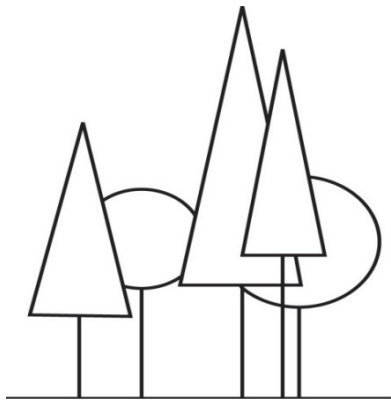


Forest Management Plan



Prepared for
Town of Carrabassett Valley
1001 Carriage Road
Carrabassett Valley, ME 04947

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General Property Information

Introduction

This property is owned by the Town of Carrabassett Valley (C.V.), with a mailing address of 1001 Carriage Road C.V., Franklin County ME 04947. This property is comprised of 2,155(+/-) total acres, as described by town tax maps: Map 1A- Lot 1, Map1C- Lot 1. The parcel is located approximately 1 mile south on Rt. 27 from the Sugarloaf Access Rd. Taking the Sugarloaf Outdoor Center Rd. will bring you on to the property at the north end.

This town lot is a diverse and highly valuable property that has many features as well as being a classic multiple-use forest. This property is the home of the Sugarloaf Outdoor Center which is "Maine's largest Nordic center, featuring a spectacular newly renovated lodge. The Sugarloaf Outdoor Center offers cross-country skiing and snowshoeing on 90 km of groomed trails and ice skating on an NHL sized rink. The Outdoor Center hosts numerous Nordic races and family friendly events throughout the season". Recently, there has also been the addition of substantial investment in mountain biking trails. There are several miles of bike trails on this property with a serious eye on expansion.

Scope of this Plan

This plan is written for the Town to meet and exceed the standards set forth in the Maine Forest Service (MFS) WoodsWise program. This plan will follow the outline as closely as possible, as provided in the MFS WoodWise literature. It will provide a good description of the current and potential values of this woodland, and a blueprint of activities to reach the objectives to maintain and improve the property. It will be written as a guide for decision makers for the next 10+ years.

This plan will include forest stand type maps, property location maps, and soil type maps. Also included will be a 3 year harvest plan map detailing harvest areas and access / road work plans for the next 3 years. All information for maps on this plan has been entered into a GIS data base and will be made available as needed. Additionally, a timber inventory was conducted and will be included. The timber inventory report is a key part of this plan and will be referred to regularly.

Landowner Goals and Objectives

One of the most important parts of any management plan is a clear statement of the landowner's objectives. These could also be thought of as goals, motivations, values, or philosophy. These statements will guide the focus and content of the plan and the development of recommendations.

The Town of C.V. has a well stated set of goals for this property, as laid out in a document created by the Outdoor Center Improvement Committee Proposed Forestry Plan Guidelines, dated February 19, 2006. The following statements are from this committee:

Overview:

The Town of C.V. Outdoor Center Improvement Committee's recommendations are to address management and use of the entire 2100 +/- acres that have been referred to as the 'public lot'. The

Committee recommends that the town adopt the following forestry management guidelines and principles, which will then be used to develop a detailed plan for forestry management of the Public Lot as further described in these Guidelines.

Recreation Zone

The Committee recommends the creation of a Recreation Zone for which a forest management plan will be developed in accordance with the following guidelines. The 'Recreation Zone' is identified on the attached maps and generally encompasses the existing core trail network.

Guidelines for forestry management plan:

- *All forestry management decisions in the recreation zone must benefit and not detract from the recreational activities that are primary for this zone. These activities include: mountain biking, walking or hiking, Nordic skiing, snowshoeing.*
- *The following criteria are to be the goals of the forest management plan for the recreation zone, in the following order of priority:*
 - 1. Recreational Use*
 - 2. Aesthetics*
 - 3. Fish and Wildlife*
 - 4. Water Quality*
 - 5. Protection of Species*
 - 6. Historic Value*
- *Special care will be taken to minimize cutting within a 150-foot corridor of existing trails. This corridor is defined as 75 feet on either side of the centerline of the trail.*

Remaining Public Lot

The land outside the above named recreation zone is the remaining acreage within the town public lot.

The following criteria are to be the goals of the forest management plan for this zone, in the following order of priority:

- 1. Aesthetics*
- 2. Recreational Use*
- 3. Fish and Wildlife*
- 4. Water Quality*
- 5. Protection of Species*
- 6. Historic Value*

Additional considerations in guiding the forestry management plan for the Remaining Public Lot includes:

- *Forestry management in this zone is to be what is known as a 'sustainable or renewable cut'. The term sustainable cut, in these Guidelines, means that the amount of annual wood volume removed from the Remaining Public Lot is not to exceed the annual amount of wood volume gain from natural growth in the*

Remaining Public Lot. The annual growth in wood volume for the Remaining Public Lot is estimated to be 2 to 3% of the total wood volume on such acreage.

- *Special care will be taken as to minimize the cutting within a 150-foot corridor of existing trails. This corridor is defined as 75 feet on either side of the centerline of the trails.*
- *The forestry management plan will provide that any cutting of trees will be over a minimum of a 3-4 year period to a maximum of a 5-6 year period within a 15-year cycle.*

In summary, the town has taken the proactive step to form a guiding committee to make sure forest management on the public lot is carefully and thoughtfully undertaken. These statements from the Town Forestry Committee reveal that aesthetics and recreation are top priorities for future management. The prescriptions and recommendations section of this plan will focus on meeting the town goals as spelled out in these statements.

General Conditions of the Woodlot

General Woodland Description & History

The Town of C.V. public lot has a rich history with long standing public use. The lot is actually 2 parcels combined to form 1 ownership, these parcels can be seen on the tax maps as separate. A brief history of how the town came to own this lot is as follows: 1971: The voters of Jerusalem Township voted to incorporate as the Town of C.V. At this time the eastern lot (approximately 900+/- ac) became part of the town ownership. The voters of Crockertown and Wyman voted not to join the incorporation. 1975: C.V. annexed Crockertown which was then Sugarloaf Township. This created a town that remains the largest in area of any organized town in Maine. At this time the western half of the lot became part of the town of C.V. The lot itself at this time was owned by the State of Maine. 2000: The town purchased the former Crockertown public lot containing 1243 acres for \$424,000 paid to the State of Maine. This land contained the Touring Center and had been leased from the Bureau of Public Lands.

This public lot is very representative of almost all the major forest cover types and land features found in the northern Franklin County region of Maine. The lower sections, in the northern part of the ownership, contain mixed wood cover types and some pure cedar bogs. Going south and up in elevation, the forest transitions into northern hardwood cover. Finally, near the southern edge of the property, approaching the highest elevation, there are softwood stands of pure spruce mixed with some fir. Much of the ownership has been harvested in the past, some as recently as 2 or 3 years, while other areas show stumps that may be 40+ years old. See the Individual Stand Descriptions section of this plan for detailed information covering all 24 major forest types found on the public lot.

Access

Access to the property ranges from excellent to poor. The main access to the property is gained over state Rt. 27, then taking the Touring Center Rd. Access by a second gravel road on to Rt. 27

also exists. The ownership extends right up to Rt. 27 at both road locations, affording legal access to the property. For timber harvesting purposes, using the Touring Center Rd. has been preferred due to a safer entrance on to the highway for logging trucks. There is approximately 1 mile of existing gravel roads on the property that can handle heavy trucking. These roads extend almost 2/3 of the length of the lot and allow for harvesting access up to 2500-3000ft away from them.

The far southern and western sections of the property are lacking adequate accessibility. Road construction will need to occur in order for timber harvesting in these areas. Refer to the Locations Map as well the Three Year Plan Map depicting road work plans.

In the event of timber harvesting in the southwest and southeast corners of the property, the best course of action would be crossing abutting property owners.

To access the “back bowl” in the southeasterly corner of the property, use of the Highland Rd. is advised. This road crosses private property and the Town of C.V. has no right of way. However, it is assumed that the abutters would be willing to allow the town access. In this scenario there will more than likely be fees involved; however it would still be the lesser expensive option compared to road construction through steep and mountainous terrain found on this portion of the town’s property. Currently a homeowners’ association on the Highland Rd. and the Penobscot Nation are the landowners that would be crossed. The last time harvesting occurred in this portion of the town’s property, there is evidence to suggest that this wood was skidded and hauled using the same adjacent landowner access.

To get to the southwesterly corner, crossing Sugarloaf property would afford good access. Sugarloaf has several log landings currently in close proximity to the public lot’s westerly line. There is evidence to suggest that the last time timber harvesting took place here, it was skidded to Sugarloaf property, hauled down a winter road, and finally out the Sugarloaf Access Rd. It is assumed given the relationship the town and Sugarloaf have that this would also be a viable option for future timber harvesting activity.

Recreational access on the public lot is excellent, given the long tenure of the Touring Center; many miles of improved trails exist on the property. These trails include designated cross country ski trails, snowshoe trails, mountain bike trails, and a hiking trail to the top of Burnt Mtn. See the attached maps for locations of these trails.

Boundary Lines

Boundary lines on this property are in good to poor shape. The author had little to no trouble finding property lines and corner posts. However, the condition varies considerably. According to estimates there are over twenty individual corners on the boundary lines of this property.

The eastern property boundary lines are in excellent condition. It appears that the abutting owner brushed, blazed, and painted the southerly half of the easterly line as little as 3-4 years ago. This section is easily seen as blue painted blazes. Wooden corner posts were also found in the most southeasterly corner as well as the next corner heading north. These posts are both fallen to the ground with age, but are still clearly identifiable with blue paint and old flagging on them. The boundary line exists in this condition approximately half way along the southern boundary as well. There appears to be a 3-way corner about half way along this southerly line: the public lot to the north, Sugarloaf ownership to the west, and the Penobscot Nation to the east. Boundaries shared

with the Penobscot Nation seem to be in the best shape. Continuing in a clockwise fashion from the aforementioned 3-way corner, the next boundary is between Sugarloaf and the public lot. These lines appear to be in marginal shape. There are old blazes with very old yellow and orange paint, as well as some faded flagging. With that said, the author could easily follow the line. Corners along the entire easterly boundary have been established by a surveyor fairly recently, although they are not that easy to find. There are iron pins (5/8") found along this line at the corners with a Professional Licensed Surveyor (PLS) # 2237 cap. These conditions exist along this line until arrival at the corner directly behind, and within sight, of what is now Hugs Restaurant. This corner is found as an iron pin with a metal tag showing PLS #1160. The northerly line generally parallels Rt. 27 but zigzags behind several houses along its entirety. This line is very hard to follow, and corners are not always located near houses. More line establishment work will need to be done here. The very northeasterly corner of the lot was not found by this author, although much searching was done for witness of a corner post, the closest evidence was approximately 100 yards south from Rt. 27 as the blue blazed line between the Penobscot's and the public lot.

Of note concerning boundaries on the public lot are the existence of two interior lines noted during field work. One is the line that used to form the boundary between the original public lot and the lot that was purchased from the State of Maine in 2000; again these can be seen on the town tax map as separate lines. This line currently serves no purpose, as the lots are now 1 ownership.

The other interior line is seen approximately 500 ft. to the east of the westerly line: most clearly seen in the southwesterly corner. This line was erroneously established as the property line between the public lot and Sugarloaf. The surveyor pins marked PLS#2237 seen along this westerly line mark the correct location. This was resolved between the landowners about 10 years ago.

Within the next 5 years, all the boundaries of the public lot should be re-brushed, re-blazed, and re-painted. This could be done by the town or contracted out. Durable corners should be set or maintained. These would be steel rebar, pipes, rock piles, or cedar/pressure treated posts. This is a very important part of timber security to prevent timber trespass both on and against. Given the several mile length of the boundary, it is recommended that the abutting landowners be contacted about cost sharing any line renewal. Boundary line renewal costs generally range around \$750/mile.

Terrain / Hydrology

The terrain of the public lot can generally be described as highly variable with flat areas, areas of poorly drained soils, and also very steep sections. The northern part of the lot is generally gentle slopes to almost flat; here you will find some poorly drained soils and wetland areas. Heading south on the property will quickly bring you up in elevation to the higher terrain to better drained upland sites. Near the south line of the property the terrain is downright mountainous. The lowest elevations on the property are seen along Rt. 27 at approximately 1200 ft. The highest point on the property is again on the southerly line peaking in elevation at 2360ft according to USGS contour lines (a total vertical gain of 1160 feet!). Slopes on this lot range from 0-50%, increasing from north to south. The property generally has a northerly aspect, but in the southern portion there are several areas of westerly, easterly, and southerly aspect. Refer to the Locations Map shown on A USGS topographical map for aid in this discussion.

Hydrology on the public lot is variable and diverse. Several perennial streams exist on the property. The largest of which is found in the South east corner of the lot, this stream is named Redington Pond Outlet, although this section is above the actual Redington Pond, which is approximately ½

mile to the east of the property. Redington Pond Outlet flows through what the author terms the back bowl of the property. There were at least two other sizeable perennial streams flowing into Redington Pond Outlet in this back bowl. A second stream of notable size is seen along the westerly side of the property, flowing directly off Burnt Mtn., this stream eventually joins Bracket Brook flowing out of Bracket Basin off Sugarloaf Mtn. There are numerous other seasonal streams that flow throughout the property. Also notable is the pond situated directly adjacent to the Outdoor Center itself. This pond is approximately 12 acres in size and provides a scenic backdrop for visitors to the Outdoor Center Lodge. This pond is part of a series of slow water flowages that run east from the Outdoor Center Pond towards the east boundary line, the flow then runs parallel to the property line before running under Rt. 27 and directly in to the Carrabassett River. All water flowing off the public eventually enters the Carrabassett River, which is just across Rt. 27. Forest management activities on the public lot will have impact on the Carrabassett River and must be done with this in mind. There are several other smaller seasonal and perennial streams found throughout the property that all combine to form an extensive riparian network.

Forest Soils

Soil features are a vital component in determining the quality of the site. Soil productivity is dependent on drainage characteristics, soil depth and development. The National Resource Conservation Service (NRCS) has defined particular soil characteristics that comprise specific Soils Series; these soils series of an area are mapped depending on tree species composition, topography, surface stoniness, aspect, drainage, texture, etc.

There are 13 defined soil series found on the public lot, refer to the accompanying soils map for locations of these soils.

Site index (SI) is a term used in forestry to describe the potential for forest trees to grow at a particular location or "site". Site index is used to measure the productivity of the site and the management options for that site and reports the height of dominant and co-dominant trees in a stand at a base age such as 25, 50 and 100 years. For example, a white pine with an age of 50 years and a height of 70 feet will have a site index of 70. Site index is species specific. Site indexes in the following soils descriptions will describe heights at year 50. Site index will be referred to in the following tables.

BrB—Brayton fine sandy loam, 0 to 8 percent slopes, very stony

Brayton and similar soils: 85 %

Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Poorly Drained	Balsam Fir	68	Slight	Slight

BTB—Brayton-Peacham-Markey association, gently sloping, very stony

Brayton and similar soils: 35%

Peacham and similar soils: 25 %

Markey and similar soils: 20%

	Drainage Class	Tree w/ max SI	Max Index	Site	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Brayton	Poor	Balsam Fir	68		Slight	Slight
Peacham	Very Poor	Red Maple	60		Slight	Slight
Markey	Very Poor	Quaking Aspen	45		Slight	Slight

BW—Bucksport and Markey soils

Bucksport and similar soils: 50 %

Markey and similar soils: 30 %

	Drainage Class	Tree w/ max SI	Max Index	Site	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Bucksport	Very Poor	N/A	N/A		Slight	Slight
Markey	Very Poor	Quaking Aspen	45		Slight	Slight

CG—Charles-Medomak-Cornish association

Charles and similar soils: 30 %

Medomak and similar soils: 25 %

Cornish and similar soils: 20 %

	Drainage Class	Tree w/ max SI	Max Index	Site	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Charles	Poor	White Pine	60		Slight	Slight

Medomak	Very Poor	White Pine	55	Slight	Slight
Cornish	Somewhat Poor	White Pine	65	Slight	Slight

CPC—Colonel-Dixfield association, strongly sloping, very stony

Colonel and similar soils: 40 %

Dixfield and similar soils: 35 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Colonel	Somewhat Poor	White Pine / Red Maple	65	Slight	Severe
Dixfield	Moderately well	White Pine	70	Slight	Severe

CsB—Colton gravelly fine sandy loam, 0 to 8 percent slopes

Colton and similar soils: 85 %

Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Excessively	White Pine	62	Slight	Slight

DMC—Dixfield-Marlow association, strongly sloping, very stony

Dixfield and similar soils: 45 %

Marlow and similar soils: 35 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Marlow	Well	White Ash	67	Slight	Moderate
Dixfield	Moderately well	White Pine	70	Slight	Severe

HeC—Hermon fine sandy loam, 3 to 15 percent slopes, very stony

Hermon and similar soils: 85 %

Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Somewhat Excessively	White /Red Pine	59	Slight	Moderate

LNC—Lyman-Tunbridge-Abram complex, rolling, very stony

Lyman and similar soils: 30 %

Tunbridge and similar soils: 25 %

Abram and similar soils: 20 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Lyman	Somewhat Excessively	Balsam Fir	60	Slight	Severe
Tunbridge	Well	White Ash	65	Slight	Moderate
Abram	Excessively	White Pine	48	Slight	Moderate

LNE—Lyman-Tunbridge-Abram complex, steep, very stony

Lyman and similar soils: 35 %

Tunbridge and similar soils: 25 %

Abram and similar soils: 20 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Lyman	Somewhat Excessively	Balsam Fir	60	Slight	Severe
Tunbridge	Well	White Ash	65	Slight	Moderate
Abram	Excessively	White Pine	48	Slight	Moderate

MaB—Madawaska fine sandy loam, 0 to 8 percent slopes

Madawaska and similar soils: 85 %

Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Moderately well	White Pine	68	Slight	Moderate

MGD—Marlow-Dixfield association, moderately steep, very stony

Marlow and similar soils: 45 %

Dixfield and similar soils: 35 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Marlow	Well	White Ash	67	Slight	Moderate
Dixfield	Moderately well	White Pine	70	Slight	Severe

MNC—Monadnock-Berkshire complex, rolling, very stony

Monadnock and similar soils: 40 %

Berkshire and similar soils: 30 %

	Drainage Class	Tree w/ max SI	Max Site Index	Hazard of off-road or off-trail erosion	Hazard of erosion on roads and trails
Monadnock	Well	White Pine	63	Slight	Moderate
Berkshire	Well	White Pine	72	Slight	Moderate

Legal Obligations

Town of C.V. Planning Board Approval for all Timber Harvesting

All timber harvesting in C.V., regardless of zoning, has to be approved by the town planning board.

This is to be done by submitting an application to the town prior to any timber harvesting taking place. There is currently a \$20 fee associated with this application. This application can be attained on the Towns web site.

Shoreland Zoning and Timber Harvesting

The purposes of the town ordinance is to “further the maintenance of safe and healthful conditions; to prevent and control water pollution; to protect fish spawning grounds, aquatic life, bird and other wildlife habitat; to protect buildings and lands from flooding and accelerated erosion; to protect archaeological and historic resources; to protect freshwater wetlands; to control building sites, placement of structures and land uses; to conserve shore cover, and visual as well as actual points of access to inland waters; to conserve natural beauty and open space; and to anticipate and respond to the impacts of development in shoreland areas”.

The Town of C.V. has elected to adopt statewide standards for timber harvesting and related activities in shoreland areas. These standards go into effect as of January 1st 2013. For complete information regarding Statewide Standards for Timber Harvesting in Shoreland Areas, please visit the Maine Forest Service web site at; <http://www.maine.gov/doc/mfs/fpm/swstds/sws.html> . According to the C.V. Shoreland Zoning Map (included in the map section) these rules will effect timber harvesting near the Outdoor Center pond , as well as the USGS mapped brook in the southwest corner, that eventually joins the brook flowing out of Brackett Basin on Sugarloaf.

Maine Forest Practices Act

The state Forest Practices Act is administered and enforced by Maine Forest Service. It has three primary components:

- Landowners must file a **Forest Operations Notification**, along with a location map, with the Maine Forest Service before beginning any timber harvesting activity. Forms and maps are available in most town offices and from MFS. The notification is not a permit and carries no fee. Notifications must be posted at the operation's principal log landing until the harvest is complete. Landowners who submit a Notification are required to complete and return a Landowner Report of timber harvesting at the end of each year in which harvesting takes place.
- Landowners who create clearcuts must adhere to standards for separation zones between clearcuts, and must have a Licensed Forester prepare harvest plans for clearcuts greater than 20 acres. Additional regulations concern the definition, size, arrangement, and management of clearcuts.
- Landowners must ensure that clearcuts have adequate regeneration of tree species within 5 years after harvest.

Other laws affecting timber harvesting in organized towns in Maine include; The Protection and Improvement of Waters Law, The Natural Resources Protection Act, and a host of other laws address different aspects of owning and managing forestland in Maine - worker's compensation law, private liability for public recreation, all-terrain vehicle use, wildlife conservation laws, and others.

Property Tax Status

Given the fact that this property is owned by the town, it is exempt from property taxes and therefore not enrolled in Maine's Tree Growth Tax program.

Non-Timber Resource Planning Considerations

Threatened and Endangered Species

A check with the Maine Office of GIS database and Maine Natural Areas Program (MNAP) has revealed **the presence of Inland Wading bird and Waterfowl Habitat**, this in the area immediately around the Outdoor Center Pond. Recommendations from The Maine Dept. Inland of Fisheries and Wildlife (MDIFW) for this habitat feature include the following; “it is important to maintain a 250' undisturbed (permanent clearings, roads, etc.) buffer. Within this buffer, uneven-aged forest management should be used if the landowner is going to harvest any trees. Volume removal should not exceed 30% in a 15-year period, and a well-distributed overstory should be maintained. No trees should be cut within 75 feet of the shore.” It is important to note that these are **only recommendations, not regulations**. This area is already governed by the Town's shoreland zoning standards but these recommendations are more stringent as they include the no cut buffer. Given that the Town's objective does include wildlife concerns, it is recommended that the Maine IF&W guidelines be followed for any harvesting that occurs around the pond.

A check with MNAP also revealed that the entire property contains potential Roaring Brook Mayfly (Endangered) and Spring Salamander (Special Concern) habitat within all riparian zones. General guidelines from MDIFW recommend maintaining a riparian buffer of 250' on both sides, in addition to implementing Maine BMP's. The 25', both sides, nearest the water shall be a no cut zone and the remaining 25-250' shall be maintained with no less than 60-70% forest canopy cover using single-tree or small group selection cuts. Prior to any harvest activity, a field visit should be arranged with an IFW Regional Biologist to establish site specific management recommendations and guidelines. A site visit can either confirm or deny the presence of this habitat.

A check with MNAP also revealed potential wild brook trout and atlantic salmon habitat within the Carrabassett River, Brackett Brook, and Redington Pond Stream and their tributaries. Maine BMP's will be implemented within these riparian zones to maintain critical habitat.

Fish and Wildlife Habitat

The diversity of the public lot makes for excellent wildlife potential. A variety of wildlife utilizes the parcel for food, cover, breeding, and nesting. By managing with what is called the “coarse filter approach”, it can be assumed that the wildlife of the area is being provided for. The “coarse filter approach” is an ecosystem management term used to describe the theory that assumes; “a residual representative array of ecosystems will contain the vast majority of species in a region.” **On the public lot, this can be interpreted to mean that to manage for wildlife, no one particular habitat type should be so altered by forest management that it is take from the landscape.**

The typical game species such as whitetail deer, moose, bear, bobcats, game birds, turkeys, fox, coyote, and rabbits can be found, as well as non-game species such as porcupine, squirrel, and song birds. Many reptiles, amphibians, and rodents inhabit these forest ecosystems as well.

The following sections from MFS information sheets can be used to guide decisions on the public lot:

“Wildlife populations have four requirements: cover, food, water, and space. Each must be present in an animal's habitat. The first three often are susceptible to manipulation, but the last one may be

more difficult to alter. The amount and quality of these elements determine the carrying capacity of your woodland for a species.

Cover

Cover is the protective element within an animal's habitat. Cover may be a hedgerow for a rabbit or a spruce tree for a golden-crowned kinglet. Whatever form cover takes, it contributes to one or more of the necessary functions in the lives of animals: breeding, nesting, hiding, loafing, sleeping, feeding, and traveling. Wildlife diversity in an area can be increased through manipulation of the vegetative cover. An 80-acre northern hardwood stand, for example, could be expected to hold about 15 species of mammals and 60-80 species of birds, largely because of the diversity existing naturally within the stand. If that same woodland were modified by timber harvesting, plantings, or habitat improvement work so that various ½ to 2 acre vegetative patches were established (such as an opening in a conifer plantation), predictable changes would take place in the animal species present. Here the mixture of habitat types would increase the animal diversity of the area. Mixtures, or mosaics, of vegetation types and the edges where they meet have greater diversity than any single vegetation type. **Maintaining edges and open spaces is often an important management practice.**

Space

The term carrying capacity refers to the concept of space and is often used to describe the number of animals an area of land can support over some period of time. This is not a constant; the carrying capacity of woodland fluctuates as the condition of the woodland changes.

Food

The manipulation of food resources is perhaps the most important management goal for a woodland owner interested in wildlife. Food plants of high value to many wildlife species can be favored. Careful selection of food plants for the cover qualities can increase benefits derived from habitat manipulation. Also, selection can be made for a diversity of food types, for plants that mature early or late, and for those that retain their fruits well into winter. Creating a good relationship between spacing of food, cover, and watering sites is a valuable overall management goal. A tree growing in the absence of competition from other trees often produces a large, widespread crown with many branches. Such trees are referred to as "wolf trees". These usually produce poor quality timber, but they often produce more fruit or nuts and provide better nest sites than a merchantable timber tree of the same species. Recognizing which wolf trees are good food producers or nest sites and maintaining them in a woodland or hedgerow will greatly benefit wildlife."

Water Quality, Wetlands, Riparian Areas

As previously mentioned in this plan, there are many water features of varying size on this property. Please reference the Terrain/ Hydrology section for a more complete description of features and locations.

Activities in the woods that involve roads, log landings, and yarding or recreational trails, can sometimes contribute to rutting, soil movement and pollution of the watershed. Improperly

conducted logging operations can also cause damage. **Use of appropriate Best Management Practices (BMPs)** greatly reduces this risk. For more information, see the booklet entitled “Best Management Practices for Water Quality,” available from the MFS.

Both forested wetlands and other kinds such as open marshes, bogs or beaver ponds provide habitat, flood control and scenic beauty. For more information, see the book Natural Landscapes of Maine, available from the Maine Natural Areas Program, 207-287-8044 or <http://www.maine.gov/doc/nrimc/mnap>; or contact your local MFS District Forester.

Harvesting recommendations around water resources on the public lot include; Prior to harvesting a site visit by IFW biologists to confirm or deny the presence of Roaring Brook Mayfly and Spring Salamander habitat. If these are found following IFW guidelines is advised, these guidelines will be more stringent than any others. On streams not found to have these habitats, following state wide standards will be the practice. Of the three options under the statewide standards, option one, which allows a 40% volume removal every ten years is recommended. This aligns better with the town goal of aesthetics. Around the pond IF&W recommendations for Inland Wading bird and Waterfowl Habitat should be followed. All other perennial streams and wetlands should be managed using a 75ft buffer from the normal high water mark, where only single tree selection harvesting takes place. Intermittent / annual streams should be managed to provide shade and maintain stream channel integrity.

Historical, Cultural, Archeological Sites

Stone walls and old cellar holes or foundations are often found in woodlands, as remnants of previous settlement and agriculture. High and dry areas near water bodies may have been pre-historic or Native American dwelling sites. Most properly conducted forest management activities will not harm these resources. Construction of roads, trails or landings, however, could potentially disturb significant sites.

Contact with the Maine Historic Preservation Commission has revealed that there is no known historic archaeology, historic buildings or structures, and no known prehistoric (Native American) archaeology.

Recreational Opportunities

Recreation is a center piece and core aspect of this ownership. There currently exists a Nordic ski center, skating rink, mountain bike trails, hiking trails and snowshoe trails. These all combine to form many miles of well-marked, well maintained trails. Sugarloaf Ski Mountain is directly adjacent, to the west of the public lot. As seen in the Landowner Objectives section, the town has even taken the steps to apply different zoning recommendations to certain areas. **Recreation will be one of the main points of concern that drive forest management decisions on this property.** Decisions that will be made based on recreation include where to harvest, when to harvest, how much to harvest, and what kind of machinery to use.

- Where to harvest is important as different areas of the property are affected at different times of the year, for example, cutting during winter months will significantly alter Nordic skiing on the property and may not be desirable.
- When to cut may be influenced due to some roads and trails being necessary at certain times of the year for events such as bike races.

- Timing may also be affected due to the fact that the town would like to expand mountain bike trails and would like to avoid areas that will be harvested in the immediate future.
- How much to harvest will be effected in terms of both acreage and stand volume. Acreage will need to be selected carefully to insure that logging contractors are capable of starting and finishing within acceptable time frames. Volume removals will need to fall within acceptable limits to preserve aesthetics for recreationalists.

Aesthetic Quality

Aesthetics has been listed as one of the most important aspects of the ownership of the public lot. Users of the trail systems benefit from the scenic surroundings; the sloping terrain, location, healthy trees, abundant wildlife, water bodies, and trail network make this property a truly beautiful landscape. Aesthetic quality is a product of diversity, in terms of multiple landscape elements (landform, vegetation, water, structures, and animals), intact ecosystems and evidence of good stewardship practices. The town forestry committee guidelines have spelled out, as seen in the Landowner Objectives section, quite specific steps to insure trail users benefit from a positive aesthetic experience.

Logging should be done in accordance with the latest industry standards for residual stand damage. Cut to Length equipment can achieve residual stand damage in the 10-20% range. With that said, most logging equipment used by skilled operators who are properly supervised, can achieve relatively low levels of residual damage. This damage includes root and soil damage, bole or trunk damage, and crown damage. Slash should be left low to the ground. Cultural features, such as stonewalls, should be undamaged. The visual impact of forestry activities can communicate a lot about stewardship. Efforts to maintain an aesthetically pleasing woodland appearance usually pay off in a greater acceptance of silvicultural practices.

Harvesting recommendations to preserve and enhance aesthetics include; prescriptions designed to maintain well stocked stands, certain large attractive trees can be left along trails and roads, rotation ages long enough to maintain persistent tree canopy, 150ft trail corridors (75ft both sides) where single tree selection harvesting is used to only cut those trees that are at risk due to disease, age, damage or pose safety hazards, minimal crossing of recreational trails with logging equipment, and a minimal number of landings that are kept as small as possible, removal / cutting of leaners, spring poles, and other heavily damaged trees. Landings can be shielded from view where possible; this can be done using topography and vegetation as buffers. **Steps can / should be taken post-harvest to insure aesthetic quality as well.** These include; landing close out where slash and other debris are pushed off in to natural depressions, down to mineral soil, then hayed and seeded (these can be great wildlife openings). Crews can be hired to go back after logging and lop slash within 50 feet of trails and roads down to less than 2 feet of the ground, and cut and drop other unsightly trees missed by logging crews.

Acreage of Land Use / Cover Types

Productive Forest Land

Based on stand type mapping there is estimated to **2100 acres of productive forest land.**

Reserved Forest Land

For this planning period the Town Forestry Committee has identified the 60 acre SF4B stand at the highest elevations of the property as a reserved forest land area that there will be no harvesting in. This can be reassessed after this plan period of ten years.

Non-Commercial / Unproductive Forest Land

At this time there are no identified non-commercial / unproductive areas.

Non-Forested / Developed Area

There is estimated to be about **26 acres of non-forested / developed area**. This includes about 8 acres around the Outdoor Center Lodge, parking lot, and ice rink. There is approximately 18 acres of gravel roads on the property.

Water Bodies

The pond located adjacent to the Outdoor Center is approximately 11 acres. This is the only water body on the property.

Wet Lands

As seen on the forest stand and cover type maps there is approximately **18 acres of wetlands identified on this property.**

Agricultural Land

At this time there is no agricultural land on the public lot.

Individual Stand Descriptions

Field Methods Statement

Boundaries of the forest property were determined from GIS boundary files supplied by the Town and later corrected by AFM using survey grade GPS. The forest was stratified into timber types by AFM using 2011 aerial photography available from the USDA. 122 cruise points were systematically placed across the ownership identified digitally by GPS coordinate. Field crews used GPS to locate each point and to verify the stand type of the cruise point location. Fieldwork was conducted during October, 2012 using 20 BAF variable radius cruise points. Each tallied tree on the cruise point was recorded in eight foot product section to its merchantable top. Volume for each tree was calculated as conical sections using Smalian's formula and form class 78. Statistical accuracy was 9.9% at the 90% confidence interval.

The individual stand descriptions will be accompanied by three sets of charts and tables found in the inventory report;

- One set of tables will combine volume by species and product, on per /acre and total stand basis. These tables will describe cover type, stand area, and stand volumes. These will be included in the inventory report.
- One set of tables and graphs will combine trees / acre by diameter class and trees / acre by species. These will describe stand composition and structure.

- One is a table that shows the A-line, B-line, and C-line percent stocking of each stand.

Growth rates have also been determined in the inventory report Harvest Analysis section. The following charts and graphs represent inventory sampling information; stand typing may conflict with displayed charts and graphs. This is due to stand typing not being based on inventory data, rather what individuals doing the cruise observed as the main canopy type, if a sample point fell where no trees of the main canopy were typed, only the sample trees are displayed below.

Please see **timber inventory report *Summary of Timber Types* on page 1** for descriptions of the following stand typing codes.

IHS3D – 5 Acres

Stand Composition and Structure:

This stand type is primarily made up of paper birch and spruce in the overstory as well as the understory. Regeneration is unevenly distributed spruce/ fir and intolerant hardwood.

Stand age / History:

The diameter distribution of this stand type is consistent with uneven age stands. Stand history includes little if any harvesting with in the past 10-15 years based on aerial photography, harvesting evidence does exist showing harvest 30-50 years ago that has influenced stand development and has most likely contributed to the intolerant hardwood component.

Stand Health:

Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern when managing mature softwood. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is understocked as it only plots at 73% of the C- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed to capture mortality in paper birch and promote growth of spruce growing stock and regeneration.

LC3A – 36 acres

Stand Composition and Structure:

This stand type is primarily made up of white cedar, yellow birch, and spruce in the overstory as well as the understory. Regeneration is unevenly distributed spruce/ fir.

Stand age / History:

The diameter distribution of this stand type is consistent with irregular un-even age stands. Stand history shows little evidence of past harvesting in this stand type.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern when managing a mature softwood stand in wet soils. Epicormic sprouting has occurred on some yellow birch stems.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is good as seen in the tally of 14% cull trees. This stand is fully stocked as it plots at 121% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed to increase stocking of yellow birch and spruce, while capturing mortality and promoting favorable regeneration, and retaining some cedar for wildlife purposes.

LC3C – 99 acres

Stand Composition and Structure:

This stand type is primarily made up of white cedar and spruce in the overstory as well as yellow birch in the understory. Regeneration is unevenly distributed spruce/ fir some cedar and tolerant hardwood.

Stand age / History:

This stand type is consistent with irregular un-even age stands. Stand history shows partial harvesting approximately 15-20 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern a mature softwood stand in wet soils. Epicormic sprouting has occurred on some yellow birch stems.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is under stocked as it plots at 47% of the C- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed to increase stocking of yellow birch and spruce, while capturing mortality and promoting favorable regeneration, and retaining some cedar for wildlife purposes.

PE3D- 16 acres

Stand Composition and Structure:

This stand type is primarily made up of white pine, balsam fir and cedar in the over story. Regeneration is unevenly distributed spruce/ fir some white pine and tolerant hardwood. The charts / graphs show only balsam fir as the point sample picked up no pine, cruisers determined cover type as pine dominated.

Stand age / History:

Field observation determined an uneven age stand present. Stand history shows partial harvesting approximately 15-20 years ago.

Stand Health:

Balsam fir has high vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern when managing a pure mature softwood stand. Stand observation indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Given the presence of white pine and balsam fir, white pine blister rust and spruce bud worm are pests and pathogens that can affect this stand health.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is under stocked as it plots at 22% of the C- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed to increase stocking of commercial species while capturing mortality and promoting favorable regeneration. White pine should be favored in this stand.

SF3A- 33 acres

Stand Composition and Structure:

This stand type is primarily made up of red spruce and balsam fir overstory as well as spruce fir and red maple in the understory. Regeneration is unevenly, densely distributed spruce/ fir.

Stand age / History:

This stand type is consistent with even age stands. Stand history shows no harvesting in the past 15-20 years. Stand establishment is thought to be the forest fire of 1905.

Stand Health:

Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern when managing a pure mature softwood stand.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is over stocked as it plots at 127% of the A- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce and fir. As regeneration is scarce first harvest entries should focus on regeneration establishment.

SF3B- 68 acres

Stand Composition and Structure:

This stand type is primarily made up of red spruce, balsam fir, and some cedar in the overstory as well as spruce/ fir sugar maple, yellow birch, paper birch, and aspen in the understory. Regeneration is unevenly distributed spruce/ fir, less than 1' tall.

Stand age / History:

The diameter distribution of this stand type is consistent with even age stands. Small parts of these stands have been harvested in the past 3-5 years. Stand establishment is thought to be the forest fire of 1905.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is fully stocked as it plots at 114% of the B- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce and fir. First entries should focus on removing intolerant hardwoods and promoting spruce and fir regeneration.

SF4B – 60 acres

Stand Composition and Structure:

This stand type is primarily made up of red spruce, balsam fir, and some paper birch in the overstory as well as spruce/ fir and paper birch in the understory. Regeneration is evenly distributed spruce/ fir.

Stand age / History:

The diameter distribution of this stand type is consistent with un-even age stands. There is no evidence of recent harvesting. Stand establishment is thought to be the forest fire of 1905.

Stand Health:

Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is the dominant concern when managing a pure mature softwood stand. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of little to no cull trees. This stand is fully stocked as it plots at 150% of the B- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce and fir. First entries should focus on removing intolerant hardwoods and promoting spruce and fir regeneration.

STH3B – 268 acres

Stand Composition and Structure:

This stand type is primarily made up of balsam fir, white cedar, red spruce, aspen, paper birch, and sugar maple. The understory is composed of balsam fir, white cedar, red maple, white ash, yellow and white birch as well as small amounts of other hardwood species. Regeneration is dense, evenly distributed spruce/ fir, less than 1' tall.

Stand age / History:

The diameter distribution of this stand type is consistent with even aged stratified mixtures. There is little to no evidence of recent harvesting, evidence of harvesting 25-35 years ago is seen in old stumps.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Stand observation also indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Given the presence of white pine white pine blister rust is a pathogen that can affect this stand's health. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is good as seen in the tally of few cull trees. This stand is fully stocked as it plots at 105% of the B- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce, fir, and white pine. First entries should focus on removing intolerant hardwoods and promoting pine, spruce and fir regeneration.

STH3C- 9 acres

Stand Composition and Structure:

This stand type is primarily made up of spruce / fir red maple and cedar in the overstory. Figure 9 shows only trees that we tallied, cruisers typed this stand. The understory is composed of balsam fir, red maple, small amounts of other hardwood species. Regeneration is unevenly distributed spruce/ fir some intolerant and tolerant hardwood.

Stand age / History:

The diameter distribution of this stand type is consistent with irregular un-even age stands. Aerial photos show probable harvesting during the mid-1990-s.

Stand Health:

Balsam fir has high vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is under stocked as it plots at 89% of the C- line

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce and fir and white pine. First entries should focus on removing intolerant hardwoods and promoting pine, spruce and fir regeneration.

STH4B – 19 acres

Stand Composition and Structure:

This stand type is primarily made up of balsam fir, white cedar, red spruce, aspen, paper birch, and sugar maple. The understory is composed of balsam fir, white cedar, red maple, white ash, yellow and white birch as well as small amounts of other hardwood species. Regeneration is dense, evenly distributed spruce/ fir, less than 1' tall.

Stand age / History:

The diameter distribution of this stand type is consistent with even aged stratified mixtures. There is little to no evidence of recent harvesting, evidence of harvesting 25-35 years ago is seen in old stumps.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Stand observation also indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Given the presence of white pine white pine blister rust is a pathogen that can affect this stand's health. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is good as seen in the tally of few cull trees. This stand is fully stocked as it plots at 105% of the B- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce, fir, and white pine. First entries should focus on removing intolerant hardwoods and promoting pine, spruce and fir regeneration.

STH4C- 8 acres

Stand Composition and Structure:

This stand type is primarily made up of red spruce and scattered white pine, sugar maple and yellow birch in the overstory. The understory is composed of white cedar. Regeneration is unevenly distributed spruce/ fir some intolerant and tolerant hardwood, dense *Rubus* spp. regeneration

Stand age / History:

The diameter distribution of this stand type is consistent with balanced un-even age stands. Aerial photos show probable harvesting during the mid-1990-s.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Stand observation also indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Given the presence of white pine, white pine blister rust is a pathogen that can affect this stand's health.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of little to no cull trees. This stand is under stocked as it plots at 89% of the C- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for spruce and white pine. First entries should focus on removing intolerant hardwoods and promoting pine and spruce regeneration.

STH4D- 13 acres

Stand Composition and Structure:

Stand is composed of scattered spruce fir in the overstory and spruce and fir as well as some intolerant hardwood regeneration.

Stand age / History:

This stand is even aged. Stand was heavily harvested three to four years ago.

Stand Health:

Stand was heavily harvested in two or three years ago and is experiencing heavy Windthrow.

Stand Volume / Stocking / Quality:

Stand is generally understocked.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Promote spruce and fir sapling and seedling growth.

TH3A-59 acres

Stand Composition and Structure:

The overstory is primarily made up of yellow birch, sugar maple, hemlock, red spruce, white ash, paper birch, beech, and aspen. The understory is composed of yellow birch, red spruce, and paper birch. Regeneration is unevenly distributed spruce/ fir some intolerant and tolerant hardwood, regeneration is scarce in places thick in others.

Stand age / History:

As seen in the inventory report bar graphs showing tree/acre by diameter class, the diameter distribution of this stand type is consistent with un-even age stands. No recent harvesting is seen in this type, evidence is present of harvesting 30-40 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Red spruce has slight vulnerability to spruce bud worm

outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry. Emerald ash borer needs to be considered here as there are quality ash trees that would be at risk given the potential regional arrival of this pest. Beech bark disease is present in the beech component of this stand type. Hemlock wooly adelgid is a concern given the presence of hemlock and the potential regional arrival of this pest.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of little to no cull trees. This stand is over stocked as it plots at 104% of the A- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for northern hardwood. First entries should focus on removing ash, beech and other short lived species. Quality hardwood stems should be favored and promoted.

TH3B- 57 acres

Stand Composition and Structure:

The overstory is primarily made up of sugar maple, yellow birch, paper birch, and spruce fir. The understory is composed of yellow birch, red spruce, and paper birch. Regeneration is unevenly distributed spruce/ fir some intolerant and tolerant hardwood, regeneration is scarce in places thick in others.

Stand age / History:

The diameter distribution of this stand type is consistent with even age stands. No recent harvesting is seen in this type, evidence is present of harvesting 30-40 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of no cull trees. This stand is over stocked as it plots at 114% of the A- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for northern hardwood and red spruce. Regeneration is sparse in this stand and first entries should focus on establishment of quality regeneration.

TH3C- 257 acres

Stand Composition and Structure:

The overstory is primarily made up of sugar maple, yellow birch, and aspen. The under story is composed of beech, red maple, yellow birch, and sugar maple. The regeneration is composed of a high concentration of *Rubus* spp. With some sugar maple, yellow birch, red maple, beech, and spruce fir.

Stand age / History:

The diameter distribution of this stand is consistent with even age stands. Photos and on the ground recon show probably harvest activity in the mid 1990's.

Stand Health:

Beech bark disease is present in the beech component of this stand type. Balsam fir has high vulnerability to spruce bud worm outbreaks.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of little to no cull trees. This stand is fully stocked as it plots at 109% of the B- line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Stand should be managed for northern hardwood. Eradicating beech from this stand type should also be a priority.

TH4A- 93 acres

Stand Composition and Structure:

The overstory is primarily made up of red spruce, yellow birch, paper birch, and aspen. The understory is composed of spruce fir, red maple, and yellow birch with some weed species such as striped maple and beaked hazelnut present.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. No recent harvesting is seen in this type.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is overstocked as it plots at 107% of the A-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed to promote northern hardwood and red spruce. Initial harvesting should focus on removal of intolerant hardwood.

TH4B- 156 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple and yellow birch. The understory is composed of sugar maple, yellow birch, aspen, and spruce fir with some weed species such as striped maple and beaked hazelnut present.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. Recent harvesting, 3-4 years ago, is seen in some area of this type, evidence shows probable harvesting 30 – 40 years ago in one area of this stand type.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Emerald ash borer is a concern given a small component of white ash and the potential regional arrival of this pest. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is well to over stocked as it plots at 173% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand should be managed for northern hardwood and red spruce. Regeneration establishment should be of particular concern in this stand type.

TH4C- 169 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple, yellow birch, paper birch, and red spruce. The understory is composed of a high concentration of *Rubus* spp. with some sugar maple, yellow birch, and spruce fir.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. Photos and on the ground recon show probably harvest activity in the mid 1990's.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Emerald ash borer is a concern given a small component of white ash and the potential regional arrival of this pest. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is well stocked as it plots at 122% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand should be managed for northern hardwoods. Promotion of quality northern hardwood regeneration is a priority in this stand.

TH4D- 269 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple, beech, yellow birch, scattered aspen. The understory is composed of a high concentration of *Rubus* spp. and beech with some sugar maple, yellow birch, and spruce fir.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. Photos and on the ground recon show probably harvest activity in the mid 1990's, as well as the late 2000's.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Beech bark disease is present in the beech component of this stand type. Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Emerald ash borer is a concern given a small component of white ash and the potential regional arrival of this pest. Hemlock wooly adelgid is a concern given the presence of hemlock and the potential regional arrival of this pest. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is slightly understocked as it plots at 92% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed for northern hardwood, and beech eradication.

THS3A- 57 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple, yellow birch, and hemlock. The understory is composed of sugar maple, yellow birch, and spruce fir with some weed species such as striped maple and beaked hazelnut.

Stand age / History:

As seen in the inventory report bar graphs showing tree/acre by diameter class, the diameter distribution of this stand is consistent with uneven aged stands. Photos and on the ground recon show possible harvest activity 30 – 40 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Balsam fir has high vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Emerald ash borer is a concern given a small component of white ash and the potential regional arrival of this pest.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is understocked as it plots at 64% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed for northern hardwood and red spruce. Quality northern hardwood and spruce regeneration establishment are priorities in this stand.

THS3B- 205 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple, yellow birch, red maple, cedar, and spruce fir with a small element of black cherry. The understory is composed of sugar maple, yellow birch, and spruce fir.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. Photos and on the ground recon show possible harvest activity 30 – 40 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Stand observation also indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Beech bark disease is present in the beech component of this stand type. Balsam fir has high vulnerability to spruce bud worm outbreaks. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Given the presence of white pine white pine blister rust is a pathogen that can affect this stand's health. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is well stocked as it plots at 120% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed for northern hardwood and red spruce. Quality northern hardwood and spruce regeneration establishment and promotion are priorities in this stand.

THS3C- 60 acres

Stand Composition and Structure:

The overstory is primarily composed of red maple, spruce fir, aspen, yellow birch, and white pine. The understory is composed of spruce fir and red maple. Regeneration is spruce fir, intolerant hardwood, tolerant hardwood and white pine.

Stand age / History:

The diameter distribution of this stand is consistent with even aged stands. Photos and on the ground recon show possible harvest activity that has occurred within the past 20 years.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Stand observation also indicated the presence of white pine weevil. This pest currently has a low effect on overall stand health but should be considered when managing for quality white pine. Balsam fir has high vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Given the presence of white pine white pine blister rust is a pathogen that can affect this stand's health. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is slightly under stocked as it plots at 91% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed for yellow birch, red spruce and white pine. Mortality in intolerant hardwood will be a concern here.

THS4B- 28 acres

Stand Composition and Structure:

The overstory is primarily composed of sugar maple and yellow birch. The understory is composed of spruce fir, yellow birch, and sugar maple with some weed species present such as striped maple and beaked hazelnut.

Stand age / History:

As seen in the inventory report bar graphs showing tree/acre by diameter class, the diameter distribution of this stand is consistent with uneven aged stands. Photos and on the ground recon do not show any recent harvest activity.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Beech bark disease is present in the beech component of this stand type. Red spruce has slight vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Hemlock wooly adelgid is a concern given the presence of hemlock and the potential regional arrival of this pest.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is slightly over stocked as it plots at 150% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

This stand type should be managed for northern hardwoods and red spruce. Hemlock should be maintained as a component for wildlife. Harvest entries should focus on residual stem quality improvement and regeneration establishment and promotion.

THS4C- 53 acres

Stand Composition and Structure:

The overstory is primarily composed aspen. The understory is composed of a high concentration of *Rubus* spp. with some fir, sugar maple, and aspen.

Stand age / History:

As seen in the inventory report bar graphs showing tree/acre by diameter class, the diameter distribution of this stand is consistent with uneven aged stands. Photos and on the ground recon show possible harvest activity 30 – 40 years ago.

Stand Health:

Stand observation indicated the presence of ice damage to the crowns on a high percentage of the mature tolerant hardwood stems. Balsam fir has high vulnerability to spruce bud worm outbreaks. Windthrow is also a risk to consider when managing stands with an element of mature softwood. Hemlock wooly adelgid is a concern given the presence of hemlock and the potential regional arrival of this pest. Mature aspen showed some fungal activity in the form of conchs which indicates decline. These stems should be harvested during the next stand entry. Die back was noted on paper birch tops, affected stems should be harvested during next stand entry.

Stand Volume / Stocking / Quality:

See inventory report for stand volumes. Stand quality is high as seen in the tally of few cull trees. This stand is well stocked as it plots at 95% of the B-line.

Growth Rate:

See inventory report Harvest Analysis section.

Long Range Silvicultural Objectives:

Capture mortality in intolerant hardwood while promoting longer lived species such as northern hardwood and red spruce.

Prescriptions and Recommendations

Logging Operations on the public Lot

Timber harvesting generally requires the services of a logging contractor, most landowners are not in a position to cut and haul their own trees to market. Working with a professional logger is the key to success. **Choosing the right logger** will give a landowner a big step in the right direction to meeting goals and objectives for their forestland. Choosing the right logger starts with the logging equipment mix they offer. It has been determined that **no one particular set of logging equipment will fit all potential harvest areas on the public lot**. Cut-to-length (CTL) equipment should be favored where practical, but CTL equipment will have a hard time felling and processing some of the large diameter hardwood stands on the public lot. In the large diameter hardwood stands, mechanized equipment capable of directionally felling the large hardwood may achieve lower residual stand damage and may be preferable, chainsaw and cable skidder crews (hand crews) may also be preferable in the large hardwood stands as they can directionally fell large hardwood. There are many steps to insuring this process is completed correctly. For more information talk with your consulting forester, or visit the Maine Forest Service web site at <http://www.maine.gov/doc/mfs/woodwise/logger.html>.

There are several methods commonly used for landowners to contract and get paid for their timber. **Stumpage contracts** are a timber sale arrangement where a fee is paid to the landowner for the

standing trees, accompanied by the right of the buyer to harvest the trees from the property under agreed conditions. Stumpage sales can be disadvantageous to landowners as they essentially sell the trees when they are still on the stump and landowners have less control over making sure those trees are processed into the highest value product (the term for this is utilization) and sold to the mill that is offering the highest possible price.

An alternative to stumpage contracting is **service contracting**. Service contracting is when a logger is hired to perform logging services such as cut, skid, load, and haul timber. The logger is given specifications for log preparation, mill destinations, harvesting prescription, job close out requirements, and other details by the landowner. This is usually done through the landowner's forester. The landowner never loses ownership of the timber, as opposed to stumpage, and thus has direct control to insure trees are utilized to their maximum possible value and sent to mills paying the maximum rates. The disadvantage of service contracting is that it requires more work on part of the landowner, or the landowner's forester, in contacting mills and getting purchase agreements in place for the various products their forestland will yield. Often for a small landowner stumpage is more attractive for this reason.

It is highly **recommended that the Town of C.V. use service contracting** administered by the forester to receive their maximum return.

Stand Prescriptions

Stand prescriptions will be given for a three year harvesting plan. These plans will align with the annual allowable cut as found in the Harvest Analysis, as well as the town's guidelines around time frame for harvesting. This assumes the town will want to harvest timber every year for the next 3 years. The same plan could be applied to a longer time period, for example the same areas chosen to harvest could be done every other year, giving the plan a 6 year time period. This is a decision the town forestry committee will need to make. For the Town of C.V. public lot 3 individual areas have been chosen as candidate harvest areas. They will remain candidate harvest areas until which time the town agrees to proceed with a timber harvest. The following recommendations detail specific silvicultural systems and desired residual outcomes. More specific cut plans will be developed at the time of harvest. The following recommendations are accompanied by Timber harvest maps; these maps will show the recommended harvest locations. Stand types falling outside the harvest areas indicated on the timber harvest maps should be treated with the same recommendations as those same stand types within the designated areas in the event that harvest area boundaries are expanded or reconfigured.

The attached maps labeled "Exhibit A" show in detail each of 3 individual harvest areas.

Plan Name-Warming Hut Harvest

Plan # 218-002

Stand types for this harvest plan include: TH3A, TH3B, THS3A, and STH3B. These stands all plot well over the B-line for their respective stocking guide, which indicates they are well to over stocked, and have therefore been targeted as candidate harvest areas. Stands that are over stock are presumed to have peaked in growth and starting to decline.

This harvest area is comprised of 2 harvest "blocks";

Area A = +/-103 acres. **This area should be managed using a uniform extended shelterwood.** The goals for this harvest would be capturing mortality in the mature and over mature trees, as well as establishing quality regeneration uniformly across the entire area. The rotation period is recommended to be extended to conform to the Town of C.V. objectives of maintaining aesthetics. By extending the rotation period to 10-25 years before the removal cut, understory trees are presumed to have reached a height / density to minimize visual impact.^{FT2} Basal areas for these stands currently average around 122ft²/ acre. To reach the goals of this harvest that include establishing quality regeneration, these stands should be harvested to a residual BA/AC of 70-80ft². This will serve to allow light to reach the forest floor to promote seedling and sapling growth.

Area B = +/- 34 acres. **This area should be managed using a single tree selection system.** The goal for this harvest would be the removal of at risk trees. This area is the 75 ft. buffer around recreational trails. The landowner objective of special care taken to minimize cutting within a 150-foot corridor of existing trails, or 75ft both sides will be obtained with this prescription. At risk trees include large diameter intolerant hardwood, diseased, dead, or dying stems, and also those that pose a safety risk. Species prone to be at risk include paper birch, balsam fir, beech, red maple, ash and aspen. Residual BA/AC should be over 100ft²/ac to minimize visual impact.

Harvest plan 218-002 is estimated to be able to produce 3,800 tons, worth \$55,000 to the landowner. This assumes approximately 40% volume removals.

Plan Name-West Line Harvest

Plan # 218-001

Stand types for this harvest plan include; TH4A, TH4B, LC3A, and THS4C. These stands all plot well over the A or B-line for their respective stocking guide, except for THS4C, which indicates they are well to over stocked, and have therefore been targeted as candidate harvest areas. Stands that are over stocked are presumed to have peaked in growth and starting to decline. THS4C is included in this harvest plan due to the presence of mature at risk species, including aspen and balsam fir.

This harvest area is comprised of two harvest “blocks”;

Area A = +/-98 acres. **This area should be managed using a uniform extended shelterwood.** The goals for this harvest would be capturing mortality in the mature and over mature trees, as well as establishing and releasing quality regeneration evenly (uniformly) across the entire stand. The rotation period is recommended to be extended to conform to the Town of C.V. objectives of maintaining aesthetics. By extending the rotation period to 10-25 years before the removal cut, understory trees are presumed to have reached a height / density to minimize visual impact. Basal areas for these stands currently average around 130ft²/ acre. To reach the goals of this harvest that include establishing quality regeneration among others these stands should be harvested to a residual BA/Ac of 70-80ft². This will serve to allow light to reach the forest floor to promote seedling and sapling growth. Residual trees in this harvest area should be long lived species, not prone to wind throw, such as northern hardwoods and red spruce.

Area B = +/- 25 acres. **This area should be managed using a single tree selection system.** The goal for this harvest would be the removal of at risk trees. The area is all within the 75 ft. buffer of recreational trails. The landowner objective of special care taken to minimize cutting within a 150-foot corridor of existing trails, or 75ft both sides will be obtained with this prescription. At risk trees

include large diameter intolerant hardwood, diseased, dead, or dying stems. Species prone to be at risk include paper birch, balsam fir, beech, red maple, ash and aspen. Residual BA/AC should be over 100ft²/ac to minimize visual impact.

Harvest plan 218-002 is estimated to be able to produce 3,000 tons, worth \$45,000 to the landowner. This assumes approximately 40% volume removals.

Plan Name-Back Bowl Harvest
Plan # 218-003

Stand types for this harvest plan include; SF3A, THS3B, TH4C, STH4B, TH4B. These stands all plot well over the A or B-line for their respective stocking guide, which indicates they are well to over stocked, and have therefore been targeted as candidate harvest areas. Stands that are over stocked are presumed to have peaked in growth and starting to decline.

This harvest area is comprised of two harvest “blocks”;

Area A = +/-167acres. **This area should be managed using an extended shelterwood.** The goals for this harvest would be capturing mortality in the mature and over mature trees, as well as establishing and releasing quality regeneration. SF3A stands in this area are recommended to be harvested in a manner to maximize windfirmness. This could include small gap or narrow strip cuts. For reasons previously stated, extended rotations of 10-25 years are recommended.

Basal areas for these stands currently average around 146ft²/ acre. To reach the goals of this harvest that include establishing quality regeneration among others these stands should be harvest to a residual BA/Ac of 70-80ft². This will serve to allow light to reach the forest floor to promote seedling and sapling growth. Residual trees in this harvest area should be longer lived species, not prone to wind throw, such as northern hardwoods and red spruce.

Area B = +/- 40 acres. **This area should be managed using a single tree selection system.** The goal for this harvest would be the removal of at risk trees. The area is all within the 75 ft. buffer of recreational trails. The landowner objective of special care taken to minimize cutting within a 150-foot corridor of existing trails, or 75ft both sides will be obtained with this prescription. At risk trees include large diameter intolerant hardwood, diseased, dead, or dying stems. Species prone to be at risk include paper birch, balsam fir, beech, red maple, ash and aspen. Residual BA/AC should be over 100ft²/ac to minimize visual impact.

Harvest plan 218-003 is estimated to be able to produce 6,000 tons worth \$90,000 to the landowner. This assumes approximately 40% volume removals.

Additional Areas

Additional harvest areas can be found in STH3B and SF3B stand types. These areas can support harvest activity that meets the Town’s goals and objectives. Due to the fact that these areas are primarily found within the recreation zone harvest plans have not been created at this time due to significant areas within the recreation zone already selected as candidate harvest areas. In the event

one or more of the three harvest plans is not acceptable to the town, these stands should receive further consideration as potential harvest areas.

Stand types TH4D, TH3C, STHD, TH3C, PE3D, THS3C, STH3C, and STH4C are not recommended to be harvested within the next ten years due to recent harvest entries.

Project Recommendations

As part of this plan a proposed road projects plan has been designed (see map labeled Proposed Road Projects). The following are brief descriptions of each project labeled A-D on the map.

Harvest plan 218-002, Warming Hut Harvest, will need to be done in conjunction **with Road Project A** (see Proposed Road Projects Map). This is primarily the construction of an off road yarding area to minimize visual impact. This road project is estimated to cost \$2,500-\$4,000.

Harvest plan 218-001, West Line Harvest, will need to be done in conjunction **with Road Project B**. This is approximately 3500ft construction that will upgrade and old road / existing recreational trail, to a gravel road capable of handling log trucks. This construction could cost up to \$25,000. It is highly recommended that the road work be done the year prior to the harvest.

Harvest plan 218-003, Back Bowl Harvest, will need to be done in conjunction with **Road Project C**. Road Project C will need abutting landowner permission. The northerly access route shown with Road Project C may be able to work as a skid trail for long skidding; otherwise approximately 2700ft of new road will be needed. Constructing the northerly road to Class 3 road standards could cost up to \$20,000. The southerly road involves approximately 2500ft. of light re-build, primarily culverts, and 1300 feet of new road, this 1300 feet could possibly be used as skid trail to lower road cost. This southerly road could cost up to \$18,000. It is highly recommended that the road work be done the year prior to the harvest.

Road Project D has also recommended to access possible future harvest locations. This route needs to be scouted for feasibility. As mapped, this road section is approximately 3200ft. A new summer haul road of this length could cost up to \$20,000.

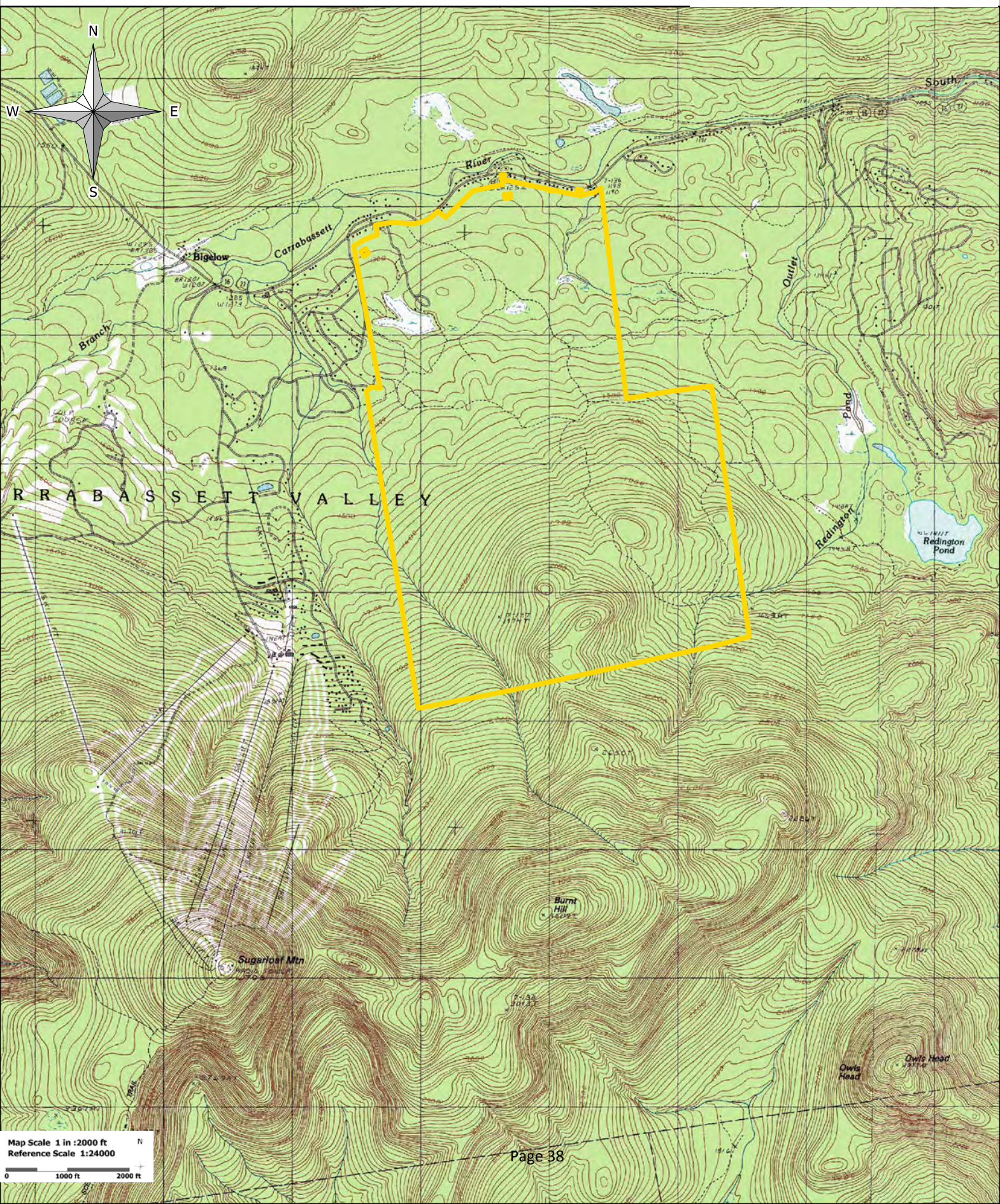
Recommendations to Protect Environmental Values

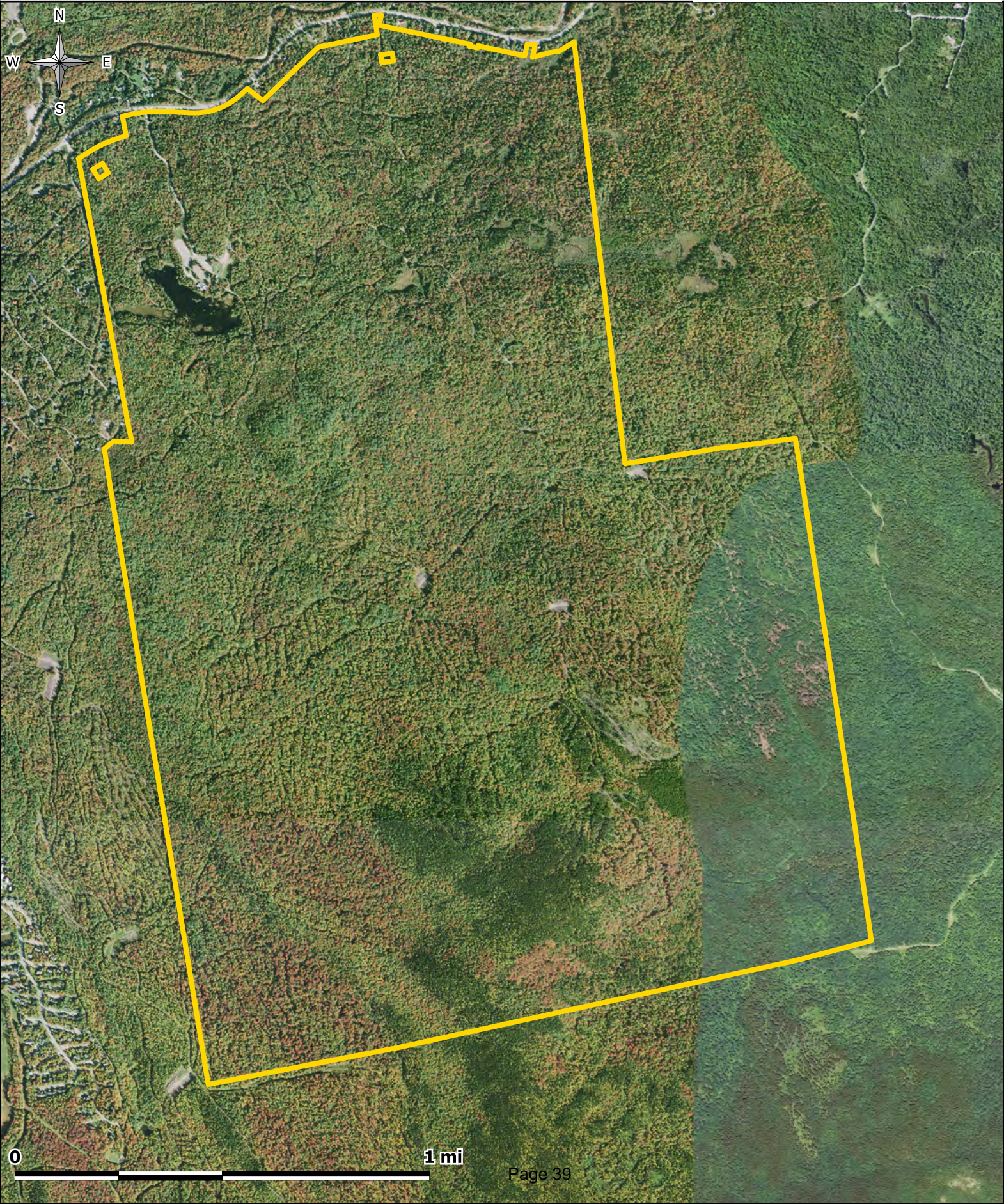
These recommendations have been covered in the Non-Timber Resource Planning Considerations section of this plan.

Project Schedule

Activity	Extent	Stand / Location	Cost or Income	Time Frame
Brush, Blaze, Paint Boundary Lines	All Lines	All Lines	Cost of \$750/mile	1-5 years
Road Project A	+/- 500ft off road yard	See Road Project A on Map	Cost of +/- \$3500	Early Summer 2013.
Harvest Plan 218-0002, Warming Hut Harvest	+/- 140 acres +/- 3,800 tons	See Timber Harvest Map	Income of +/- \$55,000	Mid-Late Summer 2013
Road Project B	+/- 3500 ft.	See Road Project B on Map	Cost +/- \$25,000	Preferable late summer 2013, may be done early summer 2014
Harvest Plan 218-0001, West Line Harvest	+/- 125 acres +/-3000 tons	See Timber Harvest Map	Income +/- \$45,000	Mid-late summer 2014
Road Project C	Up 6500ft.	See Road Project C on Map	Cost +/- \$38,000	Mid- Late summer 2014
Harvest Plan 218-003, Back Bowl Harvest	+/- 200 acres +/- 6000 tons	See Timber Harvest Map	Income +/- \$90,000	Mid – Late Summer 2015
Road Project D	+/-3200ft.	See Road Project C on Map	Cost +/- \$15,000	Mid-late Summer 2015.
Update management plan	Entire Property	All	Cost	2023

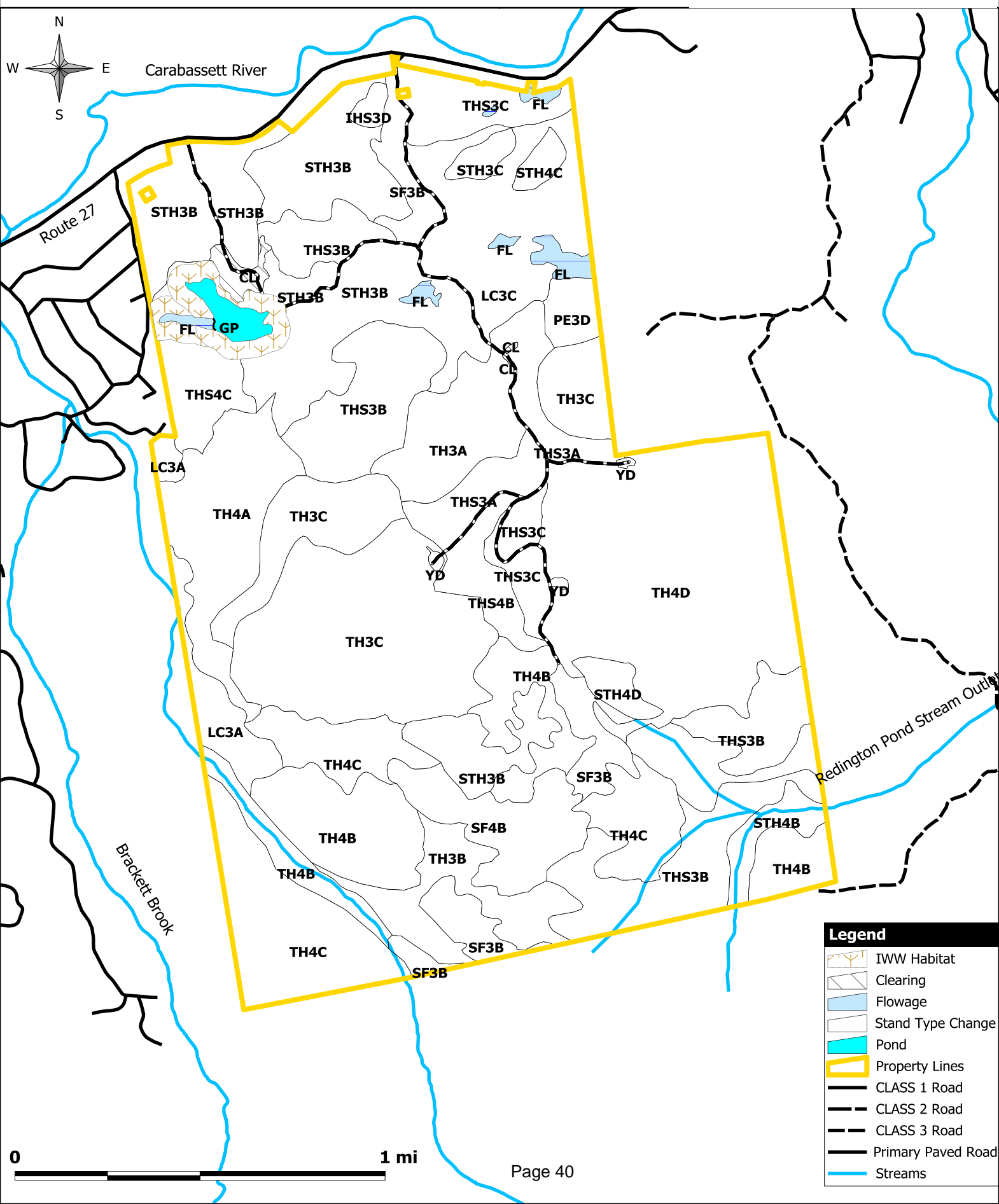
- All cost and income figures are estimates only and are subject to change.

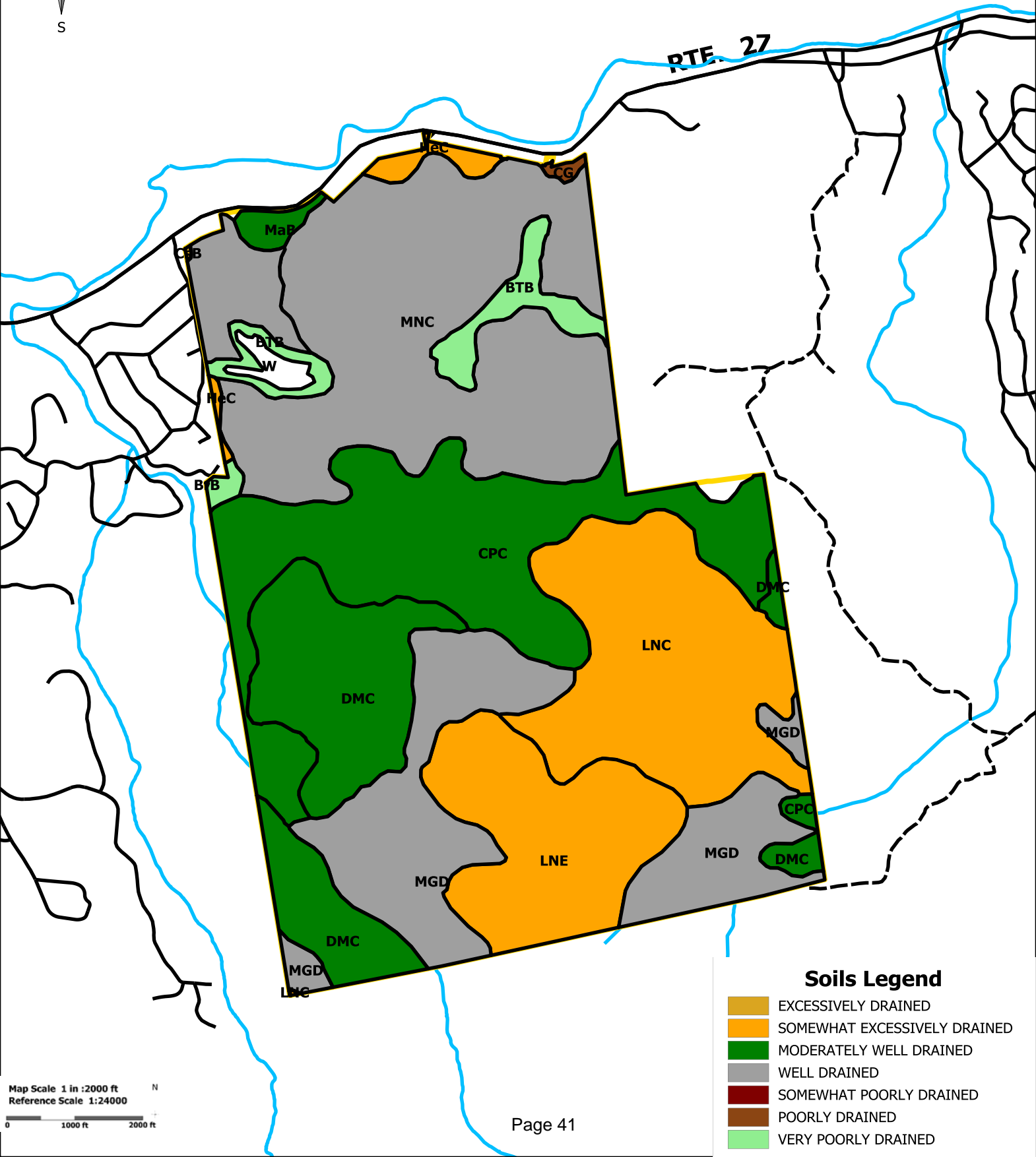
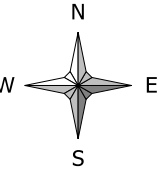






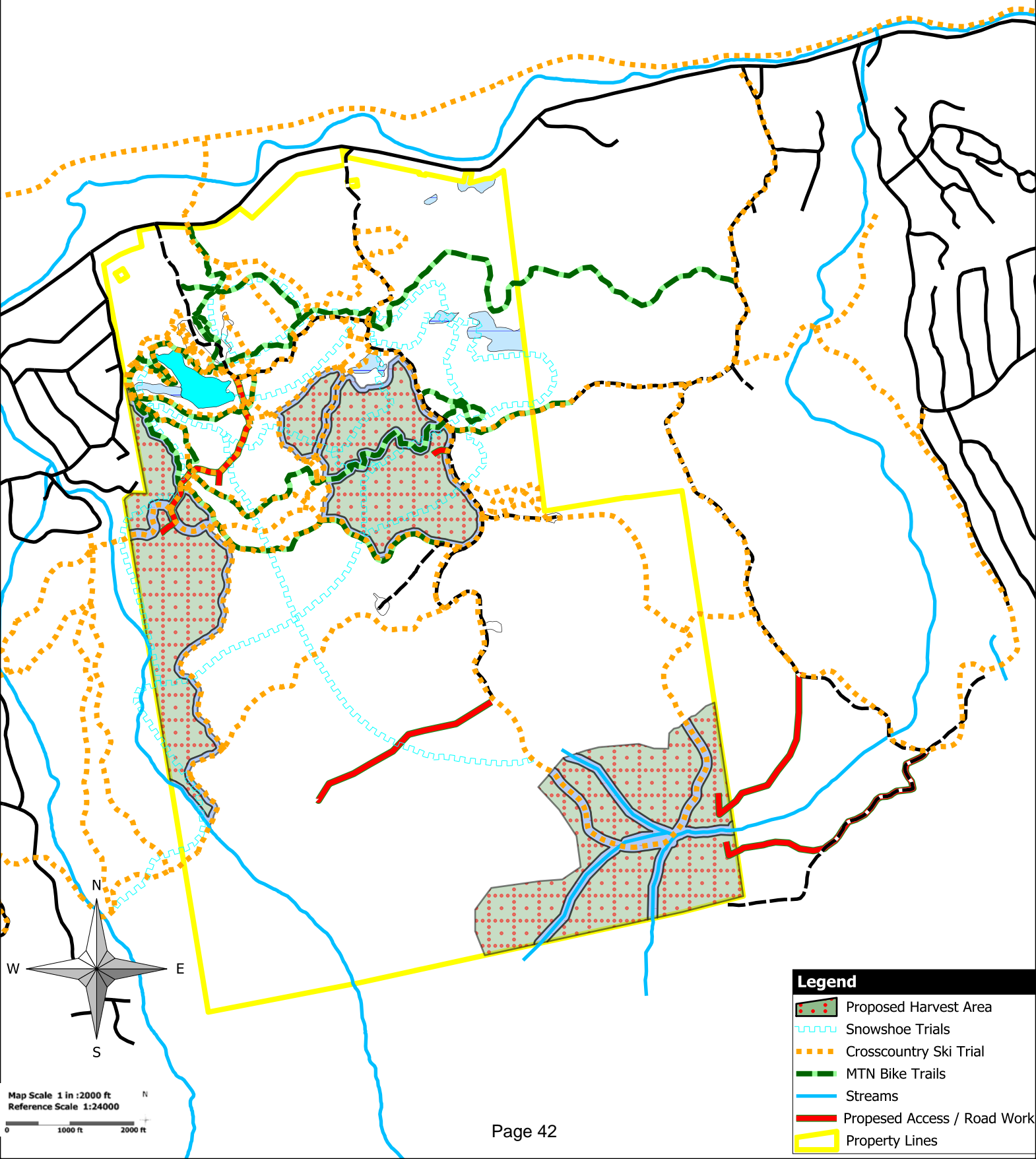
Forester: AFM
Town(ship): Carrabassett Valley
Purpose: Cover Type and Feature
Date Prepared: Jnuary 2013











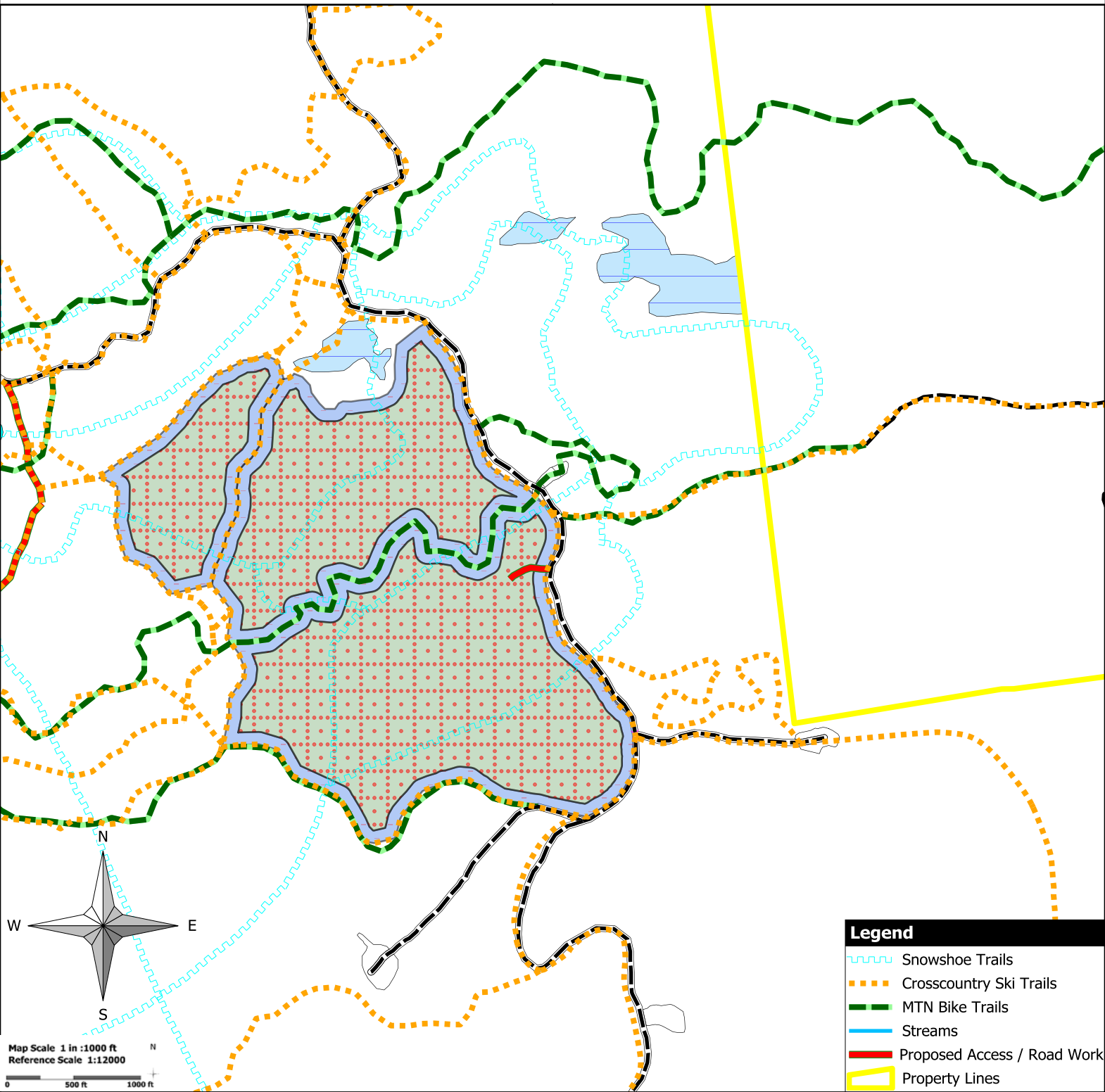
Soils Legend

- EXCESSIVELY DRAINED
- SOMEWHAT EXCESSIVELY DRAINED
- MODERATELY WELL DRAINED
- WELL DRAINED
- SOMEWHAT POORLY DRAINED
- POORLY DRAINED
- VERY POORLY DRAINED



Legend

-  Proposed Harvest Area
-  Snowshoe Trials
-  Crosscountry Ski Trial
-  MTN Bike Trails
-  Streams
-  Propesed Access / Road Work
-  Property Lines














Legend

-  Snowshoe Trails
-  Crosscountry Ski Trails
-  MTN Bike Trails
-  Streams
-  Proposed Access / Road Work
-  Property Lines

Owner: Carrabassett Valley
Forest: Stratton
Forester: M.Jacobs
Town(ship): Carrabassett Valley
Harvest Plan #: 218-0002
Plan Name: Warming Hut Harvest
Road: Outdoor Center Rd

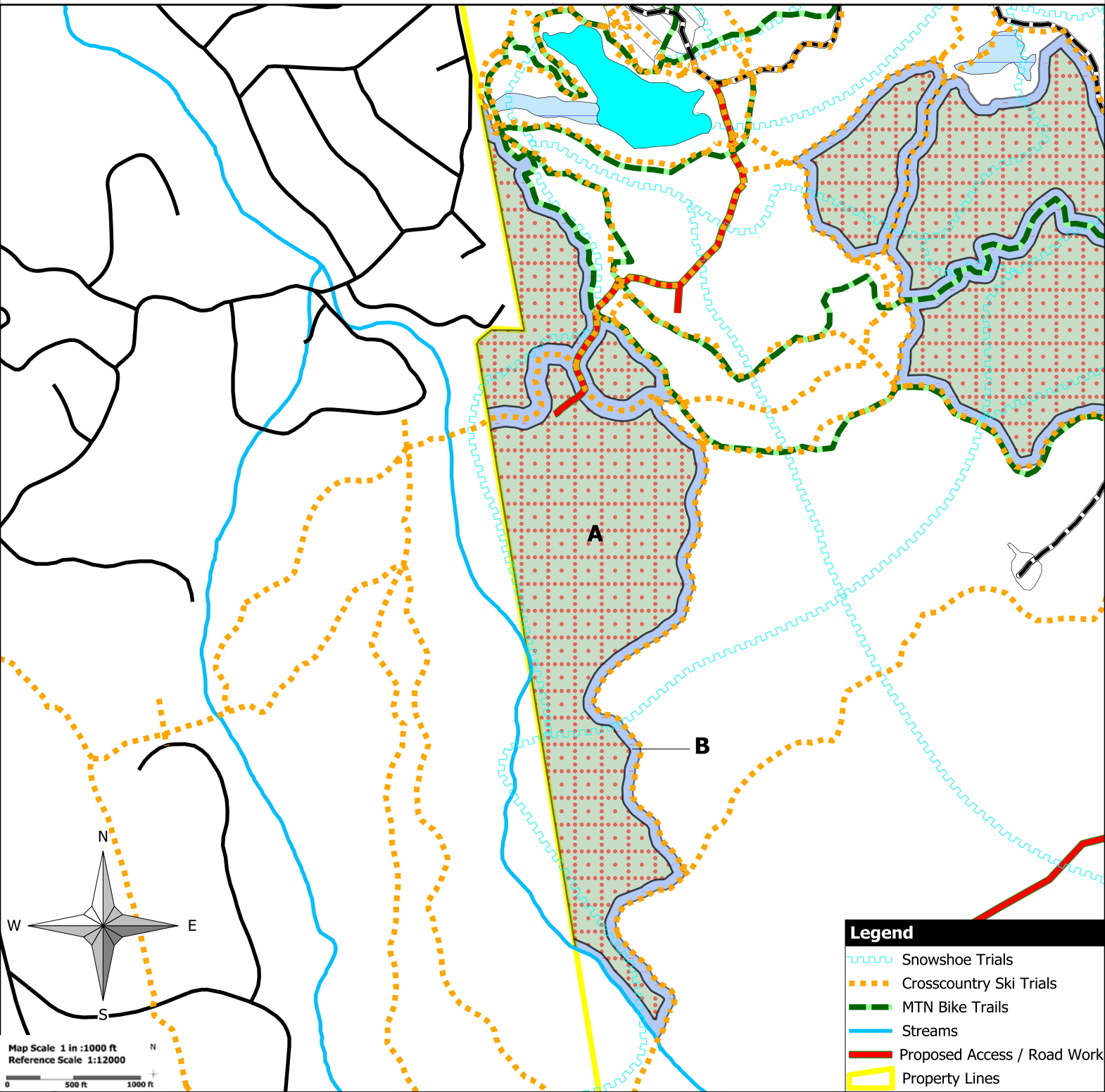
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Block B: 34
Block C:
Block D:
Block E:
Block F:

Prescription Layout		Silviculture System	
	Stream Centerline	A	 1st Entry Shelterwood
	Interior Change		 2nd Entry Shelterwood
	Stop Line		 Clearcut
	Stop Line		 Release
	Distinct Line	B	 Selection
			 Thinning



Timber Harvest Map

Exhibit 'A'
Harvest Plan Number:
218-0001



Legend

- Snowshoe Trials
- Crosscountry Ski Trials
- MTN Bike Trails
- Streams
- Proposed Access / Road Work
- Property Lines

Owner: Carrabassett Valley
Forest: Stratton
Forester: M.Jacobs
Town(ship): Carrabassett Valley
Harvest Plan #: 218-0001
Plan Name: West Line
Road: Outdoor Center Rd

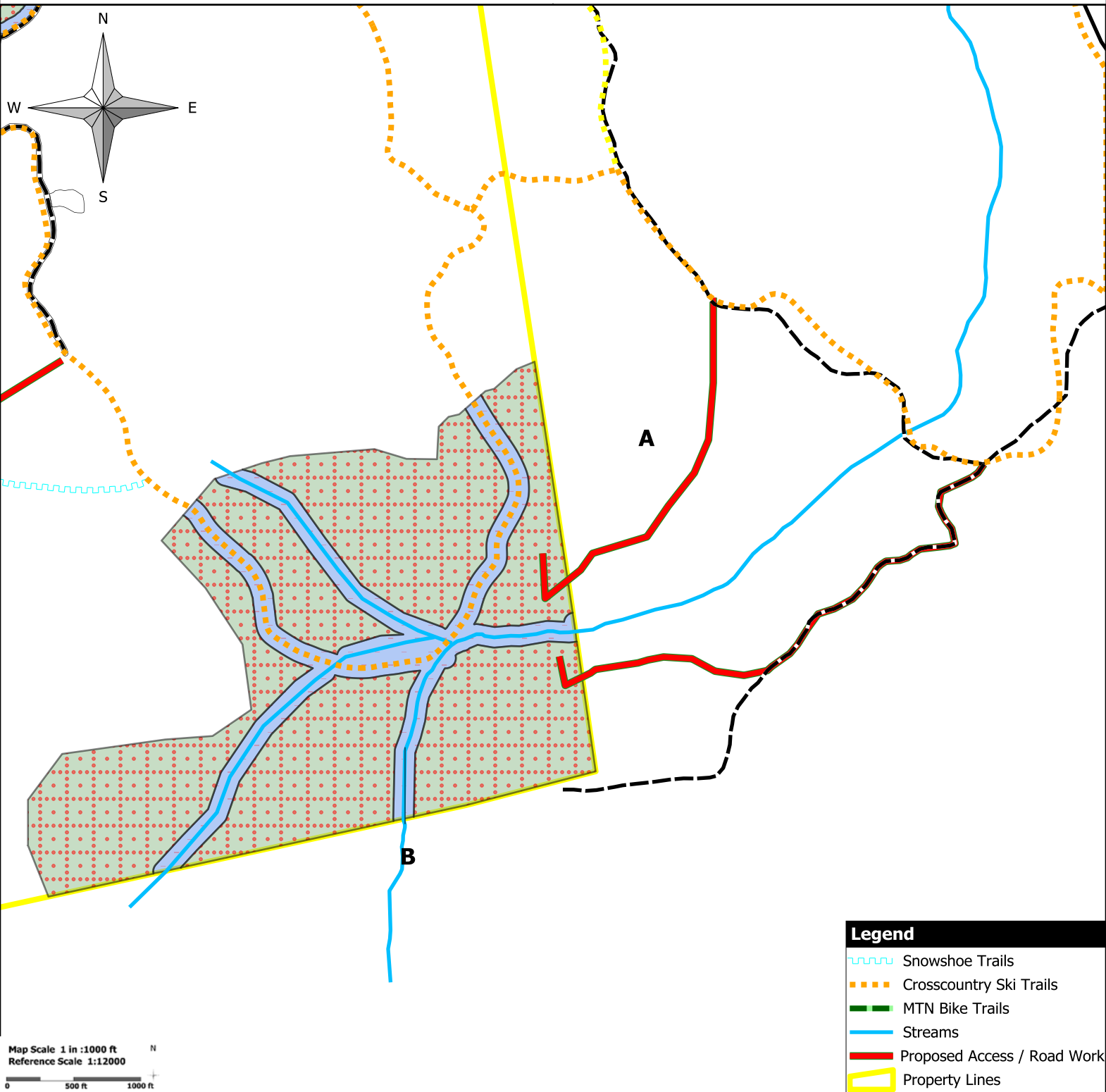
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Block B: 25
Block C:
Block D:
Block E:
Block F: Page 44

Prescription Layout

- Stream Centerline
- Interior Change
- Stop Line
- Stop Line
- Distinct Line

Silviculture System

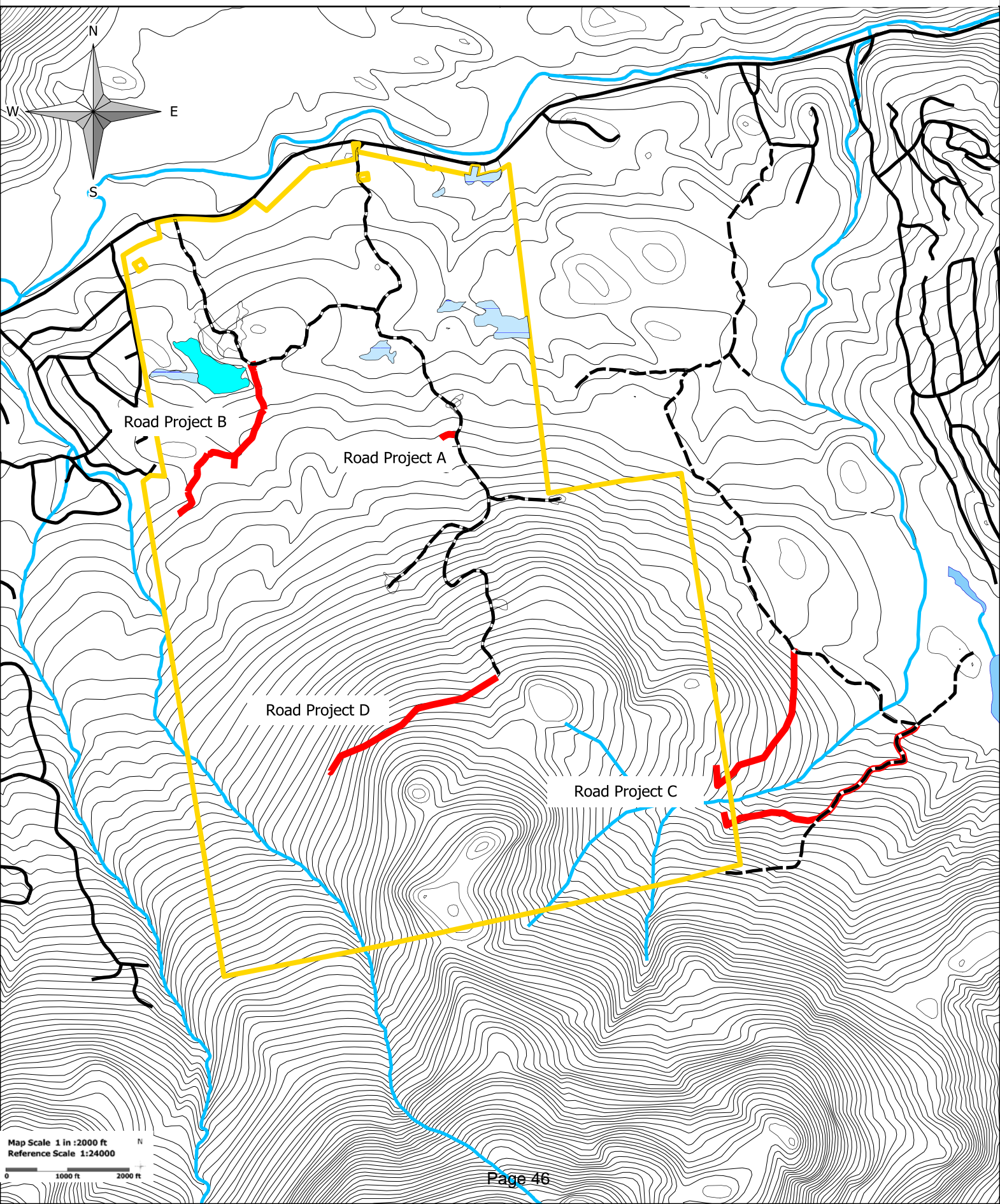
- 1st Entry Shelterwood
- 2nd Entry Shelterwood
- Clearcut
- Release
- Selection
- Thinning



Owner: Carrabassett Valley
Forest: Stratton
Forester: M.Jacobs
Town(ship): Carrabassett Valley
Harvest Plan #: 218-003
Plan Name: Back Bowl
Road: Highland Road

Block A: 167
Block B: 40
Block C:
Block D:
Block E:
Block F: Page 45

Prescription Layout		Silviculture System	
	Stream Centerline		1st Entry Shelterwood
	Interior Change		2nd Entry Shelterwood
	Stop Line		Clearcut
	Stop Line		Release
	Distinct Line		Selection
			Thinning



Maine Forest Service WoodsWISE Forest Management Plan Standards - Checklist				
	General Property Information		Non-timber Resource Planning Considerations	
	Landowner	R*	Threatened and endangered species, rare or exemplary natural communities	R
	Plan Preparer	R	Fish and wildlife habitat	R
	Plan date	R	Water quality, wetlands, riparian areas	R
	Planning period	R	Historical, cultural, archaeological sites	R
	Town and county	R	Recreational opportunities	(R)
	Tax map information	R	Aesthetic quality	(R)
	Parcel location	R	Protection from fire	O
	Landowner goals and objectives	R	Other important natural features	O
	Plan summary	O		
	Acreage of Land Use/Cover Types		Individual Stand Descriptions**	
	Forestland (productive)	R	Cover type	R
	Reserved forestland (productive)	(R)	Stand area	R
	Noncommercial/unproductive forestland	R	Composition and structure	R
	Nonforested area:		Age/history	R
	Water bodies	R	Stand health	R
	Wetlands	R	Stand volume	R
	Developed land	R	Stand stocking	R
	Agricultural land	R	Stand quality	R
			Growth rate	R
	Maps		Long range silvicultural objectives	R
	Location map	R		
	Land use/Forest stand map	R		
	Soils map	R		
	Other maps	(R)		
	General Conditions of the Woodlot		Prescriptions and Recommendations	
	General woodland description/history	R	Stand prescriptions	R
	Boundary lines	R	Stand summary table	O
	Terrain/Hydrology	R	Project recommendations	R
	Watershed name/position	O	Recommendations to protect environmental values	R
	Soils information	R	Other management activities	(R)
	Access	R	Project schedule	R
	Interaction with surrounding properties	O		
	Legal obligations	R		
	Property tax status	R		
	Field methods statement	R		
	Accomplishments	(R)		

Note: The above list represents a checklist only. The full standards further explain required items.

* Items marked "R" **must** be included in all plans.

Items marked "(R)" are required under certain circumstances, or if warranted by landowner objectives stated in the plan.

Items marked "O" are optional.

** These items are required for all stands. Stand descriptions must be based on adequate fieldwork and an inventory for some conditions.