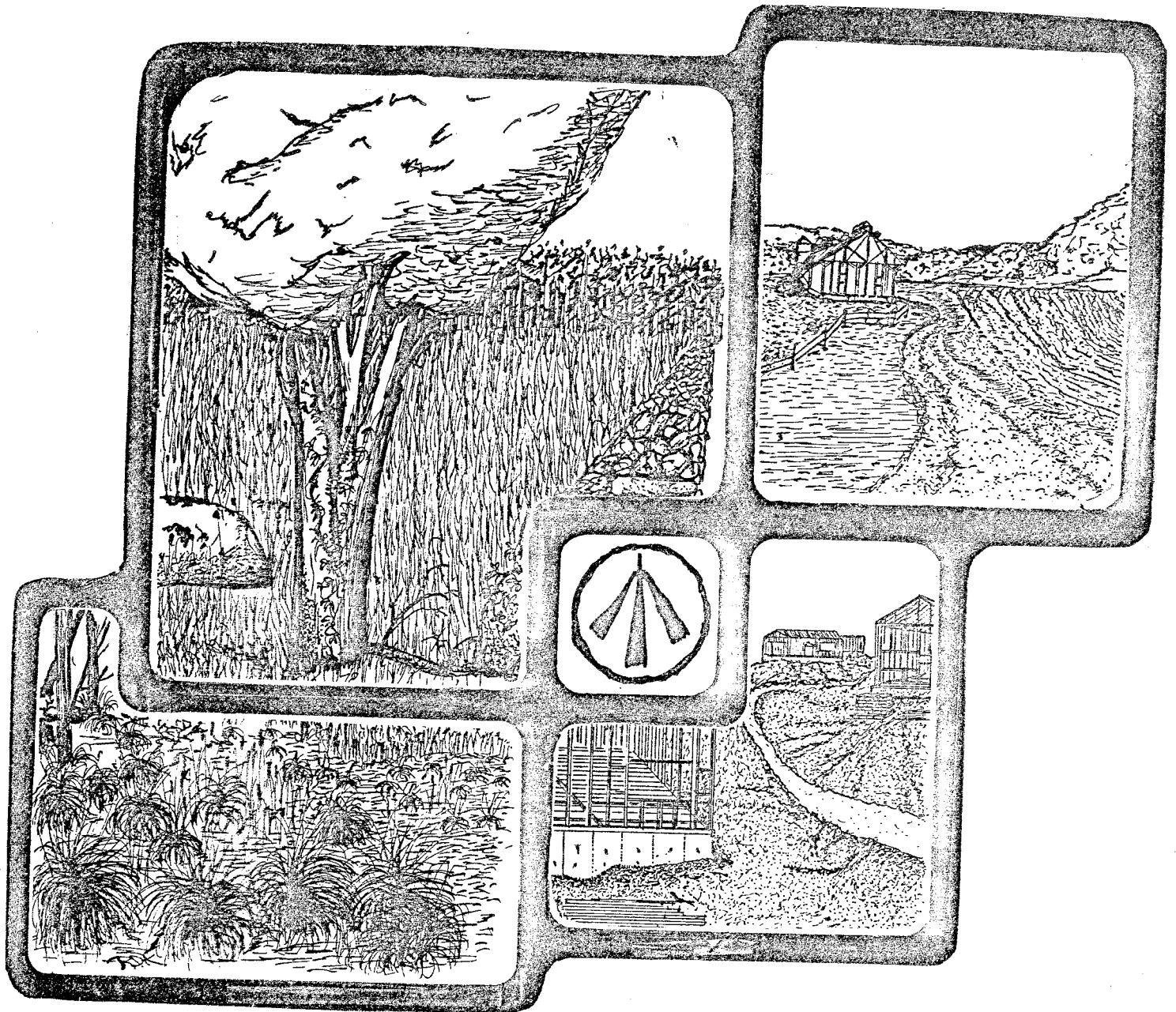


ENVIRONMENTAL REVIEW TEAM REPORT

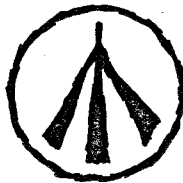


PARK'S PROPERTY DANBURY, CT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

**KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT**

**PARK'S PROPERTY
FEBRUARY 1984**



King's Mark Resource Conservation and Development Area
Environmental Review Team
Sackett Hill Road
Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies

U.S.D.A. Soil Conservation Service

State Agencies

Department of Environmental Protection

Department of Health

University of Connecticut Cooperative Extension Service

Department of Transportation

Local Groups and Agencies

Litchfield County Soil and Water Conservation District

New Haven County Soil and Water Conservation District

Hartford County Soil and Water Conservation District

Fairfield County Soil and Water Conservation District

Northwestern Connecticut Regional Planning Agency

Valley Regional Planning Agency

Central Naugatuck Valley Regional Planning Agency

Housatonic Valley Council of Elected Officials

Southwestern Regional Planning Agency

Greater Bridgeport Regional Planning Agency

Regional Planning Agency of South Central Connecticut

Central Connecticut Regional Planning Agency

American Indian Archaeological Institute

Housatonic Valley Association

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FUNDING PROVIDED BY

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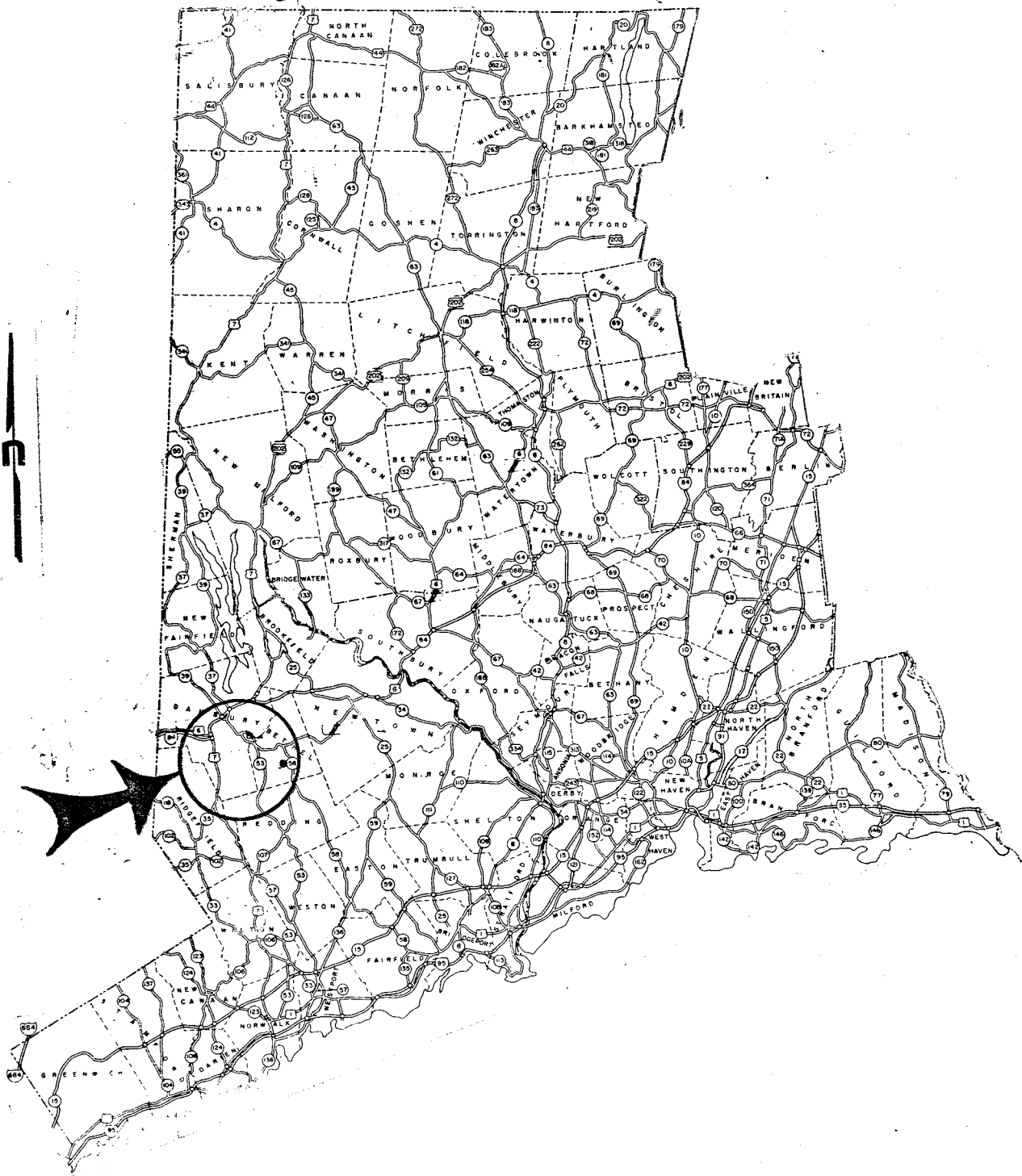
TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	1
II. HIGHLIGHTS.....	4
III. TOPOGRAPHY AND GEOLOGY.....	6
IV. HYDROLOGY.....	9
V. SOILS.....	12
VI. FORESTRY.....	17
VII. WILDLIFE.....	22
VIII. FISHERIES.....	24
IX. CULTURAL RESOURCES.....	25
X. PLANNING CONSIDERATIONS.....	26
XI. DESIGN CONSIDERATIONS.....	27
XII. APPENDIX.....	33
Soils Map	
Soils Limitation Chart	
Soil Descriptions	
Listing of wildflowers and shrubs observed by	
Betsy Murphy in area of Back Pond on	
May 14, 1983	

LIST OF FIGURES

1	Topographic Map.....	2
2	Geology Map.....	8
3	Watershed Map.....	10
4	General Soils Map.....	14
5	Critical Soil Areas.....	16
6	Potential of Soils for Septic Systems.....	18
7	Vegetation Type Map.....	19
8	Zoning Map.....	28
9	Design Zones.....	29

LOCATION OF STUDY SITE



Scale 1" = 10 miles



ENVIRONMENTAL REVIEW TEAM REPORT
ON
THE PARKS PROPERTY
DANBURY, CT

I. INTRODUCTION

The City of Danbury is considering the purchase of a 525 acre tract of land known as the Park's Property.

As shown in Figure 1, the Park's Property is located in the southern portion of town astride Brushy Hill Road. The property is bounded on the north by Southern Boulevard and on the east by Mountainville Road. The land is mostly undeveloped and characterized by moderately to steeply sloping wooded land. The northwestern quarter of the site consists of the Parks homestead, a related residential building, several farm buildings, a greenhouse, and + 42 acres of farmland. The northeastern border of the property along Mountainville Road also contains two farm fields totaling about 18 acres in size. The northcentral portion of the property has a spectacular castle atop Thomas Mountain with access off Brushy Hill Road. Figure 1 also shows that two ponds are located on the property: Park's Pond (+ 10 acres in size), and another pond known as Back Pond (+ 10 acres in size) which drains to Tarryville Lake.

The City of Danbury is now in the process of collecting and analyzing information concerning the site in order to develop a conceptual plan for the appropriate use of the property. The King's Mark Environmental Review Team was requested by the Mayor of Danbury to perform an environmental review of the site. Specifically, the Environmental Review Team was requested to identify the natural resource base of the site and to provide natural resource management advice in order to assist the City in developing a sound environmental plan for development of the property. The Team was also asked to identify those areas of the site most suitable for urban development.

The King's Mark Executive Committee considered the City of Danbury's request for an ERT study, and approved the project for review by the Team.

The ERT met and field reviewed the site on September 28, 1983. Team members participating on this project included:

Jonathan Chew.....	Regional Planner.....	Housatonic Valley Council of Elected Officials
Russell Handsman.....	Archaeologist.....	American Indian Archaeological Institute
William Hyatt.....	Fishery Biologist.....	Ct. Department of Environmental Protection
Randi Lemmon.....	Land Planner.....	Housatonic Valley Association
Paul Rothbart.....	Wildlife Biologist.....	Ct. Department of Environmental Protection

TOPOGRAPHIC MAP

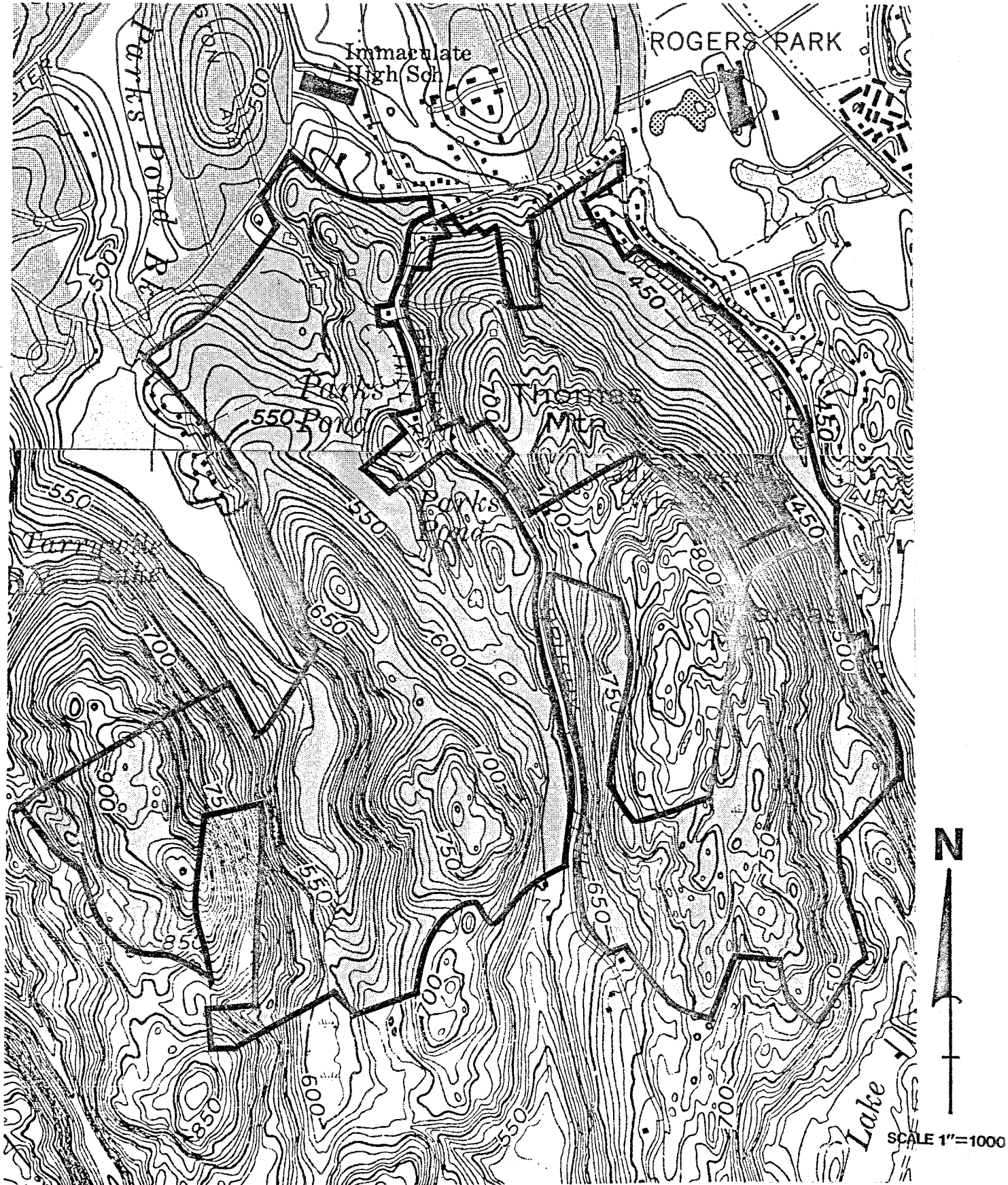


FIGURE 1

Donald Smith.....Forester.....Ct. Department of
Environmental Protection
David Thompson.....District Conservationist.....U.S.D.A. Soil
Conservation Service
William Warzecha.....Geohydrologist.....Ct. Department of
Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed study, a checklist of concerns to address, a topographic map, a soils map, and a soils limitation chart. During the ERT's field review, team members met with representatives from the City of Danbury and the landowner and walked the property. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

This report presents the Team's findings. The report identifies the natural resource base of the Park's Property and discusses opportunities and limitations for land management. It is hoped the information contained in this report will assist the City of Danbury in making environmentally sound decisions.

If any additional information is required, please contact Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, Sackett Hill Road, Warren, Connecticut 06754.

* * * * *

II. HIGHLIGHTS

1. From a geological perspective, it appears the most limiting factors with respect to development on most of the Park's Property include: (1) bedrock at or near the surface of the ground throughout most of the site, (2) the compact nature of the till soils which are characteristic of the site and impede the downward movement of ground water resulting in a high ground-water table, (3) moderate to very steep slopes throughout the property, and (4) numerous surface boulders. (p. 8)
2. It appears that the northwest portion of the property would be the most favorable area to develop for a high intensity, urban land use. This is mainly due to the presence of a public sewer and water line which is accessible to this portion of the Park's Property. The accessibility of these two utilities eliminates the necessity of locating an on-site sewage disposal system or systems as well as an on-site well or wells. Also, the slopes in this area, which range from gentle to moderate, are much more conducive to development than the moderate to very steep slopes that predominate throughout the remainder of the property. (p. 9)
3. Urban development of the Park's Property can be expected to lead to increases in stormwater runoff. The amount of increased runoff will depend on the extent of the development, amount of vegetation removed, development of impervious surface (i.e., roofs, paved areas) and the timing of development. These increases may lead to both volume and peak flow increases which can exacerbate flooding and stream bank erosion. For this reason, it is important that a stormwater management plan be prepared for any type of proposal prior to actual development. Also, due to the moderate to steep slopes throughout the majority of the site, plans for any type of development should be accompanied by a stringent erosion and sediment control plan. (p. 11)
4. No high producing sand and gravel aquifer is believed to exist on the Park's Property. Therefore, the underlying bedrock would probably be the major aquifer if there is a desire for an on-site water supply. Water yields from bedrock aquifers are commonly small, but reliable. (p. 11)
5. Much of the Park's Property consists of "critical" soils. These soils pose severe limitations for urban development and include inland wetland soils, areas characterized by steep slopes (greater than 15%), and shallow to bedrock soils (hard rock is within 20 inches of the soil surface). While limited use of the critical soil areas may be feasible (recreational trails, occasional homesites on carefully selected sites), these areas clearly do not lend themselves to any type of large scale development. (p. 15)
6. Over half of the site is covered by soils which have low to very low potential for septic systems. Most of the remainder of the property is underlain by soils with only medium potential for septic systems. While occasional inclusions of more suitable soil types may be found within these low and medium potential soils, the vast majority of the site does not appear capable of supporting any type of large scale development which must rely upon septic systems. (p. 17)
7. Of the total 525 acres present, aerial photo interpretation reveals that 102 acres are non-forested, and 203 acres are forested but either

- inaccessible or inoperable from a forestry standpoint due to excessively steep slopes. The remaining 220 acres can be divided into 11 differing vegetative types which are described in the text of this report along with their management potential. (p. 17)
8. The Park's Property is made up of three major wildlife habitat types. These are mixed hardwood forest, open fields, and open water. If the site is developed for urban related uses there will be an immediate negative impact on existing wildlife populations. The severity of this impact will depend upon the extent and type of development. (p. 22)
 9. The Park's Property contains 2 ponds, both approximately 10 acres in surface area. These ponds provide an attractive amenity and the warm water fishery offered by these ponds enhances the potential of the property for recreational use. (p. 24)
 10. The archaeological potential of much of the Park's Property is low. Although most of the parcel has not been disturbed by recent residential development, there are few signs of either prehistoric or historic use. One unrecorded site has been reported from the northern end of the tract in the vicinity of the farm. If this site exists, consideration should be given to protecting it from any proposed development. (p. 25)
 11. The Park's Property is zoned for residential use and local and regional plans call for residential use of the property. It should be noted, however, that an Open Space and Recreation Plan prepared by the Housatonic Valley Council of Elected Officials (HVCEO) also projects a definite need for additional recreation land in the portion of Danbury represented by the subject site. (p. 27)
 12. While much of the property does have severe development limitations, there are nonetheless areas which are suitable for expanded residential or municipal use. Based upon the ERT's analysis, there are two areas totaling 100 acres in size with good potential for moderate density future development. Two additional areas (i.e., the Manor house area and castle area totaling 50 acres) should be considered for retention as large estates, not to be further subdivided. The remaining 375 acres contain mostly steep, rocky woodland with limited development potential. Consideration should be given to retaining most of this area for open space and passive recreational use. (p. 30)
 13. In conclusion, the Park's Property represents one of the most unique and diverse properties remaining in Danbury, which, because of its location, access, developability, usefulness for meeting existing and future municipal needs and outstanding beauty, should be seriously considered for public purchase in the opinion of the ERT's Land Planner. With proper planning and marketing, the city could conceivably recoup most, if not all, of its initial investment while providing for the public need and directing the future development and use of this magnificent property. (p. 29)

III. TOPOGRAPHY AND GEOLOGY

For the purposes of discussion, the Park's Property in this report will be referred to in two separate sections. The parcel of land east of Brushy Hill Road will be known as Section "A", and the land to the west of the road as Section "B". Also, the pond south of Tarryville Lake will be referred to as Back Pond, its local name, throughout this report.

A. TOPOGRAPHY

1. SECTION "A"

This portion of the Park's Property consists predominantly of a rough and rocky terrain characterized by moderate to steep slopes (see Figure 1). Bedrock, which is commonly called "ledge", outcrops extensively throughout this section. Land rises in the northern portions of the section sharply from Brushy Hill and Mountainville Road to the top of Thomas Mountain. Topography throughout the southern portions of Section "A" is hummocky. Elevations in Section "A" range from a low of approximately 410 feet above mean sea level at the northeast tip of the property to a high of approximately 870 feet above mean sea level at the peak of Thomas Mountain.

2. SECTION "B"

Section "B" consists primarily of three bedrock controlled hills, two in the eastern half of the parcel and the other in the western half. Back Pond and an intermittent stream bisects Section "B". Another surface water body within this section is Park's Pond, which is located to the east. Slopes throughout this section are mostly moderate to very steep. Like the terrain throughout Section "A", the parcel is rough and rocky, and bedrock outcrops extensively. In the area northwest of Park's Pond, however, slopes are mostly gentle to moderate.

Elevations in Section "B" rise from a low of approximately 470 feet above mean sea level along the northern limits to 920 feet above mean sea level at the top of the bedrock controlled hill in the southwestern portion of the parcel.

B. GEOLOGY

While the Park's property (both Sections "A" and "B") is encompassed by both the Danbury and Bethel topographic quadrangles, most of the property lies within the Bethel quadrangle. The bedrock geologic map (QR-7) for the Danbury quadrangle has been prepared by James W. Clarke and published by the Connecticut Geological and Natural History Survey. The surficial map for the Danbury quadrangle as well as the surficial and bedrock geologic maps for the Bethel quadrangle have not been completed to date. However, there is preliminary geologic information on file at the Natural Resources Center of the Department of Environmental Protection which is available for review purposes only.

As mentioned earlier, bedrock outcrops extensively throughout the entire property. Most of the bedrock that underlies or crops out within the Park's property is gneissic. A gneiss is a crystalline, metamorphic (rocks altered

by great heat and/or pressure) rock. It is a coarse grained rock in which layers of light colored granular mineral grains alternate with bands of dark, elongate mineral grains. The chief minerals which compose gneisses are quartz and feldspar. Other minerals include biotite, hornblende and sillimanite.

Another type of metamorphic rock found along the extreme eastern limits of the property is marble. It is a medium to coarse grained metamorphosed limestone that formed mainly by the recrystallization of calcite and/or dolomite minerals found in the limestone. Marble rock is generally white or light in color due primarily to the presence of the dolomite or calcite minerals which are naturally white or pale. However, the rock may take on various tones ranging from gray, green, brown or any other mixed color, depending upon the presence of certain accessory minerals. Accessory minerals are mineral(s) that occur in relatively small quantities in a rock. As a result, the rock is given a "marbled" effect. In terms of chemical makeup, the marble rock is quite different from the gneissic rock which underlies most of the property. The minerals in the marble weather much more easily than the minerals in the gneissic rock. As a result, the marbles are much more susceptible to chemical and mechanical weathering. Therefore, bedrock exposures of marble are not as common as the more resistant gneisses.

Bedrock within most of the property is overlain by unconsolidated material of glacial origin. By far, the most widespread surficial deposit is till, which was deposited directly by the glacier ice. A thin to non-existent blanket of till covers most of the rough terrain which comprises the Park's Property. Till is composed of rock particles which were derived from local bedrock (i.e., gneisses, schists and marbles ranging in size from clay to boulders). The glacier ice collected, transported, abraded, crushed and deposited rock fragments indiscriminantly during its advance and retreat. As a result, the till shows little or no sorting or stratification (layering). It varies in texture from sandy and loose to hard, silty and compact. In general, the upper few feet of thick till deposits will be sandy, very stony and relatively loose. At depths of several feet, the till may become siltier, less stony and very compact. A large number of surface boulders are present throughout the site. Thickness of the till deposits ranges from zero, where outcrops occur, to probably not more than fifteen feet below ground surface.




As the glacier ice began to melt, streams emanating from the wasting ice carried tremendous amounts of rock materials that had been incorporated in the glacier. The streams reworked these materials so that they were sorted to some extent and deposited in layers. The resulting deposit, called stratified drift is found in minor amounts in the northern portion of Section "B", just west of the barn on the property. Stratified drift is composed primarily of sand and gravel.

Figure 2 of this report is adapted from map QR-7 and information on file at the Natural Resources Center, and shows the approximate distribution of the till, stratified drift and rock units on the site.

From a geological perspective, it appears the most limiting factors with respect to development on most of the Park's Property include: (1) bedrock at or near the surface of the ground throughout most of the site, (2) the compact nature of the till soils which are characteristic of the site and impede the downward movement of ground water resulting in a high groundwater table,

GEOLOGY MAP



-  Shallow till deposits with extensive rock outcrops of gneiss
-  Shallow till deposits underlain by marble
-  Stratified drift underlain by gneiss



SCALE 1"=1000'

FIGURE 2

(3) moderate to very steep slopes throughout the property, and (4) numerous surface boulders.

With the exception of the northwest portion of Section "B", the remainder of the Park's Property is not accessible to a public sewer or water line. As a result, the above mentioned conditions which are predominant throughout the site, would greatly limit and possibly preclude the installation of a conventional septic system and/or engineered system. Areas where (1) ledge rock is less than 5 feet below ground surface (2) soil percolation rate is slower than one inch in thirty minutes (3) maximum ground water level is less than 5 feet below ground surface or (4) soils with slopes exceeding 25% exist, the State Public Health Code designates as "areas of special concern" with respect to sewage disposal. Such areas require a detailed investigation and special design which must be prepared by a professional engineer registered in the State of Connecticut. Once the plans have been prepared in accordance with all applicable sections of the State Public Health code, (Section 19-13-B 103 a-f inclusive) the plans must be reviewed by both the local and State Health Departments for possible approval. While these limitations may in some cases be overcome by proper engineering and careful planning, the costs would probably be very high.

From a geological viewpoint, it appears that the northwest portion of Section "B" would be the most favorable area if not the only area to develop for a high intensity, urban land use. This is mainly due to presence of a public sewer and water line which is accessible to this portion of the Park's Property. The accessibility of these two utilities eliminates the necessity of locating an on-site sewage disposal system or systems as well as an on-site well or wells. Also, the slopes in this area, which range from gentle to moderate, are much more conducive to development than the moderate to very steep slopes that predominate throughout the remainder of the property.

The northeast portions of Section "A", which comprises moderately sloping open fields, could possibly support some residential development, especially if a public sewer line was made available. If on-site sewage disposal systems had to be relied on, it appears this area could possibly accommodate some septic systems with proper engineering design. Of course, this would first require a detailed site investigation, including deep test pits and percolation tests, by the local health department. Such an investigation would be necessary to determine if on-site sewage disposal is feasible or not.

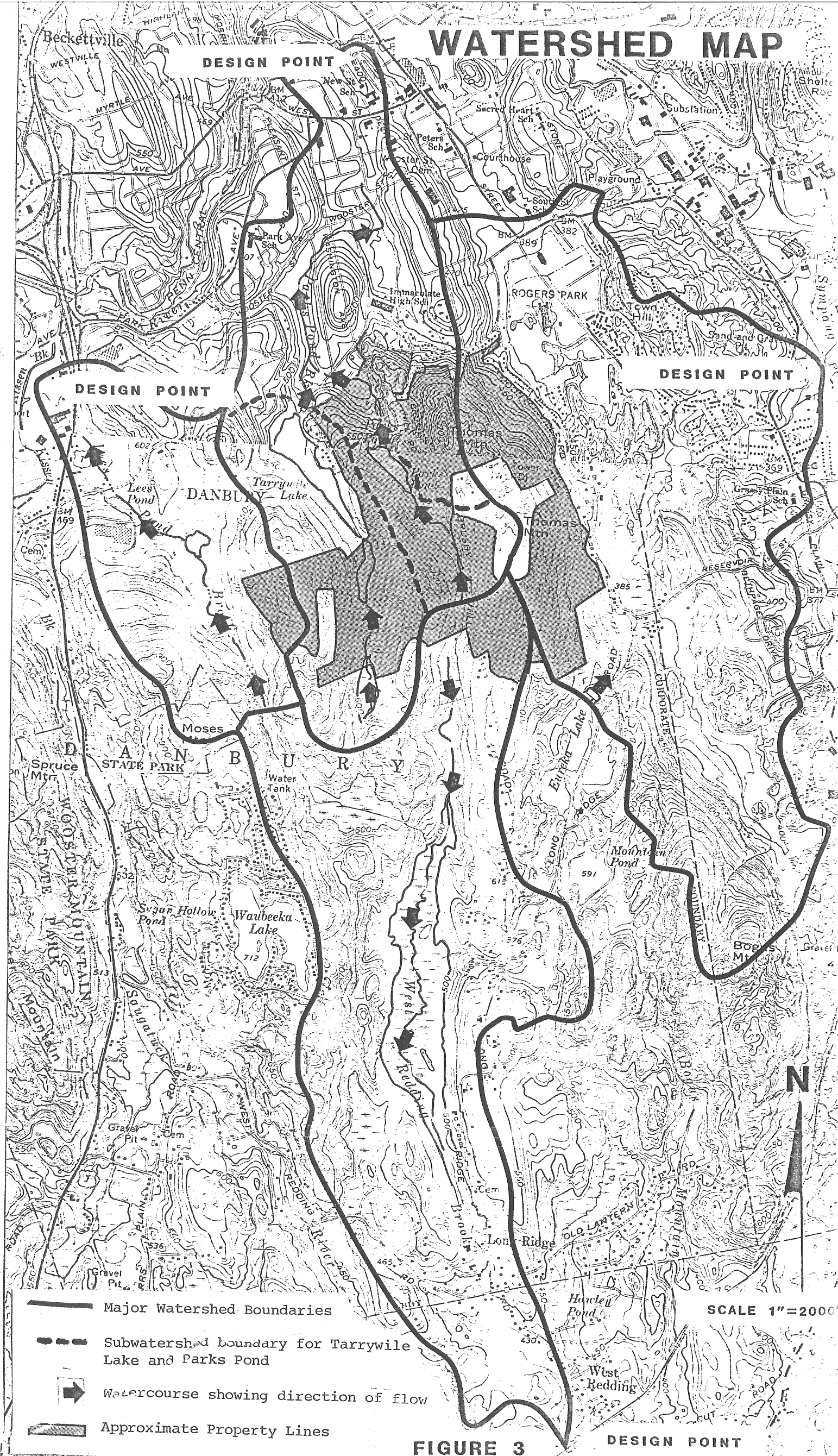
IV. HYDROLOGY

Due to the presence of shallow, compact soils (which impede the downward movement of water), numerous bedrock outcrops, and the moderate to steep slopes on the site, drainage throughout the property is quite complex. Numerous intermittent drainage channels can be seen. Major streams on the site include the inlet and outlet stream for Park's Pond and the inlet stream to Back Pond.

Runoff from the central portions of the Park's Property drains either into Tarryville Lake, Back Pond, Park's Pond or into the inlet and outlet streams for these impoundments (see Figure 3).

Park's Pond Brook, the outlet stream for Tarryville Lake, merges with the

WATERSHED MAP



- Major Watershed Boundaries
- Subwatershed boundary for Tarrywile Lake and Parks Pond
- Watercourse showing direction of flow
- Approximate Property Lines

outlet stream for Park's Pond just outside the Park's Property at the northern tip of Section "B". Park's Pond Brook, a tributary to Still River, flows in a northward course. The drainage area for this area is 1.452 square miles or approximately 930 acres.

As shown in Figure 3, a small, western portion of the Park's Property, 24 acres in size, drains in a northwestward direction into Lee's Pond Brook.

Drainage in the eastern portion of the property drains easterly through intermittent drainage channels/swales into an unnamed brook which ultimately empties into Sympaug Brook, to the east.

Lastly, runoff from approximately 43 acres in the southern portion of the property drains into an intermittent stream which merges with West Redding Brook. West Redding Brook flows in a southward direction and is tributary to the Saugatuck River.

Development of the Park's Property can be expected to lead to increases in stormwater runoff. The amount of increased runoff will depend on the extent of the development, amount of vegetation removed, development of impervious surface (i.e., roofs, paved areas) and the timing of development. These increases may lead to both volume and peak flow increases which can exacerbate flooding and stream bank erosion. For this reason, it is important that a stormwater management plan be prepared for any type of proposal prior to actual development. Also, due to the moderate to steep slopes throughout the majority of the site, plans for any type of development should be accompanied by a stringent erosion and sediment control plan.

FLOOD-PRONE AREAS

Based on the Flood Boundary and Floodway Map prepared by the Federal Emergency Management Agency for the town of Danbury, only limited areas in Section "B" of the parcel lie within the 100-year flood boundary. These areas which would be inundated during a 100 year storm are located around the outer fringes of Park's Pond and Back Pond and also along the intermittent feeder stream into Back Pond. A 100 year flood is a flood with a one chance in 100 or 1% chance of occurring during any given year.

In addition to these recognized floodplains, there are a few wetland areas or topographically low depressions within the Park's Property that may be inundated during periods of particularly heavy rain storms. These areas are important from a hydrological viewpoint in that they function as a flood storage area during heavy rainfalls. For this reason, it is recommended that these wetland or low lying areas be left in their natural state.

WATER SUPPLY

No high producing sand and gravel aquifer is believed to exist on the Park's Property. Therefore, the underlying bedrock would probably be the major aquifer if there is a desire for an on-site water supply. Water yields from bedrock aquifers are commonly small. Connecticut Water Resources Bulletin No. 21 reports that while 80% of the surveyed wells tapping gneiss bedrock in the upper Housatonic River Basin supplied 3 gallons per minute, or more, only 10% supplied 30 gallons per minute or more. Similarly, 80% of the

wells surveyed which tapped a carbonate type bedrock (marble) in the upper Housatonic River Basin yielded 4 gallons per minute or more and only 10% supplied 50 gallons per minute or more.

In reviewing well completion reports of residential wells installed along Brushy Hill Road which tap the underlying bedrock, yields ranged between 4 gallons per minute and 8 gallons per minute at depths of 105 feet to 186 feet. Such yields would be adequate for most domestic uses.

Groundwater quality in the Park's Property may contain elevated levels of iron and/or manganese due to the mineralogical makeup of the gneissic bedrock. When iron and/or manganese levels are elevated in water supplies, they may cause objectionable conditions such as a brown color to laundered goods and a metallic taste to the water, as well as beverages (i.e., coffee, tea, etc.) made with the water. Also, groundwater in this portion of Danbury is commonly moderately hard to hard. As a result, water from a well or wells on the property may require filtration.

POND FEASIBILITY

At the time of the site visit, Team members were asked to comment on the potential of creating a pond along the westside of Brushy Hill Road in the eastern portion of Section "B". The soils, which cover this area are delineated as Ridgebury, Leicester and Whitman soils (map symbol: RN) on the accompanying soils map (see Appendix). These soils are characteristically wet and do lend themselves to pond construction. However, a potential problem associated with these soils is stoniness which may present excavation problems, particularly with side bank stabilization. A pond, a half of an acre in size, could probably be constructed in this area for recreation purposes (non-bathing), aesthetics, fishing and wildlife purposes.

If the property owner or prospective purchaser of the property wishes to construct a pond, the Fairfield County Soil and Water Conservation District has information regarding the building of ponds and should be contacted for assistance.

Some points to keep in mind when selecting a pond site include: (1) the size of the watershed which drains into the proposed pond area (2) the extent of active erosion in the watershed which, if severe, may fill the pond with sediment (3) select an area whereby an adequate depth (6-7') can be obtained, as shallow ponds are subject to excessive evaporation losses and weed/algae problems, and (4) an area with suitable soils for pond construction. Based on information supplied in "Building a Pond", a publication by the Soil Conservation Service, U.S. Department of Agriculture, approximately 1½ acres is needed in a watershed above a pond for each acre-foot of water to be stored. One acre foot is equal to the amount of water to a depth of 1 foot over 1 acre, a total of 325,851 gallons.

V. SOILS

A detailed soils mapping of the Park's Property is presented in the Appendix of this report. The Appendix also contains a soils limitation chart which summarizes the suitability of the various soils for alternate land uses. The Appendix also contains a series of descriptive sheets on each of the soils which have been mapped at the Park's Property. These sheets describe in de-

tail the on-site soil characteristics and their suitability for various land uses.

Natural Soil Groups

Basically, the soils on this site can be classified into five natural soil groups (see Figure 4). A brief description of each of these soil groups follows.

GROUP A - Terrace soils over sands and gravels (excluding the poorly and very poorly drained terrace soils).

These soils occur above flood plains in river and stream valleys. They are underlain by water-deposited beds of sand and gravel. In most places a few inches to three feet of loamy or fine sandy material cover the older, coarser water deposits. Nearly all sources of sand and gravel, and many of the important sources of water supply, are in areas associated with the terrace soils. On the Park's Property, this soil is limited to a very small area on the eastern border of the site.

Although terrace soils are generally suitable for community development (i.e., earthmoving is readily done and soil conditions are favorable for buildings, parking lots, and landscaping), care must be taken not to pollute groundwater resources. Rapid percolation rates are characteristic of these sandy and gravelly soils and this can lead to inadequately renovated effluent or leachate reaching the underlying water table. Obviously in areas where these soils are recharging a public water supply well, great care is needed in the siting and design of any land use which may represent a threat to groundwater quality.

GROUP B - Upland soils over friable to firm (permeable) glacial till - including the poorly and very poorly drained upland soils).

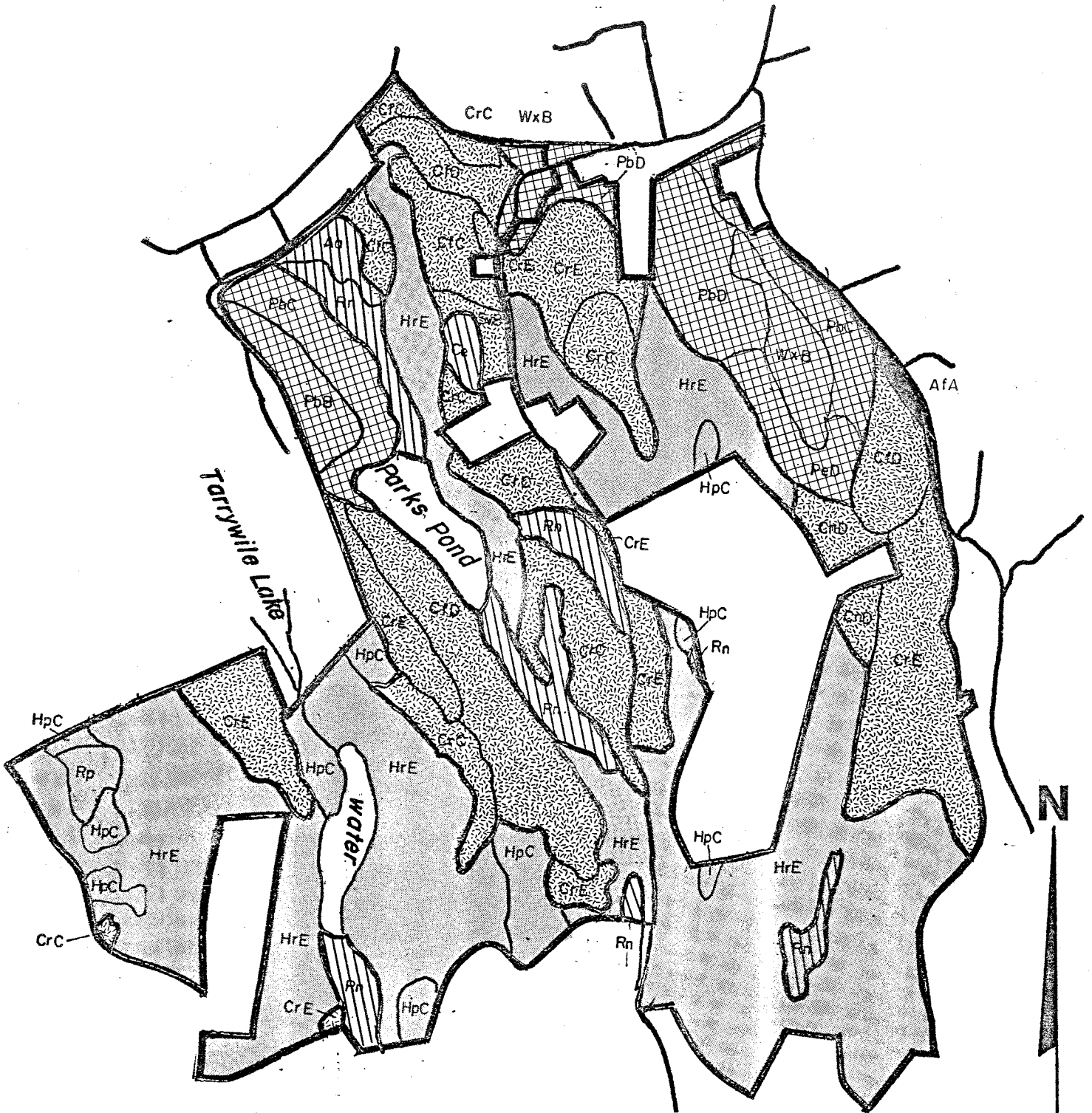
The soils in this group as well as those in the following two groups (Group C and D) are all upland soils that were formed in areas of glacial till. Glacial till is the predominant unconsolidated overburden material (surficial geologic material) found in Connecticut today.






The soils in this group are formed in the thicker, unconsolidated deposits of till usually occurring on hillsides. They generally have good potential for community development except where steep slopes or stoniness present problems.

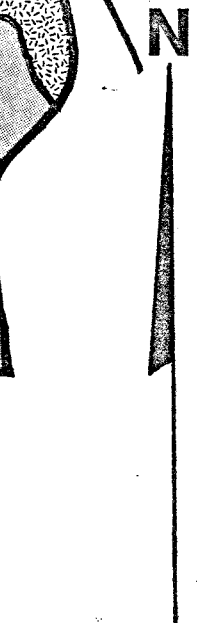
GROUP C - Upland soils over compact (non-permeable) glacial till (hardpan) - (excluding the poorly and very poorly drained compact till soils).

These upland soils occur mostly on the tops and slopes of drumlins (hills that were smoothed and elongated north to south by the movement of glaciers). The soils are underlain by compact glacial till and have a hardpan or fragipan 16 to 36 inches below the soil surface. Permeability above the hardpan is moderate but the pan drastically reduces percolation. During wet seasons, excess water in the soil moves downslope above the hardpan. This characteristic presents formidable problems in the design and construction of septic system absorption fields that function satisfactorily. Septic systems may be flooded

FIGURE 4 GENERAL SOILS MAP



-  Upland soils - rocky - shallow to bedrock
-  Inland wetland soils
-  Upland soils over friable to firm till
-  Upland soils over compact till
-  Terrace soils over sand and gravel



SCALE 1" = 1000'

by a seasonally high or perched water table and effluent may "break out" down slope of the septic system leaching fields. Careful design and engineering is also required to prevent groundwater seepage into basements and frost heaving of roads and driveways. Steep slopes and stoniness may also present problems in certain areas.

GROUP D - Upland soils - rocky and shallow to bedrock.

The soils in this group occur mostly in the rougher areas of the uplands. They may occupy narrow ridge tops but most often are on steep side slopes. They are characterized by stoniness and shallow depths to the underlying bedrock. In most places, hard rock is less than 20 inches below the soil surface. These areas provide contrast in the landscape and scenic overlooks, but in most cases pose severe limitations for urban development. Occasionally pockets of deeper soils can be found within this soil group which are more suitable for development purposes (e.g., an individual home site).

GROUP E - Inland Wetland Soils.

This group includes all soils classified as inland wetlands according to P.A. 155 as amended, Connecticut's Inland Wetlands and Water Courses Act. These soils typically have a water table within 6 inches of the soil surface during the wettest part of the year. The high water table often persists into late spring and may reoccur after prolonged or heavy summer rains. Some of these soils are very poorly drained and have water ponded on the surface for significant periods in winter and spring. By definition, well drained and moderately well drained flood plain soils also qualify as inland wetland soils in Connecticut.

Inland wetland soils present severe limitations for most urban uses. Development is very costly and requires complete alteration of the resource base. Intensive drainage and land fill measures are required to overcome wetness. Inland wetlands and watercourses are regulated in the State of Connecticut because they provide valuable functions and are critical, fragile, and irreplaceable natural resources. They are also an important part of the larger hydrologic system. Disturbance of these areas should be kept to a minimum.

Critical Soil Areas

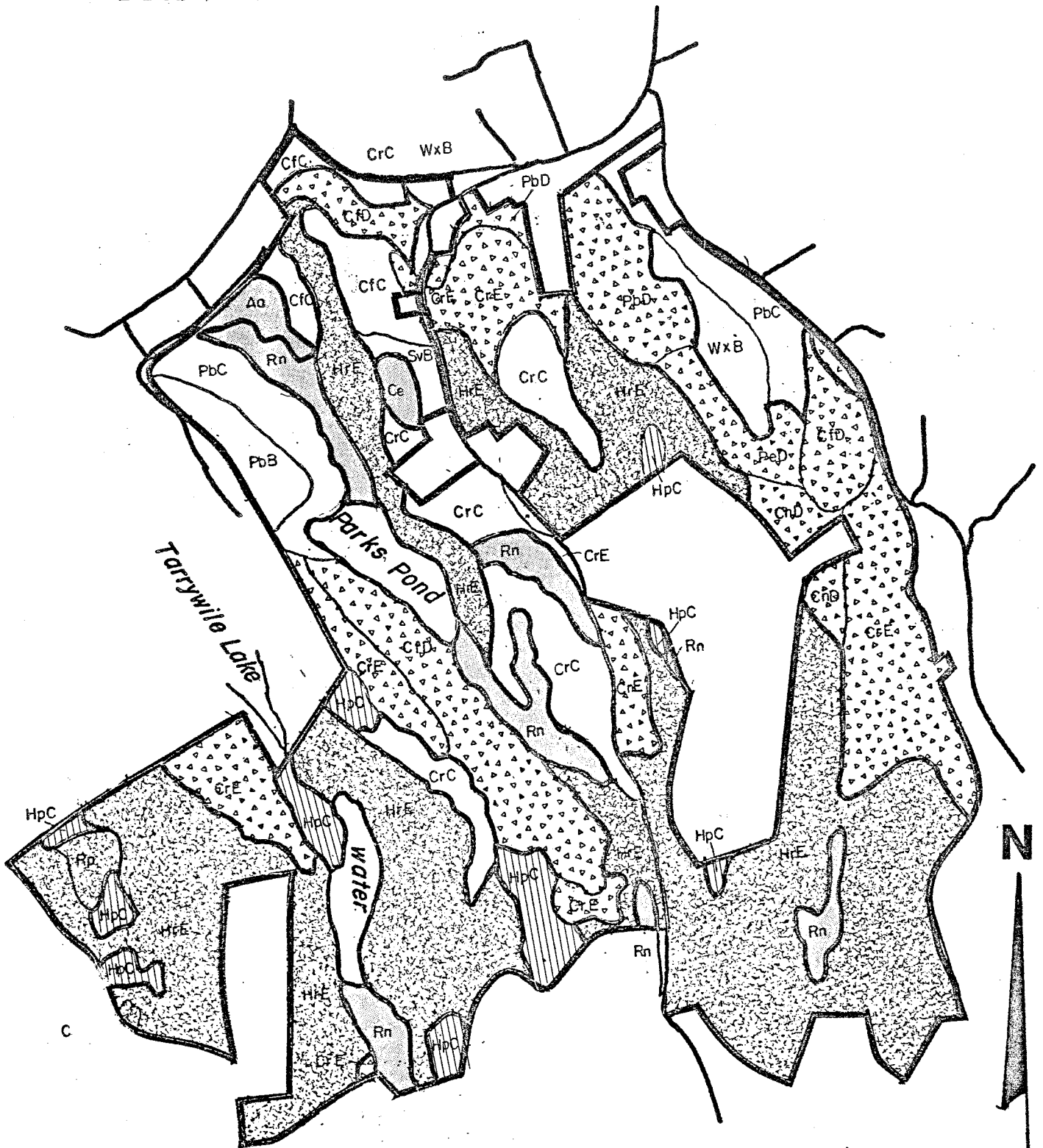
As shown in Figure 5, much of the Park's Property consists of "critical" soils. These soils pose severe limitations for urban development and include:

- . inland wetland soils
- . areas characterized by steep slopes (greater than 15%)
- . shallow to bedrock soils (hard rock is within 20 inches of the soil surface).

These critical soil areas are the least suitable areas for development on the site. It should be recognized, however, that other soils on the property may also present limitations for development (e.g., the hardpan soils in the northern portion of the site may also present limitations, albeit not as severe as the "critical" soils). The Appendix of this report provides more detail on the limiting factors of the various soils.

While limited use of the critical soil areas may be feasible (recreational

FIGURE 5 CRITICAL SOIL AREAS



- Inland wetland soils**
- Steep slopes (greater than 15%) and shallow to bedrock soils**
- Steep slopes (greater than 15%) and deep soils**
- Shallow to bedrock soils on moderate slopes**

SCALE 1" = 1000'

trails, occasional homesites on carefully selected sites), these areas clearly do not lend themselves to any type of large scale development.

Septic System Suitability

Figure 6 shows the suitability of the various soils for on-site septic systems. As shown on this map, over half of the site is covered by soils which have low to very low potential for septic systems. Most of the remainder of the property is underlain by soils with only medium potential for septic systems. While occasional inclusions of more suitable soil types may be found within these low and medium potential soils, the vast majority of the site does not appear capable of supporting any type of large scale development which must rely upon septic systems.

Erosion Hazard

The combination of soil types and slopes on this property dictate that erosion control awareness be a concern in any use proposal. The terrain is so critically subject to erosion that any extensive uses need to be carefully implemented.

Erosion and sediment control practices are described in the "Erosion and Sediment Control Handbook - Connecticut (USDA Soil Conservation Service, 1976). Additional assistance in the preparation and review of erosion and sediment control plans is available from the Fairfield County Conservation District (743-5453).

Development Potential

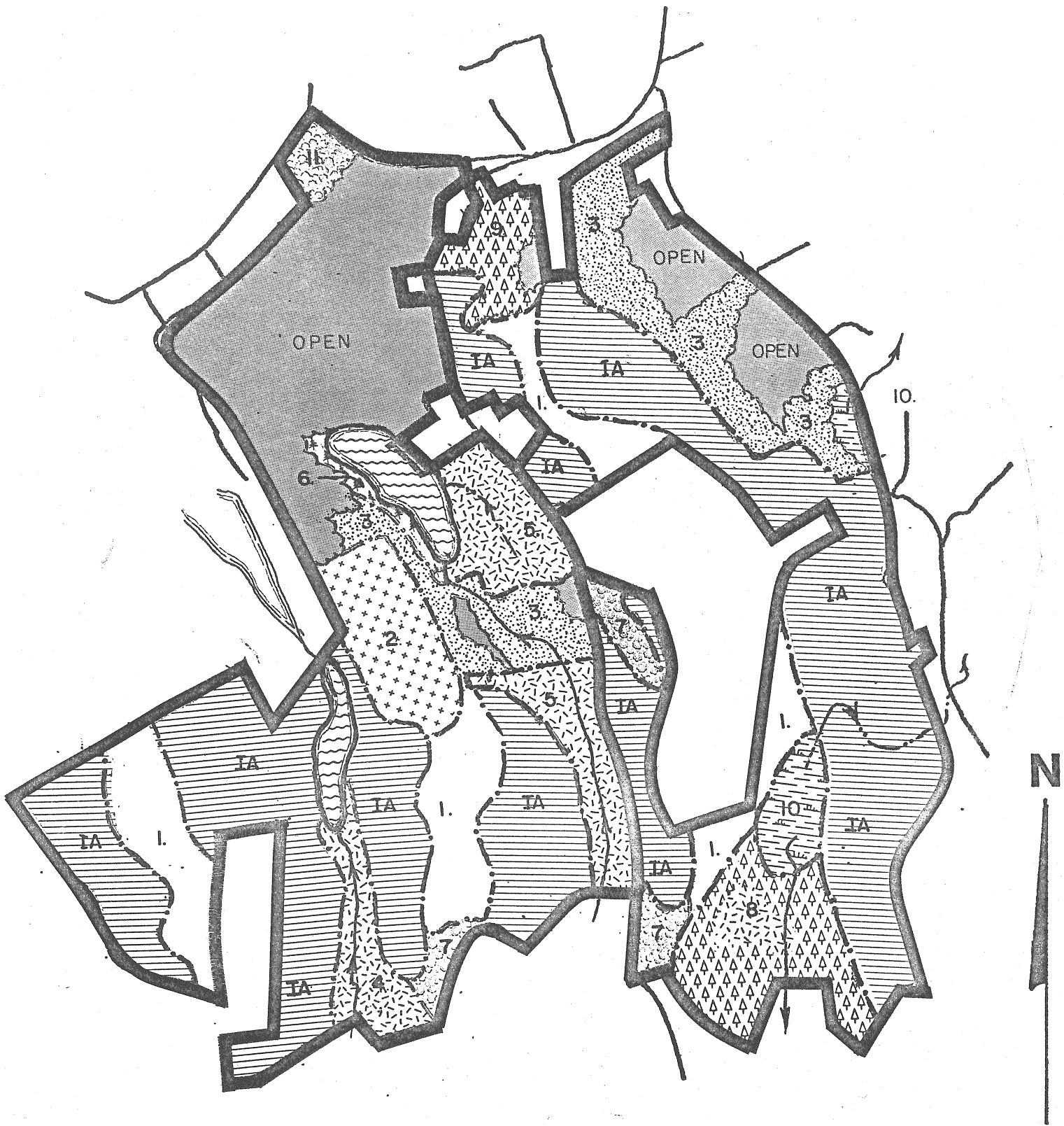
From a soil viewpoint, the north westerly portion of the property (north of Park's Pond and west of Brushy Hill Road) has the greatest use potential. Excluding the wetlands and the Hollis escarpment, the slopes are reasonable, the soils are deep and municipal services can be made available. The north easterly portion of the property fronting on Mountainville Road has severe slopes, but the soils are deep and services are close by. The remainder of the property has formidable obstacles, none of which are insurmountable, but the impact of overcoming them would be significant.

VI. FORESTRY

Of the total 525 acres present, aerial photo interpretation reveals that 102 acres are non-forested, (14 acres in water, 88 acres open field or residential) and 203 acres are forested but either inaccessible or inoperable from a forestry standpoint due to excessively steep slopes. The remaining 220 acres can be divided into 11 differing vegetative types.

Evidence from increment borings indicates that the generally accessible areas of the property were logged some 10 years ago. The logging appears to have had a beneficial effect upon the forest, as regeneration is, for the most part, plentiful throughout the harvested area. However, current cordwood harvesting appears to be misdirected, bearing evidence of being unauthorized. A discussion of the aforementioned vegetative types follows:

VEGETATION TYPE MAP



SCALE 1"=1000'

LEGEND:

- Intermittent stream
- Stream
- Swamp
- Waterbody
- Forest margin
- Inaccessible areas (IA)
- Open field-Residence area

ACREAGE BREAKDOWN		
Stand	Acres	Description
Water	14	Total Nonforested = 102 acres
Open	88	
Inaccessible	203	Inaccessible or inoperable
1.	53	Oak ridge
2.	15	Oak ridge clearcut
3.	44	Old field
4.	8	Northern hardwoods (pole-small sawlog)
5.	27	Northern hardwoods (pole-small sawlog)
6.	3	Plantation (spruce)
7.	19	Mixed hardwoods (pole-small sawlogs)
8.	27	Hemlock hardwoods (pole-sawlogs)
9.	12	Softwood (pole-sawlog)
10.	8	Wetland
11.	4	Mixed hardwood (sapling-pole)

FIGURE 7

Type IA. Inaccessible or inoperable areas. These areas are characterized by steep slopes, generally composed of ledge, boulders, stone, and small pockets of soil. Occasionally, small plateau-like areas can be found which contain better than average soils. Available moisture and nutrients range from relative abundance at the base of these slopes to extremely poor conditions at the crest of slopes.

Vegetative cover on these areas varies widely, depending on the conditions found in any particular spot. In general, these slopes are covered with mature stems, due largely to the inaccessibility of the area, which precludes any harvesting activity.

It is strongly recommended that these areas be left intact. Topography prevents meaningful management, anyway, and soils here will be very sensitive to erosion.

Type 1. Oak Ridge, 53 acres. This area is characterized by shallow, droughty soils and frequent exposure of ledge. Site quality here is very poor. The overstory found here consists of poor quality scarlet oak, chestnut oak, red maple, and beech of pole to small sawlog size. The understory consists of mountain laurel, dogwood, sassafras, and viburnum. Some sweet fern can be found, as well. The groundcover here generally consists of grasses, lowbush blueberry, huckleberry, poison ivy, and some greenbriar.

Due to the previous logging, no additional management should be necessary, save removal of the worst quality stems for cordwood.

Type 2. Oak Ridge Clearcut, 15 acres. This area basically was similar to Type 1 prior to a clearcut operation some 10 years ago. Heavy sprouting has resulted in a stand of sapling to small pole-sized red maple, gray birch, cherry, scarlet oak, and chestnut oak. The understory, where one can be discerned, is composed basically of multiflora rose and Japanese barberry. Ground cover, where existing, is limited to grasses, poison ivy, and sweet fern.

This area should be allowed to develop for another 10 years or so, at which time a thinning may be in order.

Type 3. Old Field, 44 acres. This area has fairly good site quality, as evidenced by its agricultural history. Steep slopes may limit operability in some portions of this area, but management should be feasible. The overstory in this area is diverse. The western portion of the area has large red and white oaks scattered over an understory of black birch and sugar maple poles. More open areas still have quantities of red cedar. The ground cover throughout consists of grasses, greenbriar, and heavy concentrations of multiflora rose and barberry. The eastern portion contains the overgrown remnants of an orchard. These fruit trees could be brought back into at least marginal production for wildlife habitat by releasing them from competition from other hardwoods and vines, and by a program of pruning.

Management here ought to be aimed at eradication of all multiflora rose and barberry so as to allow for the growth of other more desirable species. The overstory in the western portion could be lightly thinned by removing the poorest quality stems in such a manner as to allow for the development of 100 to 150 better quality stems per acre.

Type 4. Northern Hardwoods, 8 acres. This area is very similar to that of Type 5 but access here will be difficult at best, owing to the rocky nature of the topography. Site quality here appears to be very good, supporting an overstory of good quality pole to small sawlog-sized sugar maple. The understory, owing to a high watertable supports primarily spicebush, witch hazel, maple-leaved viburnum, and sugar maple reproduction. The ground cover consists of ferns, woodnettle, violets, and skunk cabbage.

Due to the rockiness, wetness, and slope in this area, management should be limited to a thinning of the overstory in the drier, more accessible area near the access road at the southern end of the stand.

Type 5. Northern Hardwoods, 27 acres. This area is characterized by a high site quality with ample soil moisture. The overstory here consists of black birch, yellow birch, ash, sugar maple, and red maple of pole to small sawlog size. The overstory is somewhat dense, so that the understory is somewhat sparse, consisting of primarily spicebush, witch hazel, viburnum, dogwood, and some sassafras. The understory consists of scattered grasses, ferns, some poison ivy, and some skunk cabbage along the stream.

This area is in need of a cordwood thinning to improve the overall health and quality of the stand. Removal of the poorest quality 1/4 to 1/3 of the stems here would be sufficient. This thinning should be accomplished under the guidance of a private, professional forester.

Type 6. Plantation, 3 acres. This small area along the western shore of the pond consists of a very dense stand of Colorado blue and white spruces of generally large pole size. There is no understory and very little ground cover other than some poison ivy.

This area is in need of a thinning to allow for increased growth rates and an improvement in overall health. It is important that the thinning be accomplished in several stages so as to allow the residual stems to develop additional wind firmness. This thinning and possibly substantial pruning of dead branches should, again, be conducted under the guidance of a professional forester.

Type 7. Mixed Hardwoods, 19 acres. This area is characterized by soils with medium site quality supporting an overstory of pole to sawlog-sized red oak, black oak, hickory, red maple, ash, sugar maple, black birch, and scattered white oak. The understory here consists of primarily dogwood, sugar maple, red maple, and black birch regeneration, maple-leaved viburnum, and spicebush in the wettest areas. The ground cover consists of ferns, poison ivy, violet and wild geranium.

Owing to the previous logging the management suggested for Type 1 would apply here, as well.

Type 8. Hemlock-Hardwoods, 27 acres. This area is basically the same as Type 7. The site quality is slightly lower, however, and there is the addition of a sizeable representation of pole to sawlog sized hemlock. Also, mountain laurel has invaded the understory of this stand.

The same management as in Type 7 should apply here, as well.

Type 9. Softwoods, 12 acres. This area, on the approach to the castle, is characterized by moderate to steep slopes, moderate site quality, and a stand of pole to sawlog-sized Norway spruce, white pine, and hemlock. The understory is fairly open and consists of black birch, red maple, sugar maple, white pine reproduction, hemlock production and dogwood. The ground cover consists of scattered grasses, poison ivy, and ferns.

The aesthetic value of this area, in conjunction with the castle, suggest that retention of the softwoods in a healthy state is essential. All hardwoods in direct competition with the softwoods, should be removed, marginal softwoods removed, and healthy softwoods pruned of dead branches. Additionally, poorer quality hardwoods can be removed.

Type 10. Wetland, 8 acres. This area is characterized by a high water-table. Primary forest species to be found here consist of red maple, with ash and black birch on the drier margins. Understory species to be found include spicebush, sweet pepperbush, and viburnum. The ground cover encountered includes skunk cabbage, jewelweed, and grasses but may be non-existent under heavy understory cover.

Due to the sensitive nature of the wetland soils found here, no management activities are anticipated.

Type 11. Mixed Hardwoods, 4 acres. This area at the northern tip of the property is basically an abandoned landscaped area. The moderate slopes are covered by Norway maple and sugar maple saplings and poles under scattered decrepit specimen trees of scotch pine, white pine, red pine, ash, and red oak. Any ground cover, where found, consists of grasses.

Management here would probably be strictly aesthetic, aimed at improving the appearance of the area.

Rare or Endangered Species

The Natural Diversity Data Base of the Connecticut Department of Environmental Protection does not have any records of rare, endangered, or threatened species on the Park's Property. A field investigation by a competent biologist would be desirable however as the area does have potential habitat for such occurrences. The Natural Diversity Data Base would be interested in the findings of any such biological field investigations as this would add to their baseline data.

While it is outside the scope of the ERT to provide such a detailed, biological investigation, it should be noted that a local botanist, Betsy Murphy, has compiled a listing of wildflowers and shrubs noted during a May 1983 field investigation of the area around Back Pond. This investigation found the southwest shore of Back Pond to be particularly rich in wildflowers. The Appendix of this report lists the species observed by Mrs. Murphy.

VII. WILDLIFE

The 525 acre tract comprising the Park's Property is made up of three major wildlife habitat types. These are mixed hardwood forest, open fields, and open water.

Mixed Hardwood Forest - This habitat type comprises most of the property and is dominated by a birch-maple-oak composition with scattered ash, hickory, beech, witch hazel, and tulip trees. Scattered pockets of hemlock are also present. The understory consists of spicebush, dogwood, and grape. At higher elevations (drier) the forest component has less diversity, consisting primarily of maple, oak, and cherry. The understory is mostly open.

Wildlife observed included deer, mockingbirds, raccoon scat, and several unidentified songbirds. Other species typically utilizing this habitat type are squirrels, fox, rabbits, and opossums. Rocky outcrops located within this type could provide suitable habitat for copperhead snakes and rattlesnakes.

Open Fields - This habitat component consists of several large hay fields and a few scattered small old reverting fields. These areas create habitat diversity and are valuable to wildlife.

During the field investigation evidence of deer browse, owl predation, foraging by cooper's hawk, broad-winged hawk, and turkey vultures were observed. Turkey, fox, rabbits, and numerous birds will utilize such areas.

Open Water - This habitat type consists of two ten acre ponds, one small emergency fire pond, (less than $\frac{1}{2}$ acre in size) and two marshy areas. The large ponds have a border of hardwoods and spruce along with an understory including equisetum, cattails, and rose.

Frogs, turtles, fish, a water snake, raccoon prints, kingfishers, and deer prints were observed. Other wildlife utilizing such areas include skunk, opossum, fox, and various waterfowl and shorebirds.

Discussion - If the site is developed for urban related uses there will be an immediate negative impact on wildlife. The primary impact will be a direct loss of habitat due to roads, buildings, driveways, and walkways. Another impact would be a change of habitat where forest and fields are cleared for lawns. A third impact would be the increased human presence, vehicular traffic, and number of roaming cats and dogs. This will drive the less tolerant wildlife species from the site, even where it has not been physically changed.

A number of measures can be implemented to minimize the adverse impacts of development on wildlife. When developing any road or walkway networks, every effort should be taken to minimize erosion. Culverts should have devices installed to discourage beavers.

To actively encourage wildlife at the site, consideration should be given to the following:

- 1) Leave snag/den trees throughout the forest area (5-7/acre) for cavity nesting wildlife.
- 2) Exceptionally tall trees are utilized by nesting raptors and should be encouraged.
- 3) Mast trees (oak, hickory, beech) are food sources for a large variety of wildlife and should be encouraged.
- 4) Trees with vines (produce berries) should be encouraged.
- 5) Ponds could have control structures developed to regulate water levels favorable for waterfowl. Beaver control structures should be installed.

- 6) Leave buffer strips (50 to 100 feet) of natural vegetation along wetlands to help filter and trap silt and sediments which might otherwise reach the wetlands.
- 7) Placement of bluebird boxes along edges of open fields.
- 8) Placement of wood duck boxes at both ponds and in the two marsh areas.
- 9) Hay fields should be maintained. If possible no cutting should be allowed prior to August 1 to avoid damage to nesting birds. Also, a fifteen foot uncut border should be left surrounding the fields. This border should be mowed every three to five years (after August 1) and not all the same year. These uncut borders are valuable to many wildlife species.
- 10) Small naturally reverting fields should be mowed every three to five years to maintain openness.

To conclude, urban development of this site will negatively impact existing wildlife populations. On the other hand, the project can be expected to attract the more urban adapted wildlife to the property (i.e., robins, raccoons, skunks, house sparrows, starlings).

If any further assistance is required regarding the wildlife aspects of the property, a wildlife biologist at DEP's Western District Headquarters is available.

VIII. FISHERIES

The Park's Property contains 2 ponds, both approximately 10 acres in surface area. Park's Pond is an artificial impoundment located among the farm and pasture fields to the west of Brushy Hill Road. It has a maximum depth of approximately 8 - 10 feet. The dam, located at the northern end of the pond, appears to be in good condition. Water clarity is acceptable and no problem macrophyte growth was noted. Pumpkinseed sunfish are abundant and were observed in the water column near the dam; most of these fish were 5 - 7 inches in length. Other species which the pond is capable of supporting if it does not do so already include brown bullhead, bluegill sunfish, golden shiner, largemouth bass and crayfish. Park's Pond offers a warmwater fish habitat and would not be suitable for trout except as part of a put-and-take fishery during April and May. Little or no oversummer survival of trout would be expected. However, the aforementioned fish species suitable for the pond are very capable of providing enjoyable and successful fishing for families and/or children. Additionally, the pond's dam could easily be developed into an excellent handicapped fishing area given some building up of the area behind the dam, construction of a simple fence and provision for access.

The second pond, located just upstream of Terryville Lake, is more shallow with a maximum depth of only 4 - 5 feet. The dam at the north end is in disrepair and reconstruction could raise the water level 2 - 3 additional feet. This undertaking would be recommended if any recreational fishing use is planned for the pond. Macrophyte growth in the southern end would also have to be watched as any significant encroachment into the remainder of the pond would ultimately be detrimental to the fish predator/prey balance (would allow too much hiding cover for prey species and thus result in overpopulation). This pond could be, or may already be, populated by the same species as mentioned for Park's Pond.

If the property is purchased and the ponds allowed to remain, the brush overhanging the shores of both ponds should be kept undisturbed along a sig-

nificant percentage of the shoreline. Also, brush should be weighted and placed upon late-winter ice on a biannual basis to provide additional fish habitat (providing aquatic weeds do not begin to proliferate). It should be noted that if any land within the drainage areas of these two ponds is developed, the potential exists for causing algae and/or weeds to proliferate and become a nuisance, reducing the recreational value of the ponds.

To conclude, the two ponds on this property provide an attractive amenity and the warm water fishery offered by these ponds enhances the potential of the property for recreational use.

IX. CULTURAL RESOURCES

The City of Danbury and its outlying regions have experienced significant residential, commercial, and industrial development since the mid-19th century. This development is reflected by a long and continuing history of landscape disturbance and many archaeological sites have been lost. The Park's Property is one of the larger undeveloped parcels which remains in the region and if it contained important sites, the tract could become a locality where archaeological resources would be preserved for future research. However the property does not seem to have been used intensively by prehistoric populations; scattered, isolated finds of artifacts are known but no sites have been recorded.

The lack of long-term and intensive prehistoric use may in part represent the topography of the parcel, which is characterized by many moderate-to-steep slopes. With the possible exception of the northern sections around the farm, many of the 525 acres would have been used for short-term hunting and collecting activities. This sort of use does not leave much of an archaeological record; isolated points or knives, pieces of fire-cracked rock (remains of cooking or heating fires), and by-products of manufacturing stone artifacts might be preserved. None of this evidence is obvious and is compatible with the finds which have been reported from southern Danbury and the Park's Property.

Rather than sites, the prehistoric use of most of the Park's tract is represented by amorphous traces or no evidence at all. However some information does suggest that a prehistoric archaeological site exists on one of the knolls overlooking the farm at the northern end. Annual plowing used to expose this site and revealed concentrations of tools and the by-products of their manufacture. The size or age of this site is not well known; however if it exists, it would be one of the few known sites in the region which has managed to remain undisturbed. If the owners decide to subdivide the land adjacent to the farm, this important archaeological resource could be lost.

During the 18th and 19th centuries the Park's Property was used similarly for non-intensive activities such as grazing and woodcutting. Studies of two published historic maps (F. W. Beers 1867 Atlas of New York and Vicinity and an 1875 View of Danbury, Connecticut) indicate that the parcel, once known as the Grassy Plain, was not used until the end of the 19th century. Prior to that time the residential growth of the City of Danbury had stopped along the southern edge of Southern Boulevard. Some scattered farmhouses were present along the lower sections of Brushy Hill Road and Mountainville Road, south of the property's boundaries. The upper parts of both of these roads became subdivided during the early 20th century when the farm complex in the northern end was also constructed. There is no evidence which suggests that mills were ever located along the upper reaches of West Redding Brook.

In summary, the archaeological potential of much of the Park's Property is low. Although most of the parcel has not been disturbed by recent residential development, there are few signs of either prehistoric or historic use. One unrecorded site has been reported from the northern end of the tract in the vicinity of the farm. If this site exists, it should be protected from any proposed developments. The American Indian Archaeological Institute (868-0518) is willing to discuss methods and procedures for managing this archaeological resource with the tract's owners and other interested individuals and organizations.

X. PLANNING CONSIDERATIONS

A. Relationship of Site to Local Plan of Development

According to Danbury's 1978 Plan of Development the proposed land use for the entire site is single family residence. The Plan's policy for expansion for public water supply shows the future service area extending southward from its present terminus along Southern Boulevard approximately 1000 feet into parts of the study area. The Plan's map for proposed expansion of the City's sewage disposal service area shows a similar future expansion.

The Plan's roadway circulation policies classify adjacent Southern Boulevard as an arterial which "will require reconstruction along its length to correct geometric problems and to allow widening to standard". As development scenarios for this property are generated, the time should be taken to project traffic volumes that would be generated and how these would impact Southern Boulevard and other nearby roadways.

Brushy Hill Road, which bisects the Park's Property, is a narrow, winding, low capacity road. In addition, access to this road from the Park's Property is limited in many areas due to physical limitations (e.g., steep slopes, curves in the road, wetlands). Due to these limitations, it does not appear that plans for the property should include heavy reliance on Brushy Hill Road as an access point. While limited use of this road is probably feasible, opportunities for access to the site are much better from Mountainville Road to the east and Southern Boulevard from the north.

B. Relationship of Site to Regional Plan of Development

Portions of this property within approximately 2200 feet of Southern Boulevard are recommended by the HVCEO's regional development plan as suitable for urban densities, defined as a minimum of at least 3 dwelling units per acre and as logical areas for the introduction of public water and sewer service for even higher densities. According to the HVCEO plan, the northern portions of this property which are at the edge of existing urban development contain vacant land which, as a very limited resource, should be considered for intensive uses in order to meet the housing and other needs of the City's future labor force.

Southern portions of the property are recommended by the HVCEO plan to be developed without urban infrastructure such as sewer service, thus limiting overall development potential. The regional plan can be interpreted as favoring the clustering on northern portions of this parcel of any major development in order to promote the efficient, energy-conserving development patterns

avored by the HVCEO.

The proximity of water supply watersheds should also be recognized. Eureka Lake, Mountain Pond, and all areas tributary to West Redding Brook serve as public watersupply watersheds. According to the HVCEO plan, water quality in such areas is a characteristic of the land which contains and yields it for use, and therefore conservative land use policies requiring least intensive uses are reasonable for these areas.

C. Quantifying the Need for Recreational Facilities

In August of 1975 the HVCEO released an Open Space and Recreation Plan for the region. This 83 page plan contained a detailed open space inventory for Danbury, a review of recreational planning and administrative practices, and methods of acquisition and protection for open space. The report projects a definite need for additional recreational land in the portion of the City of Danbury represented by the subject site. While this report is now 8 years old it can still be used as a benchmark for evaluating the need for specific recreational activities that may be considered for parts of the Park's Property.

XI. DESIGN CONSIDERATIONS

As shown in Figure 8, the Park's Property is zoned for residential use and, as previously discussed, local and regional plans call for residential use of the property. Comments on site design in this section of the report will therefore focus on the suitability of the site for expanded residential and recreational use.

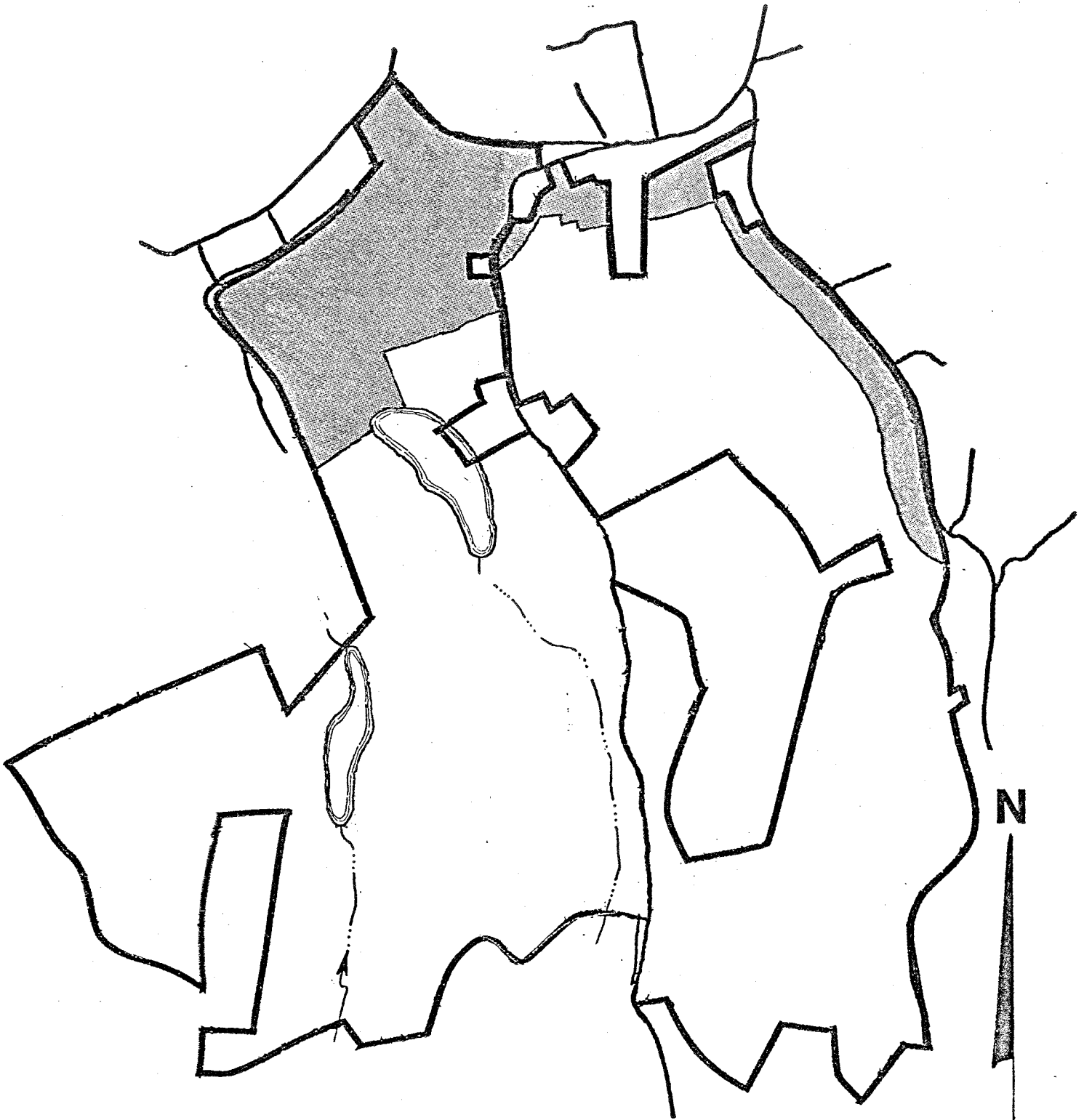
A. General Comments

The following general observations are offered for consideration:

- . The Park's Property represents one of the most unique, diverse and scenic large tracts of land remaining in the City of Danbury.
- . The property is readily accessible from a number of improved town roads and contains significant sections of land with good development potential.
- . The property's proximity to downtown Danbury coupled with existing structures on the property provide incentives for municipal and commercial use and development.
- . Extensive future development along Brushy Hill Road should be avoided unless the road is substantially improved.
- . The rural character of the property should be retained, especially along scenic Brushy Hill Road.
- . Any extensive future development should be limited to zones II and IV to minimize impact on the remainder of the property. (see Figure 9)

If large, residential lots are created on portions of this site in the future, consideration should be given to including restrictive easements which:

ZONING MAP



RA-20=Residential, 20,000 square foot minimum lot size

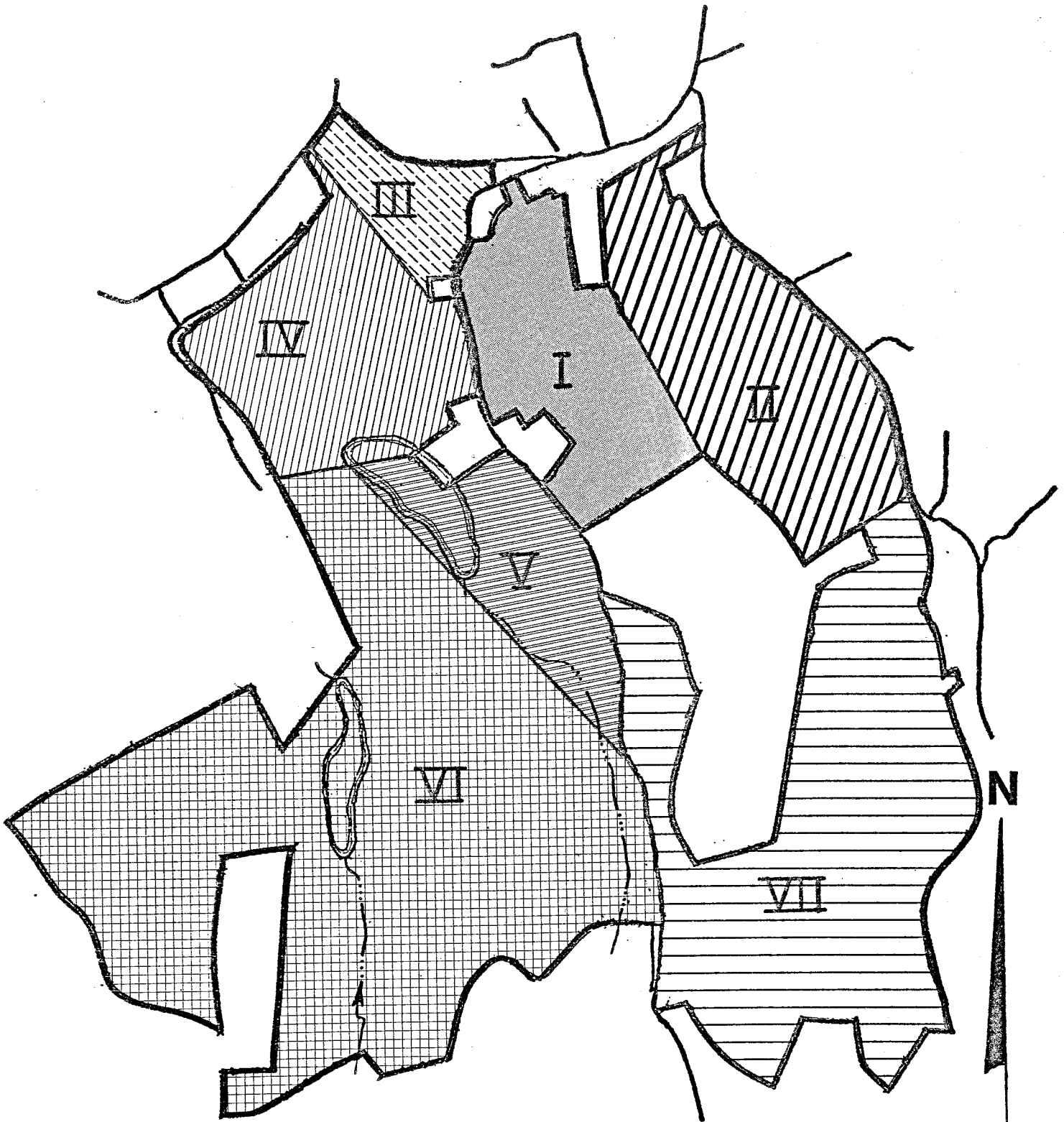


RA-80=Residential, 80,000 square foot minimum lot size

SCALE 1"=1000'

FIGURE 8

DESIGN ZONES



Note: See text for discussion

SCALE 1"=1000'

- a. Preclude further subdivision at a later date.
- b. Provide for a scenic/visual buffer between residences.
- c. Provide for a recreational trail system through the property to connect site amenities.
- d. Provide for ease in natural resource management activities such as forest management.

The Housatonic Valley Association (927-4649) is available to assist the City in the preparation of such restrictive easements.

As shown in Figure 5, the majority of the Park's Property has severe limitations for residential development. This land is generally best suited for protection or limited large lot development. Compatible uses on this land might involve: 1) passive recreational activities such as hiking, cross country skiing, limited hunting, fishing, picnicing, jogging, nature study, etc.; 2) large house lots (i.e., greater than 3 acres in size) if access and sewage disposal is feasible; and 3) farmland management in areas suitable for farming.

B. Design Zones

For the purposes of this report, the property may be divided into seven design zones (see Figure 9). Comments on each of these zones are presented below.

Zone I (35 +/- acres) contains the castle, caretaker's house, garage and other out buildings and surrounding lands.

- a. A splendid example of a medieval granite castle.
- b. High scenic quality atop Thomas Mountain with panoramic views of the city of Danbury and surrounding landscape.
- c. Soils indicate very limited potential for additional development in most of this zone.
- d. Access is poor without improvement to existing sight line along Brushy Hill Road in southerly direction.
- e. Consideration should be given to retaining this area as a single, distinct parcel (appears ideal as an inn/convention center/mini resort/manorhouse).

Zone II (40 +/- acres) contains existing agricultural fields of moderate slope capable of sustaining a moderate degree of development.

- a. Easterly exposure suitable for solar development application.
- b. Good access along Mountainville Road.
- c. Soils indicate site has development constraints ranging from moderate to severe.
- d. Agricultural viability as a single unit appears limited to commercial nursery, orchard, or vegetable production.
- e. Could be used in conjunction with Zone I for compatible development and recreational purposes (e.g., ski slopes and abutting condominium units).

Zone III (15 +/- acres) contains large 8 bedroom Manor house, small 2 bedroom stone 'gate' house, garage with apartment, greenhouse, other out buildings, small apple orchard and yard area, and massive stone walls adjoining Southern Boulevard.

- a. Soils indicate ability to sustain further development.
- b. Impressive Manor estate that should be considered for retention as a single, distinct parcel.
- c. Good access from both Southern Boulevard and Brushy Hill Road.
- d. Ideal location for cultural center/museum or similar public uses.
- e. The northeastern portion of this zone might best be used for relocation of extreme northern segment of Brushy Hill Road to improve access onto Southern Boulevard and improve public safety.

Zone IV (60 +/- acres) contains farm tenant house, farm buildings, approximately 40 acres of farm fields and meadows and Park's Pond.

- a. Soils indicate approximately half the zone has good development potential with remainder limited by wetlands and steep, rocky slopes.
- b. Good access from residential street.
- c. Close proximity to town water and sewer.
- d. Agricultural viability appears limited to same uses as Zone II.
- e. Good location for expansion of municipal facilities and/or housing if properly designed.

Zone V (35 +/- acres) contains partially open land adjacent to Brushy Hill Road and Parks Pond.

- a. Soils indicate approximately half the site has moderate development potential with remainder limited by wetlands and steep rocky slopes.
- b. Good access from Brushy Hill Road.
- c. Scenic view of Park's Pond and scenic stretch along Brushy Hill Road.
- d. Consideration should be given to limiting any residential development to large, single family house lots to reduce scenic intrusion on the landscape and to limit additional vehicular traffic onto Brushy Hill Road.

Zone VI (200 +/- acres) contains mostly steep, rocky woodland with limited development potential.

- a. Soils indicate extensive development constraints due to steepness, shallow depth to bed rock and rocky terrain.
- b. Access is extremely poor.
- c. Site contains some pockets of developable land which are only accessible from abutting private property.
- d. Consideration should be given to retaining this area for open space protection and passive recreational purposes with public access through Zone IV.

Zone VII (150 +/- acres) similar to site VI in character.

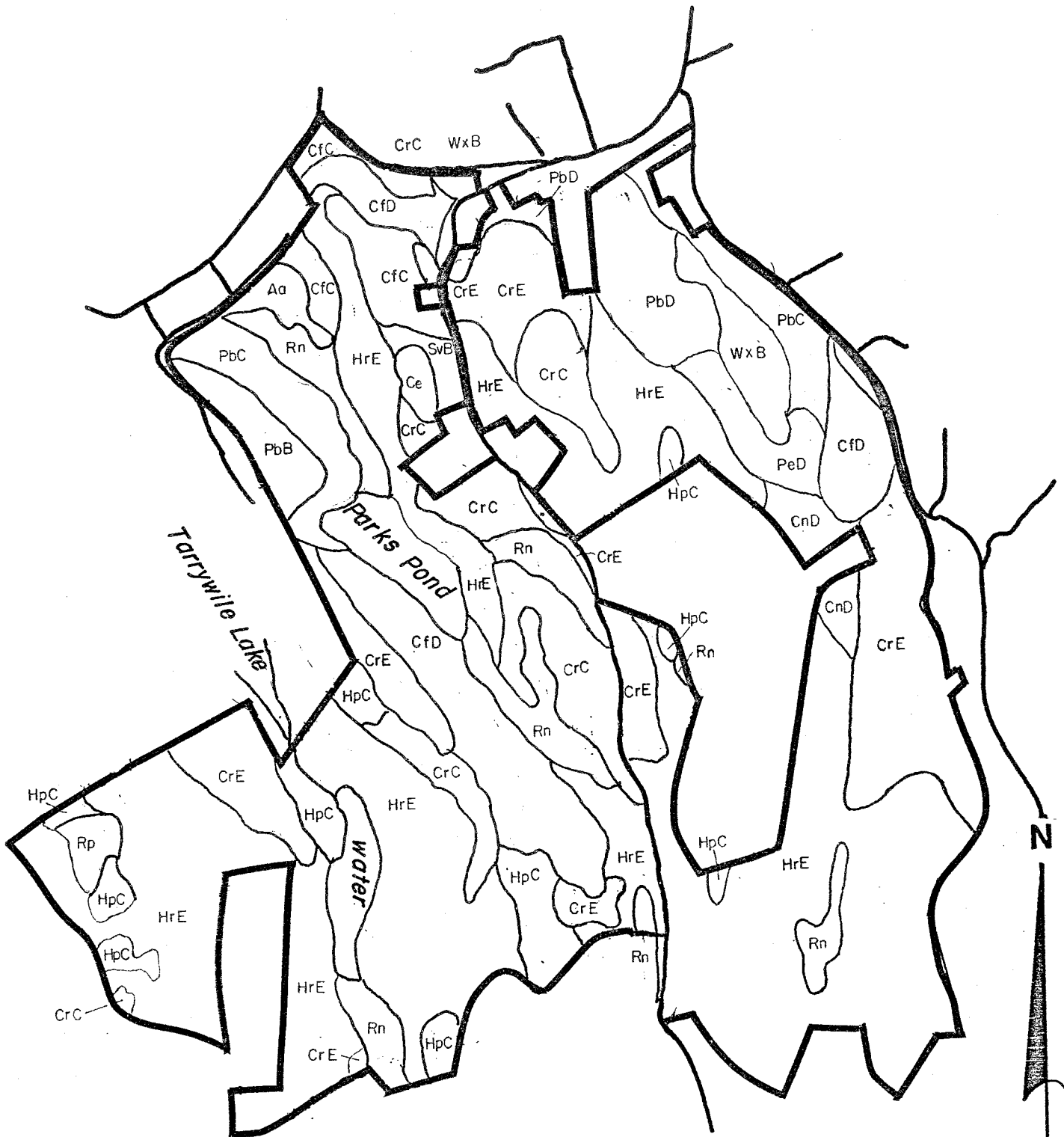
- a. Consideration should be given to retaining this zone for open space protection.

In conclusion, the Park's Property represents one of the most unique and diverse properties remaining in Danbury, which, because of its location, access, developability, usefulness for meeting existing and future municipal needs and outstanding beauty, should be seriously considered for public purchase in the opinion of the ERT's Land Planner. With proper planning and marketing, the city could conceivably recoup most, if not all, of its initial investment while providing for the public need and directing the future development and use of this magnificent property.

* * * *

APPENDIX

SOILS MAP



Soil boundary lines derived from smaller scale map (1"=1320') and should not be viewed as precise boundaries but rather as a guide to the distribution of soils on the property.

Scale 1"=1000'

SOILS LIMITATION CHART - PARKS PROPERTY, DANBURY, CT

Limitation/Ratings for:

MAP SYMBOL	SOIL NAME	SEPTIC SYSTEMS	BLDGS. W/ BASEMENTS	ROADS & DRIVEWAYS	CAMP AREAS	PATHS AND TRAILS
Aa	Adrian muck	Severe; Wetness, Floods	Severe; Wetness, floods, Low Strength	Severe; Wetness, floods, Low strength	Severe; Wetness, floods, Low strength	Severe; Wetness, floods Low strength
Ce	Carlisle muck	Severe; Wetness, Floods	Severe; ponding Floods, Low strength	Severe; ponding Floods, Low Strength	Severe; ponding Floods, Low strength	Severe; ponding Floods, Low strength
Cfc	Charlton fine sandy loam, 8-15% slopes	Moderate; Slope ---	Moderate; Slope ---	Moderate; Slope ---	Moderate; Slope ---	Moderate; Slope ---
Cfd	Charlton fine sandy loam, 15-25% slopes	Severe; Slope ---	Severe; Slope ---	Severe; Slope ---	Severe; Slope ---	Severe; Slope ---
Cnd	Charlton extremely stony fine sandy loam, 15-35% slopes	Severe; Slope, Large stones	Severe; Slope, Large stones	Severe; Slope ---	Severe; Slope, Large stones	Severe; Large stones
Crc	Charlton-Hollis fine sandy loams, very rocky, 3-15% slopes	Moderate - Severe; Slope, depth to rock	Moderate - Severe; Slope, depth to rock	Moderate - Severe; Slope, depth to rock	Moderate; Slope, Large stones	Moderate; Large stone ---
Cre	Charlton-Hollis fine sandy loams, very rocky, 15-45% slopes	Severe; Slope, Depth to rock	Severe; Slope, Depth to rock	Severe; Slope, Depth to rock	Severe; Slope ---	Severe; Slope ---
HKB	Hinckley gravelly sandy loam, 3-8 % slopes	Moderate; Slope ---	Slight	Slight	Moderate; Too sandy Small stones	Moderate; Too sandy Small stones
Hpc	Hollis-Charlton- Rock Outcrop Complex, 3-15% slopes	Moderate - Severe; Slope, Depth to rock	Moderate - Severe; Slope, Depth to rock	Moderate - Severe; Slope, Depth to rock	Moderate; Slope, Large stones	Moderate; Large stones ---

SOILS LIMITATION CHART CONT'D

MAP SYMBOL SOIL NAME SEPTIC SYSTEMS BLDGS. W/ BASEMENTS ROADS & DRIVEWAYS CAMP AREAS PATHS AND TRAILS

HRE	Hollis-Rock Outcrop-Charlton Complex, 15-45% slopes	Severe; Slope, Depth to rock	Severe; Slope, Depth to rock	Severe; Slope, Depth to rock	Severe; Slope	Severe; Slope
Pbb	Paxton fine sandy loam, 3-8% slopes	Severe; Percs slowly	Slight	Moderate; Frost action	Moderate; Percs slowly	Slight
Pbc	Paxton fine sandy loam, 8-15% slopes	Severe; Percs slowly	Moderate; Slope	Moderate; Slope Frost action	Moderate; Percs slowly	Slight
Pbd	Paxton fine sandy loam, 15-25% slopes	Severe; Slope, Percs slowly	Severe; Slope	Severe; Slope	Severe; Slope	Moderate; Slope
Ped	Paxton extremely stony fine sandy loam, 15-35% slopes	Severe; Slope, perc slowly, large stones	Severe; Slope, large stones	Severe; Slope	Severe; Slope, large stones	Severe; Slope, large stones
Rn	Ridgebury, Leicester, and Whitman extremely stony fine sandy loams	Severe; Percs slowly, wetness, large stones	Severe; Large stones, Wetness	Severe; Wetness, Frost action	Severe; Wetness, large stones	Severe; Wetness, large stones
SVB	Sutton fine sandy loam, 3-8% slopes	Severe; Wetness	Severe; Wetness	Moderate; Frost action	Slight	Slight
WXB	Woodbridge fine sandy loam, 3-8% slopes	Severe; Wetness Percs slowly	Severe; Wetness	Severe; Frost action	Moderate; Percs slowly	Slight

NOTES:

1) Limitation ratings based upon USDA Soil Conservation Service criteria.

EXPLANATION OF SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.

MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.

SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

SOIL DESCRIPTIONS

AGAWAM SOILS

AfB -- AGAWAM FINE SANDY LOAM, 3 to 8 percent slopes.

These nearly level, well-drained soils are on plains and terraces in stream valleys.

Typically, the surface layer is dark brown fine sandy loam 9 inches thick. The subsoil is brown fine sandy loam 20 inches thick. The substratum is light yellowish brown and pale olive sand to a depth of 60 inches or more.

Included with these soils may be small areas of excessively drained Hinckley soils, somewhat excessively drained Merrimac soils, well-drained Haven soils, and moderately well-drained Ninigret soils. Included areas make up about 15 percent of this map unit.

The permeability of these Agawam soils is moderately rapid in the surface layer and subsoil, and rapid in the substratum. Runoff is slow, and available water capacity is moderate.

Urban. Rapid permeability causes a hazard of groundwater pollution in areas used for on-site septic systems.

Recreation. These soils have slight or moderate limitations for picnic areas and camp sites. The level soils are favorable for play areas, but limitations for this use increase on soils having slopes above 2 percent. The potential for recreational use of these soils is enhanced by their proximity to streams, ponds, and sites with potential for water development.

Wildlife. Habitat for openland and woodland wildlife species is easily established, improved or maintained on these soils. They are well suited for the dependable growth of a wide variety of desirable food and cover plants. It is impractical to develop habitat for wetland wildlife on these soils.

Woodland. Productivity for wood crops ranges from fair on the sandy loam soils to good on the silt loam soils. Both hardwoods and conifers are well suited. Competition from hardwoods is a problem when managing for pine, spruce, or larch.

Cropland. These soils are suitable for the production of all agricultural crops adapted to the area. Supplemental irrigation is needed to assure necessary production levels for crops with a high cash return. Erosion is a hazard on these soils. Intensive surface water control measures are needed on slopes above 8 percent.

CHARLTON SOILS

- CFC -- CHARLTON FINE SANDY LOAM, 8 to 15 percent slopes.
CFD -- CHARLTON FINE SANDY LOAM, 15 to 25 percent slopes.
CnD -- CHARLTON EXTREMELY STONY FINE SANDY LOAM, 15 to 35 percent slopes.
CrC -- CHARLTON-HOLLIS FINE SANDY LOAM, EXTREMELY ROCKY, 3 to 15 percent slopes.
CrE -- CHARLTON-HOLLIS FINE SANDY LOAM, VERY ROCKY, 15 to 45 percent slopes.

These well-drained soils occur on gently sloping to very steep hills and ridges. The surface layer is very dark brown, fine sandy loam, 6 inches thick. The subsoil also is a fine sandy loam, 23 inches thick. The substratum is a gravelly sandy loam to a depth of 5 feet or more. In association with Hollis soils, there are bedrock exposures, drainageways, and small wet depressions.

Included with this complex in mapping are small areas of well-drained Paxton soils, moderately well-drained Sutton soils, and poorly drained Leicester soils. Also included are small areas of soils with bedrock at a depth of 20 to 40 inches; a few larger areas that have been cleared of stones and boulders; and a few areas where stones and boulders cover more than 5 percent of the surface.

Urban. Costly measures are required to overcome severe limitations because of slope and stoniness in developing these soils for urban use.

Recreation. These soils have severe limitations for picnic areas, campsites, and play areas.

Wildlife. Habitat requirements of openland wildlife species can be established, improved, or maintained but slope and stoniness make it very difficult to plant grain, grasses, and legumes. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat.

Woodland. These soils have fair productivity for wood crops. Competition from hardwoods is a problem when managing for pine, spruce, or larch on the soils underlain by loamy till (like Charlton). Equipment operation is difficult because of steep slopes. Attention to erosion control measures is important on skid trails and roads.

HOLLIS-CHARLTON SOILS

HpC -- HOLLIS-CHARLTON ROCK OUTCROP COMPLEX, 3 to 15 percent slopes.
Hre -- HOLLIS-CHARLTON ROCK OUTCROP COMPLEX, 15 to 45 percent slopes.

This complex consists of gently to very steeply sloping soils on hills and ridges. They have undulating topography marked with exposed bedrock, drainageways and wet depressions. Stones and boulders cover up to five percent of the surface.

This complex is about 35-40 percent somewhat excessively drained Hollis soils, 20-25 percent exposed bedrock, 20 percent well-drained Charlton soils, and 15-25 percent other soils. The Hollis and Charlton soils and the areas of exposed bedrock are so intermingled that it was not practical to map them separately.

Typically, the Hollis soils have a surface layer of very dark, grayish-brown fine sandy loam 3 inches thick. The subsoil is dark brown and dark yellowish-brown gravelly fine sandy loam and fine sandy loam that extends to bedrock at a depth of 17 inches.

Included with this complex in mapping are small areas of moderately well-drained Sutton and Woodbridge soils, poorly drained Leicester soils, and very poorly drained Adrian soils. Also included are small areas of soils with bedrock at a depth of 20 to 40 inches. A few small areas have slopes of as much as 90 percent, and in a few areas stones and boulders cover more than 5 percent of the surface.

These Hollis and Charlton soils have moderate or moderately rapid permeability. Runoff is rapid or very rapid. Available water capacity is low in the Hollis soils and moderate in the Charlton soils. Both are very strongly acid to medium acid.

The major limitations of this complex are slope, the shallow depth to bedrock in the Hollis soils, the stones on the surface, and the areas of exposed bedrock.

Recreation. Picnic areas and campsites are extremely difficult to develop.

Wildlife. The habitat requirements of woodland wildlife species can be established, improved, or maintained on these soils but the rockiness and steep slopes present severe limitations. Habitat management will be difficult and expensive and results may be unsatisfactory. It is impractical to develop openland or wetland habitat on these soils.

Woodland. The productivity of this land is poor for wood crops. Equipment operation is extremely difficult because of numerous rock outcrops, and steep slopes. Seedling survival and windthrow of trees are problems.

Cropland. These soils are not suitable for the production of cultivated crops.

ORGANIC SOILS

Aa -- ADRIAN MUCK

Ce -- CARLISLE MUCK

These nearly level, very poorly drained soils are found in depressions of floodplains and terraces.

Typcially, these soils have a black, dark brown, and grayish brown surface layer of organic material ranging from two to over five feet. The substratum is gray, mottled loamy sand.

Included with this map unit may be small areas of other very poorly drained soils. These inclusions may make up about 20 percent of the map unit.

These soils are wet most of the year, and the watertable is generally at the surface from early fall to late spring. Runoff is very slow. Some areas have water ponded on the surface. A few areas are subject to flooding. The permeability of the soil is moderate or moderately rapid, and the soil is very strongly acid to neutral.

Most areas where these soils are found are wooded, or are covered by marsh grasses and sedges.

The major limitations of these soils are the high watertable, ponding, and the instability of the organic material.

These soils are unsuitable for cultivated crops, recreation, and poorly suited to timber production.

PAXTON SOILS

- PbB -- Paxton fine sandy loam 3 - 8% slopes
- PbC -- Paxton fine sandy loam 8 - 15% slopes
- PbD -- Paxton fine sandy loam 15 - 25% slopes
- PeD -- Paxton extremely stony fine sandy loam 15 - 35% slopes

Paxton soils are well drained associated with drumlins and hills.

Typically, this soil has a surface layer of dark brown fine sandy loam 9 inches thick. The subsoil is brown gravelly fine sandy loam 22 inches thick. The substratum is very firm grayish brown gravelly sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Charlton and Stockbridge soils, moderately well drained Georgia and Woodbridge soils, and poorly drained Ridgebury soils. On steeper slopes there may be small areas of Hollis soils. Included areas may account for up to 15 percent of this map unit.

The permeability of this Paxton soil is moderate in the surface layer and subsoil, and slow or very slow in the substratum. Runoff is medium, and available water capacity is moderate.

Urban. The design and construction of septage effluent absorption fields that function satisfactorily are very difficult because of the hardpan. Slopes above 8 percent add further difficulty and problems in design and site selection for absorption fields.

Conditions are favorable for excavation of basements of homes on soils with slopes less than 8 percent. Slopes above 8 percent are a moderate limitation; however, the steeper slopes present opportunities for a wider choice of architectural design. Stability of footings is not a problem, but measures such as footing drains are needed to prevent seepage into basements.

Soil conditions are favorable for the establishment and maintenance of grass, trees, and shrubs. The stony soils and slopes above 8 percent add difficulty in landscaping.

Difficulty in constructing streets and parking lots ranges from slight on level areas, to moderate on 3 to 8 percent slopes, to severe on slopes above 8 percent. The hazard of frost heaving because of water accumulation above the hardpan requires special consideration. Also soil slippage on road cuts is a hazard during wet seasons.

Recreation. These soils are favorable for picnic areas and camp sites. The level soils have few limitations for play areas, but limitations for this use are greater on the steeper slopes and stony soils.

Wildlife. These soils are well suited for the dependable growth of a wide variety of desirable openland and woodland wildlife food and cover plants. Habitat for woodland wildlife species is easily established, improved, or maintained. On the stony soils and slopes above 8 percent it is difficult to establish grain, land wildlife habitat on these soils.

Woodland. These soils have good productivity for wood crops. Both hardwoods and conifers are well suited. Competition from hardwoods is a serious problem when managing for pine, spruce, or larch. Hardwoods to favor on these soils are red oak, white ash, and sugar maple.

PAXTON SOILS (con't)

Cropland. The soils cleared of stones are suitable for the production of most agricultural crops grown in the area. Erosion is a hazard and on the steeper slopes more intensive surface water control measures are needed.

RIDGEBURY, LEICESTER, WHITMAN COMPLEX

Rn -- RIDGEBURY, LEICESTER AND WHITMAN, EXTREMELY STONY FINE SANDY LOAMS.

This unit consists of poorly drained and very poorly drained soils in depressions and drainageways on uplands and in valleys. Stones and boulders cover 5 to 35 percent of the surface. Slopes range from 0 to 8 percent but are dominantly less than 3 percent.

The mapped acreage of this unit is about 35 percent Ridgebury soils, 30 percent Leicester soils, 20 percent Whitman soils, and 15 percent other soils. The soils were mapped together because they have no major differences in use and management. Some areas of this unit contain only one of the major soils, and some contain two or three.

Typically, the Ridgebury soils have a surface layer of very dark grayish brown fine sandy loam 4 inches thick. The subsoil is brown and light brownish gray, mottled fine sandy loam 14 inches thick. The substratum is grayish brown and dark yellowish brown, mottled fine sandy loam to a depth of 60 inches or more.

Typically, the Leicester soils have a surface layer of black fine sandy loam 4 inches thick. The subsoil is brown, mottled fine sandy loam and gravelly fine sandy loam 25 inches thick. The substratum is olive brown, mottled gravelly fine sandy loam to a depth of 60 inches or more.

Typically, the Whitman soils have a surface layer of very dark gray fine sandy loam 8 inches thick. The subsoil is 16 inches thick. The upper 10 inches is dark grayish brown gravelly fine sandy loam. The lower 6 inches is grayish brown, mottled fine sandy loam. The substratum is very firm, grayish brown, mottled gravelly fine sandy loam to a depth of 60 inches or more.

Included with this unit in mapping are small areas of moderately well drained Woodbridge and Scarborough soils. Also included are small areas where stones and boulders cover less than 5 percent of the surface or more than 35 percent and small areas that have slopes of more than 8 percent.

The major soils in this unit have a seasonal high watertable at or near the surface from fall through spring. The permeability of the Ridgebury and Whitman soils is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The permeability of the Leicester soils is moderate or moderately rapid throughout. Available water capacity is moderate in all three soils. Runoff is slow on all three, and water is ponded on the surface of some areas of the Whitman soils. The Ridgebury and Leicester soils are very strongly acid to slightly acid.

The high watertable, ponding, and the stones and boulders on the surface limit these soils.

Recreation. These soils have severe limitations for picnic areas, camp sites, and play areas but have potential for conservation uses and environmental enhancement. Pond sites are found in these areas, but difficulty of construction increases with the degree of stoniness.

Wildlife. These poorly drained soils are not suited for the production of openland or woodland wildlife habitat. Dependable growth of desirable food and cover plants is limited by their wetness. Habitat for wetland wildlife can be developed, improved, or maintained on these soils, but stoniness imposes difficulties in constructing water impoundments.

Woodland. Productivity for wood crops ranges from fair to poor. Stoniness and wetness pose severe problems in the use of equipment. Because of wetness, there are severe problems in the survival of tree seedlings, the windthrow of trees, and competition from other plants.

Cropland. With drainage the soils cleared of stones are suitable for the production of silage corn and adapted hay crops. The stoniness and wetness of the soils make them unsuitable for agricultural crops.

SUTTON SOILS

SvS -- SUTTON FINE SANDY LOAM, 3 to 8 percent slopes.

This gently sloping, moderately well-drained soil is in slight depressions and on the sides of hills and ridges.

Typically, this soil has a surface layer of dark grayish brown fine sandy loam 8 inches thick. The subsoil and substratum are yellowish brown, mottled fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well-drained Charlton and Paxton soils, moderately well-drained Woodbridge soils, and poorly drained Leicester and Ridgebury soils. Also included are a few areas of soils with slopes of less than 3 percent or more than 8 percent. Included areas make up about 15 percent of this map unit.

This Sutton soil has a seasonal high watertable at a depth of about 20 inches from late fall until midspring. The permeability of the soil is moderate or moderately rapid. Runoff is medium, and available water capacity is moderate. It is very strongly acid to medium acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum.

Urban. The watertable limits successful operation of septage effluent absorption fields unless special measures are used such as drainage and land fill. The very stony soils present problems during installation.

During wet periods, the watertable is a problem in construction of homes and basements. Measures such as footing drains are necessary to prevent seepage into basements. The very stony soils add difficulty in excavation.

Soil conditions are favorable for the establishment of grass, trees, and shrubs. The very stony soils add difficulty in landscaping.

The high watertable is a moderate problem in the design, construction, and maintenance of streets and parking lots. Stone removal during construction is a severe problem on the very stony soils.

Recreation. During the main season of use, the nonstony soils with less than 3 percent slope are favorable for picnic areas and camp sites. Drainage is needed to overcome the seasonal watertable on playing fields for intensive use and to extend the period of picnicking and camping. The limitations for play areas increase on the steeper slopes and stonier soils.

Wildlife. These soils are well suited for the dependable growth of a wide variety of desirable openland and woodland wildlife food and cover plants. Habitat requirements of openland wildlife species can be established, improved, or maintained but the stony and very stony soils are more difficult to manage. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat. It is extremely difficult and expensive to develop wetland wildlife habitat on these soils.

Woodland. These soils have fair productivity for wood crops. Competition from hardwoods is a problem when managing for pine, spruce, or larch. Hardwoods to favor on these soils are red oak, white ash, and sugar maple. Equipment operation is difficult on the very stony soils.

Cropland. The soils cleared of stones are suited to the production of adapted legumes and grasses, late vegetables, and small fruits. With drainage, these soils are also suitable for the production of alfalfa, corn, orchards and early vegetables. Erosion is a hazard and on the steeper slopes more intensive surface water control measures are needed.

WOODBIDGE SOILS

WxB -- WOODBRIDGE FINE SANDY LOAM, 3 to 8 percent slopes.

This gently sloping, moderately well-drained soil is on drumlins and hills.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 8 inches thick. The subsoil is yellowish brown fine sandy loam 24 inches thick that is mottled in the lower part. The substratum is firm, grayish brown, mottled fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well-drained Paxton and Stockbridge soils, moderately well-drained Georgia and Sutton soils, and poorly drained Ridgebury soils. Included areas make up about 15 percent of this map unit.

This Woodbridge soil has a seasonal high watertable at a depth of about 20 inches from fall until late spring. The permeability of the soil is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. Runoff is medium, and available water capacity is moderate. It is very strongly acid to medium acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum.

Urban. The design and installation of septage effluent absorption fields that function satisfactorily are very difficult because of the hardpan and seasonal high watertable. Installation of disposal systems is more difficult on the very stony soils.

During wet periods the watertable is a problem in construction of homes with basements. Measures such as drainage are needed to prevent seepage into basements. The very stony soils add difficulty in excavation.

Soil conditions are favorable for the establishment and maintenance of grass, trees, and shrubs. The very stony soils and soils with slopes above 8 percent cause problems in landscaping.

The very stony soils and soils with slopes above 8 percent present severe problems in the design and construction of streets and parking lots. The hazard of frost heaving because of watertable and hardpan must be given special consideration in design and construction. Soil slippage on road cuts is a severe hazard during wet seasons.

Recreation. During the main season of use, the nonstony soils with less than 3 percent slope are favorable for picnic areas and camp sites. Drainage is needed to overcome the seasonal watertable on playing fields for intensive use and to extend the period of picnicking and camping. The limitations for recreational use increase on the steeper and more stony soils.

Wildlife. Habitat requirements of openland wildlife species can be established, improved, or maintained but stoniness adds difficulty in management. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat. It is extremely difficult and expensive to develop wetland wildlife habitat on these soils.

Woodland. These soils have good productivity for wood crops. Both hardwoods and conifers are well suited. Competition from hardwoods is a serious problem when managing for pine, spruce, or larch. Hardwoods to favor on these soils are red oak, white ash, and sugar maple. Equipment operation is difficult on the stony soils.

Cropland. The soils cleared of stones are suited to the production of adapted legumes and grasses, late vegetables, and small fruits. With drainage these soils are also suitable for the production of alfalfa, corn, orchards, and early vegetables. Erosion is a hazard on these soils and on the steeper slopes intensive surface water control measures are needed.

LISTING OF WILDFLOWERS AND SHRUBS OBSERVED BY
BETSY MURPHY IN AREA OF BACK POND ON MAY 14, 1983

<i>Hypoxis hirsuta</i>	(stargrass)
<i>Arisaema atrorubens</i>	(jack-in-the-pulpit)
<i>Panax trifolius</i>	(dwarf ginseng)
<i>Asarum canadense</i>	(wild ginger)
<i>Caulophyllum thalictroides</i>	(blue cohosh)
<i>Antennaria plantaginifolia</i>	(plantain-leaved pussy's toes)
<i>Senecio obovatus</i>	(round-leaved ragwort)
<i>Tussilago farfara</i>	(colts foot)
<i>Alliaria officinalis</i>	(garlic mustard)
<i>Dentaria diphylla</i>	(toothwort)
<i>Rhododendron nudiflorum</i>	(pink azalea)
<i>Geranium maculatum</i>	(wild geranium)
<i>Hamamelis virginiana</i>	(witch-hazel)
<i>Glechoma hederacea</i>	(gill-over-the-ground)
<i>Lindera benzoin</i>	(spice bush)
<i>Allium tricoccum</i>	(wild leek)
<i>Erythronium americanum</i>	(trout lily)
<i>Mianthemum canadense</i>	(wild lily-of-the-valley)
<i>Polygonatum biflorum</i>	(small solomon's seal)
<i>Smilacina racemosa</i>	(false spikenard)
<i>Smilacina stellata</i>	(star-flowered false solomon's seal)
<i>Trillium erectum</i>	(purple trillium)
<i>Uvularia perfoliata</i>	(bellwort)
<i>Veratrum viride</i>	(false hellebore)
<i>Orchis spectabilis</i>	(showy orchis)

<i>Chelidonium majus</i>	(swallowwort)
<i>Dicentra cucullaria</i>	(dutchman's breeches)
<i>Sanguinaria canadensis</i>	(bloodroot)
<i>Actaea pachypoda</i>	(doll's eyes)
<i>Anemone quinquefolia</i>	(wood anemone)
<i>Anemonella thalictroides</i>	(rue-anemone)
<i>Aquilegia canadensis</i>	(wild columbine)
<i>Hepatica americana</i>	(round lobed hepatica)
<i>Ranunculus abortivus</i>	(small flowered crowfoot)
<i>Thalictrum dioicum</i>	(early meadow-rue)
<i>Fragaria virginiana</i>	(common strawberry)
<i>Mitchella repens</i>	(partridge-berry)
<i>Mitella diphylla</i>	(mittenwort)
<i>Saxifraga virginiana</i>	(early saxifraga)
<i>Pedicularis canadensis</i>	(common lousewort)
<i>Thaspium trifoliatum</i>	(meadow parsnip)
<i>Viola blanda</i>	(sweet white violet)
<i>Viola pubescens</i>	(downy yellow violet)
<i>Viola pensylvanica</i>	(smooth yellow violet)
<i>Viola papilionacea</i>	(common blue violet)
<i>Viola cucullata</i>	(marsh blue violet)
<i>Viola fimbriatula</i>	(northern downy violet)
<i>Viola palmata</i>	(early blue violet)
<i>Viola rostrata</i>	(long-spurred violet)
<i>Viola conspersa</i>	(american dog violet)
<i>Equisetum hyemale</i>	(common scouring-rush)
<i>Osmunda cinnamomea</i>	(cinnamon fern)
<i>Osmunda Claytoniana</i>	(interrupted fern)

Adiantum pedatum	(maidenhair fern)
Onoclea sensibilis	(sensitive fern)
Polystichum acrosticoides	(christmas fern)
Pteridium aquilinum	(bracken fern)
Thelypteris noveboracensis	(new york fern)
Thelypteris simulata	(massachusetts fern)

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrial developments, and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the team to enter the property for purposes of review, and a statement identifying the specific areas of concern the team should address. When this request is approved by the local Soil and Water Conservation District and the King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.