, varying in size, complexity, accessibility to resources, and geographic location. These Principles are meant to be a useful tool for all ski areas, from local ski hills to four season destination resorts, whether on public or private land. Our vision is to have all ski areas endorse these Principles eventually and make a commitment to implementing them. Some smaller areas that endorse these Principles may be limited in their ability to make progress in all of the areas addressed.

- The Principles are voluntary and are meant to provide overall guidance for ski areas in achieving good environmental stewardship, not a list of requirements that must be applied in every situation. Recognition must be made that each ski area operates in a unique local environment or ecosystem and that development and operations may reflect these regional and operational differences. Each ski area must make its own decisions on achieving sustainable use of natural resources. While ski areas have the same goals, they can choose different options for getting there.

- The Principles are meant to go "beyond compliance" in those areas where improvements make environmental sense and are economically feasible. Ski areas should already be meeting all applicable federal, state, and local environmental requirements. Through these Principles, we are striving to improve overall environmental performance, whether it be in the form of achieving efficiencies, sustaining resources or enhancing the public's awareness of our special environment.

- The Principles encourage ski areas to adopt the "avoid, minimize, mitigate" approach to natural resource management. Avoidance should be the first consideration when outstanding natural resources or settings are at stake.

- The Principles recognize that ski areas have some unavoidable impacts. At the same time, ski areas strive to maintain the integrity of the environments in which they operate, by contributing to the sense of place in mountain communities and being good stewards of natural resources.

- The Principles are aimed at improving environmental performance at existing ski areas, and can serve as helpful guidance for planning new developments. The Principles cannot fully address when and where new ski area development should occur, as that issue should be addressed on the merits of each individual project and in consideration of the specific characteristics of a particular location. What might be beneficial development in one location could be inappropriate in another.

- Ski areas are concerned about the larger issues of growth and sustainable development in mountain communities. Key issues of community planning, such as protecting viewsheds, quality of life, and open space, are inherently linked to our business and the quality of experience of our guests. While the Principles cannot address fully some of the larger issues of growth in mountain communities, the ski industry is committed to working with stakeholders to make progress on these issues of concern to mountain communities. Many of the concepts in these Principles can provide leadership in confronting those issues.

- The Principles were developed through a collaborative dialogue process where input and awareness, not necessarily consensus on every issue or by every group, was the goal. The Principles represent the major areas of agreement for ski areas and Partnering Organizations.

- These Principles are a first, collective step in demonstrating our commitment to environmental responsibility. We hope that this initiative will help us better engage our stakeholders in programs and projects to improve the environment.

ENVIRONMENTAL PRINCIPLES

VOLUNTARY ENVIRONMENTAL PRINCIPLES FOR SKI AREA PLANNING, OPERATIONS AND OUTREACH*

I. Planning, Design and Construction

In planning and designing trails, base areas and associated facilities, ski areas have the opportunity to explore ways of integrating our operations into natural systems and addressing short and long-term environmental impacts to natural resources. There may also be opportunities to address past disturbances from historical uses that have occurred in the area and mitigate the unavoidable impacts from future ones.

Principles:

- Engage local communities, environmental groups, government agencies and other stakeholders in up front and continuing dialogue on development plans and their implementation
- Assess environmental concerns and potential restoration opportunities at local and regional levels
- Plan, site and design trails, on-mountain facilities and base area developments in a manner that respects the natural setting and avoids, to the extent practical, outstanding natural resources
- Emphasize nature in the built environment of the ski area
- Make water, energy, and materials efficiency and clean energy use priorities in the design of new facilities and the upgrading of existing facilities
- Use high-density development or clustering to reduce sprawl, provide a sense of place, reduce the need for cars and enhance the pedestrian environment
- Meet or exceed requirements to minimize impacts associated with ski area construction

Options for getting there:

✓ Engaging stakeholders collaboratively on the siting of improvements and the analysis of alternatives
✓ Complementing local architectural styles, scale, and existing infrastructure to enhance the visual environment and create a more authentic experience for guests
✓ Respecting outstanding natural resources and physical "carrying capacity" of the local ecology in planning new projects
✓ Using simulation or computer modeling in planning to assist with analyzing the effects of proposals on key natural resources and viewsheds such as visual modeling or GIS
✓ Designing trails with less tree removal and vegetation disturbance where feasible
✓ Incorporating green building principles, such as using energy, water and material efficiency techniques and sustainable building practices
✓ Using long-life, low maintenance materials in building
✓ Including parks, open space and native landscaping in base area developments
✓ Seeking opportunities for environmental enhancement and restoration
✓ Maximizing alternate transportation modes in and around the base area
✓ Minimizing road building where practical
✓ Selecting best management practices (BMPs) for construction sites with stakeholder input
✓ Applying sound on-mountain construction practices such as over-snow transport techniques, stormwater control or phasing of activities to minimize disturbances to natural habitats

* These Principles are voluntary and are not intended to create new legal liabilities, expand existing rights or obligations, waive legal defenses, or otherwise affect the legal position of any endorsing company, and are not intended to be used against an endorser in any legal proceeding for any purpose.

II. Operations

In the day-to-day operation of ski areas and associated facilities, there are many opportunities for stewardship, conserving natural resources, and achieving efficiencies. Taking advantage of these opportunities will not only benefit the environment, but can also result in long-term cost savings.

Water Resources

Water is an important resource for ski areas as well as the surrounding natural environments and communities, and should be used as efficiently and effectively as possible.

Water Use for Snowmaking

Principles:
- ◆ Optimize efficiency and effectiveness of water use in snowmaking operations
- ◆ Conduct snowmaking operations in a manner that protects minimum stream flows and is sensitive to fish and wildlife resources (see Fish & Wildlife Principles on page 14).

Options for getting there:
- ✓ Using appropriate technology and equipment to optimize efficiency
- ✓ Inspecting and monitoring systems to reduce water loss
- ✓ Using reservoirs or ponds to store water for use during low flow times of the year and to maximize efficiency in the snowmaking process
- ✓ Working with local water users and suppliers to promote in-basin storage projects to offset low flow times of the year
- ✓ Installing water storage facilities to recapture snowmelt runoff for reuse
- ✓ Inventorying water resources and monitoring seasonal variations in stream flows
- ✓ Supporting and participating in research on the ecological impacts of snowmaking

Water Use in Facilities

Principle:
- ◆ Conserve water and optimize efficiency of water use in ski area facilities

Options for getting there:
- ✓ Conducting water use audits and investigating methods and alternative technologies to reduce water consumption
- ✓ Installing water efficient equipment in facilities such as low-flow faucets and toilets
- ✓ Participating in existing water conservation and linen and towel re-use programs such as EPA's WAVE® and Project Planet® programs for lodging
- ✓ Educating guests and employees about the benefits of efficient water use

Water Use For Landscaping and Summer Activities

Principle:
- ◆ Maximize efficiency in water use for landscaping and summer activities

Options for getting there:

- ✓ Incorporating water efficiency BMPs in planning and design phases
- ✓ Planning summer uses in conjunction with winter uses to maximize the efficiency of necessary infrastructure
- ✓ Using drought-tolerant plants in landscaped areas
- ✓ Using native plant species where appropriate
- ✓ Using water efficient irrigation and recycling/reuse technologies
- ✓ Using compost in soil to increase water retention and reduce watering requirements
- ✓ Inspecting and monitoring systems to reduce water loss
- ✓ Watering at appropriate times to minimize evaporation
- ✓ Educating employees about efficient water use

Water Quality Management

Principle:

- ◆ Meet or exceed water quality-related requirements governing ski area operations

Options for getting there:

- ✓ Participating in watershed planning, monitoring and restoration efforts
- ✓ Using appropriate erosion and sediment control practices such as water bars, revegetation and replanting
- ✓ Maintaining stream vegetative buffers to improve natural filtration and protect habitat
- ✓ Applying state-of-the-art or other appropriate stormwater management techniques
- ✓ Utilizing oil/water separators in maintenance areas and garages
- ✓ Using environmentally sensitive deicing materials
- ✓ Encouraging guests to follow the Leave No Trace™ principles of outdoor ethics

Wastewater Management

Principle:

- ◆ Manage wastewater in a responsible manner

Options for getting there:

- ✓ Planning for present and future wastewater needs with adjacent communities
- ✓ Using appropriate wastewater treatment technology or alternative systems to protect water quality
- ✓ Connecting septic systems to municipal wastewater systems where appropriate
- ✓ Exploring the use of decentralized or on-site treatment technologies where appropriate
- ✓ Re-using treated wastewater/greywater for non-potable uses and appropriate applications
- ✓ Monitoring wastewater quality

Energy Conservation and Use

Ski areas can be leaders in implementing energy efficiency techniques and increasing the use of renewable energy sources within their operations to conserve natural resources, reduce pollution and greenhouse gases and reduce the potential impacts of climate change.

Energy Use for Facilities

Principles:

- Reduce overall energy use in ski area facilities
- Use cleaner or renewable energy in ski area facilities where possible
- Meet or exceed energy standards in new or retrofit projects

Options for getting there:

✓ Auditing current usage levels, and targeting areas for improvement
✓ Developing an energy management plan that addresses short and long term energy goals, staffing, and schedules for new and retrofit projects
✓ Orienting buildings and their windows to maximize natural light penetration, reduce the need for artificial lighting and facilitate solar heating and photovoltaic electricity generation
✓ Using solar heating or geothermal heat pumps for heating air and water
✓ Using timing systems, light management systems and occupancy sensors
✓ Performing lighting retrofits to provide more energy efficient lamps, retrofitting exit signs to use low watt bulbs, calibrating thermostats, and fine tuning heating systems
✓ Using peak demand mitigation, distributed, on-site power generation and storage, and real time monitoring of electricity use
✓ Working with utilities to manage demand and take advantage of cost sharing plans to implement energy savings
✓ Entering into load sharing agreements with utilities for peak demand times
✓ Partnering with the U.S. Department of Energy and state energy and transportation departments to assist with energy savings and transit programs
✓ Participating in energy efficiency programs such as EPA/DOE's Energy Star™
✓ Educating employees, guests and other stakeholders about energy efficient practices
✓ Installing high efficiency windows, ensuring that all windows and doorways are properly sealed and using insulation to prevent heating and cooling loss
✓ Minimizing energy used to heat water by using low-flow showerheads, efficient laundry equipment, and linen and towel re-use programs
✓ Investing in cleaner or more efficient technologies for power generation, including wind, geothermal, and solar power generation, fuel cells and natural gas turbines and generation from biomass residues and wastes
✓ Purchasing green power, such as wind-generated power, from energy providers

Energy Use for Snowmaking

Principles:

- Reduce energy use in snowmaking operations
- Use cleaner energy in snowmaking operations where possible

Options for getting there:

✓ Using high efficiency snow guns and air compressors for snowmaking operations
✓ Upgrading diesel motors or converting them to alternative clean energy generation sources
✓ Using real time controls, sensors and monitoring systems to optimize the system and reduce electrical demand

✓ Using on mountain reservoirs and ponds to gravity feed snowmaking systems where possible
✓ Using distributed, on-site power generation to avoid or reduce peak demands from the utility grid
✓ Purchasing green power from energy providers

Energy Use for Lifts

Principles:
- Reduce energy use in lift operations
- Use cleaner energy in lift operations where possible

Options for getting there:
✓ Using high efficiency motors
✓ Upgrading diesel motors or converting them to alternative clean energy sources, such as fuel cells or microturbines
✓ Using renewable energy sources
✓ Purchasing green power from energy providers

Energy Use for Vehicle Fleets

Principles:
- Reduce fuel use in vehicles used for ski area operations
- Use cleaner fuel where possible

Options for getting there:
✓ Providing shuttles or transportation for guests and employees
✓ Using energy efficient vehicles
✓ Using alternative fuel or hybrid electric engines in ski area fleet vehicles including shuttles, trucks, snowcats and snowmobiles
✓ Conducting regular maintenance on fleet vehicles

WASTE MANAGEMENT

The Principles below incorporate the "REDUCE, REUSE, RECYCLE" philosophy of waste management to help ensure materials are being used efficiently and disposed of only after consideration is given to reusing or recycling them. Reducing waste helps protect natural resources, reduce pollution, greenhouse gases and energy use by decreasing the need to produce new materials, and minimizes disposal costs.

Waste Reduction

Principle:
- Reduce waste produced at ski area facilities

Options for getting there:
- ✓ Conducting an audit of waste production to establish a baseline and track progress toward reduction
- ✓ Purchasing recycled products
- ✓ Purchasing products in bulk to minimize unnecessary packaging
- ✓ Encouraging vendors to offer "take-backs" for used products
- ✓ Educating guests and employees about reducing wastes generated at the area and following the Leave No Trace™ Principles such as "pack it in, pack it out"

Product Reuse

Principle:
- ◆ Reuse products and materials where possible

Options for getting there:
- ✓ Using washable or compostable tableware/silverware in cafeterias and lodges
- ✓ Encouraging guests to reuse trail maps
- ✓ Composting food wastes, grass clippings, and woody debris for use in landscaping and revegetation areas
- ✓ Exploring opportunities for reusing products (e.g., building materials, lift parts and equipment, and office supplies)
- ✓ Joining EPA's WasteWise® program

Recycling

Principle:
- ◆ Increase the amount of materials recycled at ski areas where possible

Options for getting there:
- ✓ Making recycling easy for guests by offering containers and displaying signage in facilities and lodges
- ✓ Recycling office paper, cardboard, newspaper, aluminum, glass, plastic and food service waste
- ✓ Recycling building materials as an alternative to landfilling
- ✓ Partnering with local governments on recycling in remote communities where recycling programs are not readily available
- ✓ Encouraging vendors to offer recycled products for purchase
- ✓ Educating guests and training employees on recycling practices
- ✓ Setting purchasing specifications to favor recycled content and specifying a portion of new construction to require recycled content

Potentially Hazardous Wastes

Principle:
- ◆ Minimize the use of potentially hazardous materials, the generation of potentially hazardous wastes and the risk of them entering the environment

Options for getting there:
- ✓ Safely storing and disposing of potentially hazardous materials such as solvents, cleaning materials, pesticides and paints

- ✓ Recycling waste products such as used motor oil, electric batteries, tires and unused solvents
- ✓ Reshelving and reusing partially used containers of paint, solvents, and other materials
- ✓ Purchasing non-hazardous products for use when effective
- ✓ Properly managing fuel storage and handling
- ✓ Maintaining or upgrading equipment to prevent leaks
- ✓ Initiating programs to reduce the occurrence of accidental spills or releases
- ✓ Installing sedimentation traps in parking lots
- ✓ Educating employees on the requirements for properly handling hazardous wastes
- ✓ Reclaiming spent solvents
- ✓ Coordinating with local area emergency planning councils for response in case of a spill or release

Fish and Wildlife

Ski areas operate within larger ecosystems and strive to be stewards of fish and wildlife habitats. They need the cooperation of other landowners, managers, local communities and other stakeholders for an effective ecosystem management approach. There are measures ski areas can take to better understand, minimize, and mitigate impacts to fish and wildlife, and in some cases, enhance habitat, particularly for species of concern. The benefits of these measures include promoting biodiversity and the natural systems that attract guests to the mountain landscape.

Principle:

- ◆ Minimize impacts to fish and wildlife and their habitat and maintain or improve habitat where possible

Options for getting there:

- ✓ Supporting and participating in research of fish and wildlife populations and their interactions with ski areas
- ✓ Inventorying and monitoring fish and wildlife and their habitat, particularly protected species
- ✓ Using snowmaking storage ponds or reservoirs to store water for use during times of low stream flows to help protect aquatic habitat
- ✓ Conducting activities and construction with sensitivity to seasonal wildlife patterns and behavior
- ✓ Siting and designing trails and facilities to include gladed skiing areas, linkage of ungladed areas to maintain blocks of forested corridors and inter-trail islands to reduce fragmentation where appropriate
- ✓ Limiting access to, or setting aside, certain wildlife habitat areas
- ✓ Using wildlife-proof dumpsters or trash containers
- ✓ Creating or restoring habitat where appropriate, either on- or off-site
- ✓ Using land conservation techniques such as land exchanges and conservation easements as vehicles for consolidating or protecting important wildlife habitat
- ✓ Participating in ecosystem-wide approaches to wildlife management
- ✓ Providing wildlife education programs for employees, guests, and the local community such as Skecology® and the Leave No Trace™ Principles of respecting wildlife

Forest and Vegetative Management

Ski areas recognize the importance of stewardship in managing the forests and vegetation that support ecosystems and allow for public recreation opportunities. Sound forest and vegetative management can benefit fish and wildlife habitat, water quality and viewsheds and reduce erosion, pollution, and greenhouse gases.

Principle:

- Manage effects on forests and vegetation to allow for healthy forests and other mountain environments

Options for getting there:

- ✓ Inventorying and monitoring forest and vegetative resources
- ✓ Adopting vegetative management plans
- ✓ Minimizing the removal of trees through the careful siting and design of trails
- ✓ Using over-snow skidding to remove logs for new runs during times of sufficient snow cover
- ✓ Using aerial logging where economically feasible
- ✓ Removing dead and diseased trees, with consideration to habitat value, to promote healthy forests and public safety
- ✓ Revegetating roads that are no longer used
- ✓ Revegetating disturbed areas with native plant species and grasses, recognizing that faster growing, non-native species may be needed to address erosion
- ✓ Revegetating disturbed areas as quickly as possible following disturbance
- ✓ Limiting disturbance to vegetation during summer activities
- ✓ Assessing the role of forest stands in reducing greenhouse gases
- ✓ Providing signage informing guests of sensitive vegetation areas
- ✓ Using traffic control measures, such as rope fences, on areas with limited snow coverage to protect sensitive vegetation and alpine tundra
- ✓ Reducing or eliminating snowcat and snowmobile access to sensitive areas with limited snow coverage
- ✓ Planting at appropriate times to minimize water use while optimizing growth
- ✓ Employing practices to control invasive or noxious weeds

Wetlands & Riparian Areas

Ski areas recognize that wetlands and riparian areas are crucial components of the alpine ecosystems in which they operate.

Principle:

- Avoid or minimize impacts to wetlands and riparian areas, and offset unavoidable impacts with restoration, creation or other mitigation techniques

Options for getting there:

- ✓ Inventorying and monitoring wetland and riparian areas
- ✓ Limiting snowmaking and grooming equipment access to wetlands and riparian areas if snow cover is inadequate to protect them

- ✓ Limiting guest access to wetlands and riparian areas and vernal pools if snow cover is inadequate to protect them
- ✓ Engaging in restoration, remediation and protection projects
- ✓ Establishing buffers and setbacks from wetland and riparian areas in summer
- ✓ Managing snow removal and storage to avoid impacting wetlands and riparian areas as feasible
- ✓ Supporting or participating in research on functions of wetland habitats and riparian areas
- ✓ Using trench boxes to minimize impacts to forested wetlands from construction of utility lines

AIR QUALITY

Ski area guests and operators value fresh air as an integral part of the skiing experience. Although there are many sources in and around the community that, combined, may compromise air quality, ski areas can do their share to help minimize impacts. Some of the many benefits of cleaner air and reduced air pollution include enhanced visibility and lessening human influences on climate change, which is of particular concern to ski areas given their location.

Principles:

- ◆ Minimize ski area impacts to air quality
- ◆ Reduce air pollution and greenhouse gas emissions as feasible

Options for getting there:

- ✓ Reducing air pollutants and greenhouse gas emissions from buildings, facilities and vehicles through clean energy and transportation-related measures identified in these Principles
- ✓ Using dust abatement methods for dirt roads during summer operations and construction
- ✓ Revegetating as appropriate to control dust
- ✓ Reducing the sanding and cindering of ski area roads by using alternative deicing materials
- ✓ Sweeping paved parking lots periodically
- ✓ Reducing burning of slash through chipping or other beneficial uses
- ✓ Limiting wood burning fireplaces or using cleaner burning woodstoves and fireplaces and installing gas fireplaces
- ✓ Working with local and regional communities to reduce potential air quality impacts

VISUAL QUALITY

Scenic values are critical to surrounding communities and the experience of guests. Although ski area development is a part of the visual landscape in many mountain areas, it can be designed and maintained in a manner that complements the natural setting and makes the natural setting more accessible to guests. Where opportunities for collaboration exist, ski areas should also consider working with appropriate partners in the protection of open lands that help define the visual landscape in which their guests recreate.

Principles:

- ◆ Create built environments that complement the natural surroundings
- ◆ Explore partnerships with land conservation organizations and other stakeholders that can help protect open lands and their role in the visual landscape

Options for getting there:

- ✓ Planning with landscape scenic values in mind
- ✓ Minimizing ridgeline development where feasible
- ✓ Promoting protection of open space elsewhere in the community to enhance regional viewsheds
- ✓ Applying local architectural styles and highlighting natural features to minimize disruption of the visual environment and create a more authentic experience
- ✓ Using visual simulation modeling in siting, planning and design to assist in demonstrating visual effects of projects
- ✓ Designing lifts and buildings to blend into the natural backdrop or complement the natural surroundings
- ✓ Constructing trails to appear as natural openings
- ✓ Using non-reflective building products and earth tone colors on structures
- ✓ Planting trees or other vegetation to improve visual quality
- ✓ Incorporating low level lighting or directional lighting to reduce impacts of lights on the night sky while recognizing safety, security, and maintenance needs
- ✓ Keeping parking areas free of debris and garbage
- ✓ Placing existing and new utility lines underground to reduce visual impacts

TRANSPORTATION

Travel to and within ski areas has unavoidable impacts. Through transportation initiatives, ski areas can do their part to help ease congestion and impacts to air quality and improve the ski area experience. (See related topic of ski area vehicle fleets under Energy Principles.)

Principle:

- ◆ Ease congestion and transportation concerns

Options for getting there:

- ✓ Providing employee transportation benefits, including shuttles, bus passes or discounts, van pools, and ride-share incentives
- ✓ Providing and promoting ski area guest transportation through shuttles or buses
- ✓ Offering and promoting carpooling or HOV incentives for guests such as discounts or preferred parking in proximity to lodges
- ✓ Offering and promoting non-peak travel incentives for guests such as Sunday night stay discounts
- ✓ Increasing density in base area development when appropriate to reduce the need for vehicle use
- ✓ Supporting and participating in transit initiatives in the community and region
- ✓ Working with travel agents to market and promote "car free" vacation packages

III. Education and Outreach

Because of their setting in an outdoor, natural environment and the clear connection between that natural environment and the guest experience, ski areas have an excellent opportunity to take a leadership role in environmental education and in enhancing the environmental awareness of their guests, surrounding communities, and employees.

Principles:

- ◆ Use the natural surroundings as a forum for promoting environmental education and increasing environmental sensitivity and awareness
- ◆ Develop outreach that enhances the relationship between the ski area and stakeholders and ultimately benefits the environment

Options for getting there:

- ✓ Training employees and informing guests of all ages about the surrounding environment
- ✓ Promoting the Environmental Code of the Slopes®
- ✓ Educating stakeholders about these Principles and the Environmental Charter for Ski Areas
- ✓ Providing leadership on environmental concerns with particular importance to the alpine or mountain environment, such as climate change
- ✓ Dedicating personnel to environmental concerns and incorporating environmental performance measures and expectations into departmental goals
- ✓ Dedicating a portion of the ski area's website to environmental excellence and the Environmental Charter
- ✓ Offering Skecology® or other environmental education and awareness programs that provide on-mountain instruction and offer classroom information for use in schools
- ✓ Partnering with local school systems, businesses and the public on initiatives and opportunities for protecting and enhancing the environment
- ✓ Displaying interpretive signs on forest resources, vegetative management and fish and wildlife
- ✓ Publicly demonstrating a commitment to operating in an environmentally sensitive manner by adopting these Principles or addressing environmental considerations in company policies or mission statements
- ✓ Creating funding mechanisms for environmental outreach projects
- ✓ Promoting the ski area's environmental success stories or specific measures taken to address water, energy, waste, habitat, vegetation, air quality, visual quality or transportation concerns
- ✓ Encouraging employees to participate in community environmental initiatives
- ✓ Supporting initiatives to reduce snowmobile noise and emissions
- ✓ Asking guests their opinions about ski area environmental programs and initiatives and using their feedback to improve programs and the guests' experiences.

NEXT STEPS FOR SKI AREAS

- Endorsing the Environmental Charter and making a commitment to implement the Principles over time.
- Adopting environmental mission statements, policies or programs that reflect or expand upon the Environmental Charter and demonstrate your commitment to environmental protection and stewardship.
- Designating an "Environmental Charter contact" at your resort.
- Conducting audits and gathering data to measure, document, and report your progress toward implementing the Principles.
- Using the Principles as a framework, targeting areas for improved environmental performance.
- Supporting research on, exploring, and applying technologies that conserve natural resources.
- Developing comprehensive programs for waste reduction, product reuse and recycling.
- Participating in existing programs that help foster effective environmental management and policies or measure environmental improvements.
- Developing Environmental Management Systems over time which are tailored to your operations.
- Sharing data and innovative environmental solutions with other resorts and the industry as possible.
- Taking active steps to educate employees, guests, and the general public about the Environmental Charter and the ski area's environmental policies and practices.

ENVIRONMENTAL CODE OF THE SLOPES®

WHAT SKIERS, SNOWBOARDERS AND SKI AREA GUESTS CAN DO TO HELP

- Follow the Leave No Trace™ Principles of outdoor ethics when visiting ski areas:
  - **Plan ahead and prepare:** Know the regulations and special concerns for the area you'll visit, prepare for winter weather, and consider off-peak visits when scheduling your trip.
  - **Dispose of waste properly:** Recycle your glass, plastics, aluminum and paper at resorts. Reuse trail maps on your next visit or recycle them rather than throwing them away. Never throw trash, cigarette butts or other items from the lifts.
  - **Respect wildlife:** Observe trail closures, seasonal closures, and ski area boundaries. These closures are in place not only for your safety, but the well being of plants and animals located in sensitive areas. In summer, stick to designated trails when hiking and biking to avoid disturbances to vegetation and wildlife.
  - **Be considerate of other guests:** Respect other guests, protect the quality of their experience, and let nature's sounds prevail.
- Carpool with friends and family or use transit to avoid traffic when travelling to and within the ski area.
- Turn off the lights when leaving your room and reuse bath towels and linens to help conserve energy and water.
- Use washable tableware and silverware in cafeterias and lodges instead of paper or plastics to help us reduce waste.
- Take advantage of environmental or alpine education programs offered at ski areas to learn more about the surrounding environment and how to help protect it.
- If you have kids, get them involved in environmental and alpine education programs at a young age.
- Support "clean up days" or other environmental programs at your local ski area.
- Provide feedback and let ski areas know how they can improve their environmental performance.

ENDORSING SKI AREAS

THE FOLLOWING SKI AREAS HAVE ENDORSED THE ENVIRONMENTAL CHARTER AND ARE COMMITTED TO IMPLEMENTING THE PRINCIPLES.

Alpine Meadows Ski Resort (CA)
Alta Ski Area (UT)
Alyeska Resort (AK)
Anthony Lakes Mountain Resort (OR)
Arapahoe Basin (CO)
Arizona Snowbowl (AZ)
Aspen Highlands (CO)
Aspen Mountain (CO)
Aspen Skiing Company (CO)
Attitash Bear Peak (NH)
Balsams Wilderness (NH)
Bear Creek Ski & Recreation Area (PA)
Beaver Creek Resort (CO)
Berthoud Pass Ski Area (CO)
Big Bear Mountain Resort (CA)
Big Mountain Ski & Summer Resort (MT)
Black Mountain Ski Area (NH)
Blacktail Mountain Ski Area (MT)
Blue Mountain Resorts Limited (Canada)
Bogus Basin Resort (ID)
Bolton Valley Resort (VT)
Boreal Mountain Resort (CA)
Boston Mills/Brandywine Ski Resort (OH)
Breckenridge Ski Resort (CO)
Bridger Bowl Ski Area (MT)
Bristol Mountain Ski Resort (NY)
Brodie Mt. Ski Resort (MA)
Bromley Mountain Ski Resort (CVT)
Brundage Mountain Resort (ID)
Buttermilk Mountain (CO)
Camelback Ski Area (PA)
Cannon Mountain (NH)
The Canyons (UT)
Cataloochee Ski Area (NC)
Copper Mountain Resort (CO)
Cranmore Mountain Resort (NH)
Crested Butte Mountain Resort (CO)
Crystal Mountain, Inc. (WA)
Crystal Mountain Resort (MI)
Discovery Ski Area (MT)
Denton Hill Family & Ski Resort (Ski Denton) (PA)
Devil's Head Resort (WI)
Dodge Ridge Ski Area (CA)
Dyer Mountain Associates, LLC (CA)
Eagle Crest Ski Area (AK)
49 Degrees North Ski Area (WA)
Gore Mountain Ski Area (NY)
Grand Targhee Ski & Summer Resort (WY)
Greek Peak Ski Resort (NY)
Gunstock Area (NH)
Heavenly Ski Resort (CA)
Hidden Valley Ski Area (MO)
Holiday Valley Resort (NY)
HooDoo Ski Area (OR)
Hunter Mountain (NY)
Hyland Ski & Snowboard Area (MN)
Jackson Hole Mountain Resort (WY)
Jiminy Peak – The Mountain Resort (MA)
Keystone Resort (CO)
Killington Resort (VT)
Kirkwood Mountain Resort (CA)
Lookout Pass Ski & Recreation Area (ID)
Loon Mountain Recreation Corp. (NH)
Lost Trail Ski Area (MT)
Loveland Ski Area (CO)
Mammoth Mountain Ski Area (CA)
Massanutten Ski Resort (VA)
Mission Ridge (WA)
Mohawk Mountain Ski Area (CT)
Monarch Ski & Snowboard Area (CO)
Mont Ste. Marie (Canada)
Montana Snow Bowl (MT)
Mount Shasta Board & Ski Park (CA)
Mount Snow Resort (VT)
Mount Sunapee Resort (NH)
Mountain Creek (NJ)
Mountain High Resort (CA)
Mt. Ashland Ski Area (OR)
Mt. Bachelor Inc. (OR)
Mt. Hood Meadows Ski Resort (OR)
Mt. La Crosse, Inc. (WI)
Mt. Rose - Ski Tahoe (NV)

Northstar-at-Tahoe (CA)
Nub's Nob Ski Area (MI)
Okemo Mountain Resort (VT)
Otis Ridge (MA)
Panorama Resort (Canada)
Paoli Peaks (IN)
Park City Mountain Resort (UT)
Pat's Peak Ski Area (NH)
Pebble Creek Ski Area (ID)
Peek 'n Peak Resort (NY)
Pelican Butte Corporation (OR)
Pomerelle Mountain Resort (ID)
Powderhorn Resort (CO)
Powder Ridge Ski Area (CT)
Purgatory Resort (CO)
Red Lodge Mountain (MT)
Red River Ski Area (NM)
Seven Springs Mtn Resort (PA)
Shawnee Peak Ski Area (ME)
Sierra Summit Mt. Resort (CA)
Sierra-at-Tahoe Ski Resort (CA)
Silver Creek Ski Resort (CO)
Ski Bluewood (WA)
Ski Cooper (CO)
Ski Liberty (PA)
Ski Plattekill (NY)
Ski Roundtop (PA)
Ski Snowstar Winter Sports Park (IL)
Ski Windham (NY)
Sleepy Hollow Sports Park Inc. (IA)
Smuggler's Notch Resort (VT)
Snowbasin Ski Area (UT)
Snow Creek Ski Area (MO)
Snow Summit Mt. Resort (CA)
Snowbird Ski & Summer Resort (UT)
Snowmass Ski Area (CO)
Snowshoe Mountain (WV)
Soda Springs Ski Area (CA)
Solitude Mountain Resort (UT)
Spirit Mountain (MN)
Squaw Valley Ski Corp. (CA)
Steamboat Ski & Resort Corp. (CO)
Stevens Pass (WA)
Stowe Mt. Resort (VT)
Stratton Mountain (VT)
Sugar Bowl Ski Resort (CA)
Sugarbush Resort (VT)
Sugarloaf USA (ME)
The Summit at Snoqualmie (WA)
Sunburst Ski Area (WI)
Sundance (UT)
Sunday River Ski Resort (ME)
Sunlight Mountain Resort (CO)
Swain Ski & Snowboard Center (NY)
Taos Ski Valley (NM)
Telluride Ski & Golf Company (CO)
The Temple Mountain Ski Area (NH)
Tenney Mountain Ski Area (NH)
Timberline Four Seasons Resort (WV)
Timberline (OR)
Tremblant Resort Inc. (Canada)
Triple M-Mystical Mountain Magic (NM)
Vail Mountain (CO)
Vail Resorts, Inc. (CO)
Wachusett Mountain Ski Area (MA)
Welch Village Ski Area (MN)
Whistler & Blackcomb Resorts (Canada)
White Pass Ski Area (WA)
Whiteface Mt. Ski Center (NY)
Whitetail Resort (PA)
Wildcat Mountain Ski Area (CT)
Willamette Pass Ski Corp. (OR)
Williams Ski Area (AZ)
Winter Park Resort (CO)
Wintergreen Resort (VA)
Wolf Creek Ski Area (CO)

ENDORSING ASSOCIATIONS AND AFFILIATES

American Association of Snowboard Instructors
Colorado Mountain College - Ski Area Operations
Colorado Ski Country USA
National Ski Patrol
Pacific Northwest Ski Areas Association
Professional Ski Instructors of America
Ski Areas of New York
Ski Maine Association
Ski New Hampshire
Ski Utah
University of Colorado Center for Sustainable Tourism
Vermont Ski Areas Association

(Please see www.nsaa.org for updates and revisions to this list.)

NATIONAL
SKI AREAS
ASSOCIATION

133 SOUTH VAN GORDON ST.
SUITE 300
LAKEWOOD, CO 80228
PHONE (303) 987-1111
FAX (303) 986-2345
NSAA@NSAA.ORG
WWW.NSAA.ORG

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APPENDIX U

DRAFT CONSTRUCTION POLLUTION PREVENTION PLAN

DRAFT*

CONSTRUCTION STORMWATER POLLLUTION PREVENTION PLAN

for

WHITEFACE MOUNTAIN SKI CENTER 2004 UMP UPDATE

Prepared in Accordance With New York State Department of Environmental Conservation SPDES General Permit for Storm Water Discharges from Construction Activities That Are Classified as "Associated With Construction Activity", General Permit GP-02-01s

*** DRAFT VERSION FOR UMP/SEQRA REVIEW PURPOSES ONLY**
FINAL VERSIONS TO BE SUBMITTED FOR COVERAGE UNDER GP-02-01

November 2002

OWNER AND CONTRACTOR CERTIFICATION
CPPP for Whiteface Mountain 2002 UMP Update

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: ____________________________

Name: ____________________________

Title: ____________________________

Date: ____________________________

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature	For	Responsible for
____________________________ Date: ______________		
____________________________ Date: ______________		
____________________________ Date: ______________		

CONSTRUCTION POLLUTION PREVENTION PLAN (CPPP)

SITE DESCRIPTION			
Project Name and Location: (Latitude, Longitude, or Address)	Whiteface Mountain 2004 UMP Update Whiteface Mountain Ski Center, Route 86, Wilmington NY	Owner Name and Address:	The Olympic Regional Development Authority, 216 Main St. Lake Placid, NY 12946

Permits	
Local	Site Plan Review________ Subdivision______________ Building___________ Road____________
State	Wetlands (Art 24)__________ Stream(Art 15)_______________ Other _________________________
Federal	Wetland Nationwide___________ Individual__________ **Contractor is responsible for compliance with all permits**
Other	None
Description: (Purpose and Types of Soil Disturbing Activities	The following activities are proposed for the five year period covered by the UMP. Increase the amount of downhill ski trails on the mountain from approximately 18.06 miles of alpine ski trails to 20.26 miles. This includes trail improvements for the following trails approved in the 1996 UMP but not yet completed: Cloudspin, Empire, Upper Mackenzie, Upper Wilderness, Upper Parkway, and Lower Thruway. Installation of snowmaking piping during trail construction. Increase lift capacity including lengthening the existing lift at Mixing Bowl and relocating bottom terminal at Bear. Relocation of mid-station lodge, construct new 5,000 sf Kid's Center (Easy Acres) building, expansion of NYSEF building, relocation and expansion of Fox Pole Barn and Lot 5 Pole barn and Don Straight building, and construct new grooming equipment maintenance building. Construct new lot #5 parking area. Perform drainage system improvements. Annually routine maintenance activities may result in limited soil disturbance.
Runoff Coefficient:	Pre-construction weighted CN is approximately 75 (affected area site).
Site Area:	Whiteface Mountain Ski Center Intensive Use Area covers a total of 2,910 acres. Approximately 7% or 211.4 acres presently has been developed for ski trails and lifts. Approximately 29.8 acres are proposed to be affected by ski trail construction and widening, the proposed activities that would require the great majority of soil disturbance.

Sequence of Major Activities:

1. *Establish Limits of Disturbance.* Work areas shall be clearly defined by appropriate means. This may include measures such as flagging tape or paint marks on trees at the limits of clearing for ski trails and lifts, construction fencing around building sites, marked stakes installed in the ground for areas such as the Parking Lot #5, or other suitable methods to clearly define the limits outside which soil disturbing activities are not permitted.

2. *Vegetation Removal.* Cut trees and shrubs within defined work areas. Wherever feasible chip tree tops and smaller growth on site.

3. *Install Structural Erosion Control.*

   A. Water Bars

Water bars shall be installed during construction of ski slopes and lifts in accordance with the attached specifications and details. Particular attention shall be paid to proper spacing specifications as follows:

Slope (%)	Water Bar Spacing (ft.)
<5	125
5 to 10	100
10 to 20	75
20 to 35	50
>35	25

(Source: Guidelines for Urban Erosion and Sediment Control, USDASCS, 1997)

   B. Silt Fence

Where appropriate, silt fence shall be installed in accordance with the attached specifications and details. Use of silt fence is appropriate where there is no concentration of water flowing to the barrier and where the drainage area for overland flow does not exceed ½ acre per 100 feet of fence. Additionally, maximum allowable slope lengths contributing runoff to a silt fence shall be as follows:

Slope Steepness	Maximum Slope Length (ft.)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter Than 5:1	200

(Source: Guidelines for Urban Erosion and Sediment Control, USDASCS, 1997)

C. Straw Bale Dikes

Straw bale dikes may be used as a substitute for silt fence ONLY where shallow depth to rock precludes the proper installation of silt fence. Installation shall be in accordance with the attached specifications and details. Straw bale dikes shall NOT be used where there is concentrated flow. Straw bale dikes shall NOT be used where more than 3 months of erosion and sediment control is required unless bales are replaced or an additional parallel row of bales is installed prior to the original straw bales being in place for 3 months. Length of slope above the straw bale dike shall not exceed the following:

Slope Steepness	Maximum Slope Length (ft.)
2:1 (50%)	25
2.5:1 (40%)	50
3:1 (33%)	75
3.5:1 (30%)	100
4:1 (25%)	125

(Source: Guidelines for Urban Erosion and Sediment Control, USDASCS, 1997)

D. Wattles

Fiber-wrapped wattles constructed of straw, coconut fiber (koir) or rice straw may also be used in place of silt fences where shallow depth to rock precludes the proper installation of silt fence. Wattles shall be installed in accordance with manufacturer's specifications, an example of which is attached. Length of slope above wattles shall not exceed the lengths provided for straw bale dikes above.

E. Stabilized Construction Entrances

Stabilized construction entrances consisting of a stabilized pad of aggregate shall be constructed in accordance with the attached specifications and details at any point where traffic will be entering or leaving an unstabilized construction site to a public right-of-way, street or parking area. All sediment spilled, dropped or washed onto public rights-of-way must be removed immediately. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

4. *Grub Stumps.* Stumps shall be grubbed only after structural erosion control is in place. Wherever possible, stumps shall be left in place or cut to grade in order to hold soil in place.

5. *Prepare Final Grades.* Grade disturbed areas to create final as-built elevations. Earthwork activities are designed to be localized and not involve large quantities of cuts and fills. The need to stockpile soil or transport bulk materials across the site is not anticipated. Should the need arise to temporarily stockpile soils during grading operations, stockpiles shall be surrounded with one of the temporary structural erosion control measures described above.

   Trenches excavated for installation of utilities shall make use of trench blocks where trenches are located on slopes that are in excess of 10% and trenches will remain open for more than one construction day. Sand bags or rock check dams one to two feet tall shall be installed at 100 foot intervals along the bottom of the open section of trench.

6. *Stabilize Disturbed Areas:* Stabilization shall be put in place as soon as practical after final grades are established. Stabilization shall be put in place within seven days of establishing final grades.

   Depending on the type of area being disturbed, stabilization may take the form of vegetation (ski trails and lifts), concrete (building footprints and walkways), gravel (parking areas), rip rap (culvert outfalls), or other similar means to prevent soil erosion after construction is complete. More details on acceptable vegetation stabilization measures are provided below.

7. *Remove Temporary Structural Erosion Controls.* Silt fences and other erosion and sediment controls shall be removed only after the areas which they are serving have become permanently stabilized by vegetative or other means.

Controls

Erosion and Sediment Controls

Stabilization Practices

Structural and vegetation practices to be implemented to prevent erosion and sediment transport are in accordance with NPDES Phase II Stormwater Requirements and described below.

Structural Practices

The proper use of water bars, silt fences, hay bay dikes, wattles, and stabilized construction entrances were described in a previous section.

Vegetation Practices

Maintain existing vegetation outside of marked limits of disturbance.

Soils disturbed for construction of ski trails and lifts shall be permanently stabilized by successfully establishing an herbaceous ground cover.

<u>Seeding</u>
A commercially available seed mixture appropriate to the climate shall be used to stabilize disturbed areas to be revegetated. The "Adirondack Seed Mix" contains the following;

43.65% Boreal creeping red fescue
34.3% perennial ryegrass
17% Kentucky bluegrass

The boreal red fescue is particularly well suited to the local climate and the perennial ryegrass will germinate rapidly and accelerate stabilization.

Seed may be applied by a number of suitable means including broadcasting, hydroseeding, or incorporated as part of a geotextile (i.e. Green & Bio Tech SureTurf 1000 and 4000 Seeded Mat System ®, BIOMAT ® seeded mats).

The Adirondack Seed Mix will be used to stabilize the majority of the trails constructed as part of the current UMP for Whiteface Mountain. An alternative NYSDOT seed mix will be used under those special conditions that may be most suitable, including steeper slopes (i.e. >15 to 20%), or wherever the Adirondack Mix does not become effectively established. This seed mix contains a number of wildflowers as well as sheep fescue and annual ryegrass. Components of this mix were chosen by NYSDOT because of their ability to produce a root system of varying root types, including fibrous shallower roots and deep tap roots. The per acre cost for seeding using this mix is approximately $1,140 versus approximately $35 per acre for the Adirondack Mix specified.

Mulching

Broadcast seeded areas and hydroseeded areas shall also be mulched. Broadcast seeded areas shall be mulched with straw at a rate of 2 to 3 bales per thousand square feet (100-120 bales per acre). Straw mulch shall be secured in place be either driving over the mulched area with a tracked vehicle or by applying a non-asphaltic tackifier.

Hydroseeded areas shall be mulched with straw as described above or with wood cellulose mulch applied during the hydroseeding process. Wood cellulose mulch shall be applied at a rate of 50 pounds per thousand square feet (2,000 pounds per acre). A non-asphaltic tackifier may be included with the hydromulch application.

Fertilization

Seeded areas shall be fertilized at the time of seeding in order to promote seed germination and plant growth that will provide stabilization. A suitable turf starter fertilizer shall be applied as per dictated by soil test or apply 850 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.)

Storm Water Management

During construction water bars will serve as the primary means of controlling runoff from ski trails. For Parking Lot #5 a stormwater/sediment basin will be constructed at the downhill side of the parking lot in the earliest stages of construction and remain in place after construction is complete.

Discharges of stormwater shall not result in discharge of toxic or deleterious substances.

Discharges of stormwater shall not result in the discharge of suspended, colloidal or settlable solids in amounts that causes substantial visible contrast to natural conditions or impairs receiving waters for their best (classified) usages.

OTHER CONTROLS

Waste Disposal:

Waste Materials: Any debris will be disposed of in an approved municipal or C and D landfill as appropriate and recyclable materials will be salvaged as appropriate.

Sanitary Waste: If necessary, portable sanitary facilities will be made available to construction personnel and will be serviced regularly.

Offsite Vehicle Tracking

All activities covered under this CPPP will not involve vehicle traffic on local public roads, so no off-site vehicle tracking measures are necessary.

TIMING OF CONTROLS/MEASURES

1. Temporary structural erosion controls will be installed prior to earthwork as per this plan.

2. Seeding, fertilization and mulching of disturbed areas shall take place between June 1 and September 15. Dormant seeding done after this time should only be done when 2 inch soil temperature is less than 50 degrees. When it is necessary to stabilize disturbed areas beyond these timeframes, a qualified professional shall be retained by the Owner to provide alternative stabilization measures to the Department for their review and approval.

3. Straw mulch shall be installed immediately after finished grades are established and seeding completed. Suitable geotextile erosion control blankets may be used on steeper slopes or where surface flow may concentrate.

4. Structural erosion controls and non-stabilized areas shall be inspected once a week and within 24 hours after a rainfall of 0.5 inches or more by a licensed/certified professional. Copies of the Stabilization Inspection forms and Structural Inspection forms located at the end of this report shall be completed in full for every inspection performed. Completed inspection forms shall be retained on site.

5. Vegetation stabilization is to be performed within 14 days after establishing final grades.

6. Temporary erosion control devices will not be removed until the growth of vegetation stabilizes the area served. Vegetation coverage of 75% shall be considered "stabilized".

7. The Contractor must track the overall timing of the site construction activity. The Contractor shall record the dates for initiation of construction, implementation of erosion control measures, stabilization, etc. A copy of these records will be maintained in the construction trailer or construction office and be updated in addition to the individual Stabilization Inspection forms and Structural Inspection forms completed for each inspection.

MAINTENANCE/INSPECTION PROCEDURES

Erosion and Sediment Control Inspection and Maintenance Practices

These are the inspections and maintenance practices that will be used to maintain erosion and sediment controls.

ORDA will supervise day-to-day activities on the site. A licensed/certified professional will make at least weekly inspections of erosion control devices, as well as inspections following any storm event of 0.5 inches or greater.

All measures will be maintained in good working order. If repair is necessary, it will be initiated within 24 hours of discovery. The inspector shall identify measures in need of repair immediately upon their discovery.

Built up sediment will be removed from silt fences if it ever reaches one-third the height of the structural control.

Silt fence will be inspected for depth of sediment, tears, etc., to see if the fabric is properly functioning, securely attached to the fence posts, and to see that the fence posts are firmly in the ground.

Seeded areas will be inspected for bare spots, washouts, and healthy growth. If necessary, replanting, reseeding, or sodding will be implemented as per written notification by the inspector.

A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached. Reports should be compiled and maintained on site. The Owner's Representative and the Contractor shall be mutually responsible for keeping all record keeping required in this CPPP current and up to date.

Non-Storm Water Discharges

None involved.

INVENTORY FOR POLLUTION PREVENTION PLAN

SPILL PREVENTION

Material Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

Petroleum shall be stored in above ground skid-tanks or in-vehicle (pickup truck) mounted tanks. Any refueling shall occur at least 100 feet from any surface water shoreline or wetland area.

Hydraulic oil shall be stored in original containers removed at least 100 feet from any shoreline or wetland area.

Good Housekeeping:

The following good housekeeping practices will be followed onsite during the construction project:

An effort will be made to store only enough product required to do the job. This includes fuel for machinery involved in this action.

Any materials stored onsite will be stored in a neat, orderly manner in their appropriate containers. Storage of materials is not generally anticipated for this action.

Products will be kept in their original containers with the original manufacturer's label.

Whenever possible, all of a product will be used up before disposal. There shall be absolutely no product disposal directly to surface waters or any areas that could result in discharge to surface waters.

Manufacturer's recommendations for proper use and disposal will be followed.

The Contractor will inspect daily to ensure proper use and disposal of materials onsite.

Hazardous Products:

These practices are used to reduce the risks associated with hazardous materials.

Movement of soil materials shall be limited to only those materials identified on the attached plans.

Products will be kept in original containers unless they are not resealable.

Original labels and material safety data sheets will be retained; they contain important product information.

If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

Product Specific Practices

The following product specific practices will be followed on-site:

Petroleum Products:

1. Construction personnel should be made aware that emergency telephone numbers are located in this CPPP.
2. The contractor shall immediately contact NYSDEC in the event of a spill, and shall take all appropriate steps to contain the spill including constructing a dike around the spill and placing absorbent material over this spill.
3. The contractor shall instruct personnel that spillage of fuels, oils, and similar chemicals must be avoided.
4. Fuels, oils, and chemicals will be stored in appropriate and tightly capped containers, containers shall not be disposed of on the project site.
5. Store fuels, oils, chemicals, material, and equipment and locate sanitary facilities away from trees and at least 100 feet from streams, wells, wet areas, and other environmentally sensitive sites.
6. Dispose of chemical containers and surplus chemicals off the project site in accordance with label directions.
7. Use tight connections and hoses with appropriate nozzles in all operations involving fuels, lubricating materials or chemicals.
8. Use funnels when pouring fuels, lubricating materials or chemicals.
9. Refueling and cleaning of construction equipment will take place from access roads, in staging areas or along roadside areas whenever practical to provide rapid response to emergency situations.
10. All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Any vehicle leaking fuel or hydraulic fuel will be immediately removed from the site.

Fertilizers:

Fertilizer shall be stored in original containers and on pallets should the need to store fertilizers occur. Whenever possible local retail supplier shall be utilized for purchase and immediate use of fertilizers on site. Proper delivery scheduling will minimize storage time. Any damaged containers will be repaired immediately upon discovery and any released fertilizer recovered to the fullest extent practicable.

Paints:

None involved

Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site except in a designated upland area.

While not anticipated, should concrete need to be discharged into water or wetlands, the concrete shall be poured into a tightly sealed form. This form can include a caisson which is normally used, and would prevent the movement of concrete into the groundwater.

Spill Control Practices
In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup: Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies. Any spill in excess or suspected to be in excess of two gallons will be reported to the NYSDEC Spill Response Unit. Notification to NYSDEC (1-800-457-7362) must be completed within two hours of the discovery of the spill. Materials and equipment necessary for spill cleanup will be made available to this site. Equipment and materials will include but not be limited to absorbent pads, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose. All spills will be cleaned up immediately after discovery. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with spilled substance. Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included. The construction manager responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He/she will designate at least one other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the onsite construction office or trailer.

SPILL RESPONSE REPORT	
Within 1 hour of a spill discovery of less than 2 gallons in volume the following must be notified: 1. Bruce McCulley (518) 891-7287 Within 1 hour of a spill discovery greater than 2 gallons the following must be notified: 1. NYSDEC Spill Response Hotline 1-800-457-7362. 2. Jay Rand (518) 523-9425 3. Approved Spill Response Contractors Clean Harbours Environmental Services, Glenmont (518) 434-0149 OPTEC Environmental Services, Inc., Plattsburgh (518) 561-8368 Environmental Products and Services of Vermont, Plattsburgh (518) 562-5656 The following information will need to be provided:	
Material Spilled:	**Approximate Volume:**
Location:	
Distance to nearest downgradient drainageway:	
Distance to nearest downgradient open water:	
Temporary control measures in place:	

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR:______________________________DATE:_____________________________

AMOUNT OF LAST RAINFALL ________INCHES

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STBLZD? (Y/N)	STBLZD WITH	CONDITION

STABILIZATION REQUIRED:

____

____

TO BE PERFORMED BY:____________________ON OR BEFORE:___________________________

STRUCTURAL CONTROLS

DATE:______________________COMPONENT(S):___________________________

TEMPORARY SEDIMENT BASINS _____ PERMANENT SEDIMENT BASIN _____

SEDIMENT BASINS

DEPTH OF SEDIMENT IN BASIN: ____
CONDITION OF BASIN SIDE SLOPES:____
ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT?____________________________
CONDITION OF OUTFALL FROM SEDIMENT BASIN:________________________________

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

____

____

TO BE PERFORMED BY:____________________ON OR BEFORE:___________________________

Date	**Inspector**	**Perimeter Controls**	**Sediment Basin**	**Construction Entrance**
Weekly – Post Rainfall				

OTHER CONTROLS
STABILIZED CONSTRUCTION ENTRANCE:

DOES MUCH SEDIMENT GET TRACKED ONTO ROAD?____________________
IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?________________
DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE?________
IS THE CULVERT BENEATH THE ENTRANCE WORKING?____________________

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

____
____

TO BE PERFORMED BY:________________ON OR BEFORE:__________________

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

REASONS FOR CHANGES:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE______________________________DATE:______________________

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

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SIGNATURE______________________________DATE:______________________

A. Detail of Proposed Erosion and Sediment Control Plan

i. Strategy

- The erosion and sediment control plan is designed to minimize accelerated erosion both during construction and after the site has been stabilized. Where necessary, upslope runoff will be diverted away from the site by means of diversion channels (water bars). Small areas will be controlled by the installation of filter fabric fencing or bale dikes to assure a minimal amount of off-site sediment.

ii. Sequencing

1. Clean ski trails of all mature vegetation. Trail work will proceed from top to bottom.
2. Rough in water bars as specified in the erosion and sediment control plan and install sediment traps.
3. Rough grading will then start with no more than 600 slope feet of mineral soil (with an area no greater than one acre) will be exposed on any trail section at any time.
4. Install snowmaking pipe.
5. Install lift foundations.
6. Once snowmaking pipe and lift foundations are installed, rough grading will be finished.
7. Fine grading, finished water bars, seeding, and mulching will then follow the rough grading down the trails. No more than 600 slope feet of mineral soil (with an area no greater than one acre) will be exposed on any trail section at any time between the rough grading and the fine grading and mulching crews.

B. Trail Specifications

iii. Clearing

- Clearing shall consist of the complete cutting and removal of all trees, down timber, brush and related growth within the designated areas. Poor risk trees within a distance equal to the total height of the tree from any ski trail or lift line shall be felled and removed.

- Trees lawfully cut cannot be removed from the premises in any manner but can be chipped or used on site by ORDA so long as such method is consistent with the guidelines of the State Land Master Plan, this UMP and Article 8 of the ECL. Virtually all trees which are cut for ski trail construction and widening and construction of lifts and other amenities are chipped and used on site as fill for construction and erosion control projects. Access for the wood chipper on steeper terrain is limited so some trees are buried for use as fill and erosion control.

- Stumps shall be cut as close to the ground as possible and in no case should they be left in excess of 6" high. However, allowances will be made by the construction supervisor for unusual situations. The removal of trees by dozing over will not be allowed.
- Trees and down timber may be hauled to yarding areas specified by the construction supervisor.
- Brush, limb wood, and other small woody debris can be chipped at their source if this appears to be more convenient and if it can be done without undue disturbance of the terrain.
- No trees, brush, down timber, or other material are to be felled, pushed, or deposited outside the trail boundaries.
- When completed, the designated areas shall be free of all brush, trees, and related growth.
- All local, state, and federal laws and regulations pertaining to clearing on this particular site shall be adhered to.
- Machinery may not be operated outside the clearing limits without specific permission from the construction supervisor.
- Bridges or culverts will be used whenever crossing live streams or stream beds during skidding operation.

iv. Rough grading

- All trails, lift lines, terminal sites, and related areas shall be rough graded according to a schedule which allows no more than 600 slope feet of mineral soil (with an area no greater than one acre) will be exposed on any trail section at any time between the rough grading and the fine grading and mulching crews.
- Topsoil may be stripped and stock piled for use during fine grading. Topsoil stock piles will have hay bales or silt fence staked down on the downhill perimeter. If stock piles are to remain for more than a week, they will be mulched.
- Rough grading with the use of bulldozers and excavators shall consist of the complete shaping of all trails, lift lines, terminal sites and related areas. This will include the removal and burial of all stumps and large rocks and the appropriate erosion control methods (i.e. Water bar, straw bales, etc.).

- Ski trails, unlike roads, must contain rolls, long radius bumps and dips, to add interest and create a quality skiing experience. So disposal of stumps, rocks and related debris shall be incorporated into the formation of these desired features whenever possible. (the precise location and configuration of trail contours and erosion control features are dependent to a great degree upon unknown subsurface conditions. Thus, the development of these features can take place only by supervision in the field as the rough grading progresses).
- Ledge, when it protrudes above the desired grade, will be drilled and blasted where necessary to permit removal during rough grading.
- In areas of smooth surface ledge, or ledge just slightly below the natural surface, dozing will proceed so as not to disturb valuable existing overburden.
- The outside limits of trails, lift lines, and related areas are to remain clean and free of any disposed material except insofar as the material is needed for proper shaping or drainage.
- Care shall be exercised so as not to destroy woods growth and the root systems of trees bordering the trails, lift lines, and related areas.
- Water bars on roads, skid trails, and ski slopes will be guided by the following specifications:

Grade (%)	<5	5-10	10-20	20-35	>35
Spacing (ft)	125	100	75	50	25

- Water bars shall have a 2 - 5% cross slope. Stabilized outlets will be constructed at the end of all water bars. They shall be checked at the termination of each work day to ensure their proper function.
- Water bars, drainages, and culverts shall be extended beyond the cutting limits of the trail if this is required to prevent water from running back onto the trail surface. Rip-rap or straw bale dikes will be placed at the discharge ends of all drainages.
- The rough grading contractor will be expected to coordinate his activities with the installation of the snowmaking piping and lift erection to eliminate duplication of effort regarding excavation.
- There shall be no more than 400 feet of snowmaking trench open at any one time. Trench plugs shall be installed at specific intervals depending on the slope of the pipe trench.

v. Fine grading and revegetation

- All trails, lift lines, terminal sites, and related areas shall be fine graded according to a schedule which allows no more than 600 slope feet of mineral soil (with an area no greater than one acre) will be exposed on any trail section at any time between the large dozers doing the rough grading and the fine grading and mulching crews.
- Fine grading shall consist of the complete finishing of all trails, lift lines, terminal sites, and related areas so that they present a well-groomed skiable surface with a required initial base snow depth not to exceed 6" (compacted).
- The process shall include all the necessary dozing, grading, handwork, seeding, and mulching to achieve the desired results.
- Water bars constructed by the rough grading crews shall be final shaped to conform with standards set forth by the erosion control plan (see figure 3).
- All water bars will be lined with a 6 1/2 foot wide erosion control blanket (North American green s75bn), or its equivalent.
- There shall be no exposed unseeded soil prior to weekends, downtime, or anticipated rainy periods.
- Mulching shall consist of the complete covering of all trails, lift lines, and related areas with straw. Application should average two tons per acre with three or more tons being required in areas of severe rock and steep grades, and 1-1/2 tons or less in areas with excellent soil and lower grades. This mulch may be applied by machine or manually. Certain areas with severe rock and/or ledge conditions will require hand-padding with hay bats prior to the actual mulching if done by machine. The banks or sides of all areas are to be mulched. All water courses are to be left free of straw.
- If no vegetation is established by September 15, due to natural causes, remulching – or other temporary stabilization such as tackifiers, geotextiles or heavy hydromulch – may be required for slope protection through the fall and winter.
- Strict erosion control measures shall be followed at all times. Water bars shall be kept established and clean at all times. Any washouts or related erosion will be repaired immediately.
- All vehicle traffic shall be confined to established work roads unless specific permission for other travel is received beforehand from the construction supervisor. All water bars on work roads shall be placed in their proper condition at the end of each work day.

- The steps involved in the fine grading process shall take place in sequence so that at no time will a fine graded section of over 600 feet be without the proper mulch cover to prevent unnecessary erosion.

vi. Erosion control for snowmaking trenches and valvehouses

- Before any earthwork the appropriate piping will be placed near the proposed trench with all the appropriate connections in place.
- There will be no more than 400 feet of trench open at any one time.
- At locations where the existing water bars are crossing the trench, the water bar will remain undisturbed until immediately before laying the pipe. Trench plugs shall be installed at regular intervals as determined by the slope of the pipe trench. Additionally, trench plugs shall be installed at the end of the pipe each day, whenever pipe advancement is halted.
- Each section of trench will be backfilled after the pipe is placed. Permanent water bars will be graded, seeded, and mulched, when trench is closed.
- All topsoil stockpiles will have hay bales or silt fence staked down on the downhill perimeter. If stockpiles are to remain for more than a week, they will be mulched.
- All water bars will be maintained on a daily basis, and vehicle traffic restricted to designated sections of the trails with stable soils and adequate drainage.
- All trenches will be backfilled with a minimum of a 6" berm to accommodate any future settling .
- Valvehouse construction sites will have silt fence or hay bales installed on the downhill perimeters. All excavated material will be stock piled for use during backfilling and finish grading. If stock piles are to remain for more than a week, they will be mulched.

C. Erosion And Sediment Control Measures

vii. Water bars

- To be placed across the slope to reduce the potential for erosion, with diversion into a natural vegetation mat or other stabilized outlet.
- To be constructed as shown in detail 5A.4.
- Construction specifications:

All dikes will be machine compacted
All dikes will have positive grade to outlet (not greater than 5%)
Field location will be adjusted to utilize a stable safe outlet
Diverted runoff will outlet directly onto an undisturbed stabilized area, a level spreader, or into a sediment trap

viii. Straw bale dikes

- The straw bale dike is to intercept and detain small amounts of sediment from unprotected areas of limited extent.
- Construction specifications (see Figure 5A.8):

Bales shall be placed in a row with ends tightly abutting the adjacent bales.
Each bale shall be embedded in the soil a minimum of 4 inches.
Bales shall be securely anchored in place by stakes driven through the bales. The first stake in each bale shall be driven toward the previously laid bale to force bales together.
Inspection shall be frequent and repair or replacement shall be made promptly as needed.
Bales shall be removed when they have served their usefulness, so as not to block or impede storm flow or drainage.

ix. Silt fence

- Typical installations
- Silt fence structures should be installed anywhere sediment retention is needed in and around a construction site.

At the toe of highly erodable slopes
Around culverts and storm water drainage systems
Adjacent to lakes, streams or creeks
Around the perimeter of a construction project

a) Installation guidelines (See figure 5A.9)

- dig a small trench
- unroll silt fence system. Position the post in the back of the trench (downhill side) and drive the post into the ground
- lay the bottom 6 inches of the fabric into the trench to prevent undermining by storm water run-off
- backfill the trench and compact
- it is a good practice to construct the silt fence across a flat area in the form of a horseshoe. This aids in pending the runoff and allowing sedimentation.

b) Maintenance

- Silt fences should be inspected periodically for damages such as tearing by equipment, animals, or wind and for the amount of sediment which has accumulated. Removal of the sediment is generally necessary when it reaches 1/3 the height of the silt fence. In situations where access is available, machinery can be used; otherwise, it must be removed manually. The key elements to remember are:
  - ✓ The sediment deposits should be removed when heavy rain or high water is anticipated.
  - ✓ The sediment removed should be placed in an area where there is no danger of erosion.
- The silt fence should not be removed until adequate vegetation ensures no further erosion of the disturbed slopes. Generally, the fabric is cut at ground level, the wire and posts removed, the sediment spread, and seeding and mulch is applied immediately.

D. Summer Trail Maintenance Specifications

x. General

- The annual summer trail maintenance schedule or plan of work should contain regular maintenance and repair activity necessary to keep all slopes, trails and facilities in satisfactory condition for skiing, safety, aesthetics of the area and quality control of the environment.

xi. Drainage and erosion control

- In the spring of the year when the snow starts to melt, water bars should be checked to see that the water is flowing. Even with snow cover still on the ground, the partially frozen water bars can be re-channeled by the use of hand shovels. The running water will eat its way through the snow or ice and eventually open up the water bars.
- When the snow is all gone these water bars should be checked again to see that they are working properly and repairs made if needed. These checks should continue throughout the summer months especially before and after major storms. If severe erosion is noticed, the bars should be "rip-rapped" with stone or lined with jute matting. The checking interval can be reduced once the water bars are stabilized.

However, they should always be checked and cleaned out in the fall after all the leaves have fallen and in the spring when melting starts.

- Culverts and bridge openings should be checked on the same schedule as water bars. They should be kept free from obstructions and sediment buildup.
- Washed and eroded areas should be repaired as soon as the trails dry out enough so that no more damage will occur. This repair work should be accomplished by filling in the washed or eroded areas with new material, and adding seed and mulch.

xii. Trails and trail edges

- Snags, dead trees, undermined and leaning trees, limbs and other debris, rocks, etc. within or along the edges of trails should be removed.

xiii. Seeding

- To establish permanent cover over all slopes and trails, reseeding may be required from time to time. Seeding should be done in the spring after the slopes and trails have dried, (to be completed by June 10) or alternatively during the period from August 1 to September 15.

xiv. Mulching

- Remulching may become necessary if bare rocks and ledge appear or where reseeding has taken place. Mulch should be applied at a rate of 2 tons per acre.
- Mulching and proper drainage is the key in keeping valuable topsoil in place until a good sod has been developed.

xv. Weed and brush control

- The best deterrent to weed and brush growth is a dense, well-cared-for sod of grasses and legumes.

xvi. Mowing

- All slopes and trails should be mowed each year or every other year to maintain a low cover and to control woody growth. The best time to mow is mid-August after the established grasses have gone to seed giving the potential for new growth. The most desirable cutting height is 3-1/2 to 4 inches.

STANDARD AND SPECIFICATIONS FOR WATER BAR

Definition

A ridge or ridge and channel constructed diagonally across a sloping road or utility right-of-way that is subject to erosion.

Purpose

To limit the accumulation of erosive volumes of water by diverting surface runoff at predesigned intervals.

Conditions Where Practice Applies

Where runoff protection is needed to prevent erosion on sloping access right-of-ways or either long, narrow sloping areas generally less than 100 feet in width.

Design Criteria

Design computations are not required.

1. The design height shall be a minimum of 18 inches measured from channel bottom to ridge top.
2. The side slopes shall be 2:1 or flatter; a minimum of 4:1 where vehicles cross.
3. The base width of the ridge shall be six feet minimum.
4. The spacing of the water bars shall be as follows:

Slope (%)	Spacing (ft)
<5	125
5 to 10	100
10 to 20	75
20 to 35	50
> 35	25

5. The positive grade shall not exceed 2%. A crossing angle of approximately 60 degrees is preferred.
6. Water bars should have stable outlets, either natural or constructed. Site spacing may need to be adjusted for field conditions to use the most suitable areas for water disposal.

See figure 5A.4 on page 5A.10 for details.

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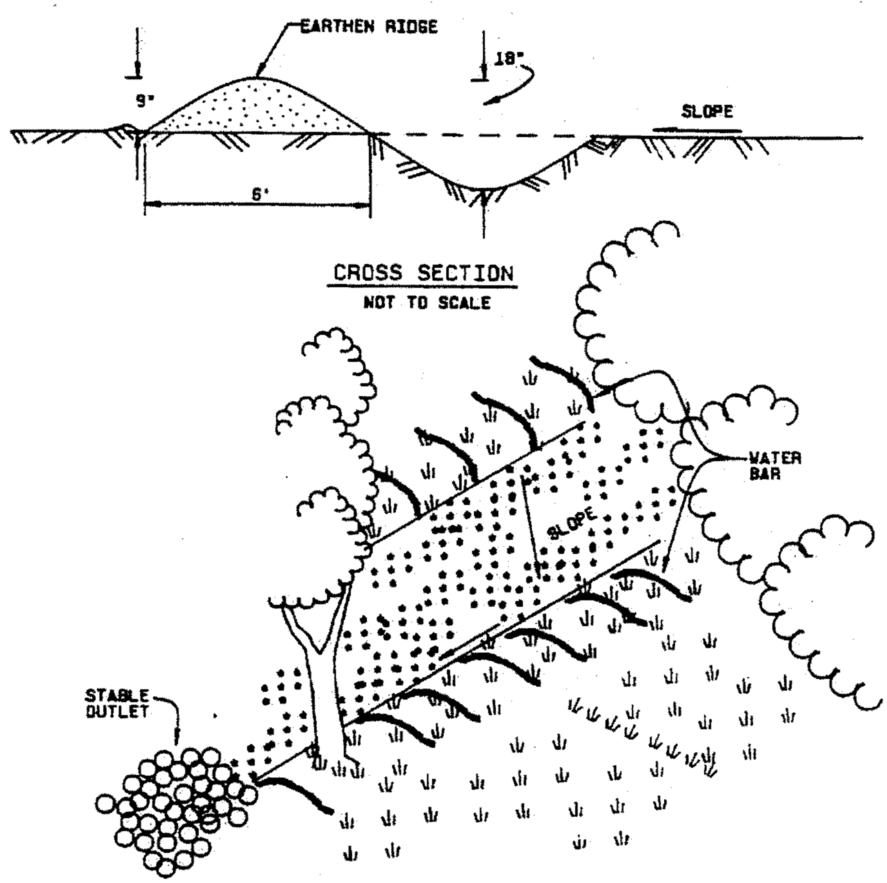
Figure 5A.4
Water Bar Details



CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE SYRACUSE, NEW YORK	WATER BARS	STANDARD SYMBOL —WB—

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used.

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence are:

Slope Steepness	Maximum Slope Length (Ft)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200

2. Maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required. All silt fences shall be placed as close to the area as possible, and the area below the fence must be undisturbed or stabilized.

A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:

1. The type, size, and spacing of fence posts.
2. The size of woven wire support fences.
3. The type of filter cloth used.
4. The method of anchoring the filter cloth.
5. The method of fastening the filter cloth to the fencing support.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. See Figure 5A.9 on page 5A.20 for details.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance. Statewide acceptability shall depend on in field and/or laboratory observations and evaluations.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.
3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 in. mesh opening, or as approved.
4. Prefabricated Units: Envirofence or approved equal may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.9.

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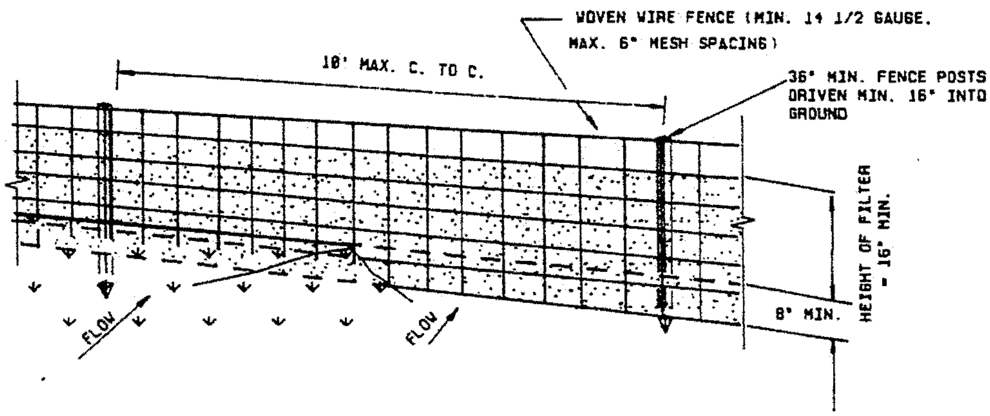
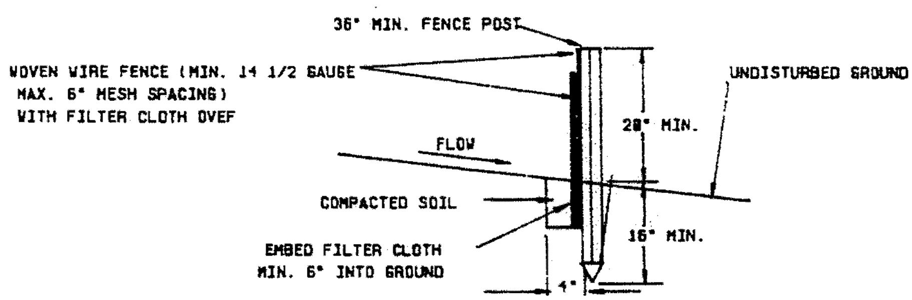
Figure 5A.9
Silt Fence Details



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE SYRACUSE, NEW YORK	SILT FENCE	STANDARD SYMBOL

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE

Definition

A temporary barrier of straw or similar material used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

Conditions Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits.

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
2 -1/2:1	40	50
3:1	33	75
3-1/2:1	30	100
4:1	25	125

Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage area in this instance shall be less than one acre and the length of slope above the dike shall be less than 200 feet.

Design Criteria

A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.8 on page 5A.18 or details.

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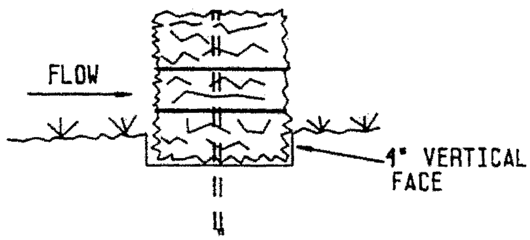
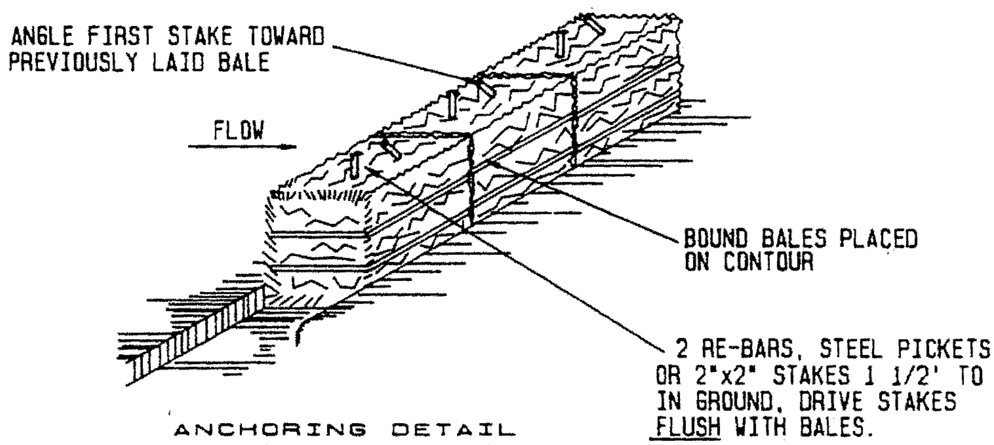
Figure 5A.8
Straw Bale Dike Details



BEDDING DETAIL

DRAINAGE AREA NO MORE THAN 1/4 AC. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%



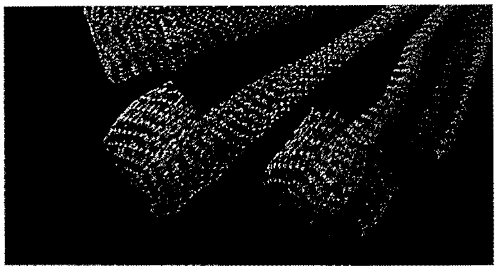
ANCHORING DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE SYRACUSE, NEW YORK	STRAW BALE DIKE	STANDARD SYMBOL SBD



What are Earth Saver Rice Straw Wattles?

Earth Saver Rice Straw Wattles are made from recycled naturally weed-free California rice straw. Earth Saver Wattles are available in three types of netting: biodegradable, photodegradable, and burlap. Earth Saver Wattles come in three diameters; 9", 12", and 20". The standard length for 9" is 25', 12" and 20" wattles standard length is 10'.

What do Earth Saver Rice Straw Wattles do?

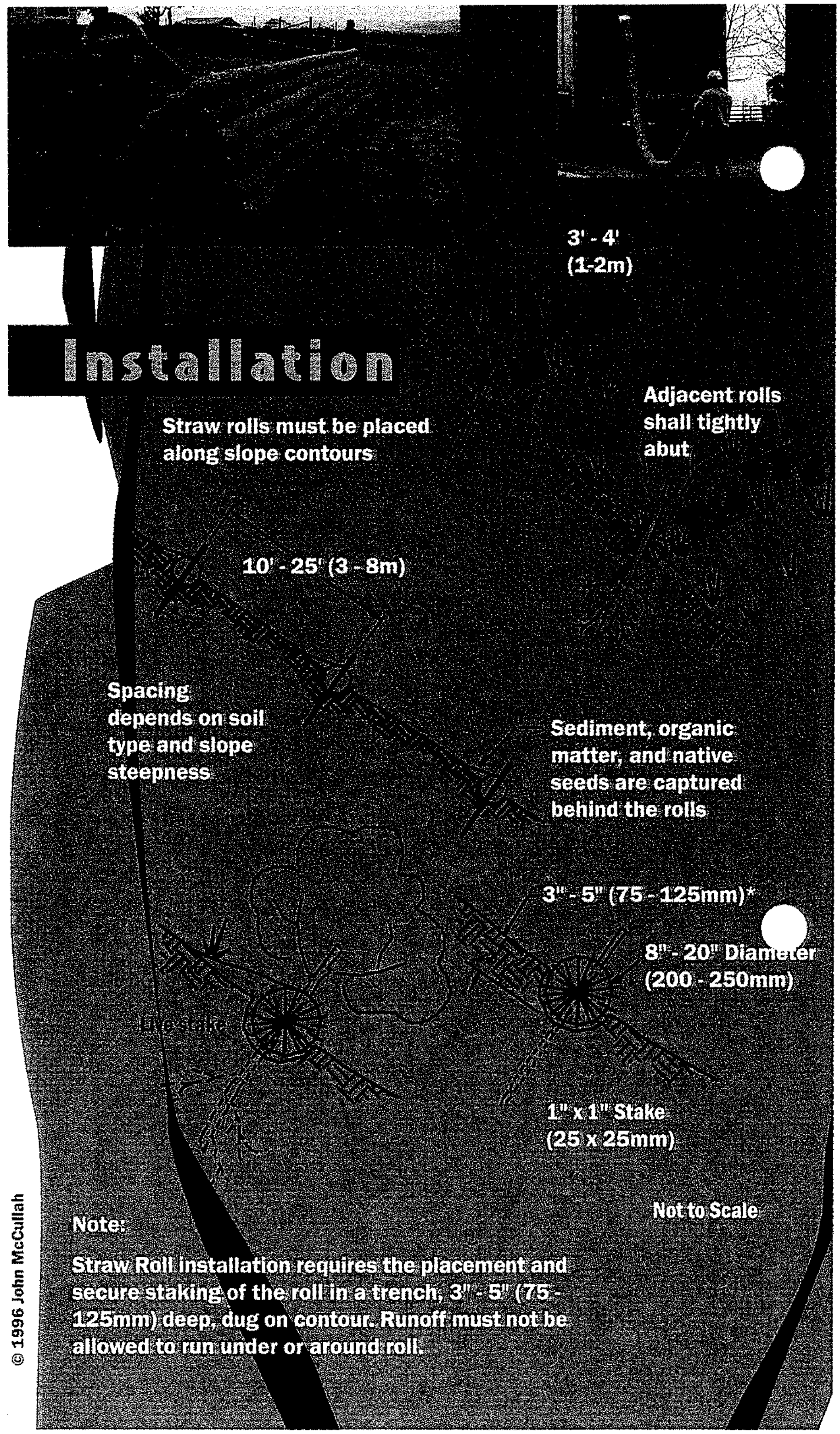
The wattles imitate natural stabilization by reducing rate of flow, absorbing water and filtering sediment runoff. By trapping silt and seed, native vegetation and brush begin to re-vegetate and restore root integrity within one year. Stabilization of the hillside will eventually transition to the reformed growth as the Earth Saver Wattles decay. The wattles also form a durable containment area to prevent polluted runoff from reaching surface waters.

What do Earth Saver Wattles replace?

Earth Saver™ Rice Straw Wattles replace Silt Fences, Sandbags, Willow Wattles, and Straw Bales, with a natural, earth-friendly, weed free solution.

Installation of Earth Saver™ Rice Straw Wattles*

Stake Earth Saver™ Rice Straw Wattles to contour of slope in a 2" to 4" trench. For sandy soils, dig a 3"- 4" trench. For dense soils, dig a 2" - 3" trench. Place Earth Saver™ RIce Straw Wattle firmly in the trench. Pack soil against the wattles on the up hill side. Stakes are to be placed at each end of the 25' Earth Saver™ and every 4'. Stakes are to be placed on each end and in the middle of the 10' Earth Saver™, leaving 2"of the stake above the Earth Saver™. For continuous rows, Earth Saver™ should be butted, not overlapped. Earth Saver™ rows should be placed horizontally, approximately 6' to 20' apart on slope, depending on site conditions. When Earth Saver™ is used on flat ground, drive stakes in vertically, when used on slopes, drive the stakes at an angle towards the up hill side of the slope. Close spacing is needed for sandy soil, high rainfall, and to catch sediment. Wide spacing is needed for heavy soil, low rainfall, and low sediment loads.



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03/01

STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

Definition

A stabilized pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk or parking area.

Purpose

The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction entrance shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 5A.38 on page 5A.74 for details.

Aggregate Size: Use 2 in. stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12 foot minimum but not less than the full width of points where ingress or egress occurs. 24 foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Filter cloth: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Filter Cloth

The filter cloth shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Brust Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 modified
Equivalent	40-80	40-80	US Std Sieve
Openning Size			CW-02215
Aggregate Depth (in)	6	10	—

[1] Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[2] Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

[3] Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

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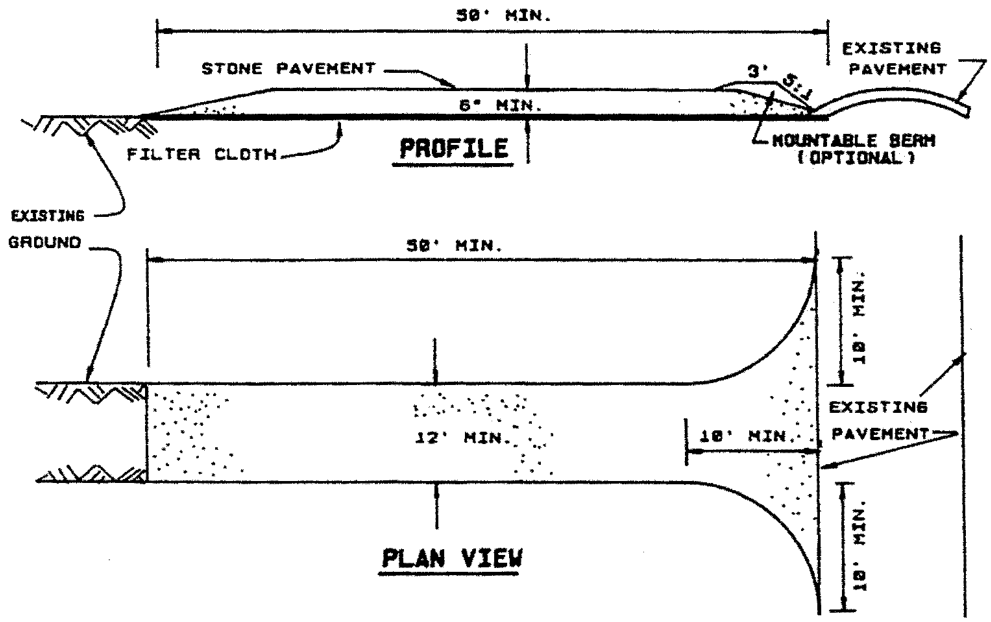
Figure 5A.38
Stabilized Construction Entrance Details



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).

3. THICKNESS - NOT LESS THAN (6) INCHES.

4. WIDTH - TWELVE (12) MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.

5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABLIZED WITH STONE AND WHICH DRAINS INTO AM APPROVED SEDIMENT TRAPPING DEVICE.

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE SYRACUSE, NEW YORK	STABLIZED CONSTRUCTION ENTRANCE	STANDARD SYMBOL

APPENDIX V

SNOWMAKING WITHDRAWAL COOPERATIVE AGREEMENT

COOPERATIVE AGREEMENT
BETWEEN
THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND
THE NY OLYMPIC REGIONAL DEVELOPMENT AUTHORITY

The NYS Department of Environmental Conservation (DEC) and the New York Olympic Regional Development Authority (ORDA) enter into the following agreement in connection with the need to protect the surface water resource of the West Branch of the Ausable River in relation to the water to be withdrawn for snowmaking operations at Whiteface Mountain Ski Center. Whiteface Mountain Ski Center is under DEC's care and custody, and ORDA manages the operation and maintenance of the ski center.

The purpose of this Cooperative Agreement is to establish mutually agreeable methods and procedures by which water for snowmaking operations can be withdrawn from the West Branch of the Ausable River while maintaining the integrity of this surface water resource. Flow monitoring of the West Branch of the Ausable River has been implemented to minimize the impacts to the river's aquatic ecology and properly manage the fishery during times of low flow.

It shall be the responsibility of the signatories or their designees to generally administer the provisions of this Cooperative Agreement. This agreement amends the existing Memorandum of Understanding between DEC and ORDA which became effective March 8, 1991, and which established mutually agreeable methods and procedures for implementation of the MOU relating to Whiteface Mountain Ski Center and Memorial

Highway, Mt. Van Hoevenberg Recreation Area and Gore Mountain Ski Center (copy attached).

Compliance with this agreement in conjunction with the individual Unit Management Plan for Whiteface Mountain Ski Center shall occur immediately.

Water Withdrawal from the West Branch of the Ausable River

Monthly water withdrawals for snowmaking during some winter months exceed the threshold for requiring a Great Lakes Water Withdrawal Registration Certificate. A certificate covering the period July 7, 2003 through July 7, 2005 was issued and will be renewed as necessary (copy attached).

Flow monitoring of the West Branch of the Ausable River is necessary to minimize the impacts to the river's aquatic ecology from snowmaking water withdrawals and properly manage the fishery during times of low flow.

The stream improvement structure on the West Branch has been built, and provides a flow monitoring station.

In order to define the pumping parameters for snowmaking as they relate to stream flows, several meetings were held with the NYSDEC during the preparation of the 1996/2002 Whiteface Mountain UMP. The following parameters were developed for water withdrawals in order to protect the aquatic environment of the river and to minimize the potential impacts to the resource during times of low flow:

1. Pumping withdrawal rates will be based on the instantaneous flow measured at the flow monitoring station.

2. Unrestricted pumping at approved withdrawal rates is permitted if the flow is 51.4 cubic feet per second (cfs) or greater. The currently permitted maximum withdrawal rate is 13.4 cfs (6,014 gallons per minute). Withdrawals by Whiteface will not reduce river flows below 38 cfs.

3. For instantaneous flows measured at the flow monitoring station between 51.4 cfs and 38 cfs, the pumping rate will be incrementally reduced. Instantaneous flows will not be reduced below 38 cfs by withdrawals by Whiteface.

4. If, during any pumping day the "instantaneous" flow rate is less than or equal to 38 cfs, then the immediate shut down of the snowmaking system will occur. ("Instantaneous" is defined as a fifteen minute average of readings taken within the 15 minute period.) Approved pumping withdrawal rates can resume when the instantaneous flow measured at the flow monitoring station is at least 44 cfs for at least 8 hours or 46 cfs for at least 6 hours, 48 cfs for at least 4 hours or 50 cfs for at least 2 hours, in order to maintain suitable downstream flow conditions.

5. The flow data and pumping data will be provided to the DEC for compliance monitoring. During the snowmaking season, the data will be provided to the DEC monthly on a routine basis, and more frequently in response to direct requests by DEC for data from specific dates. The routine submittals will include the daily minimum river flow for all days and the "Daily Detail" (15 minute flow reports) for days when, at any time during the day, river flows declined below 52 cfs. Records of withdrawals from the river should also be provided on days when river flows declined below 52 cfs. The monthly report will be provided to the DEC by five days after the end of the month.

6. During periods of severe anchor ice formation, data from the two gauges installed in the flume will be manually compared to determine if backwater effects are altering the gauge readings. Such comparisons will be done for periods upon request by the DEC.

7. The flume will be re-calibrated annually, preferably shortly before the start of the snowmaking season.

8. This Cooperative Agreement will be reviewed annually by DEC Fisheries staff and ORDA management and can be modified, amended, or canceled at any time upon mutual agreement of the signatories to this agreement.

9. This term of this agreement will be concurrent with the term of the Whiteface Mountain Ski Center UMP.

This Cooperative Agreement will become effective upon its execution by each of the parties hereto.

Department of Environmental Conservation

By: Nancy W Lussier
Nancy Lussier, Director of Management and Budget

Date: 9/25/03

Olympic Regional Development Authority

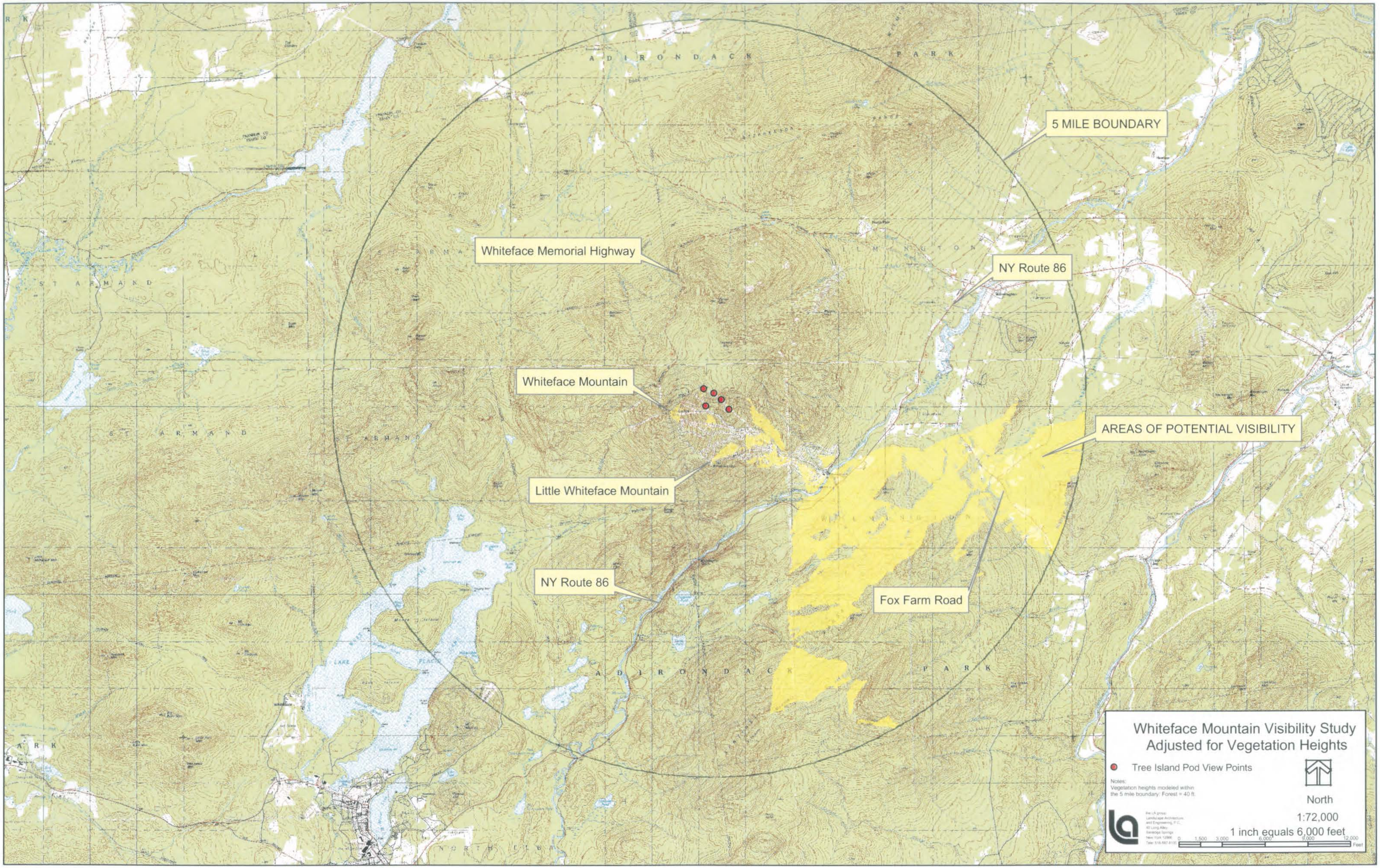
By: T B Blazer
Ted Blazer, President, C.E.O.

Date: 11-18-03

01043/cooperative.agreement

APPENDIX W

VISUAL IMPACT ASSESSMENT FIGURES



ADIRONDACK PARK
5 MILE BOUNDARY
Whiteface Memorial Highway
NY Route 86
Whiteface Mountain
AREAS OF POTENTIAL VISIBILITY
Little Whiteface Mountain
NY Route 86
Fox Farm Road
ADIRONDACK PARK
Whiteface Mountain Visibility Study
Adjusted for Vegetation Heights
Tree Island Pod View Points
Notes:
Vegetation heights modeled within the 5 mile boundary: Forest = 40 ft.
North
1:72,000
1 inch equals 6,000 feet
0 1,500 3,000 6,000 9,000 12,000 Feet

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

Tree Island Pod not visible (Blocked by topography).

Photo #1

Photo #2

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

Tree Island Pod not visible (Blocked by topography).

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

Tree Island Pod not visible (Blocked by topography).

Photo #3

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

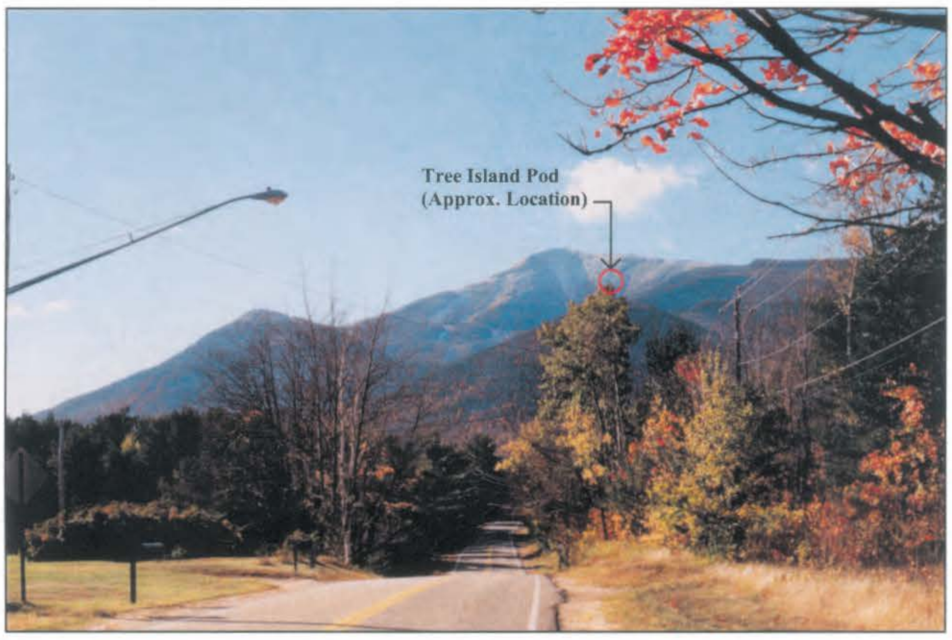
TITLE: VIEWSHED PHOTOS

PROJECT NUMBER: 01102	FILE: [whiteface]
DATE: OCT 31, 2001	EXHIBIT: V - 1

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

Very upper portion of Tree Island Pod is visible in context of existing ski trail.

Photo #4



5. View from Fox Farm looking west.

Very upper portion of Tree Island Pod is visible in context of existing ski slopes.

Photo #5

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

View of Tree Island Pod location in context of existing ski area.

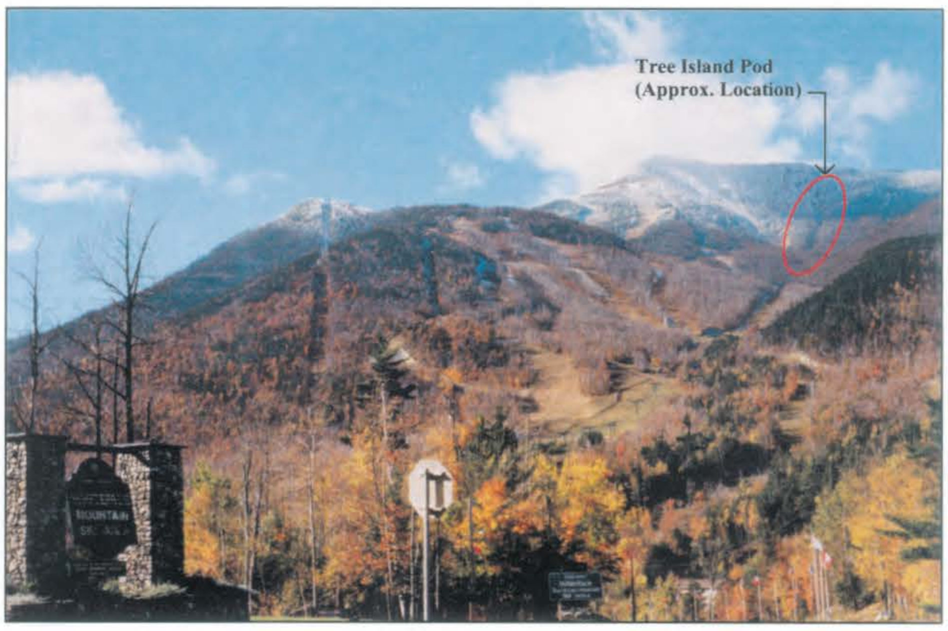


Photo #6

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

PROJECT NUMBER: 01102

FILE: [whiteface]

DATE: OCT 31, 2001

EXHIBIT: V - 2

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

Ski Trails not visible.

Photo #7

Photo #8

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

Ski Trails not visible.

9. View from Route 73 looking north.

Ski Trails not visible.

Photo #9

WHITEFACE

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

Prepared By:

SE GROUP

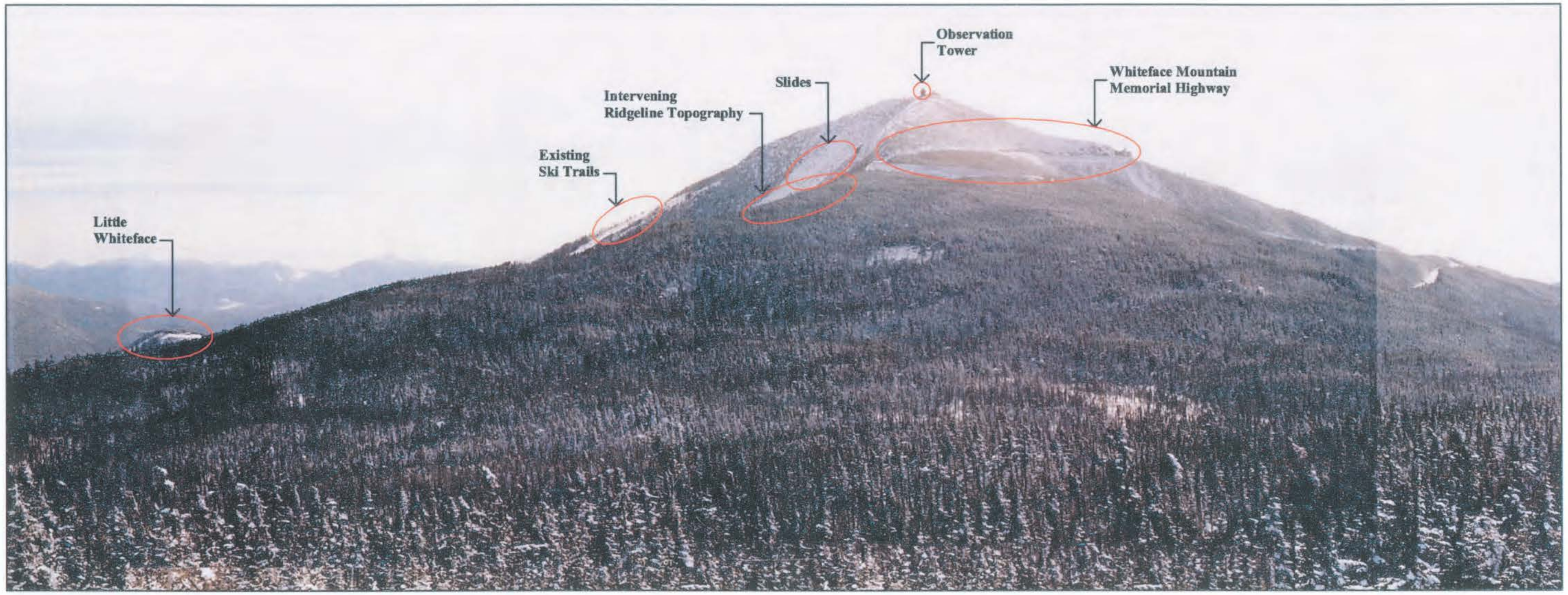
IZA Engineering & Planning
Ivan Zdrahal Associates, PLLC

COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE:
VIEWSHED PHOTOS

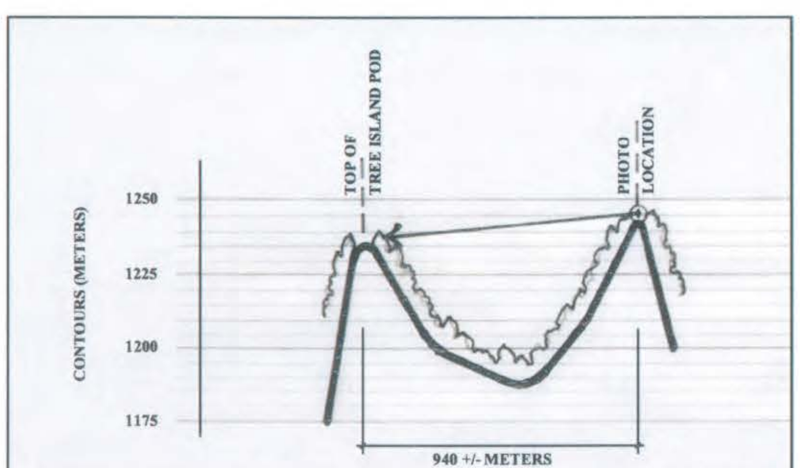
DATE: OCT 31, 2001

EXHIBIT:
V - 3



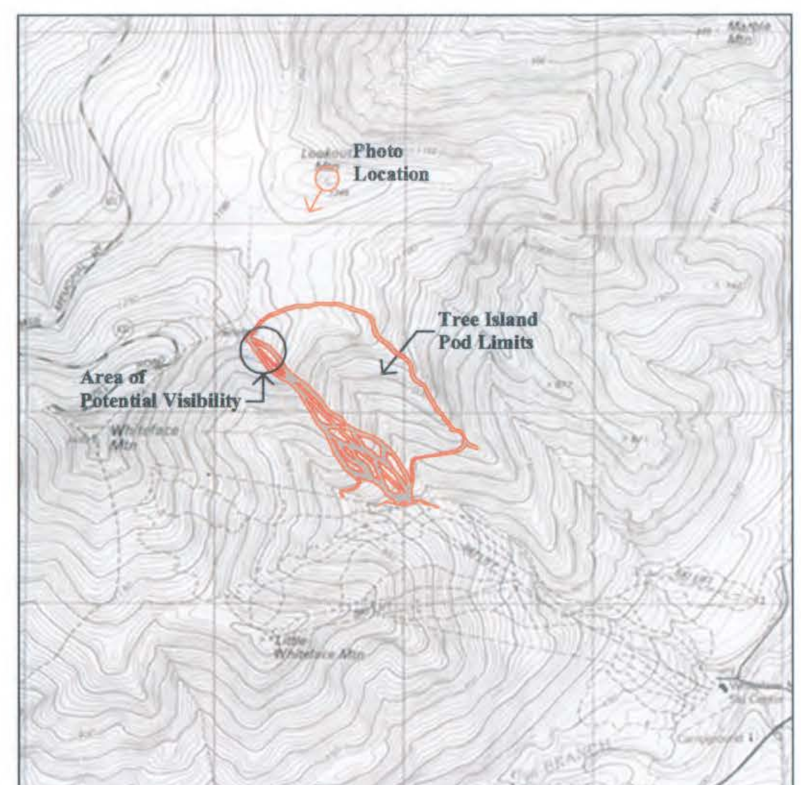
Southwest view
from Lookout Mountain Summit.

Only very upper portion of Tree Island Pod potentially visible.



SECTION VIEW
SCALE: VERT 1:2,500
HORIZ 1:25,000

LOCATION MAP
NTS



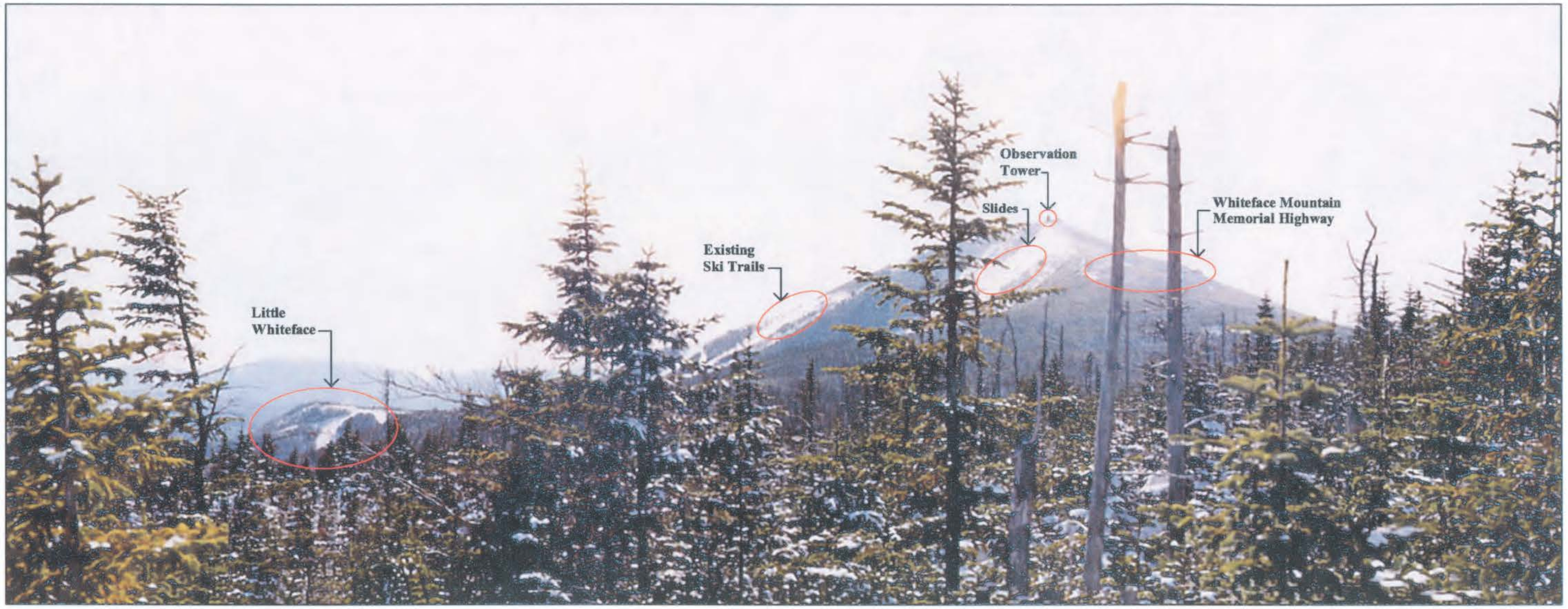
WHITEFACE

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

Prepared By:
SE GROUP
IZA Engineering & Planning
Ivan Zdrahal Associates, PLLC

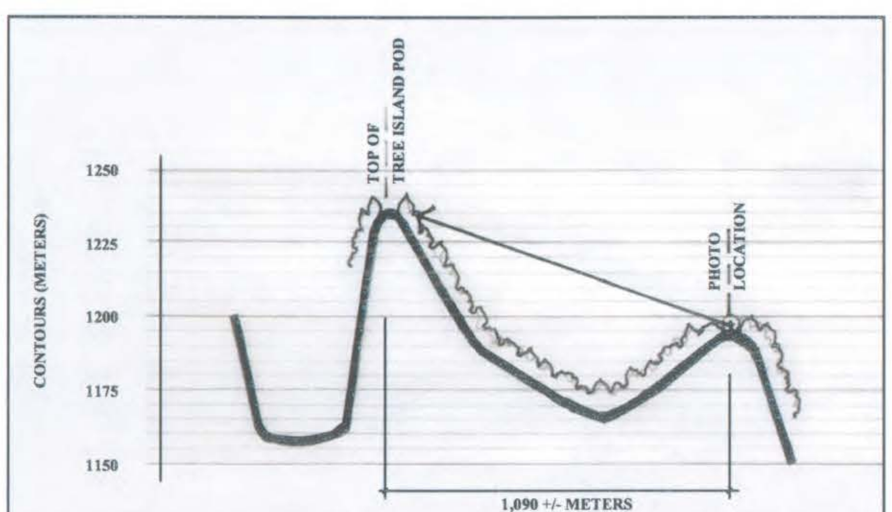
COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE: VIEWSHED PHOTOS	DATE: MARCH 20, 2003
	EXHIBIT: V - 4
PROJECT NUMBER: 01043	FILE: [whiteface]



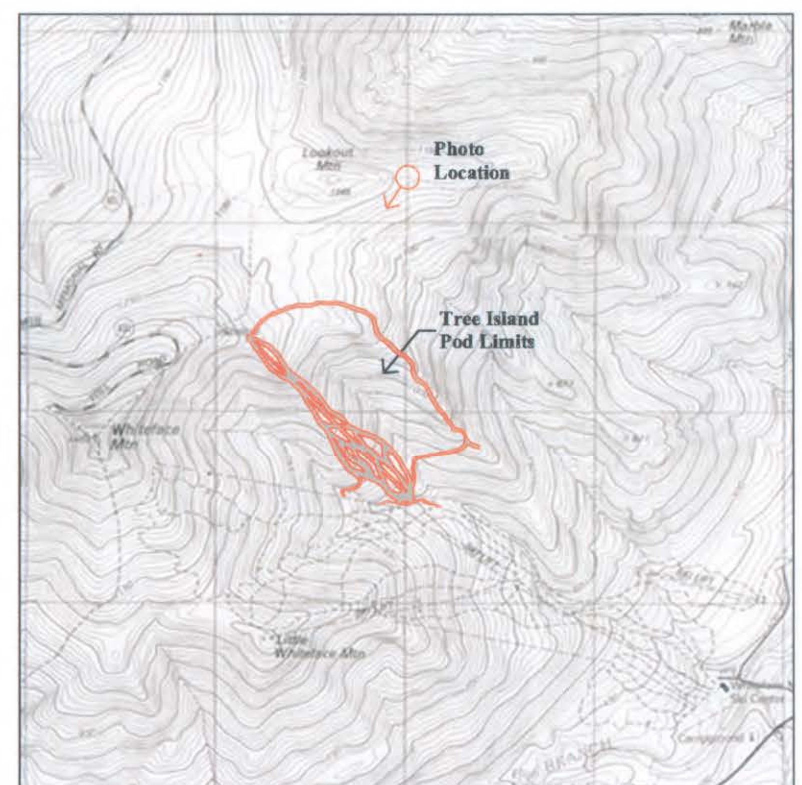
Southwest view
from Wilmington Trail east of Lookout Mountain summit.

Tree Island Pod not visible.



SECTION VIEW
SCALE: VERT 1:2,500
HORIZ 1:25,000

LOCATION MAP
NTS



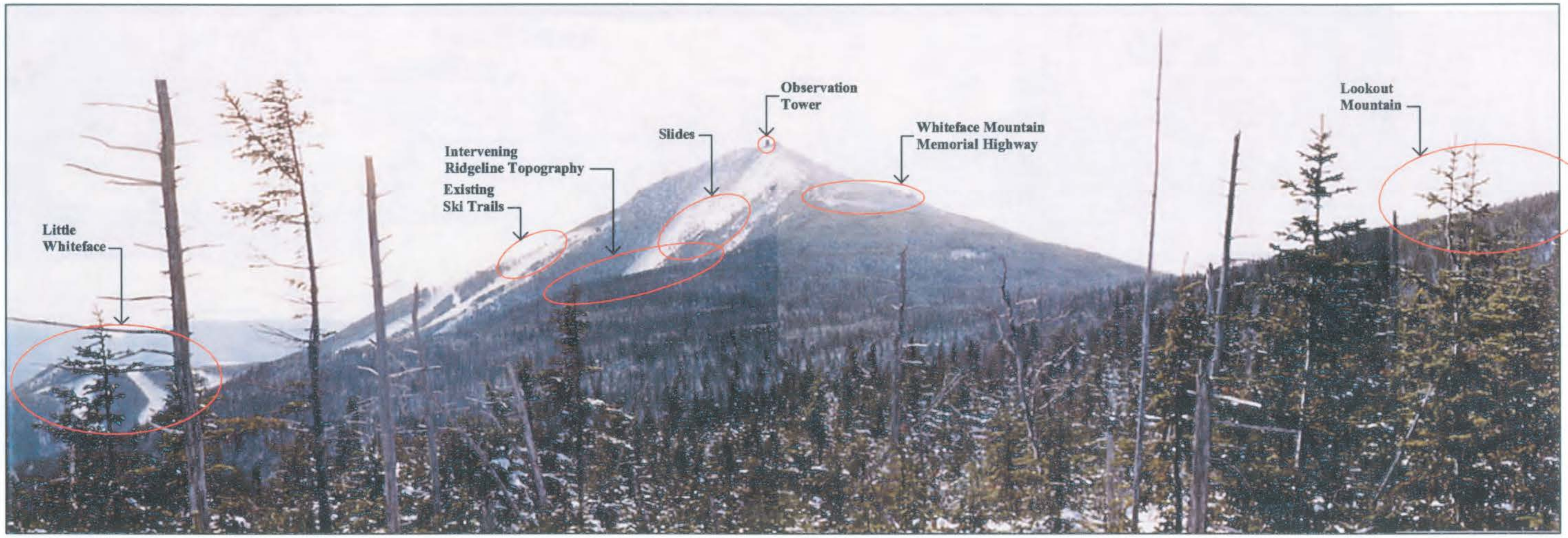
WHITEFACE

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

Prepared By:
SE GROUP
the LA group
IZA Engineering & Planning
Ivan Zdrahal Associates, PLLC

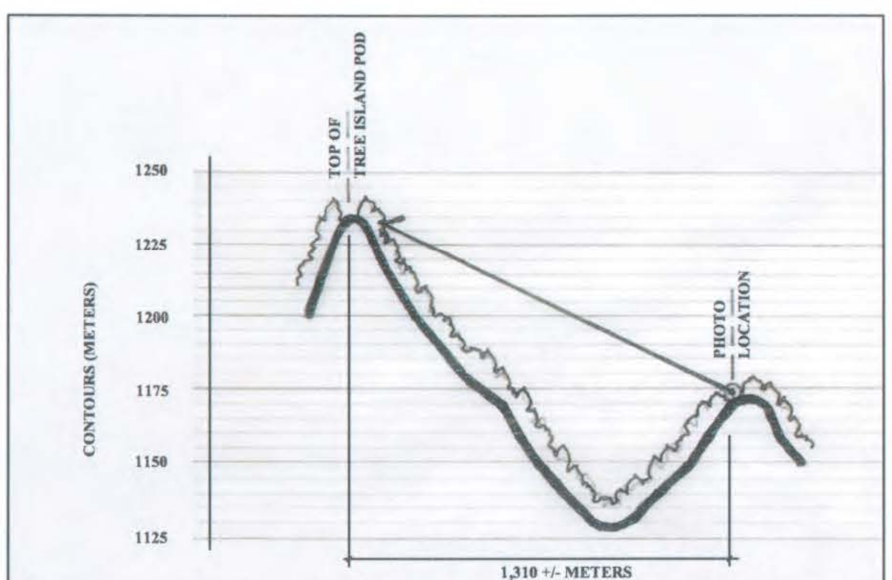
COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE:	DATE: MARCH 20, 2003
VIEWSHED PHOTOS	EXHIBIT: V - 5
PROJECT NUMBER: 01043	FILE: [whiteface]



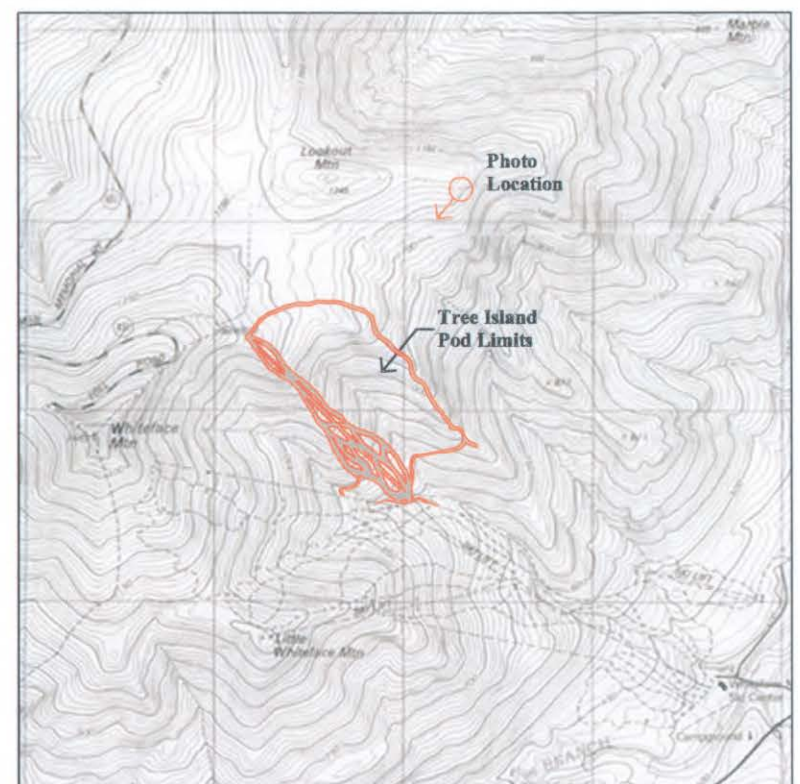
Southwest view
from Wilmington Trail before steep descent toward Marble Mountain.

Tree Island Pod not visible.



SECTION VIEW
SCALE: VERT 1:2,500
HORIZ 1:25,000

LOCATION MAP
NTS



WHITEFACE

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

Prepared By:

SE GROUP
IZA
Ivan Zdrahal Associates, PLLC

COMPREHENSIVE MANAGEMENT
AND PLANNING REVIEW
AND UNIT MANAGEMENT PLAN

TITLE: VIEWSHED PHOTOS	DATE: MARCH 20, 2003
	EXHIBIT: V - 6
PROJECT NUMBER: 01043 · FILE: [whiteface]	

APPENDIX X

AMMONIUM NITRATE MSDS

Hydro Agri Canada

Tel.: (514) 849-9222
Fax: (514) 849-3362

MATERIAL SAFETY DATA SHEET

SECTION I. MATERIAL IDENTIFICATION

UN#: 2067
CAS: 6486 52 2

Emergency Telephone#:	(514) 203-9906
Canutec #:	(613) 996-6666
Chemtrec #:	1-800-424-9300

NFPA/HMIS RATING: 1, 0, 3; Health, Flammability, Reactivity

Distributor:	**Hydro Agri Canada L.P.**
Complete Mailing Address:	1130 Sherbrooke St. West Suite #1050 Montreal, PQ H3A 2M8
Telephone Number:	(514) 849-9222
Fax Number:	(514) 849-3362
Trade/Material Name:	**Ammonium Nitrate - Fertilizer Grade**
Description:	Solid granule, WHMIS Class 'C' OXIDIZER, NH_4NO_3
Other Designations:	AMMONIUM SALT, NH_4NO_3

SECTION II. INGREDIENTS AND HAZARDS

INGREDIENT NAME	CAS #	PERCENT	HAZARD
Ammonium Nitrate	6484-52-2	95.3%	Exposure limits in air (give units) ACGIH TLV OSHA PEL other (Specify) 10 mg/l^3
Magnesium Nitrate	10377-60-3	1.5%	
Dolomite	-----	3.0%	

SECTION III. PHYSICAL DATA

Boiling Point:	210°C (410°F)	**Bulk Density:**	980 kg/m³ (61lb/cubic ft.)
Vapour Pressure:	N.A.	**Melting Point:**	169.6°C (336°F)
Vapour Density:	N.A.	**pH (0.1M Solution):**	5.4 approx.
Solubility :	187g/100g H_2O	**Molecular Weight:**	80 approx.

Appearance and Odour: white/pale yellow prills or granules.

SECTION IV. FIRE AND EXPLOSION DATA

FLASH POINT(Method)	AUTOIGNITION TEMP.	FLAMMABILITY LIMITS IN AIR:
N/A	N/A	LOWER: N/A UPPER: N/A

Stabilized Product: - IMP class 5.1 - UN2067

EXTINGUISHING MEDIA
Flood with water only. Do not use smothering agents. Wear self-contained breathing apparatus. Releases ammonia and nitrogen oxides on decomposition.

SECTION V. REACTIVITY DATA

NH_4NO_3 is stable when stored and used under proper conditions. It is hygroscopic. Strong oxidizing agent. Reacts with strong alkalies to liberate ammonia.

SECTION VI. HEALTH HAZARD INFORMATION

SUMMARY OF RISKS

Contact with skin may cause mild skin irritations. Individuals may be exposed to nitrogen oxides due to decomposition of NH_4NO_3 at high temperatures. This is a toxic gas which can quickly cause acute respiratory problems.

Use NIOSH/MSHA approved respirator/ total dust respirator when handling clay coated prills.

FIRST AID

Eye Contact: Immediately flush with tempered running water. Get medical attention.

Skin Contact: Flush with tempered water. Wash immediately with soap and water. Get medical attention.

Inhalation: Remove to fresh air. Restore and/or support breathing as needed.

Ingestion: Seek immediate medical attention.

This product is not known as a carcinogen. Toxic hazard rating (SAX)

[redacted]

HYDRO

Hydro Agri
Canada

Tel.: (514) 849-9222
Fax: (514) 849-3362

MATERIAL SAFETY DATA SHEET

SECTION I. MATERIAL IDENTIFICATION

UN#: 2067
CAS: 6486 52 2

Emergency Telephone#: (514) 203-9906
Canutec #: (613) 996-6666
Chemtrec #: 1-800-424-9300

NFPA/HMIS RATING: 1, 0, 3; Health, Flammability, Reactivity

Distributor:	**Hydro Agri Canada L.P.**
Complete Mailing Address:	1130 Sherbrooke St. West Suite #1050 Montreal, PQ H3A 2M8
Telephone Number:	(514) 849-9222
Fax Number:	(514) 849-3362
Trade/Material Name:	**Ammonium Nitrate - Fertilizer Grade**
Description:	Solid granule, WHMIS Class 'C' OXIDIZER, NH_4NO_3
Other Designations:	AMMONIUM SALT, NH_4NO_3

SECTION II. INGREDIENTS AND HAZARDS

INGREDIENT NAME	CAS #	PERCENT	HAZARD
Ammonium Nitrate	6484-52-2	95.3%	Exposure limits in air (give units) ACGIH TLV OSHA PEL other (Specify) 10 mg/m^3
Magnesium Nitrate	10377-60-3	1.5%	
Dolomite	-----	3.0%	

SECTION III. PHYSICAL DATA

Boiling Point:	210°C (410°F)	**Bulk Density:**	980 kg/m^3 (61lb/cubic ft.)
Vapour Pressure:	N.A.	**Melting Point:**	169.6°C (336°F)
Vapour Density:	N.A.	**pH (0.1M Solution):**	5.4 approx.
Solubility :	187g/100g H_2O	**Molecular Weight:**	80 approx.

Appearance and Odour: white/pale yellow prills or granules.

SECTION IV. FIRE AND EXPLOSION DATA

FLASH POINT(Method)	AUTOIGNITION TEMP.	FLAMMABILITY LIMITS IN AIR:
N/A	N/A	LOWER: N/A UPPER: N/A

Stabilized Product: - IMP class 5.1 - UN2067

EXTINGUISHING MEDIA
Flood with water only. Do not use smothering agents. Wear self-contained breathing apparatus. Releases ammonia and nitrogen oxides on decomposition.

SECTION V. REACTIVITY DATA

NH_4NO_3 is stable when stored and used under proper conditions. It is hygroscopic. Strong oxidizing agent. Reacts with strong alkalies to liberate ammonia.

SECTION VI. HEALTH HAZARD INFORMATION

SUMMARY OF RISKS

Contact with skin may cause mild skin irritations. Individuals may be exposed to nitrogen oxides due to decomposition of NH_4NO_3 at high temperatures. This is a toxic gas which can quickly cause acute respiratory problems.

Use NIOSH/MSHA approved respirator/ total dust respirator when handling clay coated prills.

FIRST AID

Eye Contact: Immediately flush with tempered running water. Get medical attention.

Skin Contact: Flush with tempered water. Wash immediately with soap and water. Get medical attention.

Inhalation: Remove to fresh air. Restore and/or support breathing as needed.

Ingestion: Seek immediate medical attention.

This product is not known as a carcinogen. Toxic hazard rating (SAX)

APPENDIX Y

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APPENDIX Z

NYSEF ENVIRONMENTAL ASSESSMENT FORM

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. Frequent-IV, there are aspects of a project that are subjective or unmeasureable. 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.

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

Whiteface Mountain Ski Area - Amendment of Existing Unit Management Plan
Name of Action

Olympic Regional Development Authority, ORDA
Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency | Title of Responsible Officer

Signature of Responsible Officer in Lead Agency | Signature of Preparer (If different from responsible officer)

March 16, 2004
Date

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 Whiteface Mountain Ski Area - Amendment of Existing Draft Management Plan		
LOCATION OF ACTION (Include Street Address, Municipality and County) Whiteface Mountain Ski Area - NY Route 86, Town of Wilmington, Essex County, NY		
NAME OF APPLICANT/SPONSOR Olympic Regional Development Authority	BUSINESS TELEPHONE (518) 523-1655	
ADDRESS 218 Main Street		
CITY/PO Lake Placid	STATE NY	ZIP CODE 12946
NAME OF OWNER (If different) State of New York - Department of Environmental Conservation	BUSINESS TELEPHONE (518) 897-1200	
ADDRESS P.O. Box 296		
CITY/PO Ray Brook	STATE NY	ZIP CODE 12997
DESCRIPTION OF ACTION Amendment of existing Unit Management Plan to construct a New York Ski Education Foundation (NYSEF) building.		

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 Forest Preserve - Intensive Use Area

2. Total acreage of project area: 0.91± acres.

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	0.54 acres	0.6 acres
Forested	0.08 acres	0 acres
Agricultural (includes orchards, cropland, pasture, etc.)	0 acres	0 acres
Wetland (Freshwater or tidal as per Articles 24, 25 of ECL)	0 acres	0 acres
Water Surface Area	0 acres	0 acres
Unvegetated (Rock, earth or fill)	0 acres	0 acres
Roads, buildings and other paved surfaces	0.28 acres	0.43 acres
Other (Indicate type)____	0 acres	0 acres

3. What is predominant soil type(s) on project site? Glacial till / loam
   a. Soil drainage: ☒ Well drained 100 % of site ☐ Moderately well drained ____ % of site ☐ Poorly drained ____ % 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? N/A acres. (See 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ☐ Yes ☒ No
   a. What is depth to bedrock? Not Determined (in feet)

5. Approximate percentage of proposed project site with slopes: ☐0-10% ______ % ☐10-15% 15 % ☒15% or greater 85 %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or the 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? not determined (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 Natural Heritage Program
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 Downhill Ski Center

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

15. Streams within or contiguous to project area: Yes
a. Name of Stream and name of River to which it is tributary unnamed tributary to West Branch Ausable River

16. Lakes, ponds, wetland areas within or contiguous to project area: None
a. Name ______ 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: 0.91 acres initially; 0.91 acres ultimately.
c. Project acreage to remain undeveloped 0 acres.
d. Length of project, in miles: N/A (If appropriate)
e. If the project is an expansion, indicate percent of expansion proposed N/A .
f. Number of off-street parking spaces existing N/A , proposed N/A
g. Maximum vehicular trips generated per hour N/A (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 33 ft height; 55.5 width,. 90.1 length.
l. Linear feet of frontage along a public thoroughfare project will occupy is? N/A 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? Erosion Control
   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? 0.08 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 4 months, (including demolition).

7. If multi-phased:
   a. Total number of phases anticipated ______ (number).
   b. Anticipated date of commencement phase 1 ______ month ______ year, (including demolition).
   c. Approximate completion date of final phase ______ 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 10, after project is complete 0

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 Sewage

14. Will surface area of an existing water body increase or decrease by proposal? ☐Yes ☒No
   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 unknown tons
   b. If yes, will an existing solid waste facility be used? ☒Yes ☐No
   c. If yes, give name as determined by commercial hauler, location ______
   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) electrical

22. If water supply is from wells, indicate pumping capacity source is the Ski Center water supply, which has a safe yield of 35 gallons per minute.

23. Total anticipated water usage per day 0 gallons/day.

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

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	Adirondack Park Agency, NYSDEC	
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 ☐special use permit ☐subdivision ☐site plan
☐new/revision of master plan ☐resource management plan ☒other Amendment of existing plan

2. What is the zoning classification(s) of the site? Forest Preserve - Intensive Use

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

4. What is the proposed zoning of the site? N/A

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

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 1/4 mile radius of proposed action?
Forest Preserve - Intensive Use, Ski Center

8. Is the proposed action compatible with adjoining/surrounding land uses within a 1/4 mile? ☒Yes ☐No

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

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 Ted Blazer, President and CEO of ORDA Date ____

Signature ____ Title ____

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.
- 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.
- 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 19 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. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.
e. 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 f eet.	☐	☐	☐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
• Construction or expansion of a sanitary 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

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

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated By Project Change
• 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 site or found on the site.	☐	☐	☐Yes ☐No
• 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
IMPACT ON AGRICULTURAL LAND RESOURCES			
10. Will the 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

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated By Project Change
• 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
• 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? ☒NO ☐YES
(If necessary, use the Visual EAF Addendum in Section 617.21, Appendix B.
Examples that would apply to column 2

	1	2	3
• 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, pre-historic or paleontological importance? ☐NO ☒YES
Examples that would apply to column 2

	1	2	3
• 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
• 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?
Examples that would apply to column 2 ☒NO ☐YES

	1	2	3
• 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

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

IMPACT ON TRANSPORTATION

14. Will there be an effect to existing transportation systems? ☒NO ☐YES

Examples that would apply to column 2

	1	2	3
• 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

15. Will proposed action affect the community's sources of fuel or energy supply? ☒NO ☐YES

Examples that would apply to column 2

	1	2	3
• 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 IMPACTS

16. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action? ☒NO ☐YES

Examples that would apply to column 2

	1	2	3
• 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

IMPACT ON PUBLIC HEALTH

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

Examples that would apply to column 2

	1	2	3
• 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 liquified 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

18. Will proposed action affect the character of the existing community? ☒NO ☐YES

Examples that would apply to column 2

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

19. Is there, or is there likely to be, public controversy related to potential adverse environmental 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

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.

(Continue on attachments)

Please see attachment

ATTACHMENT TO PART 3

EVALUATION OF THE IMPORTANCE OF IMPACTS

Statement on Action Significance:

1. This action does not rise to the level of significance that would warrant a supplemental EIS. Please see the appropriate section of the EIS for information regarding this action.

2. Mitigation of Large Potential Impacts on Land:

   This proposed action could have a potential large impact on land since the proposed construction is on slopes greater than 15%.

   Mitigation of this potential impact is proposed by design.

   The design is placing the proposed building "into" the existing grade and it is proposing to construct retaining walls which will allow the final grades around the building and on the site to be constructed in the 8 to 15 percent range. Such finished grade can be easily stabilized by topsoiling, seeding and mulching to prevent erosion.

The number of people using the Base Lodge on Peak Days is approximately 3,200. This number is not expected to increase upon completion of the new NYSEF building and the renovations to the former building. The use, and therefore the loading volume, will be spread out between the buildings, but the loading to the system will remain the same.

APPENDIX AA

DGEIS COMMENT LETTERS

September 12, 2002 – SEQRA Public Hearing Minutes

5 people attended, 7 with Jay and Vinny.

Only comments that were received were from Douglas Wolfe after Jay Rand did an excellent job running through history of UMP including a description of items ORDA is trying to get accomplished this year.

Douglas Wolfe is with the Whiteface Preservation Resource Association. Their objective is to focus on Whiteface Mountain history, natural resources and ecology. They are interested in using some of the EIS information in their educational brochures. The Toll House Interpretive Center is an example of one of their efforts. His concerns:

- Whiteface objectives include everything but the educational aspect of the mountain.
- State projects should be "green." Would like to see lodge on top of Little Whiteface incorporate passive solar design, good installation, energy savings, etc. Suggest architect look at Mt. Washington observatory for ideas on height and orientation to wind, etc.
- All facilities should be "universally accessible" (handicap accessible).
- Traffic wasn't really addressed, especially as far as conflict between pedestrians and vehicles.

1043WR07.DOC

THE ASSOCIATION
FOR THE
PROTECTION OF THE ADIRONDACKS
P.O. Box 951 • Schenectady, New York 12301-0951
Phone/Fax 518/377-1452
Web Site: www.protectadks.org

RECEIVED
SEP 18 2002
The LA Group

September 16, 2002

Jay Rand, Supervisor
Whiteface Mountain Ski Center
Route 86
Wilmington, NY 12997

<u>Re. Whiteface Mountain Ski Center UMP Update, Draft GEIS</u>

Dear Mr. Rand:

The Association for the Protection of the Adirondacks is quite concerned about the following aspects of this UMP update:

1. "Build Out" and Constitutional Limits:

With the development proposed in this latest Update, Whiteface Mountain Ski Center is essentially at its constitutional limit with regard to downhill ski trails, or 25 miles. The Update tell us new improvements will bring the total mileage to 24.51 miles. Given the very rapid increase in trail mileage that has occurred since the 1996 UMP revision, the remaining half-mile permitted under the Constitution will be developed in the very near future.

In May of 2001, Tom Martin, Regional DEC Forester, responded to our concerns about the trail mileage question at Whiteface. The approved 1996 revision of the UMP indicated there were 16.4 miles of ski trails. "Regardless of which order trail are widened, closed or opened, as approved in the UMP and this amendment, the maximum mileage of ski trails at the Whiteface Mountain Ski Center will not exceed 18.40 miles," Martin wrote in May 2001. Just over a year later, you are again expanding and the trail mileage is now at or around 25 miles.

We note that the total trail mileage contemplated in the **Executive Summary (page V)** of 25.51 miles is at variance with that contemplated in the section on **1987 Constitutional Amendment on page I-10** that says "under this plan, ski trail miles will be increased to 24.45 miles." Needless to say, it is important to be accurate in this Update. If it is found that the Update actually brings the total mileage above 25 miles, this would seriously compromise planning under this Updated UMP.

Given the limits you are up against, it is rather surprising to the reader to find nothing that would illuminate ORDA's future plans with respect to next UMP update. Given the rapid expansion since 1996, one must conclude that Whiteface will continue to seek to expand its operations on the mountain. I find no statement to the effect that this UMP update and trail expansion is the last contemplated for the next 10, 15, 25...or more years.

What is your long-term goal? Isn't it time in this Update to address a final development "build-out" at Whiteface Mountain for the next 25-50 years? If ORDA expects legislative and public support for another constitutional amendment, you will be expected to lay this out. Even if you do so, statewide support for another constitutional amendment for Whiteface is by no means guaranteed. How would ORDA and Whiteface Mountain Ski Center go about improving its facilities in the absence of a constitutional amendment? We urge you to incorporate a new section on Future Planning.

It bears mentioning that frequently the document promises: "proposed UMP actions on all state lands at Whiteface Mountain will be conducted in accordance with the provision of Article XIV as they apply (page vi)." Needless to say, planning to assure strict constitutional compliance with respect to trail mileage on the mountain is required to fulfill that promise.

II. Tree Cutting

The cutting of 54,941 trees for developments proposed in this Update constitutes a very significant level of tree cutting on the Forest Preserve over the course of a very short time span. If such tree cutting were proposed over a much-longer planning horizon, say 25 years, that would be one thing. Repeated UMP Updates authorizing such significant tree-cutting is quite another. Even if one-third of those trees are "small or less than 4" diameter at breast height," (page vi) this results in the cutting of over 36,000 mature trees.

As you know, the 2001 UMP Update to widen trail 19a, Upper Parkway Trail and Upper Thruway Trail, and Lower Valley Trail proposed no more than 831 trees over 3" DBH would need to be removed to accomplish the modifications proposed in the amendment. The sudden jump to over 50,000 trees for modifications proposed in this Update one year later is remarkable. As you know, in McDonald v. The Association for the Protection of the Adirondacks (1930) the Court of Appeals ruled that the cutting of 1,373 trees passed the point of constitutional "materiality." As you know, ORDA, pursuant to public comment, significantly reduced the level of tree cutting proposed for the Mt. Van Hoevenberg UMP improvements to under 500 trees in 1999.

Although Whiteface Mountain Ski Center and appurtenances thereto are constitutionally authorized, this does not imply to our organization that any and all tree cutting should be considered reasonable or permissible.

This is not only a constitutional issue. The document states that considerable soil erosion of thin soils can be expected from the trail and other developments (page V-1) and that mitigation measures will be taken as shown. One of those mitigation measures is to assure the public that only the very minimum number of trees will be cut. This document does state "only areas absolutely necessary for construction of tree trails, ski lifts and other proposed improvements will be cleared of vegetation." However, we believe ORDA and DEC should conduct further field work to assure the public that 54,941 trees constitutes the minimum necessary to carry out the work.

III. Erosion Control

Filter fabric fences, erosion-control blankets, and staked straw bale filters are all to be used to control soil erosion (V-2). Just as importantly, the document plans for staged clearing so as to limit soil exposure at any given time. "As much natural vegetative cover as possible will remain intact" (V-2).

Lacking environmental engineering expertise, we ask if these measures constitute the upper limits of the best possible and available practices to avoid soil erosion on steep mountain, protected environments? Can further improvements and technologies be applied, even if they are experimental, to assure the public that sensitive, high elevation Forest Preserve soils are not being unnecessarily degraded or lost with consequent damage to downstream environments?

IV. Fish and Wildlife/Natural Resource Inventory and Evaluation

With respect to Bicknell's Thrush, we appreciate the attention paid to the natural history and preliminary data about the species on page V-14, and the mitigation measure to avoid trail construction at or above 3000 feet until after August 1, or after the majority of juvenile birds have fledged according to existing evidence gained elsewhere. However, it is not in the least bit reassuring that Appendix L, Wildlife Resource Description, fails to even list the Bicknell's Thrush as a listed Species of Special Concern on or near Whiteface Mountain. Further, this section contradicts ORDA's concern for the Bicknell's Thrush on page V-14 by stating: "None of the activities associated with the Ski Center is expected to have any impact on any of the endangered, threatened or species of special concern listed." The failure to list Bicknell's in the appendices is a serious omission and fails to give the public confidence that this document is serious about biological inventory and evaluation.

There has been considerable research on Bicknell's Thrush elsewhere in the Northeast, but apparently not on Whiteface Mountain. We suggest that it is time that the State of New York, ORDA, Whiteface Ski Center and private partners like Audubon New York sponsor intensive research on this species as part of this UMP Update. Given the concern for the species expressed in this Update, it is time that a study is designed for Whiteface that seeks to ascertain in detail the effects of ski expansion on this species and perhaps others.

There is a complete failure in our opinion to discuss or document the occurrence of small mammals on Whiteface Mountain. The Update states: "Included in Appendix N is a description of wildlife habitat types and additional information regarding the wildlife at Whiteface" (II-25). The reader finds that Appendix N is about Existing and Proposed Whiteface Snowmaking Electrical Loads. We think the document meant to say Appendix L. Be that as it may, the inventory, description and evaluation of mammals, either in Appendix L or in the text itself, seems inadequate to say the least. For example, discussion of Yellow-nosed (Rock) vole, one of the rarest North American voles known to occur in the area, seems to be omitted entirely.

It appears to us that the Natural Resource Inventory, description and evaluation in this Update must be judged inadequate by standards clearly listed in the Adirondack Park State Land Master Plan.

These are some of our most prominent concerns at this stage in our review of the Update. We may issue an additional comment letter should additional issues come to our attention. Thank you very much for this opportunity to comment. We look forward to hearing from you.

Sincerely,

David H. Gibson

David H. Gibson
Executive Director

cc: Jeff Anthony, LA Group
Tom Martin, NYS DEC
Peter Duncan, NYS DEC
Karyn Richards, NYS DEC
Walt Linck, NYS APA
John Banta, NYS APA
Kevin Prickett, Association
Board of Trustees

NATURAL HERITAGE INSTITUTE

2140 SHATTUCK AVENUE, 5TH FLOOR 926 J
STREET, STE. 601
BERKELEY, CA 94704-1222
SACRAMENTO, CA 95814
(510) 644-2900 EXT. 103
888-589-1974 (FAX)
RRCOLLINS@N-H-I.ORG
WWW.N-H-I.ORG

September 25, 2002

Jay Rand
Olympic Regional Development Authority
Olympic Center
Main Street
Lake Placid, NY 12946

Stuart A. Buchanan
Regional Director, Region 5
New York State Department of Environmental Conservation
Route 86, P.O. Box 296
Ray Brook, NY 12977-0296

Walter Elander
SE Group, Planning and Design
156 College Street
Burlington, VT 05401

Re: <u>WhiteFace Ski Center Unit Management Plan Update and Draft Generic Environmental Impact Statement (2002-2007)</u> (August 2002)

Dear Mr. Rand, Mr. Buchanan, and Mr. Elander:

New York Rivers United respectfully comments on this document. Our interest is protection of the values of the West Branch of the AuSable River, as designated under the Wild, Scenic, and Recreational River Systems Act. Because the DEIS does not address the adverse impacts and legal authority for the proposed water withdrawal, we request that a supplement be published for further public comment before final action.

COMMENTS

The DEIS proposes to increase the increase water withdrawal from the West Branch, in order to enhance snowmaking. See p. IV-40. Water withdrawal may occur only when the flow downstream of the intake exceeds 38 cfs. Id. We understand the DEIS to recommend water withdrawal from the pool stored behind the concrete weir that ORDA built under DEC Permit no. 5-1554-00013/00007 (Exhibit 1). See pp. IV-48 – IV-49. If this is factually correct, then the DEIS is incomplete. It does not state the legal authority for such use of the weir, which occupies the banks, channel, and waters of a Recreational River.

The permit for construction and operation of the weir, DEC no. 5-1554-00013/00007, states only one purpose: flow monitoring to assure compliance with the 38 cfs threshold for diversion. *See* Exhibit 1, p. 1. Use of the storage capacity for water withdrawal is a different purpose not expressly authorized by that permit. The "Memorandum of Understanding, ORDA-DEC" (March 8, 1991) (Exhibit 2) does not address this facility and thus does not comply with Environmental Conservation Law § 15.0501.5's procedure for a State agency's exemption from a Stream Disturbance Permit. *See also* Exhibit 3. Further, the proposed increase in water withdrawal from this Recreational River is subject to a permit under 6 NYCRR § 666.13, Table ¶ B.1, since it involves "diversion" and is outside of the scope of DEC Permit no. 5-1554-00013/00007. Finally, we have not located in the DEIS any analysis of the impacts of the increased water diversion on the flow, biological resources, or other values of the West Branch.

We request that the ORDA and DEC publish a supplement to the DEIS to address the environmental impacts of increased water withdrawal and the legal authority for that use of the monitoring weir.

Sincerely,

Richard Roos-Collins
NATURAL HERITAGE INSTITUTE

Attorney for NEW YORK RIVERS UNITED

New York Rivers United

Comments Concerning the Whiteface Unit Management Plan Update and Draft Generic Environmental Impact Statement August 2002

by
Dan Kwasnowski
River Restoration Specialist
New York Rivers United
September 23, 2002
Hardcopy to follow.

Mr. Rand,

This letter documents the initial concerns and issues of New York Rivers United, a not for profit 501 (c) 3 organization with statewide membership and ten years experience analyzing and influencing the current and future management of our state's river ecosystems, with respect to the Unit Management Plan Update and Draft Generic Environmental Impact Statement of August 2002.

Primary Concerns

There is very little to no technical data or design detail in the document. This is especially true concerning river and stream impacts. There is no flow data, base flow curves or any analyses or rationale for specific management decisions. These are necessary to determine the soundness of the reasoning, as well as accurately and fully determine the impacts in the short and long term.

Based upon the lack of raw or represented data we have to assume that most of the decisions are arbitrary and capricious and are not only made without a full inclusive and holistic perspective (which would represent the full public interest) but are worse, not able to be monitored with respect to their stated intended result (environmental integrity). This flies in the face of the role of government as acting on behalf of the people of the State of New York who are the primary beneficiaries of the management of this land.

Unfortunately, even if the data were supplied or sufficiently represented, our organization would not have had sufficient time to review it given the late reception of the Draft. This late reception is in spite of numerous letters requesting information and drafts from both the DEC and ORDA, and requesting that NYRU be considered an interested party in all management decisions and processes, especially those concerning streams and wetlands. DEC and ORDA have repeatedly ignored this request, which is in exact contrast to every other similar process we have been involved in statewide. Letters can be supplied if this claim is doubted. By not filing on time, any following legitimate appeals can be dismissed. This is no small matter.

New York Rivers United

Specific Issues Within the Document

Section 2
A. Inventory of Natural Resources
Page II-6
c)Hydrology
(1) Surficial
Paragraph 4
"An operational plan has been developed in conjunction with the NYSDEC and formalized in a Memorandum of Understanding between the two organizations to ensure snowmaking operations will not adversely affect the stream environment."

This MOU does not exist if it is not supplied with the Draft UMP. NYRU followed up this statement with one phone call to a DEC Reg, 5 staff person. They were unsure why it was not included. If it is not present in the DRAFT it cannot be considered for review. The generalized agreement does not count for managment of the stream NYS law requires a specific MOU for management of the stream.

This MOU was actually required before construction and operation of the flume (formerely referred to as a weir, very confusing) and NYRU requested a copy of this MOU in writing. Enclosed is the letter from NYSDEC stating it does not exist. If it has been developed in the year since that letter it should have been included in the current draft UMP under review.

That MOU should also include all supporting data to determine that the decision was made on sound information.

Section 2
Page II-25
(2) Forest Cover Types and Ecological Communities
c) Fish and Wildlife
(2) Fish

3. "Habitat problems contribute significantly...Substrate embeddedness contributes to the winter mortality, probably decreasing invertebrate production and reducing natural reproduction of trout."

Probably doesn't cut it. There is need for invertebrate surveys to determine the overall suitability of what habitat exists for wintering trout. With the proposed increase of water withdrawal by Whiteface this habitat will decrease downstream due to a decrease in submerged habitat. As well the proposed dam on Stag Brook will withhold sediments from the system and will further lead to a loss of habitat and resources for the stream's ability to support trout.

To mitigate these effects, Whiteface should develop mitigation measures. This should include the following:
-possible increase of habitat and substrate using natural stream channel design techniques in the West Branch Ausable.
-Whiteface could support projects enhancing riparian habitat in other parts of the Ausable River watershed to mitigate the effects on the West Branch.

Section 2
C. Existing Snowmaking System
1. General Description
Page II-45

Under the General Description is described how the water from the pumphouse 1 has to be filtered of sand silt etc. This is the very material needed by the riparian system to provide habitat for invertebrates, which in turn feeds trout through the winter. How much do you remove from the system and where does it go?

In the same paragraph the MOU between NYS DEC and ORDA is again referred to with reference to the minimum flow agreed to in this yet undisclosed document. What data was used? What are the methods and procedures? Why is the minimum flow set at a level which will protect the current integrity when that integrity is admittedly (in this very UMP) not what it should be for a stream of this character and water quality? All of these questions and more should be addressed in this document for meaningful review and comment.

New York Rivers United

Same paragraph "Flow monitoring of the river will minimize the impacts to the river's aquatic ecology and properly manage the fishery during times of low flow."

The above quoted statement is not even credible. Monitoring flow does not ensure anything. It measures how much water is flowing in the stream and records it. That record must be interpreted and management decisions made based upon that and other information. Flow data no matter how accurate does not ensure proper management. What other data will you collect to make your decision? What data have you collected to determine the minimum flow of 38 cfs?

More importantly how will NYS DEC or Whiteface know whether or not a detrimental impact is occurring due to withdrawals or not occurring?

You need baseline data of fish assemblage, existing instream habitat, invertebrate abundance etc. This data has to be collected at a specified interval and compared and trends determined. There is not enough data available in this document to judge whether or not the minimum flow of 38 cfs is even appropriate. Withdrawing to that limit often during the winter will decrease habitat. We cannot wait until the response is noticed by anglers (a very unreliable and non-scientific measure anyway) to adjust management decisions. The UMP should determine a method that the entire stream health is monitored. Government may not act arbitrarily or capriciously.

Also, this flow guage and weir was described in the 1996 UMP as a structure as it is here. It was meant to be a fisheries enhancement structure which is the only type of structure allowed in a state designated Recreational River. Enhancement to most people, dare I say everyone, would indicate that the fishery would be improved. All that you have presented indicates that habitat will be lost, and the current lacking performance of the ecosystem will be maintained. That is not enhancement. That makes the weir an illegal structure.

Section 4
Page IV-48
f) Water System Improvements

New York Rivers United

Last paragraph
"   An ideal long-term solution is to install a new feed line from the river to PH 1 that originates above the flume structure."

The purpose of constructing the weir was to monitor flow rates in the stream under description in the 1996 UMP and the subsequent permit application. It was not stated to be an impoundment structure for removing water.

This alternative flies in the face of NYS law. It is completely inconsistent with the 1996 UMP. It also completely disqualifies the weir as a fisheries enhancement structure.

Further, if the new intake would limit the amount of water withdrawn guaranteeing that the minimum flow would never be threatened then the weir and guage are completely unneeded.

Finally
Section 5
B. Biological Resources
1. Freshwater Wetlands
Impacts
5. "A new snowmaking reservoir will be constructed on Stag Brook, adjacent to the Upper Boreen trail. Deposition of fill for the dam and flooding from the impoundment will affect approximately 800 linear feet of the stream, and between about 12,000 to 25,000 square feet (0.3-0.6) of wetland.

This reservoir was never mentioned as a dam on a brook in the 1996 UMP. It is impossible to know the impacts of such a construction without knowing the exact design of the dam. The impacts of dams generally are well known and NYRU is a noted expert by many on Dams and there affect on riparian ecosystems. The dam will block nutrients from any stream downstream and will increase water temperature. It will disrupt the natural dynamics of the brook and will undoubtedly ruin valuable habitat and ecological function for terrestrial species as well as aquatic (riparian aquatic habitat has the highest biodiversity of any ecosystem). You will need in addition to the permits you

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mentioned a dam safety permit. This part of the UMP is completely inconsistent with the 1996 document.

End of Comments.

The Adirondack Council

Defending the East's last great wilderness

CHURCH STREET PO BOX D-2 ELIZABETHTOWN, NEW YORK 12932-0640 TEL (518) 873-2240 FAX (518) 873-6675

September 23, 2002

Jay Rand
Whiteface Mountain Ski Center
Route 86
Wilmington, NY 12997

RE: WHITEFACE MOUNTAIN UMP UPDATE

Dear Mr. Rand,

On behalf of the Adirondack Council, I offer the following comments on the August 2002 Whiteface Unit Management Plan (UMP) Update which has been released for public review and comment. Due to the complexity and scope of the proposals in the UMP, I have highlighted our major concerns with development projects and management activities. We fully intend to remain involved throughout the UMP process.

We recognize the desire to provide skiers with the best skiing experience possible. But the magnitude of the construction activities proposed in this UMP update may very well go far beyond the need to provide a safe and enjoyable skiing experience. More importantly, we are concerned about the extent of the negative impacts that many of these UMP proposals are likely to have on the environment and wild forest character of the Forest Preserve. And we are reviewing whether or not the UMP proposals are within the legal authority of the Olympic Regional Development Authority as provided by the pertinent amendments to the New York State Constitution. Furthermore, these construction activities are likely to compromise the desired "Adirondack wilderness image" that was listed as one of the "Management Goals" in the UMP.

We are greatly concerned about the fact that the proposals that emerge with each Whiteface Mountain UMP update may well constitute "segmentation" of a larger project, which is specifically forbidden by the State Environmental Quality Review Act (SEQRA). This practice is not tolerated by the Adirondack Park Agency (APA) for private projects and should not be allowed for construction of this scope and magnitude on the Forest Preserve. This UMP should disclose the full set of development proposals envisioned for the Whiteface Mountain site over the long term to allow full and appropriate review of the myriad impacts expected and of the mitigation measures necessary.

We are also troubled by the fact that the UMP is virtually devoid of any meaningful discussion of likely negative environmental impacts associated with currently-proposed development projects and management activities. And it also lacks appropriate and detailed discussions of associated mitigation measures and reasonable alternatives. Any private development proposal for construction activities of this magnitude on a site having such extreme limitations to development would be required to provide a thorough assessment of site-specific and off-site physical, visual, and social impacts, as well as a detailed plan for mitigation of negative impacts. For example, no such assessment was provided for the Cloudsplitter Lodge, described as a "light-flooded building with fireplaces and many windows." It is apparent that by maximizing the views from this 13,500 square foot building that it will have a negative environmental impact on the visual and natural resources of the area. This building will be a light emitting beacon and will by no means comport with the APA's standard of "substantial invisibility," which has been applied to visually obtrusive development elsewhere in the Park. Furthermore, the ambiguity of the water source for the Cloudsplitter Lodge is another concern. Any private development proposal would be expected to include the necessary hydrogeological studies to determine the presence of an adequate water supply along with likely negative environmental impacts. In short, this massive and highly disruptive set of development proposals on one of the Park's most sensitive, fragile and visible sites, should be held to at least as thorough an environmental review as a similar private proposal.

Another concern of ours is the proposal to cut approximately 55,000 trees. The removal of this enormous number of trees and the resulting soil disturbance and habitat destruction is inappropriate, especially given its location on highly erodable, shallow, steep, high-elevation soils. To make matters worse, this cutting is proposed on the Forest Preserve, which is protected under Article XIV of the New York State Constitution. Tree removal of this magnitude and site disruption associated with trail construction and development projects will have numerous unavoidable negative environmental impacts on the visual and natural resources as well as the water quality and natural flow regimes of the entire Whiteface Mountain region.

This UMP update has set ambitious goals for the Whiteface Mountain Ski Center, which is located on public Forest Preserve lands. These proposals seriously threaten the wild forest character of this portion of the Forest Preserve. And it is doubtful that the Governor would support such disruption of the Forest Preserve at a ski center where he, himself, skis. These proposals should be significantly scaled back. And they should be presented in the context of long-term development plans, including all the necessary studies and analyses required by SEQRA. When people come through the gates of the Whiteface Mountain Ski Center, they should be reminded that they are in the Adirondack Forest Preserve, where protection of the natural environment is paramount, and where such protection does not take a back seat to unbridled commercial development for public recreation.

Thank you for this opportunity to comment and we look forward to remaining involved throughout the UMP process.

Sincerely,

Jaime A. Ethier
Program Associate

CC: Ted Blazer (ORDA), Karyn Richards (Region 5 DEC), Stu Buchanan (Region 5 DEC), Tom Martin (Region 5 DEC), Dan Fitts (APA), Walt Linck (APA), APA Commissioners

Adirondack
ADK
Mountain Club

Conservation
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Recreation
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Headquarters
814 Goggins Road
Lake George, NY
12845-4117
Phone: 518-668-4447
Fax: 518-668-3746
e-mail: adkinfo@adk.org
Web site: www.adk.org

North Country Operations
P.O. Box 867
Lake Placid, NY
12946-0867
Reservations: 518-523-3441
Office: 518-523-3480
Fax: 518-523-3518

Albany Office
301 Hamilton Street
Albany, NY
12210-1738
Phone: 518-449-3870
Fax: 518-449-3875

September 23, 2002

VIA FAX AND MAIL

Jay Rand
Whiteface Mountain Ski Center
Route 86
Wilmington, New York 12997

Re: Whiteface Mountain UMP Update and DGEIS

Dear Mr. Rand:

The Adirondack Mountain Club, Inc. has the following comments on the August 2002 Whiteface Mountain UMP Update and DGEIS.

1. We are concerned about the visual impact of the proposed lodge on Little Whiteface. It is the normal practice in visual impact assessment to provide simulations of potential projects of this scale, so that the visual impacts can be assessed properly. See DEC's Policy on Assessing and Mitigating Visual Impacts, #DEP-00-2. There do not appear to be any such simulations or other assessments in this EIS, nor does it appear that the EIS has followed the DEC Policy in its assessment of visual impacts. For instance, there is no analysis of the impacts upon sensitive receptors such as scenic overlooks, peaks or hiking trails.

A supplement to the DGEIS should be prepared which contains a proper professional Visual Impact Assessment.

2. The plan proposes to increase snowmaking, but does not assess the adverse environmental impacts on fisheries and other aspects of river ecology of removing additional water volume from the Ausable River.

ADK urges ORDA to investigate under SEQR the alternative of constructing a storage reservoir large enough to supply all of its snowmaking needs, and not just to meet the peak demand as is discussed at page IV-46. The reservoir could possibly also capture runoff on the mountain, so as to reduce or eliminate the need to remove water from the river, except at the very highest river flows.

Also, the comparison of the different types of snowmaking technology should also include an analysis of any differences in water use and conservation among the various types.

3. The plan will destroy habitat for the Bicknell's thrush (page V-14), and does nothing to mitigate that loss. Delaying construction until after August 1 may protect young birds born that year, but the loss of nesting habitat due to tree cutting will be permanent and could reduce the number of nesting pairs and young that are able to survive on the mountain in the future.

4. Page iv mentions "extreme skiing" as a new feature, and this is shown on Figure IV-1 as being the "Slides Extreme Skiing Area." However, the EIS does not seem to describe this anywhere. While ADK itself is involved with backcountry skiing elsewhere in the Adirondacks, we are concerned about the lack of information about this proposal, since lift serviced skiing could put large numbers of skiers into fragile alpine environment. Our questions include: How will skiers access this area? What are the anticipated skier numbers? Has any assessment been made of possible damage to protected alpine vegetation or krumholz vegetation?

5. ADK would also like to know if all trails have been measured to ensure that they adhere to the constitutional limits on their width.

Due to the foregoing concerns, we urge ORDA to prepare a supplemental EIS for this action.

Sincerely,

John W. Caffry, Chair
ADK Conservation Committee

Neil F. Woodworth (MB)

Neil F. Woodworth
Deputy Executive Director
and Counsel

cc: Walter Linck, APA
David Gibson, Ass'n for Prot. Ad'ks
Jo Benton, ADK
Betty Lou Bailey, ADK
Holly Elmer, LA Group

JWC/mlb
D:\Public\WPWin7\Client Files\ADK-CONS.877\Whiteface.let.wpd

THE ASSOCIATION FOR THE PROTECTION OF THE ADIRONDACKS

P.O. Box 951 • Schenectady, New York 12301-0951
Phone/Fax 518/377-1452
Web Page: www.protectadks.org

September 23, 2002

Jay Rand
Whiteface Mountain Ski Center
Wilmington, NY 12997

Dear Jay;

On behalf of the Association for the Protection of the Adirondack's, I am submitting the following comments for the Whiteface UMP. These comments are to compliment a previous letter by Dave Gibson, the Association's Executive Director sent September 16, 2002.

1. Water Storage

The mention of a structure with the storage capacity of 5 MG to 8 MG on page IV-46 is not clear and we feel needs a more detailed description.

2. Water Intake

Page IV-48 vaguely describes a long-term solution to install a new feed line from the river to PH1 that originates above the flume structure. A more concise description including a map and a detailed written explanation of this alternative needs to be included in the UMP.

3. Porcupine Lodge

On several maps, including Figures IV-1, IV-2, and IV-18, "Porcupine Lodge" is shown at the top of the Tree Island Pod. The UMP should describe this structure in detail or remove it from the maps.

4. Erosion Control

The Association has a long history of preserving rivers of the Adirondacks to ensure their wild character. With the Ausable River running at its base, sediment runoff effects from Whiteface Mountain are immediate and are of great concern to the Association. Attached are recent pictures from Whiteface of failing attempts to prevent sediment from entering the Ausable River.

Figure 1 is a picture from Parking Lot 2. The silt and sand pile in the foreground is being washed into the river below. Sadly, the source of the pile appears to be sediment excavated from the sediment trap in the background.

Figure 2 is a sediment trap that is no longer working below the Ausable River Bridge.

Figure 3 is erosion and subsequent sediment being carried towards the Ausable River.

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Similar failures on a larger scale during the proposed developments would be very devastating. This UMP needs to outline in greater detail erosion control measures during construction and on proposed trails.

The Association is also concerned about the UMP's stated justification for the proposal of the Cloudsplitter Lodge and the Tree Island Pod. Keeping up with competitive resorts such as Killington, Mont Tremblant and mega resorts in Colorado or Utah is comparing apples and oranges. These facilities are not within a constitutionally protected "forever wild" forest preserve.

We look forward to your responses and thank you for this opportunity to comment on the Whiteface UMP.

Sincerely,

Kevin G. Prickett
Wilderness Stewardship Advocate

CC: David Gibson, Association for the Protection of the Adirondacks
Board of Trustees, Association for the Protection of the Adirondacks
Jaime Ethier, The Adirondack Council

Figure 1

Figure 2

Figure 3

WILDLIFE CONSERVATION SOCIETY

ADIRONDACK COMMUNITIES & CONSERVATION PROGRAM
138A RIVER STREET SARANAC LAKE, NY 12983
TELEPHONE: (518) 891-8872 FAX: (518) 891-8875
WWW.WCS.ORG/ADIRONDACKS

To: Tom Wahl, NYS DEC

From: Heidi Kretser, WCS Heidi

Re: Whiteface Mountain Unit Management Plan

Date: September 23, 2002

Proposed activities on Whiteface Mountain under the draft version of the Unit Management Plan Update & Draft Generic Environmental Impact Statement of August 2002 have the potential to disturb critical breeding habitat of Bicknell's Thrush (*Catharus bicknelli*), a species of Special Concern in New York State and a species identified on the Partners in Flight (PFW) Watch List and as a PFW Priority Bird for mountaintop stunted conifer woodlands.

Bicknell's Thrush is one of a few species that breed in the inhospitable, high montane environments of the Adirondack High Peaks. In the Adirondack Park, Bicknell's habitat is limited to krummholtz and dense spruce-fir forest near the tops of mountains above 3000 feet in elevation. Through a partnership with the Vermont Institute of Natural Science and the Adirondack Mountain Club, the Wildlife Conservation Society's Adirondack Communities and Conservation Program (WCS/ACCP) has sponsored Mountain Birdwatch for two years to detect high elevation species, including Bicknell's Thrush, on more than 40 mountaintop routes in the Adirondacks and Catskills. This year, surveyors detected Bicknell's at and near the summit of Little Whiteface and along the toll road as well as on neighboring Ester Mountain. Habitats found on Whiteface are obviously well-suited to support Bicknell's Thrush. In addition, Whiteface Mountain - with easy access via the toll rode, chair lifts, and ski trails- is a prime location that birders visit for a chance to hear or see Bicknell's Thrush in their natural habitat. Given the species' conservation status and potential social importance, the Whiteface UMP should more explicitly describe the management efforts that will be undertaken to ensure minimal impact to the Bicknell's Thrush breeding habitat.

Enclosed are two important documents discussing the natural history of, threats to, and preferable management practices for Bicknell's Thrush. First is a copy of Bicknell's Thrush from *The Birds of North America: Life Histories for the 21st Century*, 2001. Second is a draft plan from the Vermont Fish and Wildlife Department regarding appropriate ski area management practices in Bicknell's Thrush Habitat. Please review these materials with regard to the specific areas of the Whiteface UMP outlined below.

We are happy to see a page devoted to Bicknell's Thrush in Section V – 14 of the UMP; particularly, we are happy to see the proposal to work on trail construction after August 1st. Given the vulnerability of this species and the importance of Whiteface Mountain as breeding habitat, we recommend you recognize Bicknell's Thrush in the Fish & Wildlife Section of the Appendix and in the Fish and Wildlife portion of Section II in the main document.

In summary, we support the management recommendations from the Vermont Fish and Wildife Department. We would like to reiterate the importance of maintaining low dense fir-spruce stands along the edges of trails and as islands. We recommend that you adopt some specific verbiage from the Vermont draft regarding the management of trees along trails and on islands. We recommend that ORDA commit to trail maintenance (in addition to trail construction) above 3000 feet, especially cutting trees along the edges of trails and in the Tree Island Pod, only *after* August 1st. We also recommend that construction of the Cloudsplitter Lodge occur *after* August 1st. In addition, given the fact that the breeding times occur during prime construction period, we also recommend that ORDA work with the Wildlife Conservation Society or other local bird groups to determine the presence or absence of breeding Bicknell's Thrush at or near the proposed activity site specifically on Little Whiteface (i.e. construction of Cloudsplitter Lodge) and in the Tree Island Pod (i.e. Trail Construction and Maintenance). This partnership would be in addition to the transects that WCS already surveys on Whiteface, Little Whiteface, and Ester. This partnership would target specific areas slated for development.

As an avid skier myself, I am hopeful that the NYS DEC and ORDA will seriously consider this information and update the UMP as appropriate. Bicknell's Thrush can coexist with a ski facility as long as careful management of key habitats is undertaken. WCS/ACCP is committed to integrating conservation and development in the Adirondack Park and here is a clear situation where foresight and a working partnership can create a win-win situation for wildlife and humans. If you have additional questions about our recommendations please contact me at the address and phone provided or by email at hkretser@wcs.org
Thank You.

CHRISTOPHER C. RIMMER, KENT P. MCFARLAND, WALTER G. ELLISON, AND JAMES E. GOETZ

Catharus bicknelli

Bicknell's Thrush

FRENCH: *Grive de Bicknell*
SPANISH: *Zorzal migratorio (Hispaniola), Tordo de Bicknell (Cuba)*

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The song is in a minor key, finer, more attenuated, and more under the breath than that of any other thrush. It seemed as if the bird was blowing in a delicate, slender, golden tube, so fine and yet flute-like and resonant the song appeared. At times it was like a musical whisper of great sweetness and power.

Burroughs 1904: 51

... only a freak ornithologist would think of leaving the trails [on Mt. Mansfield] for more than a few feet. The discouragingly dense tangles in which Bicknell's Thrushes dwell have kept their habits long wrapped in mystery.

Wallace 1939: 285

The nasal, gyrating song and plaintive calling of Bicknell's Thrush are familiar to few birders or ornithologists. The species' remote, inhospitable montane and maritime forest habitats, its penchant for dusk and dawn activity, and its reclusive behavior underscore its status as one of the least-known breeding birds in North America. It is also among the most rare and, possibly, most threatened. Breeding from the northern Gulf of St. Lawrence and easternmost Nova Scotia southwest to the Catskill Mountains of New York State, Bicknell's Thrush probably numbers no more than 50,000 individuals across its naturally fragmented breeding range. The species inhabits an even more restricted winter range, occurring regularly on only four islands in the Greater Antilles. Habitat loss and degradation at both ends of its migratory spectrum suggest a tenuous conservation status for Bicknell's Thrush, which is ranked as the Nearctic-

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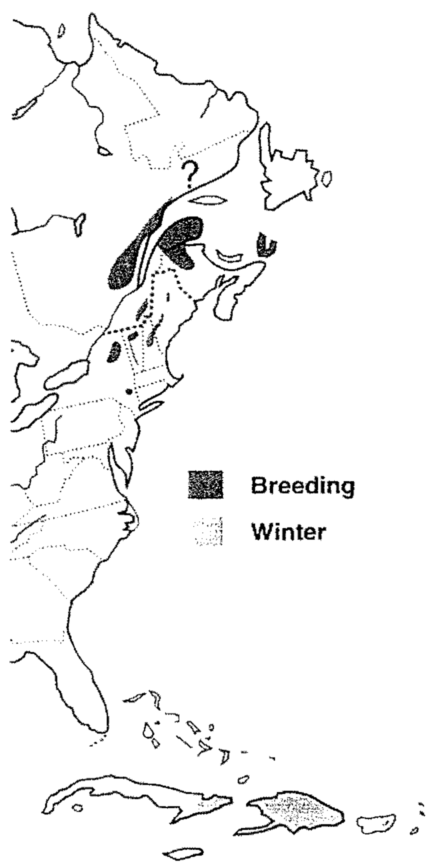

Figure 1.
Distribution of Bicknell's Thrush. Patchy distribution throughout its range makes exact delineation difficult. See text for details.

Neotropical migrant of highest conservation priority in the Northeast (Rosenberg and Wells 1995, Pashley et al. 2000).

Following its discovery in 1881 by Eugene Bicknell on Slide Mountain in New York's Catskill range, Robert Ridgway named and described Bicknell's Thrush in 1882, then classifying it as a subspecies of Gray-cheeked Thrush (*Catharus minimus*). George Wallace's (1939) classic natural-history study focused attention on Bicknell's Thrush, and a careful taxonomic assessment by Henri Ouellet (1993) led to specific recognition in 1995 (Am. Ornithol. Union 1995). Although reliable field identification of Bicknell's and Gray-cheeked thrushes remains dubious at best, marked morphological, vocal, and biochemical differences between the two taxa support this designation. The ranges are completely allopatric, with Gray-cheeked breeding farther north (Newfoundland to Siberia) and wintering farther south (Panama through northwestern Brazil and Colombia) than Bicknell's Thrush. The recent elevation of Bicknell's Thrush to full species status has heightened interest and concern among birders, scientists, land-use planners, and conservationists.

Bicknell's Thrush is adapted to naturally disturbed habitats. Historically, the species probably selected patches of regenerating forest caused by fir waves, wind throw, ice and snow damage, fire, and insect outbreaks, as well as chronically disturbed, stunted altitudinal and coastal conifer forests (Ouellet 1993, Nixon 1999, Vermont Institute of Natural Science [VINS]). In addition to these natural successional habitats, Bicknell's Thrush has recently been discovered in areas disturbed by timber harvesting, ski trail and road construction, and other human activities (Ouellet 1993, VINS). Evidence of local declines and extinctions in "traditional" breeding habitats may indicate either a shift in habitat use or increasing populations (Ouellet 1993, 1996), but more likely reflects the species' opportunistic use of disturbed habitats. Extensive loss and degradation of the primary forests that Bicknell's Thrush appears to prefer in winter pose the greatest threat to the species' long-term viability.

Despite detailed studies by Wallace (1939), VINS, and others, few concrete data are available by which to assess the conservation status of Bicknell's Thrush. The species is poorly monitored by traditional sampling methods, and its unusual spacing and mating system makes estimation of breeding densities unreliable at best. Current range-wide population estimates represent little more than educated guesses. Knowledge of the species' wintering ecology and demography is fragmentary, and its migratory routes and stopover ecology are poorly known. Recent research on the breeding and behavioral ecology of Bicknell's Thrush has documented a strongly male-biased sex ratio, with 2 to 4 males feeding young at 75% of nests and multiple paternity of most broods. Possible sexual habitat or geographic segregation on wintering grounds may cause differential survivorship of females and promote skewed breeding sex ratio, but firm evidence is lacking. Much work remains to be done on Bicknell's Thrush at all stages of its annual cycle and in all parts of its range.

DISTINGUISHING CHARACTERISTICS

Medium-sized thrush (16–17 cm, 26–30 g), but smallish and slender for a *Catharus*. Generally wary and hard to observe, occasionally sings on exposed song-post. Field identification subtle and difficult under best circumstances. Plumage separation from very similar Gray-cheeked Thrush relies on slight color differences and contrasts (e.g., tail vs. lower back), less useful than soft part color and morphometrics (Ouellet 1993, Knox 1996). Body coloration of both species varies across respective breeding ranges, obscuring differences in all but extreme variants. Most Bicknell's have olive-brown or brown dorsal coloration, whereas most Gray-cheeked have olive-gray or olive (Ouellet 1993). In comparison to Gray-cheeked, Bicknell's shows contrast between chestnut-tinged tail and wings, and rest of upperparts. This may be obscured by worn, dull tail and wings, or low contrast in warmest brown birds. Also shows warmer brown upperparts and a lighter buffy wash on the breast (underlying the dark spots) than continental subarctic Gray-cheeked Thrush (*C. m. aliciae*). This, combined with bright yellow to yellow-orange basal half or more of lower mandible, provides a subtle but generally reliable method of separating Bicknell's from *aliciae* Gray-cheeked Thrush. Potential confusion with Gray-cheeked Thrushes of Newfoundland and nearby St. Lawrence estuary coasts (*C. m. minimus*), which show some chestnut edging on wings and tail, are generally warmer brown than the more olive-gray *aliciae*, and often have extensive pale yellow on the lower mandible, although apparently not as bright as Bicknell's (McLaren 1995). In Bicknell's, color of legs purplish flesh, with toes darker than tarsi and soles of feet flesh to dull pale yellow; in Gray-cheeked, tarsi lighter flesh color, with toes invariably much darker and soles of feet brighter yellow than in Bicknell's (Ouellet 1993).

Subtle but clear distinctions in song help separate Bicknell's and Gray-cheeked thrushes. Primary difference is constant or slightly rising inflection at end of Bicknell's song, whereas Gray-cheeked song falls to lower frequencies towards the end (Ouellet 1993). This difference consistent across breeding range of both species and detectable in field. Nocturnal flight calls of the two species also differ subtly (see Ball 1952, Evans 1994), these perhaps only safely distinguished by spectrographic examination of recordings.

Bicknell's Thrush best identified in hand on basis of size and relative wing shape (Pyle 1997). Usually smaller than Gray-cheeked, although considerable overlap in measurements exists. Wing-chord of adult Bicknell's 82–100 mm (n = 415; VINS), of Gray-cheeked 93–109 mm (n = 200; Pyle 1997). Tail length of Bicknell's 60–75 mm (n = 127; VINS), of Gray-cheeked 63–79 mm (n = 185; Pyle 1997). Majority of Gray-cheeked Thrushes have wings >95 mm in length (Ouellet 1993); 85% of Bicknell's have wings <95 mm (VINS). Those with wing lengths 94–98 mm (usually young female *C. m. minimus* and adult male Bicknell's) are not safely identifiable. As befits a longer distance migrant, Gray-cheeked Thrush shows more pointed wing morphology (Phillips 1991, Pyle 1997). Difference in length between primaries (P) 8 and 6 is 3–7 mm for Bicknell's and 5–10 mm for Gray-cheeked; P8 is 24–29 mm longer than P1 in Bicknell's; 27–35 mm longer in Gray-cheeked (Pyle 1997). Ratio of primary:tertial length may be useful in separating the two species: ≤1:1 in Bicknell's, ≥1:1 in Gray-cheeked (Lane and Jaramillo 2000).

Identification from other North American *Catharus* is less difficult, but requires care. Hermit Thrush (*C. guttatus*) is much brighter rufous on upper tail-coverts and tail, showing far more contrast than Bicknell's. Hermit also has more extensively and discretely spotted breast with a whiter ground color. Swainson's Thrush (*C. ustulatus*) has pale lores more or less connected to a broad buffy eye-ring broken narrowly before the eye, a warm buff wash on face and breast and, particularly in boreal-eastern populations (*swainsoni* group), colder olive-brown upperparts. Bicknell's Thrushes that are more olivaceous on back tend to show noticeable contrast with reddish highlights in tail and wings. Pacific Swainson's Thrush (*ustulatus* group) shows rufescent color in tail that contrasts with back, which itself is a warmer brown than in boreal-eastern (*swainsoni* group) birds, but buffy facial pattern invariably distinguishes all individuals of this species from Bicknell's Thrush. Boreal-eastern populations of Veery (*C. fuscescens*) more richly and uniformly reddish brown above, less heavily spotted on breast; spots, if discrete, sparse and small. Populations breeding in Newfoundland, central Appalachian, and the West, e.g., Rocky Mtn. region, duller and less rufescent (or tawny) above and evince sharper breast spotting; these differ from Bicknell's Thrush in having more uniformly colored upperparts, sparsely and finely spotted breast, orange-pink base of lower mandible, and greater contrast of flanks with upperparts (gray versus brown).

Males and females indistinguishable in field. Individuals in Basic I plumage often separable from adults through first full summer by retention of buffy-tipped Juvenal feathers in greater and median wing-coverts, occasionally scapulars and mantle. No appreciable seasonal changes in plumage after completion of Definitive Prebasic molt.

DISTRIBUTION

THE AMERICAS

Breeding range. Figure 1. Occupies a restricted and highly fragmented breeding range. Breeds north to sw. Quebec in Réserve La Verendrye, se. Quebec along northern shore of St. Lawrence River and Gaspé Peninsula (Ouellet 1993, 1996), Magdalen Is., Quebec (probably extirpated; Ouellet 1996, D. McNair pers. comm.), nw. and n.-central New Brunswick (Erskine 1992, Nixon 1996), and Cape Breton I., Nova Scotia, including the small, outlying St. Paul and Scaterie Is. (Erskine 1992, D. Busby pers. comm.). Breeds south to Catskill Mtns. of se. New York State (Peterson 1988, Atwood et al. 1996), Green Mtns. of s. Vermont (Kibbe 1985, Atwood et al. 1996), White Mtns. of central New Hampshire (Richards 1994, Atwood et al. 1996), mountains of w. and central Maine (Adamus 1987, Atwood et al. 1996), s.-coastal New Brunswick (possibly extirpated; Erskine 1992, Christie 1993), and sw.-coastal Nova Scotia (probably extirpated; Erskine 1992, D. Busby pers. comm.). Possible but unconfirmed local and sporadic breeding in n.-coastal Maine (Atwood et al. 1996, Rimmer and McFarland 1996).

Winter range. Figure 1. Confined to Greater Antilles. Specimen and field-survey data indicate bulk of wintering population in Dominican Republic (Wetmore and Swales 1931; Ouellet 1993; Rimmer et al. 1997, 1999), where widely distributed and locally common from sea level to 2,220 m (Rimmer et al. 1999). Few records from Haiti; restricted to higher elevations, mainly in southwest (Massif de la Hotte) and east (Massif La Visite; Wetmore and Swales 1931; Woods and Ottenwalder 1983, 1986). Uncommon and local in Jamaica, mainly in Blue Mtns. from 1,200 to 2,225 m elevation (R. and A. Sutton unpubl.; VINS). Rare winter resident in e. and se. Puerto Rico, in Luquillo Mtns. at 450–720 m elevation and Sierra de Cayey at 720 m (Arendt 1992, J. Wunderle unpubl.). Recorded in e. Cuba at 1,600–1,960 m in Sierra Maestra (Rompré et al. 2000, Y. Aubry and G. Rompré pers. comm.); two

Oct specimens from w. Cuba (Havana) in 1960s (Garrido and Garcia Montaña 1975) probably represent transients. No confirmed winter records elsewhere.

OUTSIDE THE AMERICAS

Owing to difficulty of sight identification of Bicknell's and Gray-cheeked thrush, none of 43 "Gray-cheeked Thrush" records from Britain and Ireland has been conclusively identified as Bicknell's (Knox 1996). A specimen from Bardsey, Gwynedd, Britain on 10 Oct 1961 was identified by Charles Vaurie as *bicknelli* (Clafton 1963), but the bird had a 100-mm wing and a dull lower mandible more consistent with Gray-cheeked (Knox 1996). A well-photographed bird on Isles of Scilly on 20 Oct 1986 appeared to be Bicknell's (Curson 1994), but could be extreme example of nominate Gray-cheeked (Knox 1996). Most records of the 2 species from Isles of Scilly, all between 22 Sep and 26 Nov, majority in second half of Oct (Curson 1994). A small number of "Gray-cheeked Thrush" records also from France, Germany, Norway, Italy, and Iceland (Curson 1994).

HISTORICAL CHANGES

Local extirpations documented during twentieth century, but no clear evidence of rangewide declines. Few quantitative data to assess population changes. Historic breeding populations disappeared on Mt. Greylock, MA (10 pairs in 1950s, 0 in 1973; Veit and Petersen 1993); Magdalen Is., Quebec (Ouellet 1996, D. McNair pers. comm.); Seal and Mud Is., Nova Scotia (Wallace 1939, Erskine 1992, D. Busby pers. comm.); Cape Forchu, sw. Nova Scotia (J. Marshall pers. comm.); Fundy National Park, New Brunswick (Christie 1993); and Grand Manan I., New Brunswick (B. Dalzell pers. comm.). Further range contraction in Canadian Maritime provinces suggested by mid-1990s surveys showing fewer occupied sites than during 1986–1991 Breeding Bird Atlas (D. Busby pers. comm.) survey period. Species' presence, however, confirmed on 63 of 73 historic (pre-1992) U.S. breeding sites surveyed in 1992–1995 (Atwood et al. 1996), suggesting no large-scale changes in recent distribution. Recently discovered occupancy of second-growth habitats in industrial forestry landscapes in Quebec, New Brunswick, and Nova Scotia (Ouellet 1993, 1996; Holmes and Nixon 1997; D. Busby pers. comm.) may indicate either a shift in habitat use or population increases (Ouellet 1993, 1996), but more likely reflects species' specialization on disturbed habitats.

Changes on wintering grounds not well documented but likely due to extensive habitat loss and degradation throughout Greater Antilles, including montane forests currently preferred by Bicknell's Thrush; <1.5% of forest cover remains in Haiti and about 10% in Dominican Republic (Stattersfield et al. 1998). Jamaica has lost 75% of its original forest and Cuba 80-85% (Stattersfield et al. 1998). Of 14 identifiable historic (pre-1991) sites of occurrence in Dominican Republic, Bicknell's Thrush located at 7 of 11 surveyed in 1995–1997; several reported historic sites severely degraded to point of being unrecognizable or unsuitable for species' continued occupancy (Rimmer et al. 1999).

FOSSIL HISTORY

No known records; late-Pleistocene fossils of *Catharus* sp. from cave deposits in Virginia could apply to *bicknelli* (Guilday et al. 1977) and additional unidentified *Catharus* fossil records cited in Wetmore 1962.

SYSTEMATICS

Formerly classified as subspecies of Gray-cheeked Thrush, this view recently maintained by Marshall (2001), who adhered to taxonomy presented by Wallace (1939).

GEOGRAPHIC VARIATION

Possible latitudinal variation, both in size and dorsal coloration, but rigorous study needed (Todd 1963, Ouellet 1993). Todd (1963) proposed the possibility of a tawnier brown montane subspecies in New York State and New England, and a colder olive-brown subspecies in the Canadian Maritime Provinces and se. Quebec. He further suggested that the brown versus olive color polymorphism seen in n. Vermont by Wallace (1939) represents contact between these forms. It is now unclear if the trend from brown birds in south to olive birds in north represents a true cline or if the two forms are intermixed throughout the range (see Appearance: molts and plumages, below). It should be clarified whether this is true polymorphism, or only the separation of extremes in normal variation in dorsal color.

SUBSPECIES

None recognized. See Geographic variation, above.

RELATED SPECIES

Belongs to a species group with other Nearctic spotted *Catharus* thrushes, including Swainson's, Hermit, Gray-cheeked, and Veery; especially closely related to the latter two. Percent nucleotide divergence in mitochondrial DNA nonprotein coding control region (396 base pairs sequence) is 2.2% to

Veery and 2.3% to Gray-cheeked Thrush (Ellison 2001). Relationships among these species are so close as to make specifying sister taxa uncertain. Bicknell's Thrush and Veery probably arose from within a Gray-cheeked-like ancestor. Based on control region-molecular clocks derived from Zink and Blackwell (1998) and Freeland and Boag (1999) for passerines, this split probably occurred in the mid-Pleistocene era (about 500,000 to 850,000 yr ago). This is also suggested by the 1.7% divergence estimated by G. Seutin for a restriction fragment analysis of the entire mitochondrial genome of Gray-cheeked and Bicknell's thrushes (cited in Ouellet 1993). Relationships of Nearctic *Catharus* to Neotropical *Catharus* and Wood Thrush (*Hylocichla mustelina*) yet to be worked out, although it seems likely Wood Thrush is a *Catharus* (Winker and Rappole 1988).

MIGRATION

NATURE OF MIGRATION IN THE SPECIES

A nocturnal, long-distance migrant; routes and timing poorly documented owing to difficulty of distinguishing Bicknell's and Gray-cheeked thrushes in the field. Examination of hand-held birds only reliable means of separating migrants of the 2 species. Analysis of specimen and banding data, using wing-chord as identification criterion (<94 mm = Bicknell's, >98 mm = Gray-cheeked), suggests elliptical southern portion of migratory route between North American breeding grounds and Greater Antillean winter range. Most southbound migrants may depart East Coast from mid-Atlantic states or Carolinas on overwater flight to Greater Antilles; fall records scarce south of Virginia. Northward passage appears to be more concentrated through Southeast, as spring specimens from Florida, Georgia, both Carolinas, and Virginia outnumber fall records nearly 2:1. Entire migration in both directions concentrated east of Appalachian Mtns.

TIMING AND ROUTES OF MIGRATION

Spring. No information on departure from Greater Antillean wintering grounds; probably late Apr, as birds still present in Dominican Republic second week of Apr (J. Faaborg unpubl.). No verifiable U.S. records prior to May. Based on identification of specimens (n = 2; Wallace 1939) and nocturnal flight calls (n = 8 birds; Evans 1994) in e.-central Florida, migrants pass northward first half of May; earliest specimen record 3 May in Brevard Co. (Wallace 1939). No records from Florida's west coast or other Gulf Coast states. Only one reliable spring record from Georgia, a male collected on McQueen's I., Chatham Co., 8 May 1949 (Georgia Museum Natural History specimen data). Three verifiable spring specimens from S. Carolina: two near Charleston 10 and 15 May, one inland at Chester 6 May (Charleston Museum specimen data). Spring migrants of Bicknell's/Gray-cheeked thrush complex in N. Carolina recorded 24 Apr to 30 May, with 2 unsubstantiated Mar reports; 50% pass in 15-d period mid-May (Lee 1995). Only Bicknell's specimen considered authentic, taken near Southport, Brunswick Co., 12 May 1939 (Lee 1995), although 3 additional specimens reported by Wallace (1939) collected 5–18 May. Three specimen records Virginia coastal plain 17–21 May (Wallace 1939).

Bulk of confirmed (on basis of wing length) spring migrants recorded between Maryland and New England. Two specimens from Washington, D.C. on 16 and 27 May; two from Laurel, MD, both 14 May (Wallace 1939). Ten Bicknell's Thrushes banded at two e. Maryland sites 18-31 May (B. Ross and J. Weske unpubl.). At Island Beach State Park, NJ, only 3 of 43 identified Bicknell's Thrushes banded 1964–1999 captured in spring, 18–26 May (G. and E. Mahler, R. McKinney, R. Yunick unpubl.). At a Queen's Co. banding station in w. Long I., NY, species made up 24% of spring transients of Bicknell's/Gray-cheeked thrush complex (n = 24 Bicknell's, 76 Gray-cheeked) banded from 1932 to 1939; earliest date 11 May, latest 27 May (Beals and Nichols 1940). Farther east in Suffolk Co., Long I., NY, Bicknell's Thrush comprised 24% of identified spring migrants (n = 4 Bicknell's, 17 Gray-cheeked) banded in 1959–1974, all on single date 28 May 1967 (Lanyon et al. 1970, W. Lanyon unpubl.).

In New England, 5 verifiable (wing-chord ≤93 mm) spring specimens in coastal Connecticut 15–27 May, 4 in e. Massachusetts 20 May–11 Jun, the latter record of an exceptionally late female (Wallace 1939). At a coastal banding site in se. Massachusetts, 18% of new captures of Bicknell's/Gray-cheeked thrush complex in 1966–1996 referable to Bicknell's (n = 17); earliest date 23 May, latest date 6 Jun, mean date 29 May ± 4.1 d SD (Manomet Observatory for Conservation Sciences [MOCS] unpubl.). On Appledore I. off s. Maine coast, 4 captures of Bicknell's among 44 individuals of the species complex banded in 1983–1999, 18 May–1 Jun (S. Morris unpubl.). Earliest recorded occurrence on high-elevation breeding grounds in n.-central Vermont 16 May, well established in Green Mtns. by 25 May in most years (VINS). Reported to return to n. White Mtns. 25–30 May (Wallace 1939).

West of Appalachian Mtns., no identifiable Bicknell's among 94 individuals of Bicknell's/Gray-cheeked thrush complex banded in springs of

1961–1961–1994 in sw. Pennsylvania (Powdermill Nature Reserve [PNR] unpubl.). Possible vagrancy indicated by spring captures of 5 apparent Bicknell's among 371 individuals of both species banded on n. Lake Erie shore at Long Point, Ontario in 1962–1998 and 6 of 102 captures at Prince Edward Point on northeast shore of Lake Ontario in 1975–1989 (Long Point Bird Observatory [LPBO] unpubl.). At Braddock Bay on south shore of Lake Ontario, 2 identifiable Bicknell's among 50 individuals of species complex banded in springs of 1986–1999 (E. Brooks unpubl.). Possibility of misidentifications of similar *Catharus* species and erroneous wing-length measurements must be considered in evaluating all banding records of apparent Bicknell's Thrush.

Fall. Migrants identified on basis of nocturnal flight calls passing over n. Gaspé Peninsula in late Sep 1948 (Ball 1952, Evans 1994). Latest record on Mt. Mansfield, VT, 3 Oct; one presumed local hatch-year (HY) bird banded 29 Aug 1996 was recaptured 30 Sep (VINS). Six birds reported from Whiteface Mt., an Adirondacks breeding site, 26 Sep 1948 (Carleton 1999). Few reliable records from northern part of migratory range, as migrants appear to move rapidly southeastward. No confirmed Bicknell's among 21 "Gray-cheeked Thrushes" banded at a central Vermont site 1981–2000 (VINS). On the east slope of Adirondack Mtns. at 730 m elevation, individual HY Bicknell's banded on 9 Sep 1992 and 24 Sep 1994, respectively (W. Lanyon unpubl.). In Canadian Maritime Provinces, 1 of 7 "Gray-cheeked Thrushes" banded on Kent I., New Brunswick, a Bicknell's by wing length, a HY bird on 5 Oct 1980 (J. Cherry and P. Cannell unpubl.). Similarly, at Atlantic Bird Observatory off sw. Nova Scotia, 1 of 7 individuals of the two species banded in 1996–1998 had a wing length consistent with Bicknell's, this a HY bird on 14 Sep 1998 (T. Fitzgerald unpubl.).

In New England, majority of fall records from coastal or near-coastal locations. Seven identified specimens from Massachusetts 26 Sep–16 Oct, 9 from Connecticut 21 Sep–12 Oct (Wallace 1939). On se. Massachusetts coast, 19 of 214 banded fall migrants (9%) of Bicknell's/Gray-cheeked thrush complex identifiable as Bicknell's by wing length; earliest date 22 Sep, latest 20 Oct, mean date 6 Oct ± 6.9 d SD (MOCS unpubl.).

Fall transients appear to concentrate at coastal sites between Long I., NY, and Virginia. At w. Long I. banding station, Bicknell's Thrush constituted 42% of identified fall migrants of the two species (n = 117 Bicknell's, 278 Gray-cheeked); earliest date 7 Sep, latest date 8 Nov, 66% of captures 21 Sep–5 Oct (Beals and Nichols 1940). At Huntington, Suffolk Co., Long I., Bicknell's Thrush constituted 16% of identified fall migrants of both species (n = 17 Bicknell's, 109 Gray-cheeked); early date 9 Sep, late date 24 Oct, mean passage date 5 Oct ± 8.6 d SD (Lanyon et al. 1970, W. Lanyon unpubl.). At Island Beach State Park in e. New Jersey, 40 identifiable Bicknell's banded 11 Sep–20 Oct in 1964–1999 (G. and E. Mahler, R. McKinney, R. Yunick unpubl.). At Cape May, NJ, 2 of 11 individuals of Bicknell's/Gray-cheeked thrush complex banded in 1990 and 1991 identifiable as Bicknell's, both HY birds captured on 7 Oct 1990 (T. Leukering unpubl.). At Sandy Spring, MD, 7 Bicknell's banded 1975–1984, between 20 Sep–19 Oct (J. Weske unpubl.). At another e. Maryland site, 7 Bicknell's banded 1979–1994 over a similar range of dates, 21 Sep–13 Oct (B. Ross unpubl.). On Shenandoah River in e. Virginia, 3 identifiable Bicknell's banded among 53 individuals of the species complex in 1976–1994, all HY birds 12 Sep–18 Oct (W. Oberman unpubl.). Among fall migrants of Bicknell's/Gray-cheeked thrush complex (n = 947) at a coastal Virginia banding site (Kiptopeke), Bicknell's Thrush accounted for 30% of individuals captured over 4 yr (1968, 1969, 1971, 1980; Wilson and Watts 1997). Median autumn capture dates over same 4 yr: 4–7 Oct, differing significantly from Gray-cheeked Thrush in only one year (1968; 7 Oct and 2 Oct, respectively; Wilson and Watts 1997). Range of passage dates at this site narrower for Bicknell's than for Gray-cheeked Thrush; none captured during first half of Sep, none after third week of Oct (Wilson and Watts 1997). One Kiptopeke bird captured on 26 Sep 1999 originally banded at Appledore I. off s. Maine coast on 18 May 1998 (B. Wilson pers. comm.).

Reliable fall records relatively scarce south of Virginia, suggesting offshore flight from mid-Atlantic to Greater Antilles. Two records support such an overwater flight: a specimen collected on Bermuda on the exceptionally late date of 23 Nov 1957 (American Museum of Natural History specimen data, *fide* J. Marshall) and a migrant banded on New Providence I., Bahamas, 16 Oct 1993 (G. Seutin unpubl.). On mainland, only one reliable record for N. Carolina, a specimen collected on 27 Sep 1900 in Raleigh (Wallace 1939). Within the Bicknell's/Gray-cheeked thrush complex, 75% of fall migrants in N. Carolina occur during a 20-d period late Sep–early Oct, with earliest record 30 Aug and latest 29 Oct (Lee 1995). In S. Carolina, only a single fall record, a HY specimen collected south of Charleston 13 Oct 1993 (Charleston Museum specimen data). Two identifiable Georgia specimens, both from Atlanta area, 7 Oct 1915 (Wallace 1939) and 21 Sep 1970 (Georgia Museum of Natural History specimen data). At three Georgia banding sites, one identifiable Bicknell's among 22 individuals of Bicknell's/Gray-cheeked complex in 1984–1999, banded at Butler I., 26 Oct 1996 (D. Cohrs and G. Schmalz unpubl.). In Florida, only three reliable fall records: 1 Bicknell's among 31 birds of both species banded in Tallahassee 1967–1998 (HY bird on 23 Sep 1979; P. Homann unpubl.); another among 41 birds of the two species banded near Orlando 1995–1998 (HY on 13 Oct 1997; P. Small et al. unpubl.); single fall Florida specimen near Apalachicola 23 Sep 1967 (Tall Timbers Research Station specimen data). No other reliable fall record from any Gulf Coast states.

As in spring, birds identifiable as Bicknell's Thrush on basis of wing length captured at fall banding sites well west of breeding range and main migration path. At Long Point, Ontario, 1% of all Bicknell's/Gray-cheeked thrushes (n = 55 of 4,102) banded 1963–1998 referable to Bicknell's; dates ranged from 31 Aug–6 Oct (LPBO unpubl.). At Prince Edward Point, Ontario, 9 of 265 (3%) individuals of the species complex banded 1975–1989 identifiable as Bicknell's; dates 15 Sep–7 Oct (LPBO unpubl.). At Braddock Bay, NY, 1% of banded birds of both species referable to Bicknell's, two HY individuals on 16 Sep 1988 and 26 Sep 1990 (E. Brooks unpubl.). In Finger Lakes region of New York, 1 Bicknell's banded among 32 birds of the two species in 1987–1999 (15 Sep 1999; J. Gregoire unpubl.). Farther south, 18 identifiable Bicknell's among 1,441 new bandings of Bicknell's/Gray-cheeked thrush in sw. Pennsylvania 1961–1994; early date 22 Sep, late date 12 Oct (PNR unpubl.). At fall banding site in Allegheny Mtns. of W. Virginia, 3 apparent Bicknell's among 74 individuals of the species complex banded 1991–1999, 9 Sep–5 Oct (Allegheny Front Migration Observatory unpubl.).

Winter residents on territories in Dominican Republic in early Nov; earliest date 5 Nov (VINS).

MIGRATORY BEHAVIOR

Little information. Stopover lengths not well documented, but few transients appear to linger at stopover sites. No evidence of spring stopovers. Mean minimum autumn stopover on se. Massachusetts coast 2.9 d ± 2.1 SD (range 1–7, n = 8 of 19 birds; MOCS unpubl.). Mean stopover of banded Bicknell's Thrushes (n = 10 of 24 birds) in w. Long I., NY, 1.3 d, maximum stopover 2 d (Beals and Nichols 1940). No recaptures of banded fall migrants at another Long I. site (n = 17 Bicknell's; W. Lanyon pers. comm.), at Kiptopeke, VA, in 1997–2000 (n = 9 Bicknell's; B. Johnson unpubl.), or in sw. Pennsylvania (n = 18 Bicknell's; PNR unpubl.). Possible premigratory movements in e. Dominican Republic suggested by mist-net captures of 6 individuals 10–11 Apr 1974; none captured at same site 7–9 Jan 1975 (J. Faaborg unpubl.). This might, however, simply indicate food-based habitat shift in response to late-winter dry season.

Age ratios in fall strongly skewed towards HY birds throughout migratory range. Of 152 known-age birds banded at 18 e. North America sites, 90% were immature. Only 3 mid-Atlantic banding stations with fall adult ratios >20% (Kalbfleisch on Long I., NY [29% after-hatch-year [AHY] individuals, n = 5; W. Lanyon unpubl.], Sandy Spring, MD [29%; n = 2; J. Weske unpubl.], and Kiptopeke, VA [22%; n = 2; B. Johnson unpubl.]). Small sample sizes obscure possible differences in timing between age classes.

CONTROL AND PHYSIOLOGY

Little information. Some evidence for premigratory fat deposition. On Mt. Mansfield, VT, of 8 birds (2 known breeding adults, 6 presumed local immatures) examined 2–44 d after initial captures in fall (Aug–Sep), 5 gained 0.7–10.2% (mean 5.3%) of original body mass, 1 remained at same mass, and 2 lost 1% and 6%, respectively, of original mass (uncorrected for time of day; VINS). Only 1 HY bird had detectable subcutaneous fat.

Few data on fat or mass changes of migrants. On se. Massachusetts coast, mean mass of transients at initial capture 29.9 g ± 4.5 SD in fall (n = 20), 32.9 g ± 3.9 SD in spring (n =17); fall migrants (n = 8) gained average of 2.9 g ± 4.7 SD during stopovers (range -0.2–10.2; MOCS unpubl.). In sw. Pennsylvania, mean mass of 17 fall migrants 30.8 g ± 2.7 SD (PNR unpubl.). At Kiptopeke, VA, mean mass of AHY birds (n = 2) 29.2 g ± 3.4 SD, of HY birds (n = 7) 27.6 g ± 1.6 SD; AHY birds with higher average fat scores than HYs (B. Johnson unpubl.).

HABITAT

BREEDING RANGE

In U.S., a habitat specialist restricted to montane forests dominated by balsam fir (*Abies balsamea*), with lesser amounts of spruce (red [*Picea rubens*] and black [*P. mariana*]), white birch (*Betula papyrifera* var. *cordifolia*), mountain ash (*Sorbus* sp.), and other hardwood species. At southern extent of range in Catskill Mtns., generally breeds above 1,100 m elevation; minimum elevations at which species occurs decrease by 85 m / 1° latitude northward, with individuals recorded as low as 750 m on several Maine peaks (VINS). Lowest nest in Vermont documented at 1,006 m (VINS). Often associated with recently disturbed areas undergoing vigorous succession, characterized by standing dead conifers and dense regrowth of balsam fir (Wallace 1939, VINS). Highest densities typically found in chronically disturbed (high winds, heavy winter ice accumulation) stands of dense, stunted fir on exposed ridgelines or along edges of human-created openings (e.g., ski trails), or in regenerating "fir waves" (*cf.* Sprugel 1976; Marchand 1984, 1995; VINS). In the White Mtns. of New Hampshire, Sabo (1980) found Bicknell's Thrush at a mean elevation of 1,290 m in exposed mid- to upper slopes dominated by conifers (75% of foliage volume) with mean canopy height of 4.8 m.

In Canada, occupies montane fir forests in s. Quebec and New Brunswick up to 1,178 m elevation (Ouellet 1993, Rompré et al. 1997, Connolly 2000, Nixon et al. in press, D. Busby pers. comm.), coastal maritime spruce-fir forests in New Brunswick and Nova Scotia (Wallace 1939, Erskine 1992, D. Busby pers. comm.), and regenerating stands of mixed forest following forest fires or clear cutting in Quebec and New Brunswick, generally >450 m (Ouellet 1993, Nixon 1996, Nixon et al. in press).

In Quebec montane forests, occupied sites had significantly higher components of balsam fir than unoccupied sites (19,920 stems/ha versus 7,240 stems/ha; Connolly 2000); fir made up 71.1%, 75.1%, and 88.5% of all stems recorded at 3 discrete geographic study areas (Rompré et al. 1997). Spruce and hardwoods species significantly less abundant on occupied than unoccupied sites (Connolly 2000). Mean total stem density varied from 43.7 to 106.3/m^2 on occupied sites, and trees <2.5 cm diameter at 20 cm height above ground were the dominant size class (Rompré et al. 1997). Occupied sites had a lower percentage of herbaceous ground cover, higher percentage of moss ground cover, more dead fallen trees, more snags and stumps, and higher overall tree density (stems >2.5 cm diameter) than unoccupied sites (Connolly 2000). Mean canopy heights of occupied habitats ranged from to 5.4 m in Parc de la Gaspésie, to 7.5 m in ZEC des Martres, to 14.1 m on Mont-Mégantic (Rompré et al. 1997).

In predominantly industrial forest landscape of Central Highlands of New Brunswick, Bicknell's Thrush found at 457–760 m elevation, but most (67%) >600 m (Nixon 1996, Nixon et al. in press). Most occupied sites in second-growth, regenerating forest following large-scale disturbance by clear-cutting or fire. These "non-traditional" habitats (Ouellet 1993) dominated by deciduous species; 89% of occupied sites with higher densities of deciduous stems than coniferous stems, 63% of these with twice as many deciduous as coniferous stems (Nixon et al. in press). White birch dominant tree species on occupied sites, followed by balsam fir and cherry (*Prunus* sp.). Stem densities on regeneration sites high (47% of sites >40,000 stems/ha, 74% sites >20,000 stems/ha), but similar between occupied and unoccupied sites (Nixon et al. in press). Most (>70%) trees on occupied sites had diameters ≤2.5 cm, but in 5–10 cm size class, balsam fir significantly more abundant than on unoccupied sites. Mean canopy height on occupied regeneration sites 4.4 m; most harvested or planted 10–12 yr earlier (range 5–17 yr; Nixon et al. in press).

On Cape Breton I., Nova Scotia, most (78%) birds found in unmanaged "traditional" fir-dominated habitat, 22% in areas of regenerating industrial forest (D. Busby pers. comm.). Over all habitat types occupied by Bicknell's Thrush on Cape Breton, 54% with >70% coniferous cover, 30% classified as "mixed," 15% with >70% deciduous cover (D. Busby pers. comm.). Mean canopy height <5 m on 46% of occupied Cape Breton sites.

SPRING AND FALL MIGRATION

Little information. Reported to be habitat generalist; " . . . migrants usually . . . in shady lanes, along well-vegetated beaches, and in denser woodlots, occasionally emerging into more open orchards and gardens" (Wallace 1939:259). In coastal Virginia, regularly captured in mist-nets in upland shrub and dune scrub forest dominated by loblolly pine (*Pinus taeda*), various oak species (*Quercus* sp.), wax myrtle (*Myrica cerifera*), and early successional, oldfield habitats (Wilson and Watts 1997). Little evidence that montane forests preferentially selected by migrants (e.g., Rimmer and McFarland 2000; but see Wallace 1939: 259–260).

WINTER RANGE

Current preferred winter habitat mesic to wet broadleaf montane forests in Dominican Republic (Rimmer et al. 1999), Haiti (Wetmore and Swales 1931; Woods and Ottenwalder 1983, 1986), Cuba (Rompré et al. 2000, Y. Aubry and G. Rompré pers. comm.), Jamaica (R. and A. Sutton pers. comm., VINS), and Puerto Rico (J. Wunderle unpubl.). In Dominican Republic, found at all elevations from sea level to 2,200 m, although 62% of occupied sites in forests >1,000 m elevation (Rimmer et al. 1999). Majority (75%) of occupied sites ($n = 24$) in broadleaf-dominated forests ("cloud/montane broadleaf forest" and "submontane broadleaf rainforest"; Tolentino and Peña 1998) at all elevations, 19% in mixed broadleaf-pine forests, and 6% in pine-dominated forests. Primary, wet and/or mesic forests constituted 78% of all occupied sites; only 6% of occupied sites in predominantly dry forests (Rimmer et al. 1999). Use of regenerating secondary forests (22% of occupied sites) in Dominican Republic may indicate winter habitat flexibility or recent shift from preferred primary broadleaf forest habitat, much of which has been lost or degraded.

In Cuba's Parque Nacional Turquino, found in ridgeline forest ("bosque nublado" and "matoral subalpino"), characterized by steep slopes and dense, broadleaf vegetation with few or no pines (Y. Aubry and G. Rompré pers. comm.). In Parc

Nacional Macaya in Haiti, occurs in wet montane rain forest and cloud forest (Woods and Ottenwalder 1983). In Jamaica's Blue Mtns., inhabits montane forests, including "upper montane rain forest over shale," "high altitude scrub forest over shale," and "modified upper montane rain forest" (R. and A. Sutton pers. comm.). These habitats, considered to be "highest quality" available, characterized by undisturbed, mature broadleaf trees with relatively open understory and few invasive exotic plant species (R. and A. Sutton pers. comm.). Most occupied sites in Jamaica featured *Podocarpus urbani*. In e. and se. Puerto Rico, found in "lower montane wet forest," characterized by a human-modified, heterogeneous mix of native secondary forest, shrubby edges and fields, dense fern and bamboo thickets, and overgrown plantations (Wunderle 1995, J. M. Wunderle pers. comm.).

In Dominican Republic, some evidence for sexual habitat segregation, or segregation of sexes by geographic area (VINS). In Sierra de Bahoruco on Haitian border, in predominantly undisturbed broadleaf montane forests, 19 of 23 birds mist-netted in Nov 1998 and Jan 2000 were males. At a smaller, more recently disturbed montane forest site in Cordillera Septentrional in northcentral part of country, 9 of 11 birds captured in Jan 2000 were female. At a similar site 23 km to east, 4 females and 3 males captured in Jan 2000. These results preliminary and may be an artifact of small sample sizes or habitat disturbance from human activities and/or 1998 hurricane; warrant more intensive investigation.

FOOD HABITS

FEEDING

Main foods taken. Insects and other arthropods during breeding season; beetles (Coleoptera) and ants (Formicidae) constitute bulk of food volume. Regularly takes wild fruits during migration. Forages primarily for arthropods during winter, but may feed regularly on fruits.

Microhabitat for foraging. During breeding season, generally feeds on or close to ground, but may glean foliage or branches of both coniferous and deciduous trees; sometimes fly-catches from exposed perches (Wallace 1939, VINS). Considered predominantly a ground forager in interior forest habitat by Dilger (1956a). Nestling diet samples suggested that majority of prey delivered were taken above ground (A. Strong unpubl.). No information during migration. Little information from wintering grounds, but reported in dense vine tangles within a few meters of forest floor, but not actually on ground, in the Dominican Republic; 1 record of 3 birds in canopy of an aril-producing tree (R. Greenberg pers. comm.).

Food capture and consumption. Reported to be a "versatile" feeder, moving rapidly by swift hops or short flights on ground below trees or among low branches (Wallace 1939, VINS). Often searches methodically for insects, pausing and peering; may foliage-glean in outer branches; some aerial pursuit of insect prey (Wallace 1939, VINS). "Sally-strikes" and foot-scratching under litter surface recorded in Vermont (A. Strong unpubl., VINS). In winter, recorded hover-gleaning at foliage for arthropods (R. Greenberg pers. comm.).

DIET

Major food items. Invertebrates during breeding season, primarily ants, beetles and lepidopteran larvae. Stomach contents of adults collected on Mt. Mansfield, VT ($n = 5$), and Slide Mtn., New York ($n = 2$) in late Jun and early Jul contained an average of 34% beetles (range 1–95%) and 29% ants (range 0–55%); one bird contained 90% chrysomelid beetles (Wallace 1939). Animal matter constituted nearly 100% of these samples, but 2 birds showed small amounts of unidentified plant matter (Wallace 1939). Lepidopteran and other larvae constituted bulk of food delivered to nestlings in Vermont, but beetles and adult Hymenoptera important nestling prey items (Wallace 1939; A. Strong unpubl.).

Quantitative analysis. Wallace (1939) reported average stomach analyses from 7 breeding adults from the Green and Catskill Mtns.: 34% beetles (Coleoptera, dominated by Chrysomelidae, Elateridae, Cerambycidae, Carabidae, and Staphylinidae), 29% ants (Hymenoptera: Formicidae), 12% Diptera (dominated by Tipulidae), and 9% holometabolous larvae (dominated by Lepidoptera). Less than 5% of the diet was made up of each of Gastropoda, Phalangida, Aranidae, Hemiptera, Homoptera, Neuroptera, Tricoptera, Lepidoptera, and other Hymenoptera.

Ants were not found in any of 4 Vermont nestlings sampled immediately after being fed (A. Strong unpubl.). All 4 chicks had been fed coleopterans (mean 41.3% ± 34.4 SD of total diet, including Chrysomelidae, Elateridae, Cephaloidae, Cantharidae), while the esophagi of 3 contained larvae (mean 49.3% ± 15.8 SD of their total diet, including Diprionidae, Neuroptera, Geometridae, and Bibionidae). Dipterans were found in the diets of 2 nestlings (one with 17% Tipulidae, the other with 12% Chironimidae), each of which had also been fed homopterans (9% Cicadellidae, 6% *Cinara* sp. [an exotic aphid that attacks fir]). One nestling had been fed a slug (Gastropoda), one a mite (Acarina), one a spider, and one an adult conifer sawfly (Diprionidae; A. Strong unpubl.). Size of prey delivered to nestlings averaged 10.72 mm ± 5.11 SD in length (range 3.6 mm [aphid]–25.1 mm [larvae], *n* = 41); mean length of larvae 13.63 mm ± 5.14 SD (range 5.6–25.1 mm, *n* = 20) and of Coleoptera 9.32 mm ± 3.07 SD (range 5.6–14.6 mm, *n* = 10; A. Strong unpubl.).

On Mt. Mansfield, VT, three 7-d-old nestlings contained Lepidoptera larvae, one probable metallic wood-boring beetle (Buprestidae) larvae, a grasshopper (*Melanoplus* sp.) nymph, and several unidentified beetles and ants (Wallace 1939). Stomach of a depredated 11-d-old fledgling just out of the nest contained 1 cerambycid beetle, a small snail shell, a green Lepidoptera larvae, chitinous remains of unidentified beetles and fragments of various Hymenoptera (Wallace 1939).

FOOD SELECTION AND STORAGE

No information.

NUTRITION AND ENERGETICS

No information.

METABOLISM AND TEMPERATURE REGULATION

Resting oxygen consumption at thermoneutrality 3.26 ± 0.05 (SE) cm^3 $O_2/(g \cdot h)$ (*n* = 4 adults from Mt. Moosilaukee, NH; Holmes and Sawyer 1975). At temperatures below thermoneutrality, metabolic rate increased linearly with decreasing ambient temperature, but at a lower rate than in 4 sympatric thrush species, suggesting adaptation to colder summer temperatures of subalpine zone (Holmes and Sawyer 1975).

DRINKING, PELLET-CASTING, AND DEFECATION

No information.

SOUNDS

VOCALIZATIONS

Development. Little information. One captive-reared juvenile on Mt. Mansfield, VT, acquired all characteristic call notes during first summer, but developed only rudimentary song, beginning at 15 d, that lacked typical phrasing and precise tonal quality (Wallace 1939). Same captive bird, exposed to wild males the following summer, learned to imitate their songs "with perfection, but usually reverted soon after to his off-tune, winter song" (Wallace 1939: 317).

Vocal array. CALL NOTES. Most characteristic call note during breeding season is harsh, penetrating, downward slurred whistle, the *Beer* Call (Fig. 2A), variously rendered as *beer, veer, peert, queep*, or *quee-a* (Brewster 1883, Langille 1884, Ball 1952, Dilger 1956b). Highly variable in intensity and pitch, given by both sexes. Mean high frequency 5.8 kHz, mean low frequency 3.2 kHz (*n* = 29 recordings; Ouellet 1993), mean duration 3,052 ms (*n* = 25 recordings; Ouellet 1993). Variants include less piercing, lower-pitched notes, e.g., inquisitive *pe-irt* (Wallace 1939).

Several additional calls used in situations of alarm and aggression. A rolling, wrenlike chatter, or Growl Call, *crr-rr-rr*, given by agitated adults (Fig. 2B; Wallace 1939, VINS); also heard in captive-reared juvenile (Wallace 1939). Soft, low-pitched *chook-chook* or *chuck-chuck* given by both sexes, especially near nest (Wallace 1939, VINS). Adults tending nest or fledglings also give soft, whining, high-pitched whistle *weee*, similar to that of American Robin (*Turdus migratorius*; VINS). Fledglings give thin, nasal or metallic *cheer* calls, difficult to locate, often when parents away foraging (VINS).

Variety of call notes described by Wallace (1939) at nest, including several exchange calls and various chirps and warbles by female during nest-building, incubating, and brooding.

Nocturnal flight calls of migrants, distinguishable from those of Gray-cheeked Thrush, recorded in e.-central Florida (Evans 1994) and described from Gaspé Peninsula as *cree-e-e* (Ball 1952). These calls characterized by tone with bandwidth of 0.5–1.0 kHz and duration of 150-280 ms, rising sharply within 10–20 ms from initial frequency of 1.5–2.0 kHz to 4.8–5.8 kHz, then descending uniformly at 6–8 Hz/ms (Evans 1994). Initial rising section of lower amplitude than latter descending portion and often inaudible to human ear. Frequency domain and shape parameters similar to those of diurnal calls recorded on Mt. Mansfield, VT (Evans 1994).

SONG. Delivered primarily by male, but females occasionally sing on nest during incubation, hatching, and brooding (Wallace 1939, VINS), as well as during activities away from nest (VINS). Song composed of 4 measurable phrases (see Fig. 2C), quantitatively described below by Ouellet (1993) from 32 individual recordings across breeding range. Part I consists of 3–4 introductory notes generally audible to humans only from distances ≤10–12 m. Part II mean duration 0.77 ms ± 0.04 SE, mean high frequency 7.2 kHz ± 0.16 SE, mean low frequency 3.2 kHz ± 0.17 SE, mean amplitude (difference between highest and lowest frequencies) 3.8 kHz ± 0.21 SE. Mean duration of Part III 0.56 ms ± 0.04 SE, mean high frequency 6.4 kHz ± 0.15 SE, mean low frequency 2.9 kHz ± 0.07 SE, mean amplitude 3.7 kHz ± 0.15 SE. Part IV mean duration 0.61 ms ± 0.04 SE, mean high frequency 6.0 kHz ± 0.84 SE, mean low frequency 2.9 kHz ± 0.11 SE, mean amplitude 3.1 kHz ± 0.13 SE.

Qualitative rendering of typical male song *chook-chook, wee-o, wee-o, wee-o-ti-t-ter-ee* (Wallace 1939). Introductory (2–3) low plucking notes "hurriedly followed by two to four, usually three, high-pitched, vibrant, ringing phrases that slur downward . . .

Usually on the third of these phrases, there is an emphatic break which is accompanied by both rise in pitch and increased intensity . . . This climax phrase, consisting of several merged notes, is held for an instant, then runs imperceptibly into the closing notes, which are unemphasized" (Wallace 1939: 308–309). Pitch of final phrase constant or rising, whereas that of Gray-cheeked Thrush drops (Ouellet 1993).

Songs variable within populations, sometimes delivered in abbreviated form (Wallace 1939, VINS). Full songs regularly given in flight, most often at dusk, presumably by males (see Behavior: locomotion, below). Female song on nest described as "very low, whisperingly thin, and hoarse" (Wallace 1939). Males heard to give Whisper Songs next to females before copulations, occasionally in winter (VINS).

Geographic variation. Individual variation in song quality confounds interpretation of geographic variation; no consistent differences or regional dialects apparent (J. Marshall pers. comm.). Call notes reported to be similar across breeding range (J. Marshall pers. comm.), but sonographic analysis reveals up to 10 quantitatively distinct call types/bird (Ball 2000).

Phenology. Vocalizes regularly throughout winter. Sporadic calls throughout day, but most vocalizing confined to 15–20 min periods at dawn and dusk; typical *Beer* Call is perceptibly quieter and less intense than on breeding grounds (VINS). Subdued, partial and full songs occasionally heard (VINS).

Songs seldom heard within first week after arrival on breeding grounds, frequency of calling gradually increases during first 1–2 wk after return (VINS). Within 2 wk after arrival (early Jun in Vermont), songs and calls given frequently throughout day (Rimmer et al. 1996). Singing reaches peak in mid-Jun, declines sharply by late Jun and becomes more restricted to dawn and dusk (Rimmer et al. 1996). During incubation and hatching periods, dawn and dusk chorus involves fewer birds, vocal bouts shorter than during mating period (Ball 2000). Vocal activity increases during week after young fledge (Ball 2000).

In Quebec, song activity peaks earlier (5–30 Jun) than calling activity (30 Jun–23 Jul; Ball 2000). Extent of vocal activity in Jul varies among years (Wallace 1939, VINS), may be influenced primarily by frequency of renesting attempts (see Demography and populations: population regulation, below). Very little vocalizing during period of Prebasic molt and fledgling independence in Aug, but a marked resurgence of calling, with intermittent singing, occurs early to mid-Sep (Wallace 1939, VINS). Dusk flight songs occasionally given during this time.

Daily pattern. During breeding season, calls and songs may start as early as 1 h before sunrise. Vocalizing concentrated at dawn and dusk, although spread throughout day during peak of mating activities,

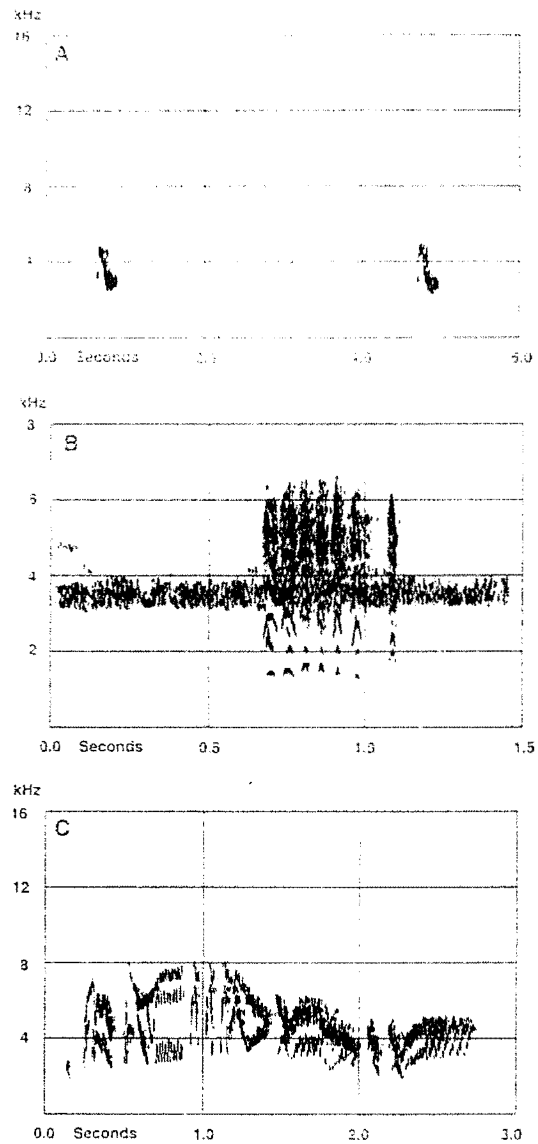

Figure 2. Vocalizations of Bicknell's Thrush. A. Characteristic diurnal call note (*Beer* Call; BLB no. 17542, recorded 19 Jun 1989, Whiteface Mtn., NY). B. Chatter or Growl Call note (Library of Natural Sounds, Laboratory of Ornithology, Cornell University, no. 96097. C. Advertising song (BLB no. 17543, recorded 29 Jun 1989, Gaspé Peninsula, Quebec). Prepared by staff of Borror Laboratory of Bioacoustics (BLB), The Ohio State University, using a Kay Elemetrics DSP 5500 Sona-Graph (with effective frequency resolution of 300 Hz [A and C] and 150 Hz [B] and a 200-point FFT transform size).

generally lowest during early to mid-afternoon (Wallace 1939, VINS). Dawn and dusk bouts consist of both calling and singing, which often climax in brief period of only 5–10 min (VINS). In Quebec, dawn song peak earlier (04:00–05:00) than dawn peak of calling (06:00); dusk peak for both songs and calls similar (21:00; Ball 2000). Dusk bouts typically more vigorous than dawn bouts but cease abruptly with onset of darkness, although vocalizations occasionally given in full darkness at all hours of night (Wallace 1939, Ball 2000, VINS).

No clear evidence of weather effects on vocal activity, as songs and calls given during all but most severe weather conditions in early and mid-Jun (Rimmer et al. 1996). High winds single most limiting condition on vocal behavior in Vermont. Frequency of singing in Quebec higher during dry, warm weather than in cold, wet conditions (M. Ball unpubl.).

Places of vocalizing. Male song often delivered from exposed perches, usually on dead snags or tops of live trees. May also be given from well-concealed perches in dense vegetation. During mating period, male often sings vigorously near female or prospective nest site (Wallace 1939, VINS). Females known to sing while on nest (Wallace 1939), and from concealed song perches (documented through radiotelemetry) away from nest (VINS).

Repertoire and delivery of songs. Little information, not well studied. Extensive inter- and intra-individual variation in song quality obscures differentiation of male song types. Statistical analysis of sonograms from 18 males throughout breeding range, however, indicates mean repertoire size of 2.4 song types ± 1.21 SD (range 1–6, based on differences in number, shape, frequency, and duration of syllables; M. Ball unpubl.). Song types appear not to be shared among individuals or across breeding range; song types sung serially within an individual song bout, which may contain 4 to as many as 175 songs (Ball 2000). Individuals probably convey their identity through distinct song types; not known whether particular song types used to communicate other information. Song-switching rates higher during dawn and dusk choruses than at other times of day, suggesting that individuals switch song types in relation to social context (Ball 2000).

Mean repertoire size of statistically identifiable call types (all variants of *Beer* Call) across breeding range 3.5 ± 2.54 SD (range 1–10, $n = 23$ presumed males; M. Ball unpubl.). Mean call repertoire from Gaspesie, Quebec 5.5 ± 2.59 SD (range 1–10, $n = 10$), from elsewhere in breeding range 1.9 ± 0.86 SD (range 1–4, $n = 13$; M. Ball unpubl.). In Vermont, 5–10% males have repeated song elements or other anomalies (distinguishable to human ear) that allow consistent, accurate individual identification (VINS).

Little information on rates of delivery. Rarely, up to 15–20 songs/min given by males for several minutes, typically when females absent from nest (VINS).

Social context and presumed functions. Male song presumed to serve primarily for mate-attraction, although counter-singing suggests function in male-male communication, may be especially strident, accelerated (speed approx. 2 times), and frequent (exceeding 15 songs/min) when soliciting females in the presence of other males and during mate-guarding. Penetrating, counter *Beer* Calls often given between or among neighboring males, appear to be primary means of indicating location. Less intense versions of these calls also exchanged by neighboring birds on wintering grounds, may function in territorial defense. Rolling/staccato Growl Call often used in close male-male aggressive encounters, between neighboring birds in winter, or by male or female in response to perceived threats near nest (VINS). Whisper or sub-song is a quiet version of full song, given by males in close proximity (<5 m) to female; may function to attract female while avoiding detection by nearby males; often precedes copulations. Female known to give sub-song while eggs hatching on nest (Wallace 1939, VINS). Stridency, speed, and rate of sub-song appear to vary inversely to proximity of other males. Close range observation via radiotelemetry suggests that females occasionally sing away from nest.

NONVOCAL SOUNDS

None known.

BEHAVIOR

LOCOMOTION

Walking, hopping, climbing, etc. Little information. Hopping appears to be primary mode of terrestrial locomotion; long, springing hops associated with relatively short femur and long tarsometatarsus may be adaptation for foraging in dense microhabitats (Dilger 1956a).

Flight. In montane forests, occasionally hawks insects with short sallies from perch (Wallace 1939, VINS). Flight songs common at dusk during peak mating period, less common at dawn (Wallace 1939, Dilger 1956b, VINS). Typically consist of 10- to 15-s flights 25–75 m above ground, often in large circles >100 m in diameter (Wallace 1939, VINS). Some straight-line flights up- or down-slope up to 0.5 km in distance (Wallace 1939, VINS). Birds tend to rise rapidly from perches before circling and to drop abruptly back after completing flight songs (Dilger 1956b). Dusk flight song heard on one occasion in Sierra de Bahoruco, Dominican Republic, on 7 Nov 1998, occasionally given at dusk during fall pre-migratory period (VINS).

SELF-MAINTENANCE

Preening, head-scratching, stretching, bathing, anting, etc. Adults on breeding grounds observed preening and bathing; older nestlings preen, head-scratch, stretch, and flap wings (Wallace 1939, VINS).

Sleeping, roosting, sunbathing. Nocturnal roost locations of breeding males vary from night to night.

Females roost on nest during incubation and brooding periods. In montane forests of Dominican Republic, radio-tagged wintering birds moved 150–500 m from diurnal home ranges in broadleaf forests to nocturnal roost sites in adjacent pine forests. Most roost sites in canopy of pine forests 10–20 m above ground; some evidence of loosely communal roosting. Individual birds roosted in same general locations of pine forest each night, but one bird that typically roosted in pines remained on daytime territory in broadleaf forest for an entire night and following day, returned to pines the next evening. Movements to and from roost sites occurred at dusk and dawn, respectively.

Daily time budget. Not well documented. Vocal activities concentrated at dawn and dusk on both breeding and winter grounds.

AGONISTIC BEHAVIOR

Physical interactions. Chases common on breeding grounds, especially during mating period, but physical attacks appear to be rare. Both male-male and male-female chases observed.

Communicative interactions. Aggressive postures described by Dilger (1956b) include Upward and Horizontal Stretch. Other hostile displays include Bill-Gaping, Crest-Raising, Wing- and Tail-Flicking, and Foot-Quivering (Dilger 1956b). *Beer* Call frequently elicits aggressive response, especially among males (Dilger 1956b, VINS, WGE). Adults with older nestlings or fledglings may aggressively scold human intruders, giving loud, harsh *peert* calls with bill opened wide and crest-feathers raised; occasionally may fly directly at intruder, veering abruptly <1 m away (Wallace 1939, VINS).

SPACING

Territoriality. See Demography and populations: range, below. On breeding grounds males not territorial in classic sense. Shortly after arrival, males begin to call and sing from song-posts throughout home range but show little physical defense of these areas. Identification of individuals using radio-telemetry and color-band resights verifies that several males often call and sing from same area within one hour. Females apparently territorial, often overtly aggressive to conspecifics during nest-building and egg-laying periods. In montane broadleaf forests of Dominican Republic, maintains discrete territories that are largely non-overlapping and appear to be defended, primarily by vocalizations. Older birds more sedentary than first-winter birds, some of which adopt mobile, "floating" strategy.

Individual distance. No information.

SEXUAL BEHAVIOR

Mating system and sex ratio. Mating system unusual and not easily categorized; may be most similar to that of Smith's Longspur (*Calcarius pictus*), which has been termed female-defense polygynandry (Briskie 1993), in that both males and females mate with multiple partners, multiple paternity is common, and >1 male often feeds nestlings. In Vermont, >75% of broods sired by multiple males; some males with offspring in 2 nests in the same breeding season. Of 13 broods in 1998 and 1999, 10 with ≥2 sires, 3 with single father (VINS).

Overall, 4-yr mean male:female ratio on 3 Vermont study plots 1.8:1.0 (annual range 1.4–2.8:1.0; VINS). Cause of male-biased sex ratio not known, may relate to ratio at hatching, differential natal dispersal patterns, events on wintering grounds (e.g., differential male and female survival due to winter habitat segregation); needs investigation.

Pair bond. No specific information. Extremely difficult to assess, given dynamic nature of mating associations.

Courtship displays. Males pursue females in rapid flights through dense thickets, with crest erect and bill gaping, often singing (Wallace 1939). Up to 3 males observed around female on ground singing Whisper Songs, apparently competing for copulations; male may droop and then rapidly flutter wings before copulating (VINS). Male observed to resume foraging shortly after copulation. Dusk flight songs during mating period assumed to have courtship function.

Extra-pair copulations. Apparent rarity or absence of traditional pair bonds obscures terminology. Multiple paternity of most broods indicates that females regularly copulate with ≥2 males during fertile period.

SOCIAL AND INTERSPECIFIC BEHAVIOR

Degree of sociality. See Spacing: territoriality, above. During migration, most often solitary or in groups of 2–3 individuals.

Play. No information.

Nonpredatory interspecific interactions. Agonistic encounters with Swainson's Thrush occasionally observed on breeding grounds, including chases and displacement from song-posts (Able and Noon 1976, VINS). This species and Hermit Thrush attracted to playbacks of Bicknell's Thrush vocalizations and may react aggressively to song broadcasts (VINS, WGE). American Robin and White-throated Sparrow (*Zonotrichia albicollis*) observed to displace Bicknell's Thrush from song-posts (VINS).

PREDATION

Kinds of predators. Few documented predators of adults. Remains of 2 radio-tagged females found in or below active Sharp-shinned Hawk (*Accipiter striatus*) nest in mid-elevation red spruce forest up to 2 km from known home ranges on Mt. Mansfield, VT (VINS). Five other dead, radio-tagged adults found on hardwoods forest floor probably depredated by Sharp-shinned Hawks; 2 of these recovered at plucking-posts of this species. Radio-tagged female with dependent fledglings found cached underneath rotting log; tooth marks in skull suggested depredation by long-tailed weasel (*Mustela frenata*; VINS). Occasional mobbing and chasing of Northern Saw-whet Owl (*Aegolius acadicus*) suggests that this species may depredate adults or free-flying young (VINS).

Of 7 radio-tagged fledglings known to have died, all taken by predators. One found at Sharp-shinned Hawk plucking-post, others apparently killed by mammals. Juveniles probably more susceptible to mammalian predation than adults, due to less developed flight skills and conspicuous begging behavior.

Red squirrel (*Tamiasciurus hudsonicus*) only confirmed predator of eggs and nestlings (Wallace 1939, VINS). Other suspected or likely nest predators include Blue Jay (*Cyanocitta cristata*), Common Raven (*Corvus corax*), eastern chipmunk (*Tamias striatus*), boreal red-backed vole (*Clethrionomys gapperi*), deer mouse (*Peromyscus maniculatus*), and weasel (*Mustela* sp.; Wallace 1939, VINS). Other potential predators observed in breeding habitat include red fox (*Vulpes fulva*), coyote (*Canis latrans*) and raccoon (*Procyon lotor*). Possible predators in winter include Sharp-shinned Hawk, Ridgway's Hawk (*Buteo ridgwayi*), mongoose (*Herpestes auropunctatus*), and rats (*Rattus* sp.).

Response to predators. Agitated *Beer* Calls by nesting adults often given in response to approach of potential predators, including humans, especially during nestling stage (VINS). Growl Call may also be used. Mobbing of red squirrel, Northern Saw-whet Owl, and Blue Jay occasionally observed (VINS). One incubating female flushed silently at approach of red squirrel, did not vocalize or remain visibly close by while squirrel ate eggs in nest (VINS).

BREEDING

PHENOLOGY

Pair formation. Little information. Earliest known arrival date of breeding male in Vermont 16 May, of female 23 May (VINS). Breeding males arrive significantly earlier than females (mean difference 1.7 d, 95% Confidence Interval [CI] = 3.2–0.3). Mating activities probably begin shortly after female arrival, as evidenced by frequent singing and calling throughout day in late May and early Jun (Rimmer et al. 1996). Mating associations are dynamic and probably tied to stage of individual females' fertile periods, likely influenced by availability of other mating opportunities and chick-feeding by males.

Nest-building. Earliest confirmed nest construction date in Vermont 1 Jun (VINS); other extrapolated nest-initiation dates of 2–4 Jun (Wallace 1939). Reported nest with 3 eggs on Seal I., Nova Scotia, 3 Jun 1901 (Reed 1904) suggests late May construction and is exceptionally early, as eggs laid in 3 other Seal I. nests were 13–14 Jun (Tufts 1909).

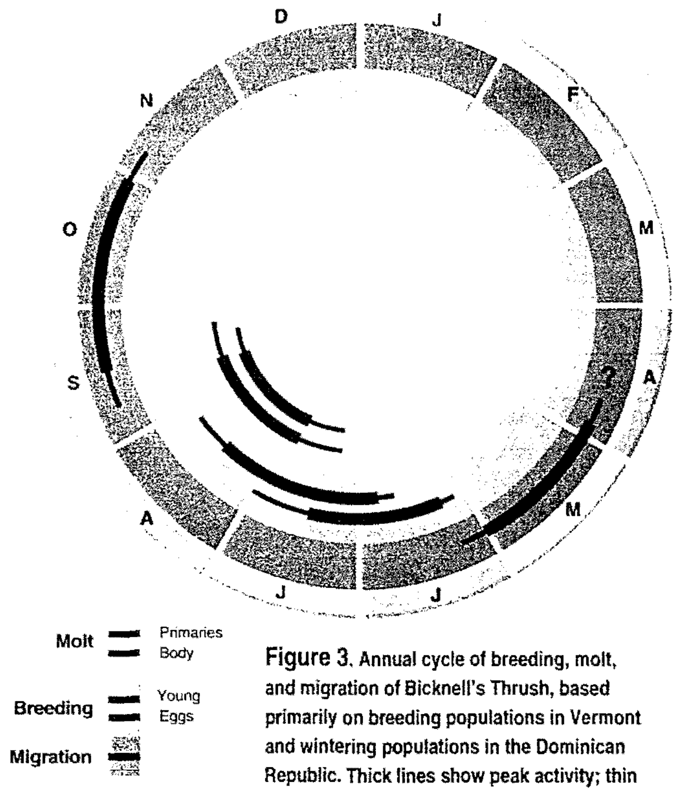

Figure 3. Annual cycle of breeding, molt, and migration of Bicknell's Thrush, based primarily on breeding populations in Vermont and wintering populations in the Dominican Republic. Thick lines show peak activity; thin lines, off-peak.

First brood per season. See Figure 3. In Vermont, 71% of 89 clutches initiated in first 3 wk of Jun; later clutches probably represent renesting attempts. Clutch initiation dates: Vermont, 7 Jun–14 Jul (n = 89; Wallace 1939, VINS); New Hampshire, 21 Jun–14 Jul (n = 5; Wallace 1939, Richards 1994); Massachusetts, 18 Jun (n = 1; Veit and Petersen 1993); Quebec, 6 Jun–20 Jul (n = 7; Wallace 1939, Y. Aubry unpubl.); Nova Scotia, 3–14 Jun (n = 4; Wallace 1939, Tufts 1962). Known hatching dates 23 Jun–29 Jul (70% by 6 Jul) in Vermont (n = 68; Wallace 1939, VINS), 26 Jun–14 Jul in Quebec (n = 6 nests; Y. Aubry unpubl.). Known fledging dates 3 Jul–3 Aug (70% by 14 Jul) in Vermont (n = 53; Wallace 1939, VINS), 8–24 Jul in Quebec (n = 6 nests; Y. Aubry unpubl.). Young stay in nest 9–13 d (average 11.4 ± 1.3 SD, n = 17; Wallace 1939, VINS).

Second brood per season. Second brood rare, one confirmed instance in Vermont. Female that fledged 2 chicks on 2 Jul initiated second clutch on 7 Jul, built nest while feeding fledglings and continued feeding during egg-laying (VINS). Renesting attempts after early-season failures common. Mean interval between loss of first nest and initiation of second clutch in Vermont 6.8 d (range 5–12, n = 5). One female renested successfully on third attempt, requiring only 2 d from loss of second clutch to initiation of third (VINS).

NEST SITE

Selection process. Little information. Probably selected solely by female. Females build nests 17–1,344 m apart in successive years (mean 182.9 m ± 267.8 SD, n = 26; VINS). No statistical difference between distances for females of failed versus successful previous year's nest, although large movements tend to follow failures. One older female moved 1,344 m and another 540 m after failing the prior year; these distances more than twice those between any other successive year's nests. One female in 2000 nested 1,715 m away from nest she built in 1998 as yearling bird. Renesting attempts averaged 52.7 m ± 28.5 SD from first nest (range 19–87, n = 7; VINS).

Microhabitat. Usually located in dense stands of young to mid-successional fir or "krummholz," uncommonly in more mature, open forests (Wallace 1939, VINS). Often found in dense regrowth along natural or artificially created edges. On 2 ski areas in Green Mtns. of Vermont, nests averaged 10.8 m ± 8.97 SD from ski-trail edge (range 0–33, n = 26; VINS).

On nest-centered 5-m radius plots (n = 103) in Vermont, mean densities of large woody stems (<8.0 cm diameter at 10 cm above ground) 163.4 ± 107.34 SD (VINS). Balsam fir accounted for 67% of all live woody stems <8.0 cm diameter within 5 m of nests, followed by white birch (11.7%), dead stems (9%), mountain ash (6.1%), mountain-holly (*Nemopanthus mucronata*; 1.9%), and red spruce (1.1%); 11 other species each accounted for <1%. Leaf litter depth ranged from 1.5 to 21.5 cm (mean 5.1 ± 2.9, n = 74). On nest-centered 11.3-m radius plots (n = 103), mean density of live trees 8–23 cm dbh (diameter at breast height) was 33.4 ± 18.7 SD (range 5–89), mean density of dead standing trees 8–23 cm dbh 11.9 ± 8.2 SD (range 0–34). Mean densities of live trees >23 cm dbh was 3.25 ± 4.95 SD (range 0–30), of standing dead trees >23 cm dbh 2.3 ± 2.9 SD (range 0–22). Canopy dominated by balsam fir at 81 of 103 nests (79%), balsam fir and white birch codominant at 9 nests, mix of balsam fir and mountain ash at 5 nests, white birch dominant at 4 nests, mix of several species at 2 nests, balsam fir and red spruce codominant at 1 nest, red spruce at 1 nest. Mean canopy height within 11.3 m of nests ranged from 1.2 to 17.9 m (mean 5.4 ± 2.9 SD, n = 103). Slope ranged from 0° to 46° (mean 18.7° ± 10.4 SD, n = 101).

Site characteristics. Vermont nests typically built at base of 1–4 horizontal branches against trunk of small tree (70%; n = 105), occasionally up to 3 m from trunk on horizontal branches of larger trees (VINS). Support branches average 1 cm diameter (range 0.1–5.25, n = 93). Some nests supported between two closely spaced trees (23%; n = 105). One nest inside cavity of balsam-fir snag, another perched on shelf created by broken snag. Most nests (103 of 118; 87%) in balsam fir, but also in red spruce (n = 10), white birch (n = 3), and dead standing fir (n = 2; Wallace 1939, VINS). Average nest tree height 3.2 m ± 1.55 SD (range 0–11, n = 102) and mean dbh 5.7 cm ± 5.24 SD (range 1–31.5, n = 102). Nest orientation in relation to trunk averaged 161° (n = 27 in southeastern quadrant, 22 in southwestern quadrant, 15 in northwestern quadrant, 13 in northeastern quadrant). Of 118 Vermont nests, mean height above ground 2.05 m ± 1.18 SD (range 0.46–10 m; Wallace 1939, VINS). Mean vegetation concealment in 25-cm diameter circle around 98 nests, estimated from 1 m away, was 74.7% ± 24 SD overhead, 62.7% ± 27.4 SD to north, 64.9% ± 29.3 SD to south, 63.8% ± 27.4 SD to east, and 67% ± 27.1 SD to west. Mean nest height of 8 Quebec nests 1.5 m ± 0.34 SD (range 1.0–2.0), 7 in balsam fir, 1 in a paper birch (Y. Aubry unpubl.).

NEST

Construction process. Only females observed constructing nests (Wallace 1939, VINS). One nest built in 11 d (Wallace 1939), one in 9 d (VINS). One renest built in 2 d (VINS). May exceptionally prolong construction or abandon nest if interrupted while building (Wallace 1939, VINS). Interval between nest-building visits about 2 min; same as time spent arranging material from each load (Wallace 1939). Foundation built first, followed by walls, interior cavity, and lining (Wallace 1939).

Structure and composition matter. Bulky, cup-shaped nest built primarily of twigs and moss. Exterior shell of most nests in montane forests of Vermont constructed of twigs of balsam fir, occasionally of red spruce and white birch, profusely interwoven with strands of moss (primarily *Pleurozium schreberi*, often lesser amounts *Sphagnum* spp.; Wallace 1939, VINS). Proportions of twigs and moss vary; some nests reported to be almost entirely constructed of moss (Wallace 1939). Other materials found in nest walls include grasses, sedges, stalks of herbaceous flowering plants or ferns, dry leaves, bark strips, hair, and lichen (Wallace 1939, VINS). Interior layer of wall consists of decayed vegetation, such as leaf mold. Inner lining of Vermont nests invariably composed of threadlike, black rhizomorphs of horsehair fungus (*Marasimius androsaceous*; McFarland and Rimmer 1996); some nests may also be lined with fine stems of grasses or sedges (Wallace 1939, VINS). One nest on ski area contained pieces of nylon rope woven in cup (VINS).

Dimensions. Mean minimum-maximum outside diameter of 20 Mt. Mansfield, VT, nests in 1930s, 11.5 × 12.8 cm (range 10.3–14.1); inside diameter 6.3 × 7.2 cm (range 5.8–8.7); outside height 8.6 cm (range 7.1–9.6); inside depth 4.6 cm (range 3.8–6.4; Wallace 1939). Average outside diameter of 79 nests from

Vermont in 1992–2000, 11.3 cm ± 1.8 SD (range 5–16); inside diameter 7.1 cm ± 1.3 SD (range 5.3–12); outside height 8.1 cm ± 1.9 SD (range 1.6–14); inside depth 4.4 cm ± 0.9 SD (range 2–6.5; VINS).

Microclimate. No information.

Maintenance or reuse of nests. Not known to reuse old nests; builds new nest when renesting. One female reused exact nest site in tree for 2 yr in Vermont. Female often pokes and probes rapidly at bottom of nest during nestling stage (VINS).

Nonbreeding nests. None reported.

EGGS

Shape. Subelliptical.

Size. Twenty-nine eggs from 8 clutches on Mt. Mansfield, VT, in 1935 had mean length of 21.9 mm (range 21.0–23.0) and mean breadth of 16.6 mm (range 16.0–17.5; Wallace 1939). Ten eggs from Vermont in late 1990s had mean length of 22.38 mm ± 0.78 SD (range 20.48–23.6) and 8 eggs had mean breadth of 16.29 mm ± 1.64 SD (range 12.36–17.5; VINS).

Mass. No information.

Color. Bluish green with variable amounts of light brown speckling. Spots typically concentrated around larger end but may be uniformly distributed over egg, ranging in appearance from very small dots to larger, irregular blotches. Eggs of olive-phased birds reported to be nearly plain, those of brown-phased birds more heavily blotched (Wallace 1939). Individual clutches may contain both lightly and heavily spotted eggs (Wallace 1939, VINS).

Surface texture. Smooth, semiglossy.

Eggshell thickness. No information.

Clutch size. First clutches invariably 3–4 eggs. Of 13 Mt. Mansfield, VT, nests examined in 1935, 7 contained 3 eggs, 6 contained 4 (Wallace 1939). Of 59 known or probable first-clutch nests examined on Mt. Mansfield and Stratton Mtn., VT, mean clutch size 3.6 ±0.49 SD (range 3–4; VINS). Three Nova Scotia clutches from 1907 each with 3 eggs (Tufts 1962), two 1999 nests from Gaspé Peninsula in Quebec each with 4 eggs, 3 Gaspé nests in 2000 each with 3 eggs (Y. Aubry unpubl.). Nests initiated earlier in season tend to have 4 eggs, later nests 3 (Wallace 1939, VINS). Mean clutch size of 13 known second attempts 3.1 ± 0.28 SD (range 2–4; VINS). One known third attempt contained 3 eggs.

Egg-laying. Little information. Eggs laid at 1-d intervals, usually in early morning. One observation of an egg laid at noon (Wallace 1939). For first nests, laying begins several days after nest completion. For renests, laying may begin before nest completely constructed; building continued during and after eggs laid in one documented second-brood nest (VINS). Prior to and during egg-laying, males active and vocal in nest area. Females often aggressive toward conspecific intruders. Intraspecific nest parasitism at one Quebec nest documented on basis of genetic analyses (G. Seutin pers. comm.).

INCUBATION

Onset of broodiness and incubation. By female alone, usually beginning with penultimate egg (Wallace 1939, VINS).

Incubation patch. Developed only by female; single median abdominal patch. In Vermont, earliest date of fully developed patch 9 Jun and latest 31 Jul (VINS).

Incubation period. In Vermont, incubation period to nearest day, 9–14 d (average 12 ± 1.6 SD, n = 8; Wallace 1939, VINS). Eggs in 1 Quebec nest hatched 13–14 d after incubation began (Y. Aubry unpubl.).

Parental behavior. Female alert and watchful but restless on nest, frequently shifting position, rolling and inspecting eggs, picking at nest bottom, preening, and taking insects within reach (Wallace 1939, VINS). Most females remain tightly on nest, flushing only at close range (Wallace 1939, VINS). Female may leave nest to feed as early as predawn, frequently leaves during day, some birds at 5–10 min intervals; few remain off nest >15 min, but one bird left clutch unattended for >1 h (Wallace 1939, VINS). Females reported to sing during all stages of incubation, including hatching, at 4 Mt. Mansfield nests (Wallace 1939). At one Stratton Mtn. nest, female sang muted song on nest as eggs began to hatch (VINS). Males occasionally visit nests and sing or call nearby during incubation, but are not known to feed incubating females (see Parental care: feeding, below; Wallace 1939, VINS).

Hardiness of eggs against temperature stress; effect of egg neglect. No information.

HATCHING

Preliminary events. Female reported to become increasingly agitated during 24 h before hatching, frequently inspecting and picking at eggs, in one case even bringing an insect and prodding at eggs with it (Wallace 1939).

Shell-breaking and emergence. Eggs pipped in circle around widest part of egg, break into 2 parts (Wallace 1939). Chicks generally hatch within 24 h of each other (Wallace 1939, VINS). Hatching of individual chicks may take up to 12 h (Wallace 1939).

Parental assistance and disposal of eggshells. Female may assist emerging chick by tugging vigorously at egg (Wallace 1939). Eggshells invariably removed and deposited away from nest (Wallace 1939, VINS), not known to be eaten.

YOUNG BIRDS

Condition at hatching. Altricial and nidicolous. Skin with flushed, pale reddish appearance; margin of bill whitish yellow, interior of mouth bright orange (Wallace 1939). Body mass of one nestling immediately after hatching 1.7 g (Wallace 1939).

Growth and development. See Table 1 for measurements. Combined average daily rate of mass gain for

Table 1. Mass (g) and body measurements (mm) of nestling Bicknell's Thrush from Green Mtns., VT. Day 1 is hatching day. Data shown as mean (*n*) for Wallace 1939 (A) and mean ± SD (*n*) for VINS (B).

Age (d)	Mass	Wing length	Tarsus length	Source
1	2.5 (3)		8 (3)	A
2	3.6 (4)	7.8 (3)	10.1 (6)	A
3	6.47 (9)	9.5 (9)	11.8 (9)	A
4	9.8 (9)	12.1 (9)	14.9 (9)	A
5	12.9 (9)	16.5 (9)	18.2 (9)	A
	15.5 ± 2.83 (2)			B
6	15.7 (6)	21.7 (6)	21.2 (6)	A
	18.5 ± 3.3 (5)			B
7	17.2 (5)	25.8 (8)	22.8 (8)	A
	15.4 ± 0.87 (5)		22.6 (1)	B
8	20.7 (5)	31.6 (8)	25.8 (8)	A
	20.6 ± 2.11 (11)			B
9		35.6 (5)	26.9 (5)	A
	22.9 ± 1.15 (4)			B
10	21.8 (3)	41.7 (8)	28.9 (8)	A
11	Slight increase (3)	44.8(3)	30 (3)	A
	23.7 ± 1.47 (3)			B
12	24.8 (1)			A

3–9 nestlings on Mt. Mansfield, VT, 2.6 g ± 0.9 SD (range 1.2–3.5) between ages 1–8 d, total increase of little more than 1 g between ages 8–11 d (Wallace 1939). Mean wing length increased 4.6 mm/d ± 1.4 SD (range 1.8–6.1) between days 2–11, mean tarsus length 2.2 mm/d ± 0.8 SD (range 1.1–3.3; Wallace 1939). Tail-feathers erupted on day 7, grew average of 3.1 mm/d ± 1.6 SD between days 8–11 (Wallace 1939). Four clutches on Mt. Mansfield measured at mid-nestling stage (5–8 d old) and just before fledging gained 0.3–2.1 g/d (average 1.3 ± 0.6 g, n = 10; VINS). Chicks sometimes audible up to 15 m from nest from about day 5 to fledging. Late in nestling period, young preen, stretch, and beat wings. Just before fledging, may perch on nest rim, walk and hop around nest and onto nest support branches. Young leave nest with body mass nearly that of adult's (Wallace 1939, VINS).

PARENTAL CARE

Brooding. Only by female. Time spent brooding declines with nestling age, sharply after day 1. Mean brooding periods 20.2 min on 1-d-old chicks (range 4.6–42.3, n = 14 brooding events), 7.6 min on 2-d-old chicks (range 0.3–18.5, n = 28 brooding events), 7.5 min on 3-d-old chicks (range 0.2–17.2, n = 45 brooding events), 6.9 min on 5-d-old chicks (range 0.7–23.7, n = 40 brooding events), 3.3 min on 7-d-old chicks (range 0.2–10.3, n = 12 brooding events; VINS).

Feeding. Both sexes feed chicks. Male occasionally delivers food to brooding female, who feeds nestlings or may eat it herself, especially when nestlings are very young (Wallace 1939, VINS). Male and female may feed young simultaneously (Wallace 1939, VINS). First food deliveries of day may be brought by male in near darkness of predawn, before female has left nest from night's brooding (Wallace 1939). At 25 Vermont nests observed by videography, one female fed at each nest, with 2 provisioning males most common (60%), followed by 1 male (20%), 3 males (16%), and 4 males (4%; VINS). Four males documented to feed at >1 nest within single breeding season, 3 feeding 2 broods simultaneously (nests 186–443 m apart). One male simultaneously provisioned at two nests 443 m apart, shared feeding of nestlings at first nest, was sole male feeder at second nest. First nest fledged 3 d after second nest hatched; male then left care of fledglings to the other male and fed second brood at nearly twice the rate as he had fed young at first nest. Individual female, total male, and total adult provisioning rates did not differ between nests with single and multiple male feeders. Some males did not feed at nests in which they sired young, and some males fed at nests in which they sired no young. Male feeding rates increased with nestling age until day 7–8 and then decreased until fledging. Multiple male feeders also reported at nests in Gaspé Peninsula, Quebec, with 3 males attending 2 different nests in 2000 (Y. Aubry unpubl.).

Nest sanitation. Unhatched eggs often removed within several days of others hatching. Chicks that die at early age are removed. In one case, an 8-d-old chick died and was crushed into nest cup bottom by surviving siblings. Young produce fecal sacs, usually subsequent to food deliveries. Adults typically wait after feeding young, peering at raised and protruding cloaca, which is oriented towards outside of nest, until fecal sac emerges. Adults eat up to 3 fecal sacs/visit, especially when chicks young. No more than one uneaten fecal sac carried away each feeding trip. Few fecal sacs eaten and none carried away during first day of nestling life. With nestlings 2–7 d old, adults eat 0.7 to 1.9 fecal sacs/h and carry away 0.05–0.36 sacs/h. By day 7, eating:disposal ratio nearly 1:1; from day 8 to fledging ratio steadily increases to 1:2, as fewer and fewer fecal sacs produced. From 8–12 d, adults eat 0.23–0.3 fecal sacs/h and carry away 0.6–1.1 sacs/h. Chicks usually leave excrement in nest cup and on rim when fledging. (VINS).

COOPERATIVE BREEDING

Not documented.

BROOD PARASITISM

Interspecific brood parasitism not known to occur; little or no overlap in breeding habitat with Brown-headed Cowbird (*Molothrus ater*).

FLEDGLING STAGE

Departure from nest. Nestlings fledge 9–13 d after hatching (average 11.4 d ± 1.3 SD, $n = 17$ known to exact day; Wallace 1939, VINS). In 3 Quebec nests, fledging 12–14 d after hatching (Y. Aubry unpubl.). Tarsus, toes, and bill are adult length, but wings only half-grown and tail about one-fifth grown at fledging (Wallace 1939, VINS). Young at nearly adult weight when leaving nest (Wallace 1939, VINS).

Growth. Little information. One Vermont fledgling captured 30 d after leaving nest increased mass from 22.1 g to 25.8 g (VINS). One nestling retained in captivity grew wings and tail about 3 mm/d until adult size achieved (Wallace 1939).

Association with parents or other young. Little information, but fledglings may remain with adults up to 14 d after leaving nest. Adults often split brood. One known case of 2 males splitting brood, apparently emancipating female. In another case, female and one of 2 male feeders split brood; second male continued to feed nestlings in another nest. Movements of family groups not well documented, but adults with dependent fledglings found up to 280 m away from known nest sites. (VINS)

Ability to get around, feed, and care for self. No information.

IMMATURE STAGE

Little information. Movements and habitat use during postfledging period of independence poorly known. Of 11 Vermont fledglings radio-tagged in 2000, 7 known to have been depredated (mean survival 8.1 d ± 6.6 SD after fledging, range 1–19), 2 disappeared after 8 and 19 d, respectively, and 2 survived until transmitter batteries expired (40 and 31 d, respectively). Of these latter 2 birds, one remained within 275 m of its natal nest site in montane fir forest, while the other moved nearly 1 km downslope after about 10 d to hardwood-dominated forest at elevations 700–900 m, and remained there. One free-flying juvenile banded on 25 Jul stayed within 100-m radius of banding location in stunted fir forest at 1,150–1,175 m elevation until 22 Aug, then disappeared (VINS).

DEMOGRAPHY AND POPULATIONS

MEASURES OF BREEDING ACTIVITY

Age at first breeding; intervals between breeding. Breeds at approximately 1 yr old and annually thereafter. Of known-age female breeders at 85 Vermont nests in 1994–1999, older (≥2-yr-old) females outnumbered yearling females 73 to 12 (85.9% to 14.1%). Of 25 Vermont males with known paternity at 1998 and 1999 nests, only 2 (8%) were yearling birds, while this age-class constituted about 25% of entire male study population. Highly irregular settlement patterns further suggest that some yearling males fail to sire young (VINS).

Clutch. See Breeding: eggs, above. Mean clutch size in Vermont 3.6 ± 0.49 SD (range 3–4, $n = 59$; VINS).

Annual and lifetime reproductive success. In Vermont, annual reproductive success among males skewed but generally low. Of 21 males with known paternity at nests in 1998 and 1999, 13 (62%) sired only 1 chick, 4 (19%) sired 2 chicks, 3 (14%) sired 3 chicks, and 1 (5%) sired 4 chicks; these are minimum estimates (VINS).

Annual Mayfield daily survival rate of nests (probability of nest surviving 1 d without failure) on Stratton Mtn., VT: 0.98 ± 0.014 SE (n = 39 nests), and on Mt. Mansfield, VT: 0.96 ± 0.007 SE (n = 56 nests). Daily survival rates of Vermont nests strikingly biennial in response to balsam fir cone production and red squirrel population cycles. From 1994 to 2000, fall cone crops very high in even-numbered years, resulting in high red squirrel populations during following springs and summers, with consequent low productivity for Bicknell's Thrush because of nest depredation. In odd-numbered years, fall cone production invariably lower, spring and summer squirrel populations reduced, and thrush nesting success markedly higher (VINS).

Average number of young fledged/nest in Vermont: Stratton Mtn. 2.1 ± 1.37 SD (range 0–4, n = 30); Mt. Mansfield 1.5 ± 1.59 SD (range 0–4, n = 46).

Number of broods normally reared per season. Only one brood normally reared; one documented second brood (see Breeding: phenology, above).

Proportion of total females that rear at least one brood to nest-leaving. Percentage of females that raise one brood to independence each year in Vermont: Stratton Mtn. 1997 = 85.7%, 1998 = 88.8%, 1999 = 0%, 2000 = 90.9%; Mt. Mansfield 1999 = 62.5%, 2000 = 62.5% (VINS).

LIFE SPAN AND SURVIVORSHIP

Longevity record for banded male 8 yr, for female 7 yr. Annual survival rate of older birds captured on Vermont breeding grounds, based on Cormack-Jolly-Seber model (Lebreton et al. 1992, Cooch and White 1998, White and Burnham 1999, Bertram et al. 2000), was not dependent on time or sex on 4 study plots. To account for uncertainty in model selection, range of mean parameter estimates averaged over all 16 models in the candidate set for each study plot, weighted by Akaike model weights, and most parsimonious model used (Burnham and Anderson 1998, Bertram et al. 2000). Annual survivorship on Mt. Mansfield ridgeline in 1992–1999: 54.7% ± 6.5% SE with mean parameter estimates for all models ranging from 54% to 55.8%; Mt. Mansfield east slope in 1995–1999: 74.8% ± 8.6% SE, mean estimates 71.9–79.1%; Stratton Mtn. ski-area plot 1997–1999: 73.9% ± 10.1% SE, mean estimates 75.6–88.3%; Stratton Mtn. natural plot 1997–1999: 94.6% ± 28.4 SE, mean estimates 86.1–94%. No difference in survivorship between Stratton Mtn. ski area and natural area plots. Survival rate of juveniles poorly known because of apparent natal dispersal; only 3 of 115 (2.6 %) nestlings and dependent fledglings and 9 of 62 (14.5 %) independent juveniles banded in Vermont 1992–1998 documented to return to breeding site. Two nestlings that returned were females from the same nest. On Mt. Mansfield in 2000, only 2 of 11 (18.2%) radio-tagged fledglings known to have survived beyond 30 d. Annual survival rate of wintering individuals captured at montane broadleaf forest site in Sierra de Bahoruco, Dominican Republic, based on Cormack-Jolly-Seber model estimates, was not time dependent in 1994–1999: 72.9% ± 14.3% SE, with mean parameter estimates for all models ranging from 68.4% to 79.7% (VINS).

DISEASE AND BODY PARASITES

Diseases. No information.

Body parasites. Unidentified *Mallophaga* found on remiges of 36 of 90 (40%) adults examined in Vermont during 2000 and on primaries of 15 of 46 (33%) birds examined in Dominican Republic 1996–2000 (VINS). Nymphs of 4 individual *Ixodes scapularis* ticks removed from base of bill and around eyelids of 2 adult Bicknell's Thrushes (1 male, 1 female) on Stratton Mtn., VT, in late May 1999; these presumably acquired during northward migration in U.S. (VINS). Unidentified ticks found on 3 of 46 (7%) birds examined in Dominican Republic. Nestlings reported parasitized by blow flies (*Protocalliphora* sp.) at 1 Vermont nest (Wallace 1939), but no instances of this parasitism noted at 85 Vermont nests in 1990s.

CAUSES OF MORTALITY

Exposure. Some nestling deaths attributable to severe weather, e.g., >2-d periods of cold (3–5°C), wet conditions, often with heavy rain and high winds (VINS).

Predation. See Behavior: predation, above.

Competition with other species. Not known.

RANGE

Initial dispersal from natal site. Little information. See Breeding: immature stage, above. One Vermont juvenile captured in mist-net 507 m from nest site 30 d after fledging (VINS). No documentation of dispersal away from natal site, but assumed due to very low natal philopatry of banded juveniles in Vermont.

Fidelity to breeding site and winter home range. See Breeding: nest site, above. Both older males and females of all ages site-faithful on breeding grounds, as indicated by mist-net recaptures at same sites over successive years. Between-winter philopatry documented in broadleaf forest in Sierra de Bahoruco, Dominican Republic, with 14 of 27 banded individuals recaptured between winters (mean distance between captures 95.4 m ± 92.6 SD, range 0–260 m; VINS).

Male banded on Mt. Mansfield, VT, on 16 Jun 1995 recaptured in mist-net in Sierra de Bahoruco of Dominican Republic <6 mo later, on 2 Dec 1995. This individual occupied same breeding home range during 1996 and 1997 summers and was strongly suspected, although not confirmed, to reoccupy same winter territory in 1996/1997 (Rimmer and McFarland in press). High variance in feather deuterium values from small study areas in Sierra de Bahoruco, Dominican Republic, compared to more uniform values in discrete areas of breeding range, suggests mixing of breeding populations in winter (Hobson et al. 2001).

Dispersal from breeding sites. Only 1 documented long-distance breeding dispersal of yearling male on Equinox Mtn., VT, that was captured 17.2 km distant 2 yr later on Stratton Mtn., VT. High variance in feather deuterium values of yearling birds within breeding populations suggests high natal dispersal and/or considerable movement among montane habitat patches (Hobson et al. 2001). This is also supported by estimates of gene flow among 4 ne. U.S. mountain ranges derived from mitochondrial DNA control region sequence data (WGE).

Home range. On breeding grounds, males range more widely than females. Using 95% fixed-kernel estimates from radio-tracking data on Stratton Mtn., VT, male home ranges averaged 4.53 ha ± 2.17 SD, while those of females averaged 2.33 ha ± 1.01 SD. Individual male home ranges overlap extensively with those of 2–7 other males, often intersecting near nest sites. Males had 1–4 known nest sites within home range. Female home ranges generally overlap little. During inclement weather early in breeding season on Mt. Mansfield, VT, some males descend to midelevation transitional forest, some females move to south-facing slopes. Winter home range sizes poorly known, but evidence from mapping vocalizations in broadleaf forests of Sierra de Bahoruco, Dominican Republic, suggests 0.5–2 ha (VINS).

POPULATION STATUS

Numbers. Breeding densities difficult to ascertain because of unusual mating system, rugged terrain, and dense habitat. One of the most rare, range-restricted breeding species in e. North America. Based on amount of potential breeding habitat from remote-sensing data, mean home range area in Vermont, and dual assumptions of nonoverlapping home ranges and saturated habitat, estimated rangewide breeding population of 25,000–50,000 individuals (VINS). Estimates of effective population size derived from mitochondrial DNA control region genealogies, with methods derived from coalescence theory, are comparable (WGE). More than 90% of birds believed to breed within U.S, only an estimated 2,000–2,500 pairs breeding in Canada (Nixon 1999). In U.S., Adirondack Mtns. contain largest area of montane forest breeding habitat, followed in descending order by White Mtns. of New Hampshire, mountains of w. and central Maine; Green and Taconic Mtns. of Vermont, and Catskill Mtns. of New York (Atwood et al. 1996, VINS).

Trends. See Distribution: historical changes, above. Little information from any part of range, due to lack of adequate baseline data on population levels. Virtually unsampled by Breeding Bird Survey. Point-count data collected annually at 68 ne. U.S. montane forest sites beginning in early 1990s; trend information not yet available. Anecdotal evidence of recent breeding-population declines on several small Vermont peaks (VINS). Capture rates of migrant "Gray-cheeked" Thrushes (n = 3,252, included known Bicknell's and Gray-cheeked) in coastal Virginia declined significantly from 1968 to 1995 (Wilson and Watts 1997).

POPULATION REGULATION

Few data. Apparent biennial cycle of balsam-fir cone crops in montane forests of Vermont correlates to elevated predator populations and depressed reproductive success of Bicknell's Thrush in summers following high cone crops. Recruitment in Vermont, as measured by annual number of yearling individuals captured, correlated to previous year's breeding productivity.

CONSERVATION AND MANAGEMENT

EFFECTS OF HUMAN ACTIVITY

Shooting and trapping. No information.

Pesticides and other contaminants/toxins. Little information. Blood and feather mercury (Hg) levels examined in 18 adults from 5 breeding sites across ne. U.S. in 1999 and 2000. Mean blood Hg 0.192 ppm ± 0.188 SD (range 0.038–0.795, n = 14); no consistent age, sex, or geographic differences. Mean feather Hg levels, indicating chronic body burden, 0.739 ppm ± 0.429 SD (range 0.171–1.61, n = 18), highest in 2 older males from Whiteface Mtn. in Adirondacks, 1.561 and 1.61 ppm, respectively. Among known-aged birds on Mt. Mansfield, VT, significantly higher feather Hg levels in older birds (mean 0.924 ppm ± 0.26 SD; males 0.801 ± 0.203 SD [n = 4], females 1.170 ± 0.175 SD [n = 2]) than in yearling birds (mean 0.434 ppm ± 0.118 SD, n = 3 males). Mercury toxicity thresholds not known in this or other terrestrial insectivorous bird species.

Collisions with stationary/moving structures or objects. No documented cases of mortality from collisions with TV towers, but several migrants that may be Bicknell's Thrush recovered below towers in Leon Co., FL (Tall Timbers Research Station specimen data; n = 5) and in downtown Atlanta, GA (Georgia Museum of Natural History [GMNH] specimen data; n = 2). One record of a fall migrant killed by striking a building in Atlanta (GMNH specimen data).

Degradation of habitat. Well-documented decline of high-elevation forests in ne. U.S. during 1960s and 1970s (Johnson and Siccama 1983, Eager and Adams 1992). Red spruce dieback especially pronounced, but mortality of balsam fir also extensive and widespread (Miller-Weeks and Smoronk 1993), although most of this from naturally occurring fir waves. Atmospheric deposition of acidic ions from industrial sulfur and nitrogen oxides strongly, although not conclusively, implicated as a causal factor in red spruce decline (Johnson et al. 1992, NAPAP 1992). Increased winter-freezing injury of spruce, possibly mediated through reductions in calcium reserves, may be directly linked to high levels of acidic deposition (DeHayes et al. 1999). Despite declining trends in atmospheric sulfate concentrations resulting from mandates of 1990 Clean Air Act amendments, acidity of precipitation in ne. North America does not appear to be decreasing (Scherbatskoy et al. 1999).

Heavy metal toxicity from airborne pollutants also implicated as contributing cause of high-elevation forest decline in ne. U.S., particularly in Adirondack and Green Mtns. (Gawel et al. 1996). Several recent studies, however, indicate that lead concentrations in the forest floor are rapidly decreasing (Friedland et al. 1992, Miller and Friedland 1994, Wang and Benoit 1997). Little information on other heavy metals in montane forests.

Atmospheric deposition of airborne mercury 2–5 times higher in montane forests of Mt. Mansfield, VT, than in surrounding low-elevation areas (Lawson 1999). Methylation rates and possible uptake in terrestrial food chain of montane forests unknown.

Global climate change may exert profound, long-term impacts on balsam-fir forests. The average global surface temperature could rise 1.6–6.3°F (0.9–3.5°C) by 2100, with significant regional variation (EPA 2000). A modeling effort using USDA Forest Service Forest Inventory Data, numerous environmental variables, and equilibrium climate variables provided by five Global Circulation Models (assuming doubling of atmospheric carbon dioxide) predicts an average reduction of 96% in area occupied by balsam fir in e. U.S. (Iverson et al. 1999, Prasad and Iverson 1999).

Recreational and commercial development in montane forests contribute to increased habitat fragmentation and loss, but cumulative effects poorly known. In Vermont, 13 mountains >915 m in elevation are developed for recreational skiing; many of these offer mountain-biking programs during summer. Ski area development pressures similar in New Hampshire and Maine, less so in Catskill and Adirondack Mtns. of New York.

Proliferation of telecommunications towers on mountaintops of ne. U.S., also development of wind-power generation facilities, may further fragment montane breeding habitat and introduce disturbance from construction and servicing activities.

Industrial forestry practices in Canada, such as clear-cutting and pre-commercial thinning, may cause adverse, short-term impacts on Bicknell's Thrush breeding habitat, but effects unknown.

Disturbance at nest and roost sites. Incubating and brooding females vary in tolerance to disturbance near nest. Qualitative observations suggest that birds nesting in areas of high or moderate human activity may become habituated to nearby disturbance. Females in areas of undisturbed habitat and low human activity much more prone to flush from nests (VINS).

Direct human/research impacts. Little evidence. Of 108 Vermont nests monitored from 1992 to 2000, 3 abandonments in early egg stage may have resulted from discovery and/or subsequent visits by researchers (VINS).

MANAGEMENT

Little specific information. Vegetation management of montane forest breeding sites developed for recreational skiing can enhance habitat for Bicknell's Thrush, or minimize possible adverse impacts. Maintenance of low fir-spruce thickets in 3–7 m wide bands of gradually increasing height along ski-trail edges can provide nesting and foraging sites. Maintaining forested "islands" of maximum size between ski trails, minimizing width of trails, and maximizing connectivity of habitat in developed areas may increase suitability. Vegetation management or construction at breeding sites should be conducted outside nesting season. In industrial forests of Canada, harvesting operations should be scheduled to ensure a continuous supply of regenerating (5–15 yr old) clear cuts across the landscape (Nixon et al. in press).

APPEARANCE

MOLTS AND PLUMAGES

The following is based on Dwight 1900; Wallace 1939, 1949; Ouellet 1993; Curson 1994; Pyle 1997; Lane and Jaramillo 2000; and personal observations of authors. Sexes known or assumed to be similar in all plumages, unless otherwise noted.

Hatchlings. Natal down dark gray or blackish, visible at hatching only in cephalic, dorsal, and humeral tracts. Remigial quills emerge from skin at 2–3 d, feather tips from quills at 6–7 d.

Juvenal plumage. Acquired by complete Prejuvenal (postnatal) molt.

Upperparts, including lesser and median wing-coverts, olive-brown to brown (sepia or raw umber), most feathers with prominent buffy subterminal spots or shaft streaks, these markings darker and more diffuse on rump and upper tail-coverts. Greater wing-coverts brownish, variably tipped with narrower, buffy shaft-streaks. Remiges brownish, rectrices brownish to chestnut-brown. Chin and throat whitish, unstreaked or with few faint dusky streaks. Breast and sides whitish to buffy-white, feathers darker buff towards tip with dusky terminal bar, giving scaled appearance. Remainder of underparts dull whitish with buffy tinge, under tail-coverts more strongly tinged buffy to buffy-brown. Moderately distinct buffy eye-ring, slightly thicker posteriorly.

Basic I plumage. Prebasic I molt partial; includes all feathers except remiges, rectrices, and primary-coverts. Usually includes some to all median-coverts and 0–4 inner greater-coverts (Pyle 1997, VINS). Occurs late Jul–mid-Sep on breeding grounds (Fig. 3).

Basic I plumage similar to Definitive Basic, but often with variable numbers of retained buff-tipped Juvenal feathers in median and greater wing-coverts, occasionally in scapulars and mantle. Retained Juvenal rectrices significantly more pointed than those of Definitive Basic birds (Collier and Wallace 1989, VINS), P10 is 0–6 mm in length (4–10 mm in Definitive plumages; Pyle 1997).

No documented Prealternate I molt. Worn spring aspect of Basic I plumage similar to Definitive Alternate plumage, but remiges and rectrices may have browner appearance than those of Definitive-plumaged birds (Wallace 1939). Close inspection may reveal moderate wear of distal flight feathers.

Definitive Basic plumage. Definitive Prebasic molt complete, early Jul through Sep on breeding grounds (Fig. 3). In Vermont, birds in very early stages of remigial molt (≤ 3 primaries shed; $n = 8$) captured from 4 Jul to 1 Aug (VINS). Latest individuals in active flight-feather molt examined in mid-Sep (latest 13 Sep). Mean calculated molt-duration of 4 males examined both early and late in same molt cycle was 50.5 d $\pm$ 4.9 SD (range 47–59 d). Birds in midmolt stages typically had 4–5 primaries growing simultaneously (none >5) and all 12 rectrices. Yearling males tended to initiate molt slightly earlier than older birds of both sexes. One male examined in molt in 3 consecutive years was calculated to begin 23 Jul as yearling, 29 Jul and 30 Jul in following 2 yr. Weight changes of 5 males recaptured 24–43 d apart in same molt cycle varied from -1.0 g to 3.0 g (mean 0.8 g $\pm$ 1.5 SD). Nearly all captures of molting birds ($n = 14$ of 17) in same area occupied during breeding season.

Contour-feather molt begins shortly after shedding of P1, usually in spinal and ventral tracts, and terminates in capital tract shortly after remigial molt is complete.

No evidence for Definitive Prealternate molt. Worn spring aspect of Definitive Basic plumage nearly indistinguishable from that in fall; slightly more olive (versus grayer) dorsal coloration reported by Wallace (1939) to be acquired through wear.

Upperparts (head, nape, mantle, wing-coverts, upper tail-coverts) vary from olive-brown to brownish (sepia or raw umber), typically contrasting with brighter, chestnut-tinged tail; this contrast may be less evident when tail- and wing-feathers worn and duller, or contrast may be slight in birds with warmest brown back color. Degree of chestnut tinge in tail and of contrast with dorsal coloration varies. Although Wallace (1939) suggested clinal dichromatism in dorsal coloration, with northern birds tending to be olive and southern birds brown, much geographic intergradation exists, even within breeding sites (VINS, WGE). Wings brownish to olive-brown, remiges often showing slight chestnut tone, especially on outer webs and bases of primaries, giving perceptibly warmer effect than rest of upperparts (except tail). Chin and throat unstreaked off-white to buff, males tending more towards buff. Lores and post-ocular crescent dull gray. Double malar stripes dusky, lower stripe more prominent. Breast off-white with buffy wash, with prominent, wedge-shaped dusky (blackish) spots; these become more diffuse, more rectangular in shape, and paler (brownish) on sides and lower breast, less extensive and bold overall than on Hermit Thrush. Belly off-white, flanks usually show grayish or dusky brownish wash.

BARE PARTS

Bill and gape. Upper mandible and distal half to one-third of lower mandible blackish gray, proximal half to two-thirds of lower mandible bright pale yellowish to orange-yellow. Entire lower mandible may be suffused with pale yellowish flesh in juveniles.

Iris. Dark brown in all ages.

Legs and feet. Light purplish flesh to purplish flesh, some individuals with darker brownish wash on tarsi. Toes invariably darker than tarsi. Soles of feet vary from flesh to dull pale yellow. Legs grayish in juveniles, especially on leading edge, grayish flesh on hind edge; soles of feet pale yellow.

MEASUREMENTS

LINEAR

See Appendix.

MASS

See Appendix. Also see Migration: control and physiology, above. Mass of some females during breeding season may reflect addition of egg in oviduct (VINS).

PRIORITIES FOR FUTURE RESEARCH

Many aspects of the breeding and wintering ecology, demography, and behavior of Bicknell's Thrush remain poorly known. A lack of baseline population data and logistical difficulties hinder attempts to clarify this species' conservation status. A standardized, rangewide monitoring program, currently in its early stages, is needed to determine breeding-population trends and distributional changes. Similar efforts are warranted on the wintering grounds, where limiting factors may be most severe. Development of accurate methods to census populations and estimate densities are needed in both areas. Accurate calculations of total population size, based on GIS projections of occupied habitats and spatially explicit density estimates, are needed throughout the breeding range. A formal conservation assessment is needed to assess the possibility that Bicknell's Thrush may qualify for federal Endangered or Threatened listing, in both the U.S. and Canada.

Many landscape-level questions about the species' ecology and population dynamics require focused research. Information is needed on reproductive success, demographics, and site persistence in habitat patches of different size and isolation; on the existence of source/sink population dynamics; on patterns of natal dispersal and breeding recruitment; and on levels of population interchange among habitat patches. The apparent male-biased breeding sex ratio requires rangewide investigation; its causes and demographic/ecological correlates must be determined. Accurate estimates of breeding population density in different habitat types across the species' range are needed. Detailed understanding of habitat use, breeding status and success, demography, site persistence, and effects of silvicultural practices (e.g., pre-commercial thinning) in regenerating industrial forests of Maritime Canada is needed to guide management. The species' status in regenerating clearcuts in both montane and low-elevation forests in Maine should be investigated. Distributional status in coastal maritime forests of Canada needs clarification, as does possible existence of contact/hybrid zone with Gray-cheeked Thrush along north shore of Gulf of St. Lawrence. The possibility that Bicknell's Thrush may occur in unglaciated areas of southeastern Newfoundland should be investigated.

Research is needed on potential effects of food availability and its temporal-spatial variability on breeding system structure and reproductive success; relative diets of adults, nestlings, and fledglings; postfledging dispersal and habitat use; postbreeding movements and habitat use of adults; effects of human activities (e.g., recreational development, telecommunications towers) on spacing patterns and reproductive success.

In winter, distribution and habitat use of Bicknell's Thrush in Cuba and Haiti, and to lesser extent Jamaica, need to be better understood. Protected status of core wintering areas must be carefully assessed, and needs for further protection specifically identified. Occupancy of primary versus second-growth winter habitats needs study, as does existence of possible sexual habitat segregation. Demographic studies are needed to investigate microhabitat use, overwinter survival and site persistence by age and sex, between-winter site fidelity and survivorship. Spacing patterns and movements of age and sex classes throughout winter need further study, as do possible seasonal shifts in diet and body condition.

Stopover ecology is virtually unknown. Studies of banded, transient individuals are needed to determine stopover lengths, physiological condition, diet, and habitat use. A thorough study (currently underway by VINS, summary in Migration: timing and routes, above) of available banding and specimen data would help establish migratory routes and timing, and might identify specific geographic areas of importance to stopover migrants. Establishment of standardized criteria for field and in-hand identification would facilitate determination of distribution and migration patterns.

Additional research is needed on song and call repertoire, degree of sharing across breeding range and among neighbors, recognition of "types" by birds themselves, responses of Bicknell's Thrush to Gray-cheeked Thrush vocalizations, and vice versa, across the breeding range.

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Appendix. Linear measurements (mm) and mass (g) of Bicknell's Thrush. Breeding-range data from specimens (Ouellet 1993), regional and winter data from mist-netted birds (VINS, WGE). Data shown as mean ± SD (range, *n*).

	AHY males	AHY females	HY individuals[1]	AHY sex unknown	HY sex unknown
Bill length					
Exposed culmen					
Breeding range	12.71 ± 0.76 (10.6–16.7, 73)	12.56 ± 0.52 (11.8–13.7, 19)			
S. Vermont	12.6 ± 0.81 (11–14.2, 36)	13.0 ± 1.49 (11.1–17.9, 17)			
N. Vermont	12.8 ± 1.16 (8.9–14.9, 40)	12.2 ± 1.13 (8.9–13.2, 13)			
Mt. Mansfield, VT			11.3 ± 0.61 (9.9–12.3, 27)		
Dominican Republic				12.7 ± 0.68 (11.8–15.1, 33)	12.6 ± 0.86 (11.1–13.7, 12)
Culmen from nares					
Breeding range	9.09 ± 0.41 (8.1–10.2, 73)	9.1 ± 0.42 (8–9.9, 19)			
Catskills, NY	9.2 ± 0.4 (8.3–9.7, 12)				
Adirondacks, NY	9.2 ± 0.44 (8.5–10, 17)				
S. Vermont	9.3 ± 0.54 (7.6–10.5, 42)	9.5 ± 0.67 (8.4–10.9, 18)			
N. Vermont	9.4 ± 0.61 (8–10.3, 40)	9.1 ± 0.43 (8.6–10.2, 14)			
White Mtns., NH	9.2 ± 0.32 (8.5–9.6, 11)				
Mt. Mansfield, VT			8.4 ± 1.06 (7–12.9, 27)		
Dominican Republic				9.4 ± 0.6 (8.4–10.9, 33)	9.7 ± 1.55 (8.4–14.1, 11)
Culmen depth					
S. Vermont	4.0 ± 0.21 (3.5–4.3, 37)	4.2 ± 0.2 (3.8–4.5, 17)			
N. Vermont	4.1± 0.35 (3.6–4.9, 33)	4.0 ± 0.44 (3.3–4.9, 10)			
Mt. Mansfield, VT			3.8 ± 0.18 (3.7–4, 3)		
Dominican Republic				3.9 ± 0.15 (3.7–4.3, 33)	4.0 ± 0.37 (3.6–5, 11)
Culmen width					
S. Vermont	4.2 ± 0.37 (3.6–5.1, 37)	4.3 ± 0.53 (3.5–5.5, 17)			
N. Vermont	4.4 ± 0.49 (3.6–5.5, 37)	4.4 ± 0.42 (3.9–5.2, 11)			
Mt. Manfield, VT			4.1 ± 0.31 (4–5, 27)		
Dominican Republic				4.1 ± 0.24 (3.6–4.8, 33)	4.2 ± 0.23 (4–4.7, 11)
Wing length					
Unflattened wing-chord					
Breeding range	92.92 ± 2.73 (84.8–98.8, 74)	87.78 ± 3.87 (81.7–95.2, 19)			
Catskills, NY	91.9 ± 2.42 (88–96, 32)	86.9 ± 2.46 (82.5–88, 5)			
Adirondacks, NY	93.9 ± 1.96 (91–97, 17)				
S. Vermont	91.0 ± 2.75 (85.5–97, 60)	87.8 ± 2.04 (83.5–91, 25)			
N. Vermont	91.8 ± 2.94 (84.5–100, 134)	87.4 ± 2.24 (83.5–93, 56)			
White Mtns., NH	93 ± 2.73 (86.5–96, 12)				
Mt. Mansfield, VT			88.7 ± 2.87 (82–95, 61)		
Dominican Republic				92.1 ± 3.5 (85–100, 66)	89.1 ± 2.32 (84.5–94.5, 41)
Tail length					
Breeding range	68.73 ± 2.79 (62.1–77.6, 74)	65.57 ± 2.61 (61.6–70.6, 19)			
Catskills, NY	69 ± 3.41 (64–75, 12)				
Adirondacks, NY	70.6 ± 2.53 (65.5–74, 17)				
S. Vermont	66.8 ± 2.66 (62–73, 37)	62.4 ± 2.97 (54–67, 18)			
N. Vermont	67.2 ± 3.94 (60.7–74.5, 37)	63.9 ± 3.0 (60.4–68.3, 10)			
White Mtns., NH	68.9 ± 3.26 (62–73, 11)				
Mt. Manfield, VT			62.6 ± 3.04 (57–69, 23)		
Dominican Republic				68.3 ± 3.09 (63.1–73.5, 30)	64.4 ± 2.77 (60.5–58.8, 10)

Appendix (continued).

	AHY males	AHY females	HY individuals[1]	AHY sex unknown	HY sex unknown
TARSUS LENGTH[2]					
Breeding range	29.24 ± 0.69 (27.5–30.7, 72)	28.89 ± 0.5 (28.1–29.7, 17)			
Catskills, NY	28.6 ± 1.02 (27–30.1, 12)				
S. Vermont	33.0 ± 0.93 (31–34.9, 37)	31.8 ± 0.83 (30.1–33.1, 17)			
N. Vermont	32.7 ± 1.37 (28.3–34.7, 40)	32.1 ± 1.88 (28.2–34.5, 13)			
Mt. Manfield, VT			29.3 ± 1.73 (26.6–34.2, 28)		
Dominican Republic				32.9 ± 1.32 (29.9–35.3, 31)	32.6 ± 1.1 (30–34, 11)
MASS[3]					
Breeding range	28.18 ± 2.02 (20.5–33.0, 38)	31.97 ± 4.27 (28.7–36.8, 3)			
Catskills, NY	27.7 ± 1.85 (24.3–31.9, 33)	27.8 ± 1.97 (24.6–29.5, 5)			
Adirondacks, NY	27.8 ± 1.32 (26–30, 17)				
S. Vermont	27.5 ± 1.95 (21–32.4, 62)	26.8 ± 2.65 (22.3–34.5, 26)			
N. Vermont	27.5 ± 1.54 (24–31.9, 118)	28.1 ± 3.51 (23–37, 45)			
White Mtns., NH	28.3 ± 1.54 (24.9–30.8, 12)				
Mt. Mansfield, VT			26.9 ± 1.44 (24.1–30.2, 62)		
Dominican Republic[4]				27.2 ± 1.76 (23.8–30.6, 60)	26.8 ± 1.86 (22.1–30.6, 41)

[1]Late summer/fall hatch-year individuals.
[2]Regional and winter data reported using "field" tarsus (distance from lateral condyle to third scale; VINS).
[3]Mass of some females during breeding season may reflect addition of egg in oviduct (VINS).
[4]Individuals in Sierra de Bahoruco, broadleaf forest captured in Nov and recaptured in Mar had changes in mass ranging from -1.4 to 2.0 g (0.13 ± 1.18, $n = 7$).

ABOUT THE AUTHORS

Christopher C. Rimmer received a B.S. in wildlife biology from the University of Vermont and an M.S. in ecology and behavioral biology from the University of Minnesota, where he studied passerine molt ecology on the coast of James Bay, Ontario. He has been Director of Conservation Biology at the Vermont Institute of Natural Science since 1986. Current research focuses on ecology and conservation of montane forest birds in the Northeast and the Dominican Republic. He estimates that field work on Bicknell's Thrush has already reduced his life expectancy by several years, and he is currently searching for another research obsession, in hopes of being able to enjoy saltwater fly-fishing during retirement. Current address: Vermont Institute of Natural Science, 27023 Church Hill Road, Woodstock, VT 05091. E-mail: crimmer@vinsweb.org.

Kent P. McFarland, aka "Kapt. Krummholz," received his B.S. in environmental studies from Allegheny College (Meadville, PA) and an M.S. in environmental studies from Antioch New England Graduate School (Keene, NH). He has been chasing the wily Bicknell's Thrush as a research biologist at the Vermont Institute of Natural Science since 1994. Current research focuses on ecology and conservation of birds in the Northeast and on butterfly conservation and ecology in Vermont. Current address: Vermont Institute of Natural Science, 27023 Church Hill Road, Woodstock, VT 05091. E-mail: kmcfarland@vinsweb.org.

Walter G. Ellison is currently a doctoral candidate at the University at Albany, Albany, NY, studying gene flow and population history in Bicknell's Thrush and Veery. As part of this study, he did field work on Gray-cheeked Thrush in Labrador and Newfoundland. He received an M.S. degree from the University of Connecticut for a study on the range expansion of Blue-gray Gnatcatcher. He and his wife, Nancy Martin, also co-edit the New England Region Autumn Migration report for the journal North American Birds. Current address: Department of Biological Science, The University at Albany (SUNY), Albany, NY 12222. E-mail: wgellison@earthlink.net.

James E. Goetz earned a B.A. in biology at SUNY Potsdam and an M.S. at SUNY—College of Environmental Science. He has conducted fieldwork on Bicknell's Thrush on its breeding and wintering grounds since 1995. Current research focuses on the role of paternity and parental care in the breeding system of Bicknell's Thrush. Current address: SUNY-ESF, 1 Forestry Drive, 6 Illick Hall, Syracuse, NY 13210. E-mail: jegoetz@syr.edu.

Vermont Fish and Wildlife Department
Draft Management Recommendations for Vermont Ski Areas

December 1999 (minor revisions in 2000 and 2001)

Bicknell's Thrush Vegetation Management Plan

Purpose: to provide guidance for vegetation management of existing ski trails for Bicknell's Thrush breeding habitat.

Introduction: Bicknell's Thrush is an uncommon to rare bird species, both within Vermont and globally, that inhabits high elevation forests in the state. Although not protected by the Vermont State Endangered Species Law or Federal Endangered Species Act, it is listed as a species of special concern by the Scientific Advisory Group on Birds of the Vermont Endangered Species Committee. Bicknell's Thrush has also been listed as a wildlife species of regional conservation concern in the northeastern United States by the Northeast Endangered Species and Wildlife Diversity Technical Committee, which is a working committee of the Northeastern Association of Fish and Wildlife Agencies. Furthermore, concern over the population status of this species has prompted federal and state agencies and private groups to be concerned over impacts to its habitat. It was ranked as the number one Neotropical migrant for conservation concern in the Northeast by Rosenberg and Wells (1995, Partners in Flight working group, NE Region). Finally, it was recently added to a list of globally threatened and vulnerable bird species by the International Union for Conservation of Nature (IUCN) in their new edition of the IUCN Red Book.

The Vermont Institute of Natural Science (VINS) has spearheaded research on Bicknell's Thrush in New England since 1992 and is the key non-government organization in Vermont for thrush research. VINS' findings have been significant in recognizing the importance of Bicknell's Thrush conservation in the Northeast.

Bicknell's Thrush nest mainly in low, dense fir-spruce and mixed ~~forests on high~~ elevation exposed ridges, blow-downs, or fir-wave areas. Optimal thrush habitat appears to be moderate-sized areas of low, dense, fir-dominated forest. Areas along ski trails often mimic these naturally disturbed forest types, and their development often is greatly accelerated because ~~of increased exposure~~. ~~Statewide, Bicknell~~'s Thrush nest mainly above 3000 feet in elevation and occasionally lower if the habitat is appropriate. Furthermore, it appears that birds regularly descend below 3000 feet for foraging, especially early in the breeding season. It should be noted that there are few data on fledgling or post-breeding dispersal in fall, but that both juvenile and adult thrushes have been documented to use lower elevation forests at this time.

VINS' recent research has determined that by leaving fir-spruce cover along the edges of trail to the greatest extent possible, without interfering with skiing, it is possible to enhance the habitat for Bicknell's Thrush by providing suitable structure and a buffer. Bicknell's Thrush will use these areas for foraging, perching, and for cover when moving about and crossing trails. VINS has also documented occasional nesting in narrow buffers covered with low, dense fir-spruce along ski trails.

On 18 May 1999, Okemo Mountain Resort, the Vermont Department of Fish and Wildlife (VDFW), the Vermont Dept. of Forest, Parks and Recreation (VDFPR), and VINS conducted a site visit to determine which ski trails would be appropriate to manage for Bicknell's Thrush. Based on discussions during this site visit and the combined expertise of VINS, Okemo Mountain and Agency of Natural Resources professionals, the following preliminary management plan was developed. Minor revisions have been made since 1999.

Vegetation Management

1) Management of ski trail vegetation for Bicknell's Thrush will be done only in areas that will not interfere with skier safety.

2) Ski trails to be managed for Bicknell's Thrush will be 3000 feet in elevation and above, with the exception of areas above 2700 feet that support appropriate vegetation (see #3 below).

3) Vegetation management is warranted mainly in areas where the adjacent forest is fir-spruce dominated and characterized by a high stem density in the understory, often forming a dense thicket. Taller (>5 m) trees may be present, but these are often damaged by wind and/or insects and do not form a complete canopy, thus promoting understory growth. In these areas, which may include only one (usually the wind-exposed) side of a ski trail, low fir-spruce will be allowed to extend along the edge outward for 10-20 feet (or wider) at heights of 1-3 feet (or higher). An attempt should be made to "feather" such vegetation at the edge of ski trails, i.e., gradually decreasing tree height from the forest to the grassy trail edge. This would appear similar to a 'half pipe' for snowboarders, but composed of fir trees. When these areas are cut back, there will be an attempt to maintain woody vegetation at heights of one foot or more. Also, regeneration cuts will be made as infrequently as possible to maximize habitat availability and continuity.

4) Management of gladed skiing trails for Bicknell's Thrush is important to maintain habitat integrity within ski areas. To minimize adverse impacts to Bicknell's Thrush, existing gladed trails in suitable habitat should be kept as narrow as possible. Patches of low, dense fir-spruce should be left intact or minimally altered, while still allowing the trails to function for their intended recreational purpose. Annual maintenance should ensure that some tree saplings are retained, so there is continual recruitment to older age classes. This will help to prevent tree mortality events that could cause the longer-term conversion of gladed trails to completely open trails. Concerted efforts should be made to prohibit any unauthorized gladed trail establishment or maintenance, or unauthorized habitat alteration (i.e., cutting) of any kind. The proliferation of trails illicitly cut by recreational, off-trail skiers, and recently documented by VINS on some Vermont ski areas, must be actively discouraged.

5) Another potential habitat enhancement for Bicknell's Thrush involves islands of trees in ski trails. Islands often have a low, dense fir-spruce component and provide crossing points for Bicknell's Thrushes, which tend to avoid wide crossings of open ski trails. Maximizing the size of islands between ski trails will benefit movements of Bicknell's Thrush between patches of suitable habitat and may reduce "edge effects" such as increased predation of nests. In situations where one or more islands can be combined into a single, larger island, Bicknell's Thrush habitat will be improved.

6) In instances of habitat removal or alteration for ski trail establishment or expansion, a minimum 1:1 mitigation process is recommended, such that an area of currently developed habitat equal to (or greater than) that to be altered will be actively restored or passively allowed to recover to conditions suitable for Bicknell's Thrush occupancy.

7) The timing of vegetation management in areas of Bicknell's Thrush breeding habitat is important and should be delayed until after August 1, when the majority of nesting activities are complete.

8) Trail areas that are appropriate for thrush habitat management should be maintained by the ski area. The plan and map should be reviewed annually by the ski area maintenance supervisor and those who will be doing on-the-ground management.

9) The most current plan and map of Bicknell's Thrush and its habitats will be presented to the District Forester of VDFPR as part of an annual review of vegetation management on the mountain. VDFPR will coordinate with VDFW's Nongame and Natural Heritage Program on the Bicknell's Thrush portion of the plan. VDFW will in turn seek input from VINS research staff when appropriate.

Summary: We have an important opportunity to work in partnership to manage existing ski trails to minimize impacts of ski area management on available habitat of Bicknell's Thrush, and to enhance habitat whenever possible. This will help promote the conservation of this Species of Special Concern in Vermont.

Additional Information on Bicknell's Thrush: Rimmer, C.C., K.P. McFarland, W.G. Ellison, and J.E. Goetz. 2001. Bicknell's Thrush *(Catharus bicknelli)*. *In* The Birds of North America, No. 592 (A. Poole & F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Residents' Committee to Protect the Adirondacks
P.O. Box 27, North Creek, NY 12853-0027 Phone: (518) 251-4257
Fax: (518) 251-5068 E-mail: RCPA@netheaven.com

What the past has entrusted to us, let the future inherit from us.

Clean Water
Sustainable Forestry
Healthy Communities
Wildlands

December 6, 2002

Mr. Ted Blazer, Executive Director
NYS ORDA
Olympic Arena
Lake Placid, NY 12946

Re: WHITEFACE MOUNTAIN UMP UPDATE and DRAFT EIS

Dear Mr. Blazer,

The Residents Committee to Protect the Adirondacks (RCPA) has the following comments on the August 2002 Whiteface Mountain Ski Area Draft Environmental Impact Statement (DEIS) and Unit Management Plan Update. We will also communicate these comments to the Adirondack Park Agency and appropriate officials in the Governor's office and State Legislature.

General Comments

As residents, taxpayers and neighbors who care about the Adirondacks, the RCPA hopes the Whiteface Mountain Ski Area managed by the Olympic Regional Development Authority (ORDA) prospers and is successful in the coming decade. The area needs the jobs and the terrific skiing opportunities you provide residents and visitors of all ages. However, the RCPA fears your proposed expansion will be highly vulnerable to challenge if you proceed based on the skimpy documentation in this DEIS.

Where RCPA would expect to see large numbers of environmental issues discussed in a DEIS dealing with a project as vast, complex and controversial as this, our review surfaced perhaps a dozen issues that we believe are insufficiently analyzed or not touched on at all. Due to the complexity of this project and large gaps in this DEIS we will not furnish detailed page-by-page comments, but will make comments more of a scoping nature to point out issues which we believe should be included in your DEIS.

What is a DEIS and what is it expected to do? DEIS's are expected to completely disclose environmental implications of a project so the public can work for changes, improvements, mitigations and compromises to make sure the project has as benign an impact as humanly possible. Planners who are serious about insulating a project from legal challenge, disclose and even over disclose all possible negative consequences in great detail. This is because adverse impacts are generally not sufficient to stop a project, but an EIS that fails to fully disclose would certainly provide grounds to do so. Paradoxically, a project where the EIS fully discloses every conceivable environmental impact is less vulnerable to challenge than one that hides or glosses them over. In short, this DEIS seems more a promotional vehicle for ORDA's expansion plans to generate public excitement than a real DEIS.

Last, from the RCPA's vantage point, ORDA was not created to make Gore Mountain and Whiteface Mountain into Vails, Telurides, Killington's. Built on Forest Preserve lands, the two ski centers are to provide New Yorkers and others with quality skiing experiences at affordable family prices. As such these facilities augment the range of outdoor experiences for the public in the Adirondack Park. Because the ground upon which Whiteface Mountain Ski Area is built is Forest Preserve, environmental protection must be predominant in ORDA's planning and decision making. It's apparent from this DEIS that this is not the case.

Specific comments on the DEIS

1. **Alpine Krummholz Issues:** In the 1995 UMP pgs. 40, 49 there was discussion of what that UMP called the "highly significant" Alpine Krummholz zone. The discussion said this unusual forest condition is found at elevations above 4429 feet. The project does not plan to cut any trees on the 7 acres classified as Krummholz, but we would still like to see a simple statement in the plan that none of the 55,000 trees to be cut are considered "Krummholz. We would also like to know how far away the cutting of trees is from Krummholz and a clear buffer zone established.

2. **Summit Lodge Issues:** We associate ourselves with the comments of the Adirondack Council and the Adirondack Mountain Club (ADK). Particularly the Council's concerns that you are creating a light emitting beacon in violation of the APA's "substantial invisibility" standard with your proposed summit restaurant. Further, we are aware of strong concern from businesses and residents on Lake Placid from potential light pollution, both during the day from sunlight glare and at night from interior and exterior illumination, caused by the new summit lodge.

   One of the great benefits of living in the Adirondacks is our dark skies at night. This is especially true of our High Peak summits. The proposed summit lodge seems unnecessary and seems impossible to design and build to prevent high elevation light pollution.

   The RCPA questions the necessity of this lodge given the mid-station lodge. Further, while the RCPA is not in the restaurant business, we do use both Whiteface and Gore Mountain Ski Areas regularly, and we question whether the thought process at ORDA that supervises how hamburgers are currently served (and we encourage you all to go into Whiteface or Gore and order a hamburger, French fries, a brownie and drink and see what you get) can manage a supposed world class restaurant facility as the proposed summit lodge is reputed to be.

3. **Bicknells Thrush:** We support ADK's concerns about habitat for the Bicknells Thrush. The RCPA questions the inventorying that was done to date of the trees to be removed. The project proposes to cut 54,941 trees, some under 4" in diameter. At these altitudes small diameter trees may nevertheless be very old so the DEIS should include age-class information. Also, we encourage you to display more detail on diameters not just lump 37,000 trees into a single category of over 4 inches. (Pg. V12.) Given the harsh growing conditions at high elevations above 3,000 feet, it may be that even relatively small diameter trees could be old growth. This information is of absolute necessity. ORDA's stewardship of Whiteface Mountain includes stewardship of one of the rare, high elevation floral communities and its associated wildlife habitats. The impacts on this community must be part of the data analysis and will certainly affect planning. We urge that ORDA seek out additional scientific and ornithological assessments to appraise these impacts.

4. **Impacts on the West Branch of the Au Sable River:** The weakest point in the DEIS is the failure to adequately inventory the current state of the West Branch of the Au Sable River. Due to a general lack of baseline data, the various assessments and analyses of potential impacts are weak. Just as ORDA has stewardship responsibility over the summit and high elevation areas of Whiteface Mountain, ORDA also has a responsibility for the West Branch, a river often referred to as one of the great fly fishing rivers and whitewater canoeing rivers in the East.

   <u>Snowmaking and the dam on the West Branch</u>: The RCPA associates ourselves with the concerns that New York Rivers United (NYRU) has voiced about the dam constructed on the West Branch of the Au Sable River for "monitoring" purposes. The DEIS should clearly state the role that this dam will play in ORDA's snowmaking operations.

   <u>Fish populations</u>: On page II-25 the DEIS states that the quality of the West Branch of the Au Sable fishery is lower than might be expected. Why? The plan mentions in passing that wild fish are not in the abundance one might expect and fisheries have declined since the 1960's. The 1960's were the decade in which the ski area expanded to the top when lift F was completed (pg. I-8). Are existing ski operations in any way responsible for the decline in wild fish? The RCPA understands that the river is popular with anglers, but this is probably due to stocking. Is stocking masking a fisheries decline for which low abundance of wild fish is an indicator? The plan should analyze water withdrawals on the river, compare habitat and abundance above and below the water intake, and examine past and future sediment run-off on habitat quality. (Perhaps the East Branch of the Au Sable could be a benchmark indicator for the West Branch. If both branches have the same poor wild fish quality or if the habitat above and below Whiteface is similar in quality then presumably you are not impacting water quality and fish habitat.)

Sand and salt impacts: Is the sand and salt used in snow removal perhaps responsible for poor fish quality in the West Branch of the Au Sable? If so, would increased visitors use or parking lot construction exacerbate the situation? If not, why? If so, by how much? How much sand and salt is being used, where does it go? If this is a problem can you ameliorate it in some way? Frankly, we are more concerned about sand than salt impacts.

Water quality monitoring: The RCPA also cites the 1995 Gore Mountain UMP as an example for ORDA to emulate at Whiteface. That plan included an extensive water quality-monitoring program for North Creek to assess potential impacts from run-off and sedimentation from construction of new ski slopes as well as impacts from construction and operation of big, new parking lots. The RCPA encourages ORDA to undertake the same kind of water quality analysis on the West Branch; only it should be larger and more comprehensive given the larger level of development, operation, and size of the river.

No recent fish surveys: It has also come to the attention of the RCPA that there have been no recent fish surveys of the West Branch of the Au Sable. The RCPA encourages ORDA to work with the DEC to schedule meaningful fish surveys in the summer of 2003 to get solid information about fish populations in the river. It is entirely appropriate for projects of this scale to fund regular fish surveys and water quality monitoring; this might be a good idea given recent problems with upstream municipal wastewater.

Flow monitoring and water rights: The 1996 UMP provided for flow monitoring. The results of this monitoring should be discussed and provided. What water rights does Whiteface have, what effect on water quality and over wintering fish would occur if the resort exercised all available water to which it has rights? We would also like to see some background and rationale about the chronology of water right increases in terms of flows.

5. **New Ski Slopes:** The SLMP pg. 34 states "...Whiteface should be modernized to the extent physical and biological resources allow." The areas scheduled for the new runs "Three Island Pod" and the new "extreme" skiing area are to be built on what appear to be slopes of the highest instability. Building new runs and their supportive infrastructure may likely cause soil disturbance so this should be disclosed in the DEIS. Some minimal architectural cross sections of any construction particularly any that involve unstable slopes or wetlands disturbance would be in order. Whiteface Mountain has very visible slides, thus a history of soil instability. How will the very steep extreme ski slopes impact soil structures and stability? This issue is not adequately assessed in the DEIS. In order for erosion control systems to function, a minimal soil depth is required. The DEIS needs to be more specific about soil depths. The suggestions and guidelines in the current NY State handbook "Best Management Practices for Water Quality" for controlling erosion from tree cutting don't even discuss erosion control on slopes this steep as it is assumed that no one would ever cut down trees on slopes like this.

In fact it appears from aerial maps that the "Extreme" ski area requires no tree cutting because it uses old landslides.

6. **No-action alternative needs to be expanded:** Presently the section "No–action" alternative" is a scant paragraph that discusses the economic impacts rather than environmental impacts of not doing this expansion. Where is that data to support the assertions of negative economic impacts? Who will stop using Whiteface without the proposed improvements? Who are Whiteface users now and why will they stop coming? We remind that this is an Environmental Impact Statement, not a business impact statement so the pros and cons of a "no-action" alternative should be discussed in terms of the environmental impacts. When the plan is rewritten to include alternatives and discloses the soil, water, sewage, fish and other impacts the "no change" alternative section should be easy to write. It would display the sum of all the negatives caused by construction minus the current problems like sewage issues eliminated by completing the preferred alternative. In any case the plan should contain several alternatives that it does not.

7. **Sewage treatment facilities:** The plan envisions improving and expanding sewage treatment facilities, so it should include a review of all impacts of current and future sewage treatment. Members report to us that people sometimes smell raw sewage at Whiteface. If this has ever been true for any place, at any time, then it should be covered in the EIS. Has Whiteface been promptly reporting any spills or plant failures to appropriate monitoring authorities? Copies of such reports should be provided in an appendix. It seems perfectly logical that on days when the ski area is full, that the sewage system could be overtaxed? What is the current potential of the system and how many people will it accommodate and at what level of use? Can the system as designed, or as improved, accommodate the maximum number of people that have used Whiteface Ski Area over a 1 – 3 day period?

8. **Environmental impacts of snowmaking:** What are the environmental impacts of making snow on the massive scale you do? What does the current literature say? What are impacts from oil or diesel residues on snow? (At Gore Mountain, brochures about "Black Pollen" are handed out to allay concerns about contamination of snow during snowmaking. Is this the case at Whiteface?)

9. **DEIS maps:** The DEIS has some good maps, but we would like to have them recreated so as to overlay, for example, the "new runs" map upon the soil stability map. In fact the DEIS should probably include such a combined map in the needed section. In short, mapping needs to be improved.

10. **Wetland disturbances:** The plan proposes to build a dam on Stag Brook, which will flood a wetland. New roads and new ski runs cross several streams and wetlands. The RCPA expects urges more information about any and all wetlands impacts from submergence, fill, or other disturbances.