Fairlee : *Environmental Assessment.*

1. The project is being proposed by the Town of Fairlee. The proposal involves the acquisition of 770 acres of land in three tracts adjoining the Fairlee town forest. The project is designed to provide additional lands available to the public for passive recreational purposes - hiking, cross-country skiing, snowshoeing, hunting, snowmobiling, and possibly wood-cutting. The principal component of the proposal is the acquisition of the land. Plans for trail clearing and the use of the area for organized recreational activities (nature walks, Boy Scouts, etc.) and an an energy conservation resource (selected wood-cutting for fuel), are still tentative. The project will serve the general public, and in partciular the residents of the Town of Fairlee. The proposed acquisition will substantially enlarge the protected open space which is available for such uses in the town. In addition, as development pressures and population grow in the medium and longer term, while demand for such open space increases, the supply of private land which the public can use decreases, as does that of open land in general (public and private). More land is used for construction, and more land is posted. For this reason, in order that the public should continue to have the opportunity for passive outdoor recreation, it is desirable that the public sector should acquire open land for conservation purposes. As this endeavor is far less difficult when development pressures are still slight than when they are intense, public authorities should act now to protect the interests of future generations. Such action is in the interests not only of town residents, but of the public at large, who stand to benefit from the aesthetic appeal of large unspoiled tracts of open land.

The land to be acquired is located in the western and central part of the town. It consists of 3 tracts of land, one on the north side of the town forest, consisting of approximately 150 acres, and two on the south side, one of about 540 acres, and one of 70 acres. The land to be acquired is timberland. The terrain is rough with a relief of about 850 feet (900 feet to 1765, lowest to highest point). Slopes range between 8 and 50% in general, though there is some level land.

The site is served by 2 town roads on the north side, both of which run to within easy walking distance of the property. On the east 2 town roads reach into the property (one of which is passable up to the boundary of the property and then continues through the property and the town forest, as a trail to Bald Top). The site is also accessible by several hiking and snowmobile trails. Acquisition would take place as soon as funds became available (FY1979).

The town has no other recreation projects under consideration or construction at the moment. However, inasmuch as the town forest is a recreational resource for the whole community the proposed acquisition would add significantly to the recreation capacity of this facility. The proposal is consistent with both the Fairlee municipal development plan and the Fairlee recreation plan, both of which mention land acquisition in the Bald Top and Glenn Falls Brook areas a major goal. It is in conformance with the 1978 comprehensive

outdoor recreation plan for the state and is consistent with related recreational and land use plans for the area (regional plan, regional land use element).

2. Some of the land to be acquired was at one time used for agriculture. However, in recent memory, the land has been wooded. Though some logging has taken place historically, there has been little logging activity recently. There is presently some low-intensity recreational use (primarily hunting and snowmobiling). Surrounding land use is similar, given the relative inaccessibility of the area. Adjoining the properties under consideration is the Fairlee town forest, which is also used primarily for recreation. No wood-cutting has taken place in the forest recently. The area is zoned residential. There was some attempt to develop the properties under consideration in 1972-75, but these were not successful due to a shortage of capital on the part of the developer.

There are no special topographic features on the land being considered, though the 70 acre tract runs right up to the base of Bald Top, which is the second highest point in the town, and enjoys unobstructed views of the Connecticut Valley and beyond to the mountains in New Hampshire.

The 1960 population of the town was 569, and that for 1970 was 604. The Two Rivers Regional Planning Commission estimates 1975 population to be 672. This constitutes an increase of 11.2% over the 1970-75 period, an annual growth rate of 2.2%. This is above the regional average of 1.9%. (Source: Two Rivers Regional Housing Element). The population profile of the town is similar to that of the region as a whole. Given the family high rate of population growth (due in large part to immigration), in order to maintain a given level of recreational services per capita, the town must add to its recreational facilities. The project under consideration is a relatively low-cost way to do so while being consistent with the general character of the town and region.

Prior to World War II, economic activity in Fairlee was predominantly agricultural. Since then, the focus has shifted from the primary to the secondary and tertiary sectors. The major employment centers for residents of the town are Bradford (manufacturing and services) and the Hanover - White River area (predominantly education and services, but with some manufacturing).

The town has a small commercial district in the Village. Tourism plays a significant, though seasonal role in the town's economy. There are a large number of seasonal residences, and some inns, hotels and summer camps on or near Lake Morey.

Income levels in the area are low relative to those in the state and nation as a whole, and there is a correspondingly greater need to rely on public sources of recreational opportunities. Medium family income for the Two Rivers Region, of which Fairlee is a constituent part, was $11,651 in 1976.

Economic growth in the area is expected to be slow. Agriculture will likely continue to decline in importance, while the manufacturing and service sectors will continue to predominate (Source: Two Rivers Regional Housing Element).

It is proposed to acquire 770 acres of land. A number of soil types are present in the area. They include colrains, bucklands, Tunbridge, and Woodstock soils, interspersed with bedrock outcroppings. (Soil interpretation sheets describing the soils present in the area are attached.)

Slopes are in general fairly severe. Soils vary from poorly to well-drained and permeability also varies. Moisture capacity is generally low with the exception of the backlands, colrains, and muck. While the development potential of the land is limited, the characteristics of the soils pose no serious impediment to the uses envisioned in the project proposal.

Surface geologic features present in the area are hills, bedrock outcroppings, and small valleys wooded by several water courses. The terrain is glacial in origin with post-glacial weathering and erosion. Subsurface bedrock is mainly schist and other metamorphic rock. There are no known mineral deposits of commercial value.

The annual precipitation in the Fairlee area is 42 inches. It ranges from a low of 2.78 inches in February to a high of 4.22 inches in July. The annual mean temperature is 44.5° F. and fluctuates from a low of 19.0° in January to a high of 68.7° in July. Monthly mean precipitation and temperature for the area are shown in the table below.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Precipitation	3.3	2.78	3.49	3.57	3.72	3.73	4.22	3.31
Temperature*	19.6	20.7	30.4	43.2	55.2	64.1	68.7	66.5

	Sept.	Oct.	Nov.	Dec.	Annual
Precipitation	3.49	3.12	3.76	3.19	41.68
Temperature*	58.7	48.0	36.3	23.1	44.5

*Degrees fahrenheit

Source: U.S. Dept. of Commerce, Weather Bureau

There are no significant bodies of standing water in the tracts to be acquired. Included in the property are parts of the watersheds of Big Brook, Mill Pond Brook, Blood Brook, and Glenn Falls Brook. Surface runoff is into these brooks, where it occurs. Some of the south-eastern portion of the land is drained by Pine brook which feeds the old town reservoir near the south-western corner of Lake Morey. The reservoir is at present unused, but there is some talk of using it as an emergency water supply.

The only area in the tracts to be acquired that is subject to flooding is the section of permanently wet soils between the sources of Glenn Falls and Mill Pond Brook. This section is designated Mu on the accompanying soils map. There are no known aquifers in the area. The area does not serve as a aquifer recharge area for town water supplies. Town water is taken from wells east north east of Lake Morey. This aquifer recharge area is related to the Connecticut River flow. The only water flowing from the area involved, which is currently being used by residents of the town is the Glenn Falls Brook. One house near its mouth uses this brook as an alternate water source.

The vegetation of the area is mixed forest. Various coniferous and deciduous species are present. The woodland is at varying stages of maturity from overgrown meadow to climax forest.

Fauna and food chains are those typical of Northern New England mixed forest. No rare or endangered species are present in the area under consideration, There are several deer yards on the land to be purchased and the area as a whole is a good one for deer hunting.

There are no important transportation routes in the area at present. Access to the properties to be acquired is via 2 small roads off Brushwood Rd., which lead to within easy walking distance of the site, via a town trail up the Glenn Falls Brook to Bald Top, or via a thrown up road extending into the southern parcel from Terry Rd. There is a right of way from this road which extends through most of the 540 acre southern tract. There are also some logging roads within the tracts. Access to the site is limited.

It is difficult to describe the probable future environment if the project is not initiated. The present landowner refuses to comment on the issue. However, it seems likely that the land will remain in timber. It should not be forgotten, though, that one attempt to develop the parcels for residential use has already been made. If the land remains wooded, it is probable that it will be logged. The intensity of such activity, and hence its environmental impact, is unclear.

3. Environmental Impact of the Proposed Action

The site does not involve a National Historic Register Site. No sites of state or local historical significance are involved. There are no known archeological sites on the land involved. Two sites of natural significance - Bald Top and Glenn Falls Brook - are involved. These sites of great natural beauty stand to be protected by the proposed acquisition.

Present land use is at present at very low intensity, and almost exclusively recreational (snowmobiling and some hiking). If new trails were cut and marked, this activity would most likely increase. It is unlikely that such activity would affect the character of the site to any significant degree as it would be confined to the trails and their vicinity, and by its very nature does not have serious environmental impact. It is possible that some cutting of firewood will occur on the property. As this will be closely controlled if it does occur, it will not result in adverse impact and may actually

improve the quality of the forest, as well as providing a valuable energy resource for the community.

Socioeconomic impacts can be subdivided into positive and negative categories. The acquisition increases the amount of public land available for recreational use. To the extent that this results in an increase in or sustainment of the recreational activity of present and future generations, and assuming that such increase or sustainment is desirable, the project will have a positive social impact.

Present tax revenue on the land is about $800/yr. The town will lose this amount of tax if it acquires the land. It has been proposed that to compensate for this loss the town should allow some logging on the land.

No persons will be displaced. There will be no alteration of settlement patterns. Area residents will be unaffected. No commercial enterprise will be directly affected. No solid wastes will be generated.

Given the lack of substantial change in the site, water resources are unlikely to be affected. There may be some additional runoff near trails due to compacting and destruction of vegetation. There may be some erosion associated with this run off and accompanying soil destabilization. As trails will occupy only a very small portion of the land to be acquired, this impact will not be important. In addition, the low intensity of trail use makes it unlikely that serious erosion will occur even in the vicinity of trails. The water table will be unaffected by the project. As the town's water supply is not dependent on any part of the land to be acquired, the project will not affect it. Even if the town did use the land or part of it for water supply the acquisition would be more to protect the supplies than to endanger them. Water quality of streams in the area will be unaffected. No human waste is likely to be generated.

Vegetation will be unaffected by the recreational pursuit except to a limited extent in the vicinity of trails. If logging or cutting of firewood occurs, vegetation may be affected over large areas. If this is managed correctly, however, this will result in improvement of the stands of timber and maximization of their biomass productivity.

There will be no serious effect on fauna. The area is already being used for recreational purposes. Any increase in such activity that may take place as a result of the acquisition is unlikely to be great enough to deleteriously affect wildlife population. The only direct impact is hunting. This is particularly true as the land is at present unposted.

No changes in transportation routes are contemplated, except for some trail-marking and clearing on the site. Increased congestion is improbable, as additional traffic will be minimal.

There will be no impact on energy consumption. However, if the controlled cutting of wood is permitted on the land to be acquired and in the town forest itself, the supply of cheap energy to residents of the town will be substantially increased.

Air quality will be unaffected.

There may be some increase in the ambient noise levels due to snowmobile traffic. This impact will be insignificant as there is no settlement in the area.

The management of the land will be handled by the Town of Fairlee. Management functions will be minimal and not a significant addition to those already associated with the town forest.

4. No mitigating measures are contemplated as no significant adverse impacts are envisaged.

5. No adverse impacts which cannot be avoided are anticipated.

6. Given the nature of the project (conservation of woodland through acquisition of private land), there could be no impacts of the proposal in the context of similar proposals. No similar projects are contemplated or in process at this time. There is no conflict between public and private conservation efforts, and thus the public sector is unlikely to be violating or adversely affecting private recreational interests with such a proposal. The project stands to benefit future generations as indicated in section one of this document.

It is difficult to determine how the immediate and long range impacts on the area with the project compare with the immediate and long-range impacts without the project. In the short run, it is likely that in either case the land will stay in timber and that the public will have access to it for recreational use. In the longer term, three possibilities are evident:

a. maintenance of status quo.

b. increased logging activity in order to realize some of the commercial potential of the land.

c. development for seasonal and/or permanent residences.

Either b or c is more probable than a, as it is unlikely that a rational landowner would continue to forego the commercial rewards of exploitation of the land while at the same time paying taxes on it. In the case of (b) the extent of impact depends on logging methods used. It is clear, however, that the environmental impact (aesthetic and physical - erosion, etc.) of uncontrolled private logging will be more negative than recreational use coupled with closely controlled cutting.

In the case of c, once again the extent of impact depends on the intensity of development, but c is likely to have a far greater impact on water resources and quality, transportation routes, energy consumption, vegetation and fauna, noise levels, solid wastes, etc., than the proposed project.

7. The only irrevocable commitment of resources will be the expenditure

of public monies in the acquisition of the property. The project restricts the range of possible uses of the land by preserving it for outdoor recreation. As the land is for the most part unsuited to other uses, except for logging, this restriction is unimportant. This is particularly true as wood is not a scarce resource in the region, and because public ownership does not necessarily interfere with rational wood-cutting practices on the land to be acquired.

There will be no extraction of nonrenewable resources and any removal of wood will be limited to a level which is sustainable. There will be no destruction of archeological, geological or historic features, no destruction of fragile habitat or endangered species habitat, no unalterable changes in land use, and no resources used in project development. The entire thrust of the project is to maintain and preserve existing conditions and uses rather than to irretrievably alter them.

8. Several alternatives to the proposed action are available. First, land could be acquired elsewhere for recreational purposes. Fairlee's first efforts in this regard involved the attempted purchase of the Bradford Town Forest in the northwest corner of Fairlee. However, this project was ruled out as it was ineligible for BOR funding. In addition, no other large parcels of land are available at the present time. The present proposal has the added advantage of involving land which is adjacent to the Fairlee Town Forest. As such, if acquired, the town will possess a single large consolidated parcel of protected land. Further, the land presently under consideration includes, or is in close proximity and hence protects, certain areas of particular natural beauty. This might or might not be the case with other parcels of land. Finally, choosing other land would mean foregoing the offer of the present landowner to donate the 20% required for local share.

Second, the town would rely on the goodwill of private landowners in the provision of access rights to the public and in the preservation of undeveloped land in its natural state. This has the advantage of being costless, and also avoids the loss of tax revenue. However, this alternative is less certain than public ownership, as such informal arrangements would not be binding on the owners. Further, if and when other uses became profitable to owners of the land, it would be unreasonable to expect them to forego such projects in the interest of environmental conservation or the good of those citizens benefiting from their largesse.

Third, the town may not act at all. In the short run, it will likely make little difference whether the town acquires this land or not. There is no shortage of accessible woodland which can be used for recreational purposes. In addition, the intensity of use of existing public forest land in the town is not excessive. However, in the medium and longer term, this situation is likely to change. More private land is being posted every year. When considered in conjunction with relatively rapid population growth, this indicates that greater demands will be placed on existing public land, and hence to an insufficiency of such land. Were no such land acquired, a situation of excessive use of existing public land could develop. With this in mind, it is prudent for the public sector to acquire undeveloped land.

9. The public has been involved in the decision making process through

open meetings of the Board of Selectmen and through an informational meeting on the proposal, which was held on August 21. In addition, various aspects of the project have been extensively covered in the local press (see attached documentation).

In developing the proposals, the Town has consulted the Two Rivers Regional Planning & Development Commission, the Division of Historical Sites of the Agency of Development & Community Affairs, the Agency of Environmental Conservation - Division of Planning and the Dept. of Forests Parks & Recreations, and the Heritage Conservation & Recreation Service of the Department of the Interior. At the local level, the town's Recreation Council, Planning Commission, Listers and Board of Selectmen have been involved.

No other agency has evaluated this potential environmental consequences of this project.

The applicant knowns of no controversy involved or likely to manifest itself.

SOIL SURVEY INTERPRETATIONS

SOIL SERIES - BUCKLAND, VERY STONY

MAP SYMBOLS - BJC

DESCRIPTION OF THE SOIL

Soils in this series are well drained and moderately well drained, loamy, and very stony. Mapped areas have stones on the surface 5 to 30 feet apart. These soils occupy the glacial till covered uplands, whose topography is largely controlled by bedrock. Slope ranges from 0 to 50 percent. The soil typically has a very dark grayish brown loam or silt loam surface layer in cultivated areas. The subsoil and underlying material consist of olive brown and olive gray loam or silt loam and formed in glacial till. The material to a depth ranging from 12 to 28 inches is compact and very firm in place. This material impedes the downward growth of roots and movement of water. Permeability is moderate above the compact layer and slow within this layer; available moisture capacity is high; and natural fertility is high. Depth to seasonal high water table is 1 to 2 feet and a saturated condition is common above the compact layer during wet seasons. Depth to bedrock is 5 to 10 feet or more.

INTERPRETATIONS AND LIMITATIONS FOR FARMING AND RELATED USES

SOIL SLOPE PHASE	CAPABILITY SUBCLASS	CULTIVATED CROPS	PASTURE AND HAY	ARTIFICIAL DRAINAGE	WATERWAYS	POND RESERVOIR AREAS	POND EMBANKMENTS
A,B,C	VIs	SEVERE	SEVERE	SEVERE	SEVERE	SLIGHT	MODERATE
D	VIs	SEVERE	SEVERE	SEVERE	SEVERE	SLIGHT	MODERATE
E	VIs	SEVERE	SEVERE	SEVERE	SEVERE	SLIGHT	MODERATE

MAJOR FACTORS AFFECTING USE- The basic limitation of this soil for most farming uses is severe because of the very stony condition and excess wetness. Close spacing of stones makes it difficult to use farm equipment and to provide artificial drainage to remove the excess water. The soil has only a slight basic limitation for reservoir areas because of the slow seepage rate. The soil material is very stony and, therefore, is a moderate limitation for pond embankments. The soil material also is difficult to compact when it is excessively wet.

SOIL LIMITATIONS FOR WILDLIFE

SOIL SLOPE PHASE	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
A,B,C	SEVERE	MODERATE	SEVERE
D,E,	SEVERE	MODERATE	SEVERE

MAJOR FACTORS AFFECTING USE- The use of this soil is severely limited for openland wildlife because of the very stony condition and excess wetness during the spring. Because it is moderately well drained it has a severe limitation for wetland wildlife. It has fair potential for woodland wildlife, but excess wetness and slopes in some areas are a limitation.

WOODLAND INTERPRETATIONS

SOIL SLOPE PHASE	SEEDLING MORTALITY	EROSION HAZARD	WINDTHROW HAZARD	PLANT COMPETITION		EQUIPMENT LIMITATION	ORDINATION SUBCLASS
				HARDWOODS	CONIFEROUS		
A,B,C	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	SLIGHT	3o
D	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	MODERATE	3r
E	SLIGHT	MODERATE	SLIGHT	SLIGHT	MODERATE	SEVERE	3r

ESTIMATED PRODUCTIVITY RATING FOR SELECTED SPECIES

NORTHERN HARDWOODS	RED OAK	WHITE PINE	RED PINE	WHITE SPRUCE	RED SPRUCE	To Favor	To Plant
52-59 Site Index		70-80 Site Index		60-70* Site Index		W.S. B. Fir W. Pine S.H. Y.B. W.A.	W.P. W.S. R.S. N.S.

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IN COOPERATION WITH VERMONT AGRICULTURAL EXPERIMENT STATION AND
VERMONT DEPARTMENT OF FORESTS AND PARKS, USDA FOREST SERVICE

June 1969

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February 1975

SOIL SERIES -- BUCKLAND, VERY STONY

SOIL LIMITATIONS FOR RECREATION

SOIL SLOPE PHASE	CAMP AREAS	PICNIC AREAS	ATHLETIC FIELDS AND PLAYGROUNDS	PATHS AND TRAILS	PARKING AREAS		
A,B	MODERATE	SLIGHT	MODERATE	MODERATE	MODERATE		
C	MODERATE	MODERATE	SEVERE	MODERATE	SEVERE		
D	SEVERE	SEVERE	SEVERE	MODERATE	SEVERE		
E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE		

MAJOR FACTORS AFFECTING USE FOR RECREATION - The soil has a moderate basic limitation for most recreational items because of the very stony condition and excess wetness. The layout and construction of camp areas, athletic fields and playgrounds, and parking areas is difficult because of the close spacing of stones and the excess wetness during wet seasons. The difficulty of layout and construction also increases with the increase in slope gradient. Parking areas are unstable during wet seasons and after prolonged rainfall, because of the slow permeability of the soil and the saturated condition. Athletic fields and playgrounds and traffic ways dry out slowly after rain in the spring because of the slow permeability and excess wetness.

NOTE: For buildings, septic tank sewage systems, ponds, and access roads refer to other sections.

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

SOIL SLOPE PHASE	SEPTIC TANK SEWAGE DISPOSAL	SANITARY LAND FILL	STREETS AND ACCESS ROADS	BUILDINGS		EXCAVATIONS PIPELINES, ETC.	LAWNS, GOLF FAIRWAYS AND LANDSCAPING
				WITH BASEMENTS	WITHOUT BASEMENTS		
A,B,D	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	MODERATE
D,E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE FOR COMMUNITY DEVELOPMENT - The excess wetness and very stony condition are the major limitations for community development items. The streets and access roads are subject to frost heave and are unstable during wet seasons and after prolonged rainfall. Basements tend to be wet in the spring and other wet seasons because of the wet condition of the soil. Water also moves into and fills other types of excavations such as pipelines and trenches for utilities. The saturated condition of this soil during the spring and other wet periods can cause sewage effluent from septic tanks to move to the surface of the soil or seep out on hillsides.

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES FOR ENGINEERING

SOIL HORIZON DEPTH	CLASSIFICATION			% OF MATERIAL PASSING SIEVE				PERMEABILITY	AVAIL. WATER CAP.	SOIL pH	SHRINK-SWELL POTENTIAL
	USDA TEXTURE	UNIFIED	AASHO	#4	#10	#40	#200				
								in./hr.	in./in.		
Inches 0-7	Very stony loam, silt loam or fine sandy loam	SM, ML	A-4	80-100	75-90	65-95	45-75	0.6-2.0	.16-.21	5.1-6.5	Low
7-15	Loam, silt loam, fine sandy loam and gravelly analogues	SM, ML	A-4	85-100	75-90	65-90	45-75	0.6-2.0	.14-.20	5.1-6.5	Low
15-40+	Compact loam, silt loam, fine sandy loam and gravelly analogues	SM, ML	A-4	85-100	75-85	65-90	45-75	0.06-0.2	.06-.12	5.6-7.3	Low

June 1969

SUITABILITY OF SOIL AS A SOURCE OF

TOPSOIL - Poor, very stony.
SAND - Not suitable - excess fines.
GRAVEL - Not suitable - excess fines.
ROADFILL - Poor, very stony, seasonal high water table, high potential frost action.

DEFINITION OF RATING TERMS: The soil is evaluated to a depth of 5 feet or less. The three classes of soil limitations are: Slight - relatively free of limitations or limitations are easily overcome. Moderate - limitations need to be recognized, but can be overcome with good management and careful design. Severe - limitations are severe enough to make use questionable.

(Back)

SOIL SURVEY INTERPRETATIONS

SOIL SERIES - COLRAIN VERY STONY

MAP SYMBOLS - CsD

DESCRIPTION OF THE SOIL

Soils of this series are well drained, loamy, and very stony. Mapped areas have stones on the surface 5 to 30 feet apart. These soils occupy glacial till covered uplands with slopes of 0 to 50 percent. These soils typically have fine sandy loam or sandy loam surface layers and subsoil that overlie a fine sandy loam or loamy fine sand at a depth of about 33 inches. Cobbles and stones are present throughout the profile. Permeability is moderately rapid; available moisture capacity is medium; and natural fertiliby is medium. Depth to water table and bedrock typically exceeds 5 feet.

INTERPRETATIONS AND LIMITATIONS FOR FARMING AND RELATED USES

SOIL SLOPE PHASE	CAPABILITY SUBCLASS	CULTIVATED CROPS	PASTURE AND HAY	ARTIFICIAL DRAINAGE	WATERWAYS	POND RESERVOIR AREAS	POND EMBANKMENTS
A,B	Vs,VIs	SEVERE	MODERATE	NOT NEEDED	SEVERE	MODERATE	MODERATE
C	VIs	SEVERE	MODERATE	NOT NEEDED	SEVERE	MODERATE	MODERATE
D	VIs	SEVERE	MODERATE	NOT NEEDED	SEVERE	MODERATE	MODERATE
E	VIIs	SEVERE	SEVERE	NOT NEEDED	SEVERE	SEVERE	MODERATE

MAJOR FACTORS AFFECTING USE- The very stony condition is a severe limitation on all slope phases for cultivated crops and waterways. In addition it is a moderate limitation for pasture and hay crops primarily because of the difficulty in harvesting the crop. Moderately rapid permeability may permit excessive seepage in pond reservoir areas. Since this soil is well drained artificial drainage is not needed.

SOIL LIMITATIONS FOR WILDLIFE

SOIL SLOPE PHASE	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
A,B,C,D,E	SEVERE	SLIGHT	SEVERE

MAJOR FACTORS AFFECTING USE- The limitations for growing openland wildlife habitat elements is severe because of the very stony condition of the soil. This condition is only a slight limitation for woodland wildlife habitat. Since the soil is well drained it has a severe limitation for wetland wildlife habitat.

WOODLAND INTERPRETATIONS

SOIL SLOPE PHASE	SEEDLING MORTALITY	EROSION HAZARD	WINDTHROW HAZARD	PLANT COMPETITION		EQUIPMENT LIMITATION	ORDINATION SUBCLASS
				HARDWOODS	CONIFEROUS		
A,B,C	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	SLIGHT	3o
D	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	MODERATE	3r
E	SLIGHT	MODERATE	SLIGHT	SLIGHT	MODERATE	SEVERE	3r

ESTIMATED PRODUCTIVITY RATING FOR SELECTED SPECIES

NORTHERN HARDWOODS	RED OAK	WHITE PINE	RED PINE	WHITE SPRUCE	RED SPRUCE	To Favor	To Plant
59-66 Site Index		70-80 Site Index			40-50 Site Index	S.M. Y.B. W.A. W.S. B. Fir W.P.	W.P. R.P. N.S. R.S.

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SOIL SERIES – COLRAIN VERY STONY

SOIL LIMITATIONS FOR RECREATION

SOIL SLOPE PHASE	CAMP AREAS	PICNIC AREAS	ATHLETIC FIELDS AND PLAYGROUNDS	PATHS AND TRAILS	PARKING AREAS		
A	MODERATE	SLIGHT	MODERATE	MODERATE	MODERATE		
B	MODERATE	SLIGHT	MODERATE	MODERATE	MODERATE		
C	MODERATE	MODERATE	SEVERE	MODERATE	SEVERE		
D	SEVERE	SEVERE	SEVERE	MODERATE	SEVERE		
E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE		

MAJOR FACTORS AFFECTING USE FOR RECREATION – The very stony condition hinders use for camp areas, athletic fields and playgrounds, and parking areas. The close spacing of stones makes construction and layout difficult. The degree of limitation increases as the slope gradient increases because of increased problems in construction, layout, and erosion hazard.

NOTE: For buildings, septic tank sewage systems, ponds, and access roads refer to other sections.

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

SOIL SLOPE PHASE	SEPTIC TANK SEWAGE DISPOSAL	SANITARY LAND FILL	STREETS AND ACCESS ROADS	BUILDINGS		EXCAVATIONS PIPELINES, ETC.	LAWNS, GOLF FAIRWAYS AND LANDSCAPING
				WITH BASEMENTS	WITHOUT BASEMENTS		
A	MODERATE	SEVERE	SLIGHT	MODERATE	MODERATE	MODERATE	MODERATE
B	MODERATE	SEVERE	SLIGHT	MODERATE	MODERATE	MODERATE	MODERATE
C	MODERATE	SEVERE	MODERATE	MODERATE	MODERATE	MODERATE	MODERATE
D,E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE FOR COMMUNITY DEVELOPMENT – The construction of buildings and sanitary land fill is difficult because of the close spacing of stones. The soil absorbs sewage effluent from septic tanks readily but the installation of septic tank disposal systems may be difficult because of the large number of stones. The steeper slope phases have a greater limitation because of the higher potential erosion hazard, and additional construction problems.

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES FOR ENGINEERING

SOIL HORIZON DEPTH	CLASSIFICATION			% OF MATERIAL PASSING SIEVE				PERMEABILITY	AVAIL. WATER CAP.	SOIL pH	SHRINK-SWELL POTENTIAL
	USDA TEXTURE	UNIFIED	AASHO	#4	#10	#40	#200				
Inches								in./hr.	in./in.		
0-6	Fine sandy loam, sandy loam	SM	A-2,A-4	85-100	75-95	60-85	30-45	2.0-6.0	.12-.16	5.1-7.3	Low
6-33	Fine sandy loam, sandy loam and gravelly analogues	SM	A-2,A-4	85-100	75-95	60-85	30-45	2.0-6.0	.10-.14	5.6-7.3	Low
33-40 plus	Fine sandy loam, sandy loam, loamy fine sand and gravelly analogues	SM	A-2,A-4	85-95	70-90	60-80	25-45	2.0-6.0	.08-.12	6.1-7.3	Low

June 1969

SUITABILITY OF SOIL AS A SOURCE OF

TOPSOIL – Poor – very stony
SAND – Not suitable-loamy, excess fines

GRAVEL – Not suitable – loamy, excess fines
ROADFILL – Good on A,B,C slopes; fair on D slope; and poor on E slope

DEFINITION OF RATING TERMS: The soil is evaluated to a depth of 5 feet or less. The three classes of soil limitations are: Slight – relatively free of limitations or limitations are easily overcome. Moderate – limitations need to be recognized, but can be overcome with good management and careful design. Severe – limitations are severe enough to make use questionable.

(Back)

SOIL SERIES – MUCK AND/OR PEAT, DEEP

MAP SYMBOLS –

DESCRIPTION OF THE SOIL

Soils in this series are very poorly drained and consist of muck and peat. The muck and peat consists of the remains of reeds, sedges, and woody plants that grew in shallow ponds and marshes. Slopes are mainly level, but in places they are 3 to 5 percent. These soils occupy depressions and marshy areas. The soils typically consist of muck and/or peat to a depth of 4 feet or more. In places, mineral material is present at 3 to 4 feet. Permeability is moderate to moderately rapid; available moisture capacity is high; and fertility is low. The water table is at or near the surface unless the soils are artificially drained. Depth to bedrock typically exceeds 5 feet.

INTERPRETATIONS AND LIMITATIONS FOR FARMING AND RELATED USES

SOIL SLOPE PHASE	CAPABILITY SUBCLASS	CULTIVATED CROPS	PASTURE AND HAY	ARTIFICIAL DRAINAGE	WATERWAYS	POND RESERVOIR AREAS	POND EMBANKMENTS
A,B	VIIIw	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE – The very poorly drained condition as a result of a high water table is a severe limitation for farming and related uses. The organic muck and peat has a poor capacity to support loads when wet. Drainage is difficult because the muck and peat settles unevenly upon drying. Wind erosion also is a potential problem when large areas are drained and farmed. The material is unstable in embankments and erodes readily.

SOIL LIMITATIONS FOR WILDLIFE

SOIL SLOPE PHASE	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
A,B	SEVERE	SEVERE	SLIGHT

MAJOR FACTORS AFFECTING USE – Establishing and maintaining habitat for openland and wetland wildlife is difficult because of the high water table and low fertility. Trees blow down readily because of the high water table and anchorage of roots. The high water table is a favorable feature for wetland wildlife.

WOODLAND INTERPRETATIONS

SOIL SLOPE PHASE	SEEDLING MORTALITY	EROSION HAZARD	WINDTHROW HAZARD	PLANT COMPETITION		EQUIPMENT LIMITATION	ORDINATION SUBCLASS
				HARDWOODS	CONIFEROUS		
		UNSUITED FOR COMMERCIAL FOREST PRODUCTION					

ESTIMATED PRODUCTIVITY RATING FOR SELECTED SPECIES

NORTHERN HARDWOODS	RED OAK	WHITE PINE	RED PINE	WHITE SPRUCE	RED SPRUCE	

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IN COOPERATION WITH VERMONT AGRICULTURAL EXPERIMENT STATION AND
VERMONT DEPARTMENT OF FORESTS AND PARKS, USDA FOREST SERVICE

June 1963

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COORDINATION BETWEEN STATES IS COMPLETED
JULY 1973

SOIL LIMITATIONS FOR RECREATION

SOIL SLOPE PHASE	CAMP AREAS	PICNIC AREAS	ATHLETIC FIELDS AND PLAYGROUNDS	PATHS AND TRAILS	PARKING AREAS		
A,B	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE		

MAJOR FACTORS AFFECTING USE FOR RECREATION- The major limitation for all recreational items is the high water table. The muck and peat are unstable when wet and have a poor capacity to support foot and vehicular traffic. Structures placed in or on the organic material settle unevenly and are subject to damage.

NOTE: For buildings, septic tank sewage systems, ponds, and access roads refer to other sections.

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

SOIL SLOPE PHASE	SEPTIC TANK SEWAGE DISPOSAL	SANITARY LAND FILL	STREETS AND ACCESS ROADS	BUILDINGS		EXCAVATIONS PIPELINES, ETC.	LAWNS, GOLF FAIRWAYS AND LANDSCAPING
				WITH BASEMENTS	WITHOUT BASEMENTS		
A,B	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE FOR COMMUNITY DEVELOPMENT- The high water table and poor capacity to support loads are the main limitations for residential and community development. Ground water seeps into basements, sanitary land fill trenches, and other excavations. Structures placed in or on these organic materials settle unevenly and are subject to damage. Septic tank filter fields are saturated during wet seasons and the soil has poor capacity to absorb effluent.

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES FOR ENGINEERING

SOIL HORIZON DEPTH	CLASSIFICATION			% OF MATERIAL PASSING SIEVE				PERMEABILITY	AVAIL. WATER CAP.	SOIL pH	SHRINK-SWELL POTENTIAL
	USDA TEXTURE	UNIFIED	AASHO	#4	#10	#40	#200				
Inches								in./hr.	in./in.		
0 to 40 plus	Muck and/or peat	PT	-	-	-	-	-	Variable	More than .22	Variable	Low

June 1969

SUITABILITY OF SOIL AS A SOURCE OF

TOPSOIL- Poor, oxidizes readily, loose when dry
SAND- Not suitable, mainly organic material
GRAVEL- Not suitable, no gravel, organic
ROADFILL- Poor, high compressibility, poor capacity to support loads

DEFINITION OF RATING TERMS: The soil is evaluated to a depth of 5 feet or less. The three classes of soil limitations are: Slight- relatively free of limitations or limitations are easily overcome. Moderate- limitations need to be recognized, but can be overcome with good management and careful design. Severe- limitations are severe enough to make use questionable.

(Back)

SOIL SERIES - TUNBRIDGE STONY

MAP SYMBOLS -

DESCRIPTION OF THE SOIL

Soils of this series are well drained, loamy, stony, and moderately deep to bedrock. Mapped areas have stones on the surface 30-100 feet apart. These soils occupy glacial till covered uplands, whose topography is controlled by bedrock. Soil slope is 0 to more than 50 percent. This soil typically has fine sandy loam surface layers and subsoil that overlie bedrock at a depth ranging from 20 to 40 inches. The bedrock is mainly schist. Permeability is moderately rapid; available moisture capacity is moderately low; and natural fertility is medium. Depth to water table is typically more than 5 feet. The surface and subsoil layers are a light loam in places. Potential frost heave is moderate.

INTERPRETATIONS AND LIMITATIONS FOR FARMING AND RELATED USES

SOIL SLOPE PHASE	CAPABILITY SUBCLASS	CULTIVATED CROPS	PASTURE AND HAY	ARTIFICIAL DRAINAGE	WATERWAYS	POND RESERVOIR AREAS	POND EMBANKMENTS
A	IIe	SLIGHT	SLIGHT	NOT NEEDED	MODERATE	MODERATE	SEVERE
B	IIe	SLIGHT	SLIGHT	NOT NEEDED	MODERATE	MODERATE	SEVERE
C	IIIe	MODERATE	SLIGHT	NOT NEEDED	SEVERE	MODERATE	SEVERE
D	IVe	SEVERE	MODERATE	NOT NEEDED	SEVERE	MODERATE	SEVERE
E	VIe	SEVERE	SEVERE	NOT NEEDED	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE- This soil has little or no limitation for farming on A and B slope phases. Stones and rock outcrops are present but are not close enough together to be a moderate limitation. Since this soil is well drained artificial drainage is not needed. The limitation is moderate for reservoir areas because of the moderately rapid permeability and the possibility of excess seepage. The limitation is severe for pond embankments because of the moderate depth to bedrock. Bedrock may be exposed when waterways are constructed.

SOIL LIMITATIONS FOR WILDLIFE

SOIL SLOPE PHASE	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
A,B,C	SLIGHT	MODERATE	SEVERE
D	MODERATE	MODERATE	SEVERE
E	SEVERE	MODERATE	SEVERE

MAJOR FACTORS AFFECTING USE- This soil has good potential for openland wildlife habitat but has a severe limitation for wetland wildlife habitat because the soil is well drained.

WOODLAND INTERPRETATIONS

SOIL SLOPE PHASE	SEEDLING MORTALITY	EROSION HAZARD	WINDTHROW HAZARD	PLANT COMPETITION		EQUIPMENT LIMITATION	ORDINATION SUBCLASS
				HARDWOODS	CONIFEROUS		
A,B,C	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	SLIGHT	3o
D	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODERATE	MODERATE	3r
E	SLIGHT	MODERATE	SLIGHT	SLIGHT	MODERATE	SEVERE	3r

ESTIMATED PRODUCTIVITY RATING FOR SELECTED SPECIES

NORTHERN HARDWOODS	RED OAK	WHITE PINE	RED PINE	WHITE SPRUCE	RED SPRUCE	To Favor	To Plant
59-66 Site index		70-80 Site index			50-60 Site index	S.M. Y.B. W.A. W.P. W.S. B.Fir	W.P. B.Fir Larch W.S.

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SOIL LIMITATIONS FOR RECREATION

SOIL SLOPE PHASE	CAMP AREAS	PICNIC AREAS	ATHLETIC FIELDS AND PLAYGROUNDS	PATHS AND TRAILS	PARKING AREAS		
A	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT		
B	SLIGHT	SLIGHT	MODERATE	SLIGHT	MODERATE		
C	MODERATE	MODERATE	SEVERE	SLIGHT	SEVERE		
D	SEVERE	SEVERE	SEVERE	MODERATE	SEVERE		
E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE		

MAJOR FACTORS AFFECTING USE FOR RECREATION- The basic limitation for this soil for most recreational uses is slight or moderate on A and B slope phases. The well drained condition and good suitability for foot and vehicular traffic are attributes of this soil for recreation uses. The soil dries out quickly after rain and has only slight limitations for maintaining vegetation. As the slope gradient increases the problems of construction and layout also increase. The D and E slope phases dominantly have a severe limitation because of the problem in construction and potential erosion hazard.

NOTE: For buildings, septic tank sewage systems, ponds, and access roads refer to other sections.

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

SOIL SLOPE PHASE	SEPTIC TANK SEWAGE DISPOSAL	SANITARY LAND FILL	STREETS AND ACCESS ROADS	BUILDINGS		EXCAVATIONS PIPELINES, ETC.	LAWNS, GOLF FAIRWAYS AND LANDSCAPING
				WITH BASEMENTS	WITHOUT BASEMENTS		
A,B,C	SEVERE	SEVERE	MODERATE	SEVERE	MODERATE	SEVERE	MODERATE
D,E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE FOR COMMUNITY DEVELOPMENT- This soil has a severe limitation for most community development items because of the moderate depth to bedrock. This moderate depth hinders the use for septic tank sewage disposal and sanitary land fill. Construction of basements also is a severe problem because the underlying bedrock must be removed. The same problem is experienced in making other excavations and making cuts for streets and access roads. Stones and a moderately low available moisture capacity are the main limitations for lawns and golf fairways.

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES FOR ENGINEERING

SOIL HORIZON DEPTH	CLASSIFICATION			% OF MATERIAL PASSING SIEVE				PERMEABILITY	AVAIL. WATER CAP.	SOIL pH	SHRINK-SWELL POTENTIAL
	USDA TEXTURE	UNIFIED	AASHO	#4	#10	#40	#200				
Inches								in./hr.	in./in.		
0-7	Fine sandy loam, light loam	SM,ML	A-2,A-4	85-95	80-90	60-80	25-45	2.0-6.0	.12-.16	5.1-7.3	Low
7-29	Fine sandy loam, gravelly fine sandy loam, light loam	SM,ML	A-2,A-4	80-95	75-85	55-75	30-45	2.0-6.0	.10-.14	5.1-7.3	Low
29-40 plus	Schist bedrock	-	-	-	-	-	-	-	-	-	-

June 1969

SUITABILITY OF SOIL AS A SOURCE OF

TOPSOIL- Fair, stony and cobbly
SAND- Not suitable, loamy, excessive fines
GRAVEL- Not suitable, loamy, excessive fines
ROADFILL- Fair, moderately deep to bedrock

DEFINITION OF RATING TERMS: The soil is evaluated to a depth of 5 feet or less. The three classes of soil limitations are: Slight - relatively free of limitations or limitations are easily overcome. Moderate - limitations need to be recognized, but can be overcome with good management and careful design. Severe - limitations are severe enough to make use questionable.

SOIL SURVEY INTERPRETATIONS

SOIL SERIES – WOODSTOCK OR WOODSTOCK ROCKY

MAP SYMBOLS –

DESCRIPTION OF THE SOIL

Soils in this series are somewhat excessively drained, loamy and shallow to bedrock. Bedrock outcrops are 100 to 300 feet or more apart. They occupy bedrock dominated uplands that are thinly covered with glacial till. Slope is dominantly 3 to more than 25 percent. This soil typically consists of fine sandy loam material that overlies bedrock at less than 20 inches. The bedrock is dominantly schist. Cobble and stones are common in the upper 20 inches. Permeability is moderately rapid; available moisture capacity is moderately low and natural fertility is medium. Depth to water table typically exceeds 5 feet.

INTERPRETATIONS AND LIMITATIONS FOR FARMING AND RELATED USES

SOIL SLOPE PHASE	CAPABILITY SUBCLASS	CULTIVATED CROPS	PASTURE AND HAY	ARTIFICIAL DRAINAGE	WATERWAYS	POND RESERVOIR AREAS	POND EMBANKMENTS
A	IIIs	MODERATE	MODERATE	NOT NEEDED	SLIGHT	SEVERE	SEVERE
B	IIIe	MODERATE	MODERATE	NOT NEEDED	MODERATE	SEVERE	SEVERE
C	IVe	SEVERE	MODERATE	NOT NEEDED	SEVERE	SEVERE	SEVERE
D	VIe	SEVERE	SEVERE	NOT NEEDED	SEVERE	SEVERE	SEVERE
E	VIIe	SEVERE	SEVERE	NOT NEEDED	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE – The shallow depth to bedrock and rocky condition are limitations for use of this soil for farming and related uses. Since the soil is somewhat excessively drained, artificial drainage ordinarily is not needed. The bedrock outcrops in the rocky phase causes difficulty in the use of farm equipment and in the construction of waterways and other conservation practices. Because of the shallow depth only moderately low amounts of soil moisture are available for plants.

SOIL LIMITATIONS FOR WILDLIFE

SOIL SLOPE PHASE	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
A,B,C,D	SEVERE	SEVERE	SEVERE
E			

MAJOR FACTORS AFFECTING USE – Limitation for all types of wildlife is severe because of the shallow depth of the soil. Establishment of openland wildlife habitat elements is difficult. Since the soil is somewhat excessively drained wetland wildlife habitat is difficult to establish and maintain.

WOODLAND INTERPRETATIONS

SOIL SLOPE PHASE	SEEDLING MORTALITY	EROSION HAZARD	WINDTHROW HAZARD	PLANT COMPETITION		EQUIPMENT LIMITATION	ORDINATION SUBCLASS
				HARDWOODS	CONIFEROUS		
A,B,C	SEVERE	SLIGHT	MODERATE	SLIGHT	SLIGHT	SLIGHT	4d
D	SEVERE	SLIGHT	MODERATE	SLIGHT	SLIGHT	MODERATE	4d
E	SEVERE	MODERATE	MODERATE	SLIGHT	SLIGHT	SEVERE	4d

ESTIMATED PRODUCTIVITY RATING FOR SELECTED SPECIES

NORTHERN HARDWOODS	RED OAK	WHITE PINE	RED PINE	WHITE SPRUCE	RED SPRUCE	To Favor	To Plant
59-66 Site Index		60-70 Site Index		50-60 Site Index	40-50* Site Index	S.M. Y.B. W.S. R.S. W.P. B.F.	W.P. W.S.

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IN COOPERATION WITH VERMONT AGRICULTURAL EXPERIMENT STATION AND
VERMONT DEPARTMENT OF FORESTS AND PARKS + USDA FOREST SERVICE

June 1969

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COORDINATION BETWEEN STATES IS COMPLETED
February 1975

SOIL SERIES – WOODSTOCK OR WOODSTOCK ROCKY

SOIL LIMITATIONS FOR RECREATION

SOIL SLOPE PHASE	CAMP AREAS	PICNIC AREAS	ATHLETIC FIELDS AND PLAYGROUNDS	PATHS AND TRAILS	PARKING AREAS		
A	SLIGHT	SLIGHT	MODERATE	SLIGHT	SEVERE		
B	SLIGHT	SLIGHT	MODERATE	SLIGHT	SEVERE		
C	MODERATE	MODERATE	SEVERE	SLIGHT	SEVERE		
D	SEVERE	SEVERE	SEVERE	MODERATE	SEVERE		
E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE		

MAJOR FACTORS AFFECTING USE FOR RECREATION – Unless the slope is too steep and land shaping is required the shallow depth to bedrock is only a slight limitation for camp areas, picnic areas, and parking areas. The rock outcrops can be a problem where large areas are required for development such as for athletic fields, playgrounds, or parking areas. As slope gradient increases the limitations increase for most recreational items because of the difficulty in land shaping and excavation of the bedrock. Layout and placement of picnic tables, tents, and trailers is difficult on the C, D and E slope phases.

NOTE: For buildings, septic tank sewage systems, ponds, and access roads refer to other sections.

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

SOIL SLOPE PHASE	SEPTIC TANK SEWAGE DISPOSAL	SANITARY LAND FILL	STREETS AND ACCESS ROADS	BUILDINGS		EXCAVATIONS PIPELINES, ETC.	LAWNS, GOLF FAIRWAYS AND LANDSCAPING
				WITH BASEMENTS	WITHOUT BASEMENTS		
A,B,C,D, E	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

MAJOR FACTORS AFFECTING USE FOR COMMUNITY DEVELOPMENT – The shallow depth to bedrock and the close spacing of bedrock in the rocky phase cause serious design and construction problems for community development. Excavation of trenches for utilities and for basements is difficult because of the presence of bedrock. The function of septic tank sewage systems and sanitary landfill is severely hindered by the shallow depth to bedrock. The problems of construction increase as the slope gradient increases because of the increased need to excavate the bedrock. Lawns, golf fairways, and other vegetated areas tend to dry out quickly during prolonged dry periods because of the shallow capacity of this soil to supply moisture, and careful management of water and fertilizer application is needed. Pollution of shallow water supplies is possible from on-site sewage disposal or sanitary landfill.

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES FOR ENGINEERING

SOIL HORIZON DEPTH	CLASSIFICATION			% OF MATERIAL PASSING SIEVE				PERMEABILITY	AVAIL. WATER CAP.	SOIL pH	SHRINK-SWELL POTENTIAL
	USDA TEXTURE	UNIFIED	AASHO	#4	#10	#40	#200				
Inches								in./hr.	in./in.		
0-6	Fine sandy loam, sandy loam	SM	A-2,A-4	85-95	80-90	60-75	20-45	2.0-6.0	.14-.16	5.6-6.5	Low
6-18	Fine sandy loam, sandy loam and gravelly analogues	SM	A-2,A-4	85-95	80-90	60-75	20-45	2.0-6.0 plus	.14-0.16	5.6-6.5	Low
18+	Bedrock (predominantly schist)	---	------	------	------	------	------	------	------	------	------

June 1969

SUITABILITY OF SOIL AS A SOURCE OF

TOPSOIL – Poor – rocky and stony

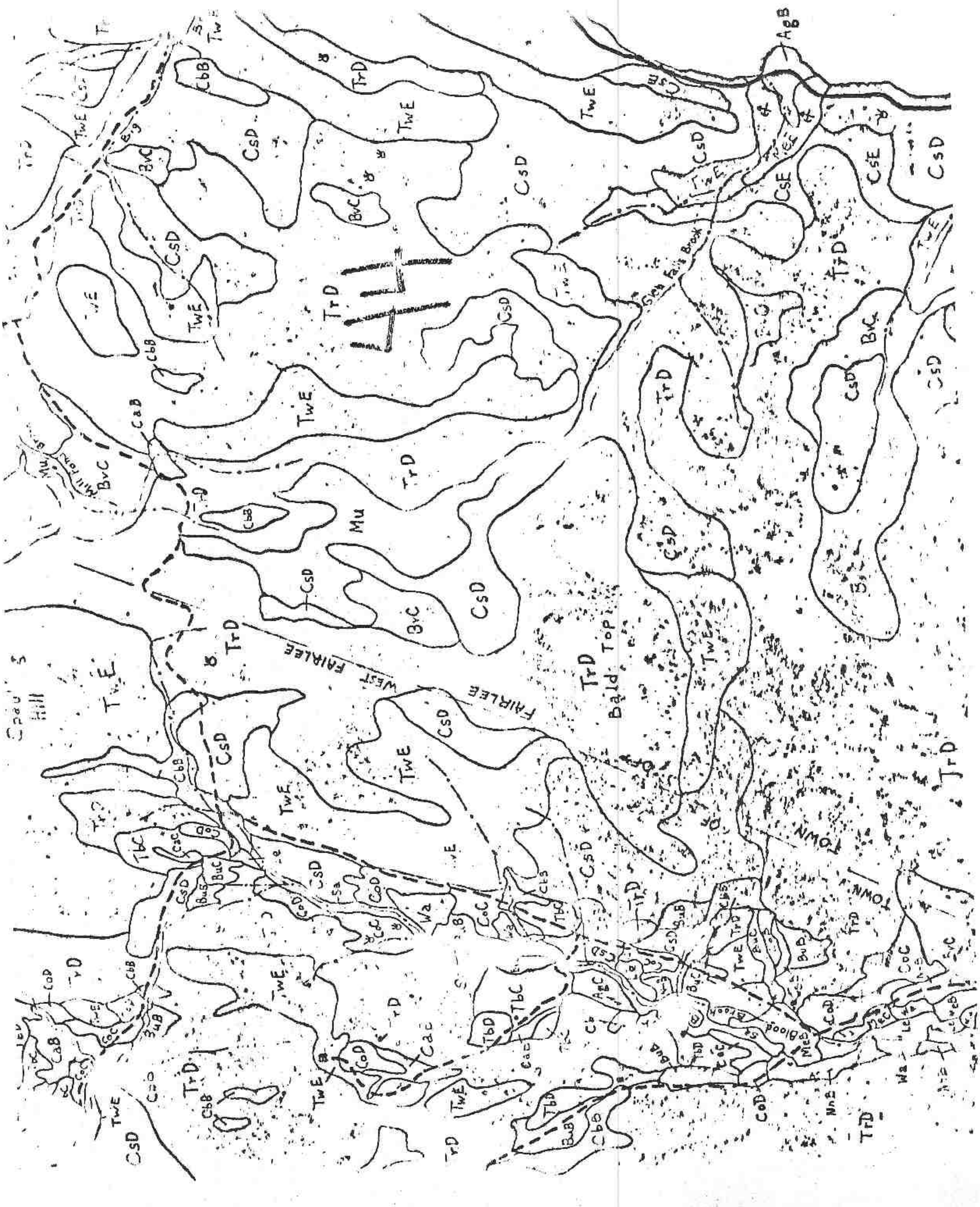
SAND – Not suitable – loamy, shallow to bedrock

GRAVEL – Not suitable – loamy, shallow to bedrock

ROADFILL – Poor – shallow to bedrock

DEFINITION OF RATING TERMS: The soil is evaluated to a depth of 5 feet or less. The three classes of soil limitations are: Slight – relatively free of limitations or limitations are easily overcome. Moderate – limitations need to be recognized, but can be overcome with good management and careful design. Severe – limitations are severe enough to make use questionable.

(Rock)


Glen Falls Brook
WEST FAIRLEE
FAIRLEE
Bald Top
TOWN
TOWN
Blood Brook


Narrow Hill
B R A D F O R D
Bradford
School No 7
River
Lower Plain
Pierpont Sta
Old Buffalo
Tebbetts Notch
Rowell Bk
Brook
Wormwood Hill
W E S T F A I R L E E
Spaulding Hill
Mill Pond
Bog Pond
VERMONT
NEW HAMPSHIRE
Echo Hill
Sawyer Mtn
TRANSMISSION LINE
West Fairlee
Blood Brook
Bald Top
Glen Falls Bk
F A I R L E E
Lake Morey
CONNECTICUT
BOSTON
The Palisades
Cottonstone
Middle
School No 9
Fairlee
Orford
Blackberry Hill
ORANGE CO
GRAFTON CO
COLLEGE
Jacobs
Strawberry Hill
Orfordville
Ely
Kenyon Hill
Mud Pond
Stonehouse Mtn
Sunday Mt