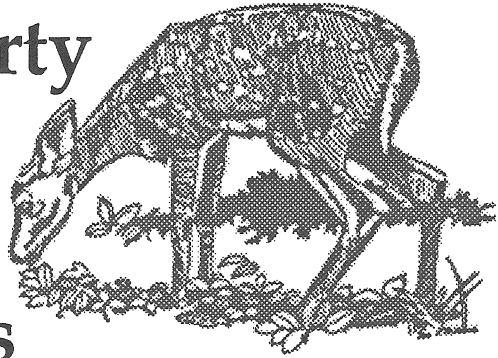


**Blake Colman Property
and
Upper and Lower
Mianus State Parks**



Greenwich and Stamford, Connecticut

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

King's Mark Resource Conservation and Development Area, Inc.

Blake Colman Property and Upper and Lower Mianus State Parks

**Greenwich and Stamford
Connecticut**

Environmental Review Team Report

**Prepared by the
King's Mark Environmental Review Team
of the King's Mark
Resource Conservation and Development Area, Inc.**

**for the
Greenwich Conservation Commission
and the
Stamford Environmental Planning Board**

July 1999

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Acknowledgments

This report is an outgrowth of a request from the Greenwich Conservation Commission and the Stamford Environmental Planning Board to the Fairfield County Soil and Water Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Tuesday, December 8, 1998.

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I would also like to thank Denise Savegeau, conservation director, Steve Danzer, conservation commission member, Michael Aurelia, inland wetlands and watercourses director, Peter Moss, Mianus River Greenway Alliance, Richard Bergstresser, selectman, Ric Peake, DEP law enforcement officer, Larry Rousseau, DEP forester and Jan Allardt, Trout Unlimited, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given additional information concerning the conservation easement, and some Team

members made additional field visits to the site. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the towns and state. This report identifies the existing resource base and evaluates its significance to the proposed uses, and also suggests considerations that should be of concern to the towns. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in the review, planning, and the development of a management plan for these properties.

If you require additional information please contact:

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Brief Summary

Wetlands Review

- Lower Mianus State Park
 - 8 identified wetlands
 - range from kettlehole, wooded swamp to riparian wetland
 - primary value of water quality attenuation
 - channel erosion was noted downstream of wetland #7
- Blake Colman
 - may contain a vernal pool
 - invasive exotics should be removed
- Upper Mianus State Park
 - contains at least 12 small isolated wetlands which exhibit strong vernal pool characteristics
 - may be a good area for vernal pool ecology research
- Streambank erosion and surface flow diversions from horse trail activity need to be addressed.
- Management plan for non-native invasive exotic plants.
- An improved crossing is needed at Grays Pond Brook where Blake Colman and the Upper Mianus State Park are linked by a trail.
- Any parking lot construction should take into consideration proper stormwater management control to avoid impacting wetlands and watercourses.

Aquatic Resources

- Significant physical habitat deterioration in and adjacent to streams of the Mianus River within all three parcels due to equestrian and pedestrian trail development.
- This is foreseen to promote adverse impacts to habitat and water quality through stream reaches down-gradient in the watershed.
- Management should include redesign and relocation of existing equestrian and pedestrian trail network.

Wildlife Resources

- Heavy deer browsing is evident throughout all three parcels and it may be limiting the forest vertical structure diversity and seedling recruitment of highly palatable plants.
- Erosion along trails is evident from moderate to heavy horse use.

- The three properties are highly valuable reserves for area-sensitive wildlife, and the value of the parcels for wildlife will be dependent on many factors including:
 - maintenance of trails
 - management of vegetation
 - management of white-tailed deer
- Activities that maintain or enhance biodiversity should be a goal of property managers.
- Rules for horse use should be formulated and action taken on erosion problem areas.
- Management of the deer herds on the properties is recommended.
- Deer hunting should be considered to provide an opportunity for hunting as well as provide some deer population control. Archery deer hunting may be the best option for these types of property.
- Passive recreation should have minimal negative effects on properly designed and maintained trails.
- A leash law should be in effect to reduce the amount of disruption to ground nesting birds during the nesting season.
- Maintenance of vegetative diversity through:
 - selective forestry operations
 - development of a forest management plan
 - management could include:
 - maintenance of healthy red cedar trees
 - enhancement of sugar maples
 - removal of invasive exotic plants

Forest Resources

- Continuation of the sugar bush in the Upper and Lower Mianus State Parks.
- Red cedar management.
- Stabilization and maintenance of horse trails.
- Evaluate trails for potentially hazardous trees.
- The CT Agricultural Experiment Station has indicated that it may be interested in studying an area in the Lower Mianus State Park on the effects of thinnings on young stands.

The Natural Diversity Data Base

- Water plantain spearwort (*Ranunculus ambigens*), a state endangered plant species, is found growing in the alluvial soil along the Mianus River in the Lower Mianus State Park.

- The location of this population needs to be factored into any plans to prevent direct or indirect impacts to this species.

Archaeological Resources

- The CT Archaeological Site Files and Maps show one prehistoric Native American site located at the confluence of Gray's Pond Brook and the Mianus River.
- The three properties do possess a high sensitivity for undiscovered archaeological resources.
- Any management decisions that may include subsurface disturbances should be reviewed for impacts during the planning process.

Watershed Protection

- Parking facilities should be small and it is recommended that they be accessible to both Upper and Lower Mianus State Parks.
- Proposed recreational uses are acceptable.
- Trails should be mapped (equestrian, pedestrian, bicycle).
- Trails should be assessed periodically to address adverse impacts and maintenance.
- Planned distribution of maps can be a method to limit the number of individuals using the properties.
- Prohibited uses should be listed on all educational materials/signs.
- Signage indicating watershed land helps to educate the public and protect the watershed.
- Sanitary facilities and trash receptacles should be provided at access points.
- Patrolling, another component of monitoring and maintenance, should be at sufficient frequency to discourage dumping, erosion, vandalism, discharge of waste, etc.
- A reporting system should be instituted with the CT American Water Company in the event of an incident that could have adverse impacts on water quality or quantity.

State Parks Review

- The Blake Colman property should have the same uses as the state park parcels.
- It is suggested that fishing be allowed in the Upper Mianus State Park and the Blake Colman Property but this needs to be approved by the CT American Water Company.
- A review is needed to determine if some limited hunting would be beneficial.

- A small parking area could be developed but it is suggested that only one lot be developed for the entire trailway (Lower Mianus State Park - Blake Colman - Upper Mianus State Park).
- Bicycling is allowed on the Upper and Lower State Parks and should be allowed on the Blake Colman Property.
- Education/interpretive programs are an acceptable use.
- There needs to be better trail development on the steeper sections for equestrian/bicycle use.
- With light use of the area DEP law enforcement patrol would be on an as needed basis and general patrol from time to time by DEP personnel would continue as they do with the Upper and Lower Mianus State Parks.

Conservation District Review

- Educational opportunities exist in the following areas:
 - maple sugaring
 - wildlife and forestry management techniques/demonstration areas
 - horse education trail to illustrate:
 - manure management
 - rotational grazing
 - paddock management

DEP Greenways Program Comments

- Highest and best use is as public water supply watershed.
- If a loop trail is desired the Lower Mianus State Park may be the best area for it.
- A parking area should be developed.
- Locate trails on Blake Colman away from the reservoir.
- Continue equestrian use but do not publicize.
- Limited parking and signage should reflect the character of the local roads and neighborhood.
- Access will not be limited to local residents
- Use of mountain bikes should be discouraged or prohibited on state lands.
- Be aware that the usage of these parcels may influence future donations and easements to complete the greenway.

Introduction

Introduction

The Greenwich Conservation Commission and the Stamford Environmental Planning Board requested the Environmental Review Team (ERT) to provide a natural resources inventory and information and guidelines to be used in the development of a management plan for the newly acquired Blake Colman Property and the Upper and Lower Mianus State Parks.

The ±83 acre Blake Colman Property was recently purchased by the CT Department of Environmental Protection (DEP) with conservation easements purchased by the towns of Greenwich and Stamford. The Blake Colman Property is located between two other state owned parcels (Upper and Lower Mianus State Parks, each approximately 100 acres in size). (see Figures 1, 2, 3 and 4) The Blake Colman piece will not become part of the state parks, but it will be managed as a Natural Heritage Trust Area. This purchase completes the northern six (6) miles of the 12 mile Mianus River Greenway. All three parcels are located in a public water supply watershed of the Connecticut American Water Company (CAWC) which supplies water to Greenwich, Stamford and surrounding communities. Uses for the three properties include: open space for watershed protection, passive recreation such as walking and hiking, and equestrian use. The emphasis is on not creating intensive or excessive use.

Objectives of the ERT Study

DEP and the municipalities have asked for assistance in developing a management and operations plan for the Blake Colman property and the state parks as they relate to each other, the greenway and the drinking water supply watershed. The following sections provide a natural resource inventory, as well as, guidelines and recommendations for management and development.

The ERT Process

Through the efforts of the towns of Greenwich and Stamford this environmental review and report was prepared for the Towns of Greenwich and Stamford.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the towns. Team members were able to review maps, plans and supporting documentation provided by the town of Greenwich.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on Tuesday, December 8, 1998 and some Team members made additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Figure 1

Location Map

Scale 1" = 2000'

— Approximate Site Boundaries

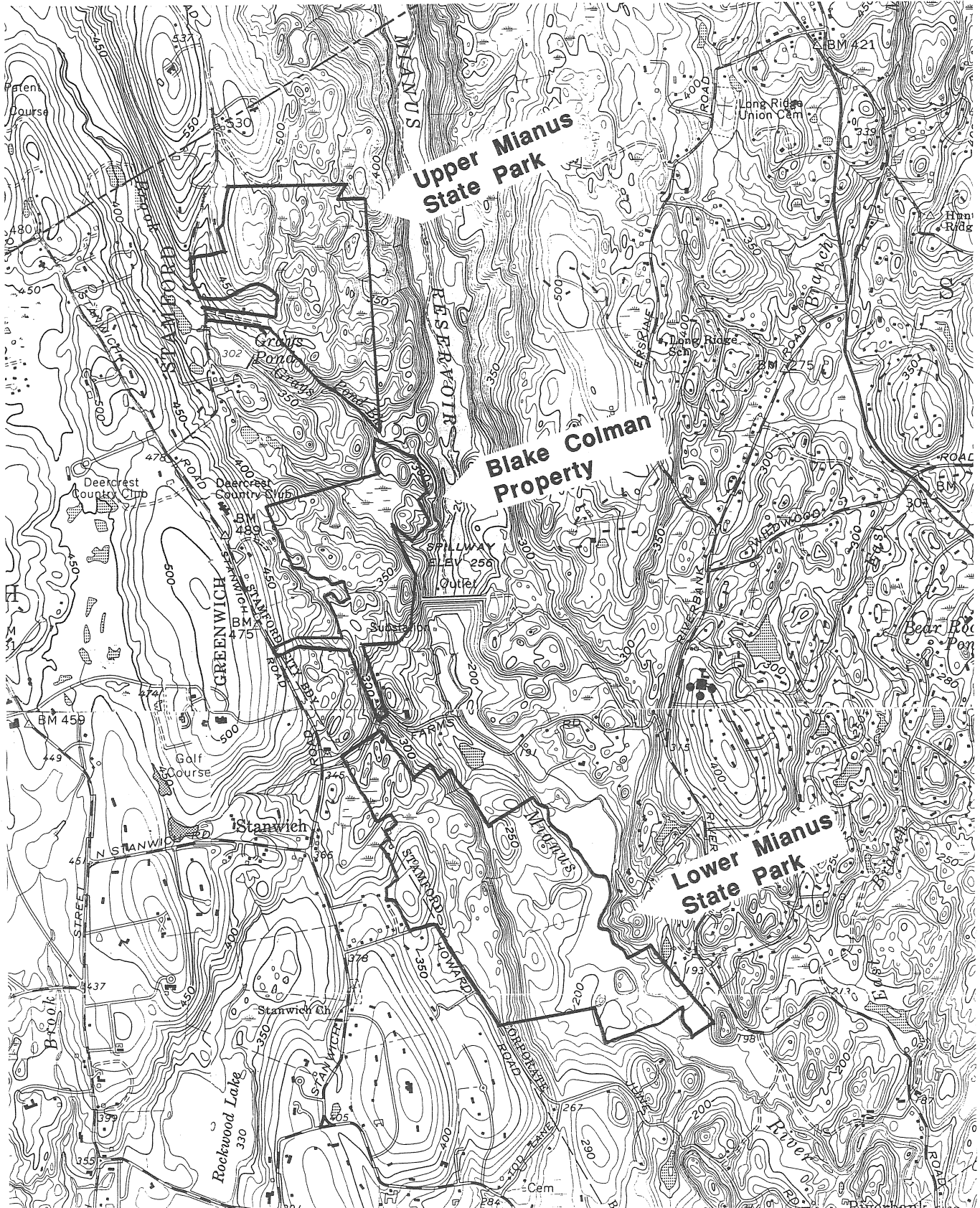


Figure 2



Blake Colman Property

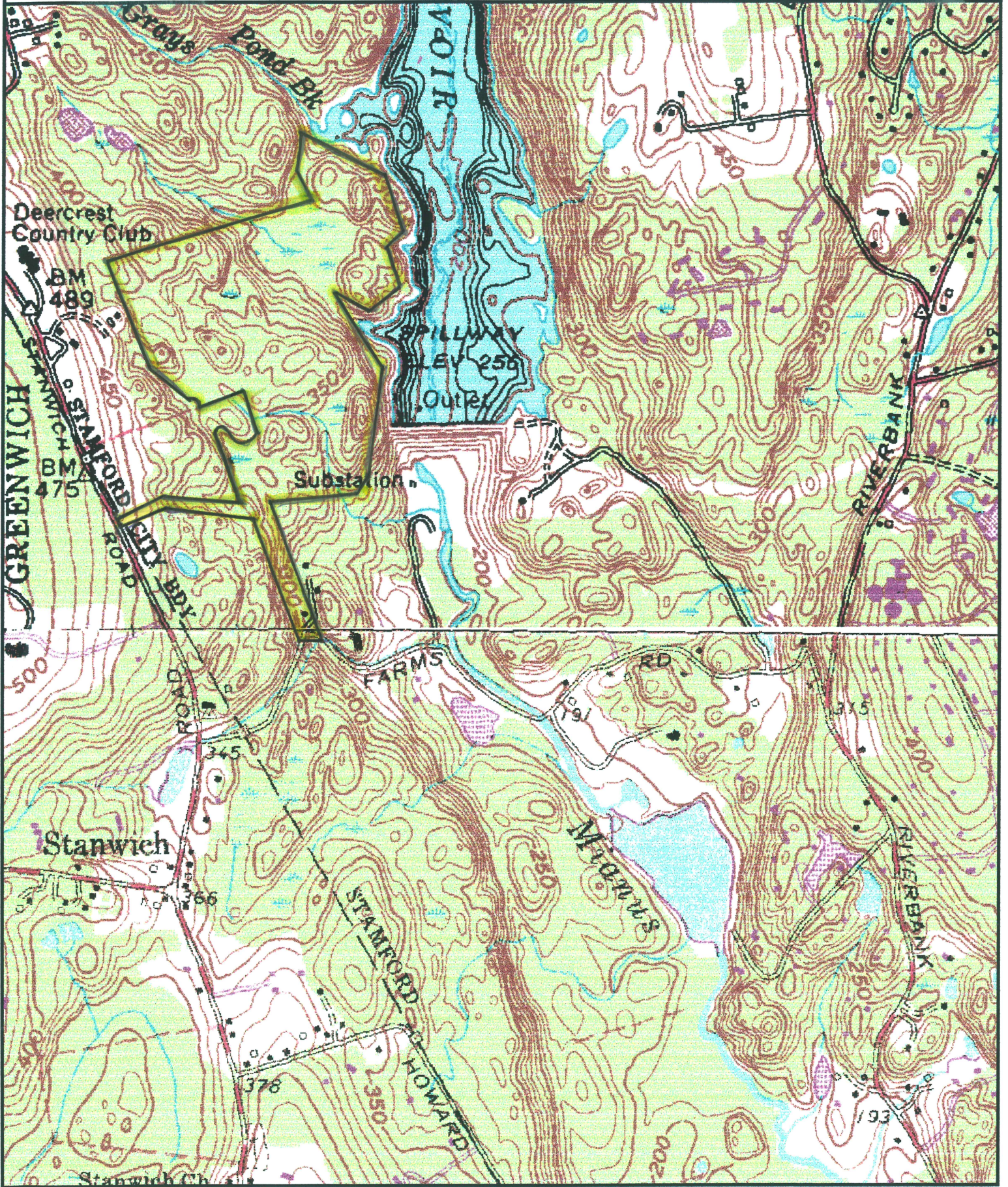




Figure 3

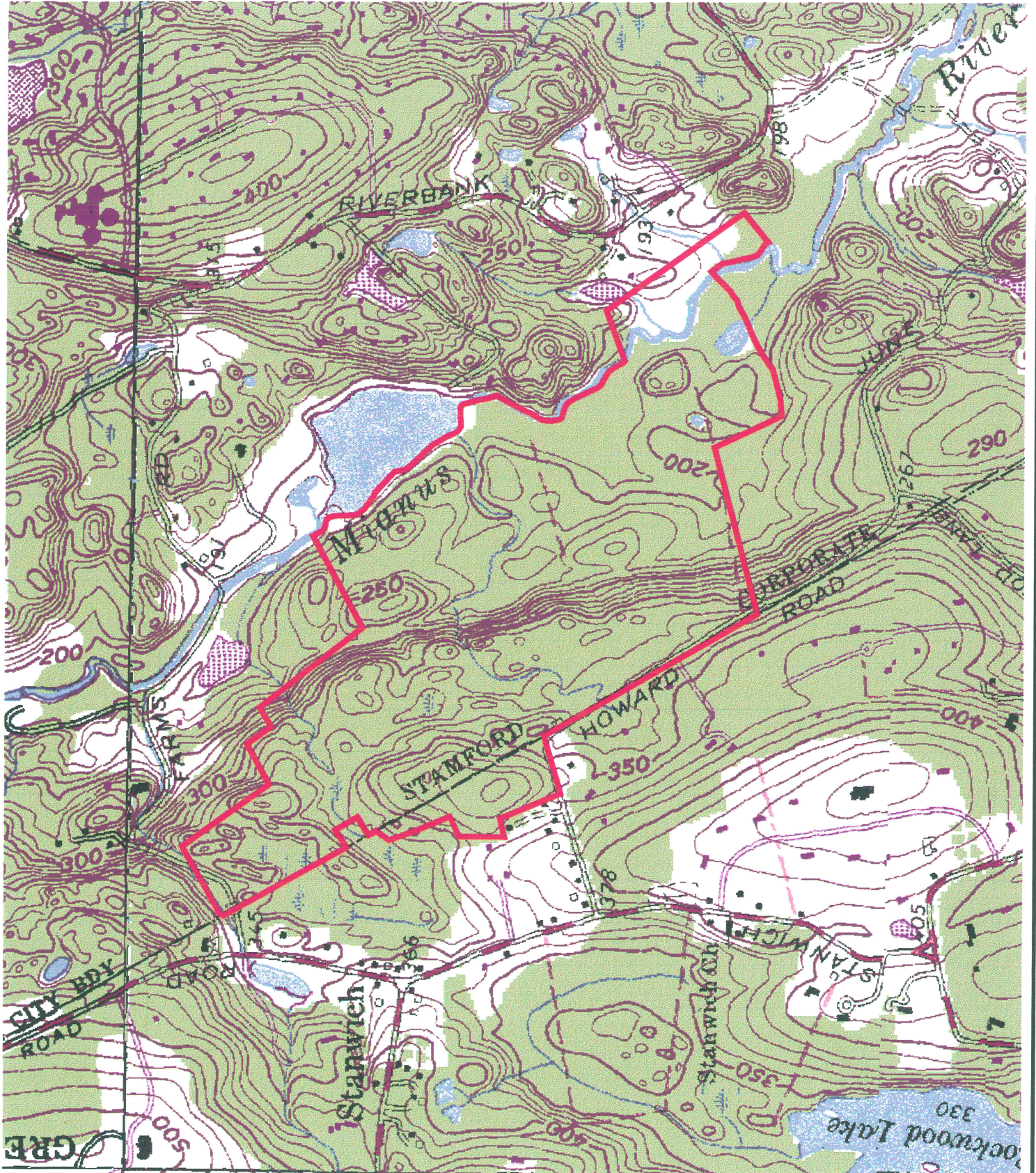
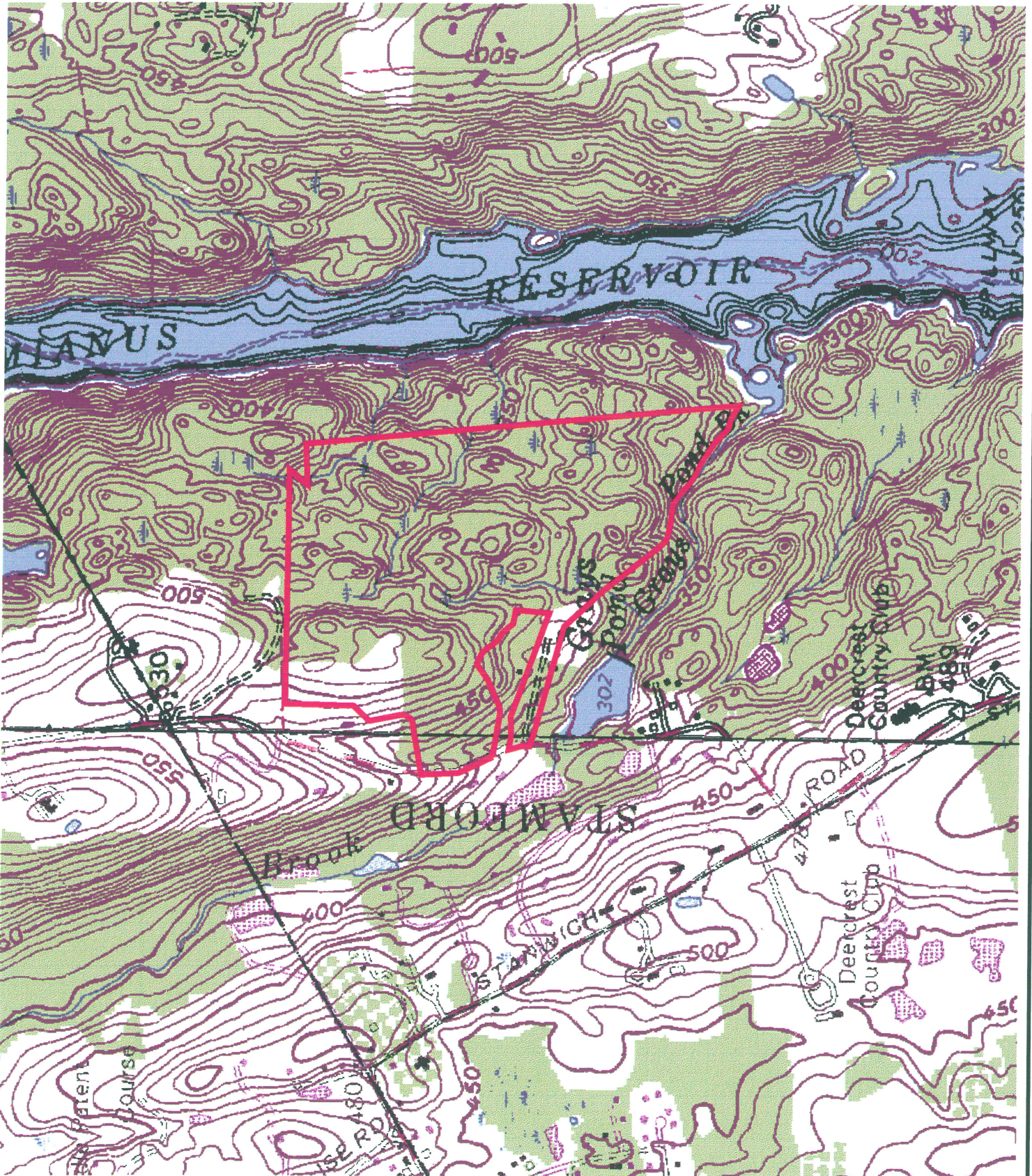




Figure 4



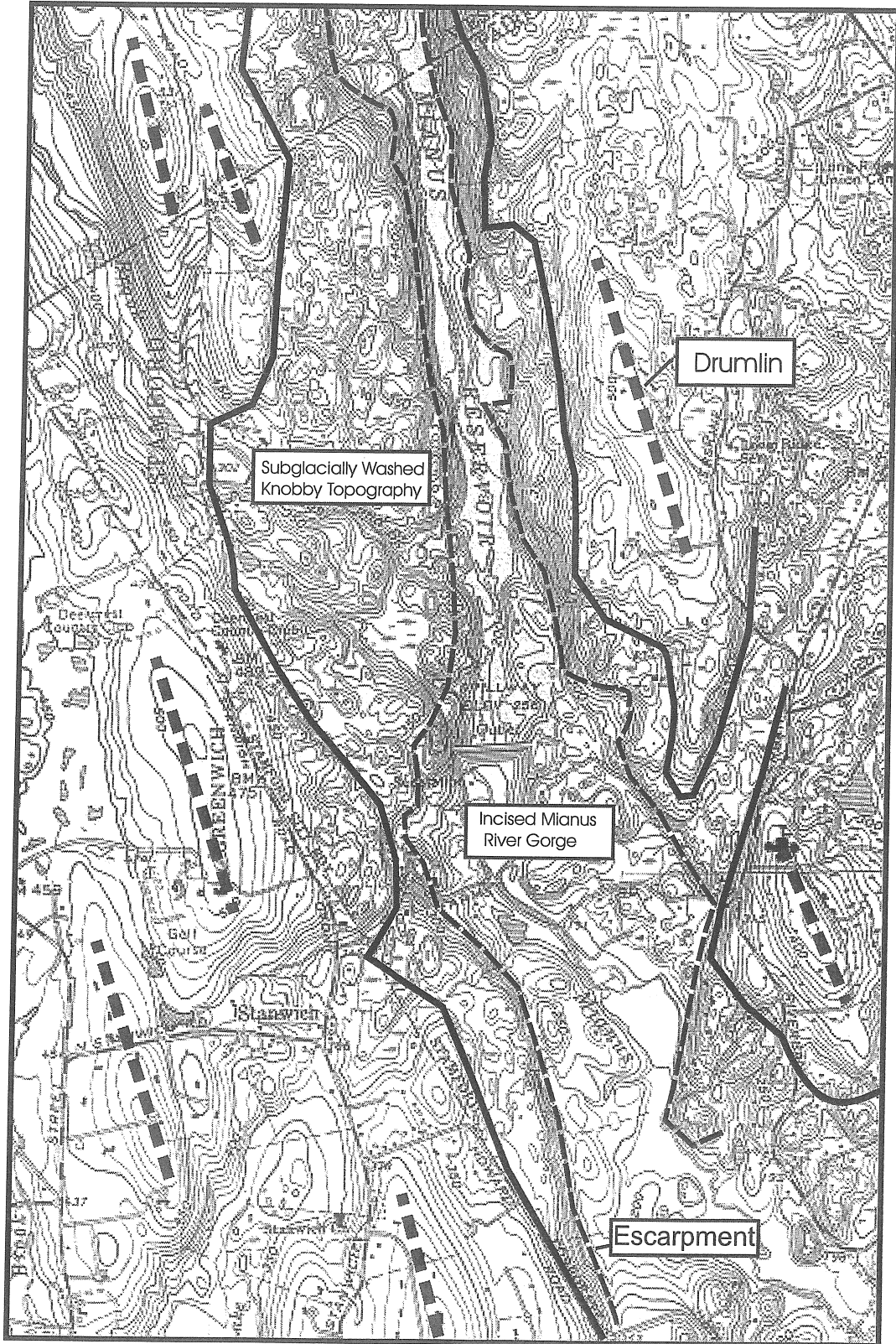
Topography and Surficial Geology

The Blake Colman Property and the Mianus State Parks cover a 3 by 0.5 mile strip of wooded land along the western side of the Mianus River Valley in the Northwestern corner of the town of Stamford, CT (a small 1500 x 200 ft. strip of the Lower Mianus State Park extends into the town of Greenwich). The topography of much of the area is picturesque, intricate and interesting on a small scale. The irregular, continually changing topography makes the area an ideal setting for attractive forest trails. The relatively flat terrace between the 450 and 300 foot elevation is characterized by numerous small 10-50 foot high rounded bedrock knolls and basins covered by a thick veneer of bouldery, sandy till. The surrounding uplands are much smoother and underlain by a thick blanket of glacially deposited compact till. The till may exceed 100 or so feet in thickness on the smooth, NNW-SSE elongated drumlinoid hills near Stanwich and along Erskine Road. The Mianus River follows a deep, linear bedrock gorge eroded along a weak fractured ancient fault zone. A steep 70-foot high escarpment marks both sides of the incised valley. A thin 20 ft. fill of stratified sands and gravel covers the floor of the valley.

The topography speaks volumes about the recent geologic history of the Mianus River Valley. Long before the last ice age, the Mianus River meandered back and forth across a wide flat bottomed valley which in the area of the Upper Mianus State Park was at an elevation of 400 feet above the present sea level. The dramatic disruption of the normal drainage system and the significant increases in discharge as the ice melted during the several advances and retreats of continental glaciers deepened the river valley in the narrow zone of fractured bedrock along the trace of an ancient (probably Jurassic, 180 million years old) fault. During the last major ice advance, a thick blanket of till was deposited under the ice over the whole area. Subglacial melt waters following the general trend of the Mianus Valley seem to have stripped much of this basal till from the area below 450 feet elevation leaving the knobby topography strewn with a lag deposit of large boulders, and a veneer of sandy till as the area was exhumed from

under the ice. The greatest concentration of large boulders is found at what is probably the narrowest part of the subglacially washed zone, on top of the terrace along Howard Road in the Lower Mianus State Park. Ice-contact sands and gravels clogged the central gorge as the last ice melted away.

Figure 5
Topographic and Surficial Geologic Features
Blake-Colman, Mianus River State Parks Area



Scale
0 2000 ft

Bedrock Geology

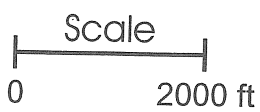
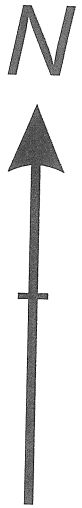
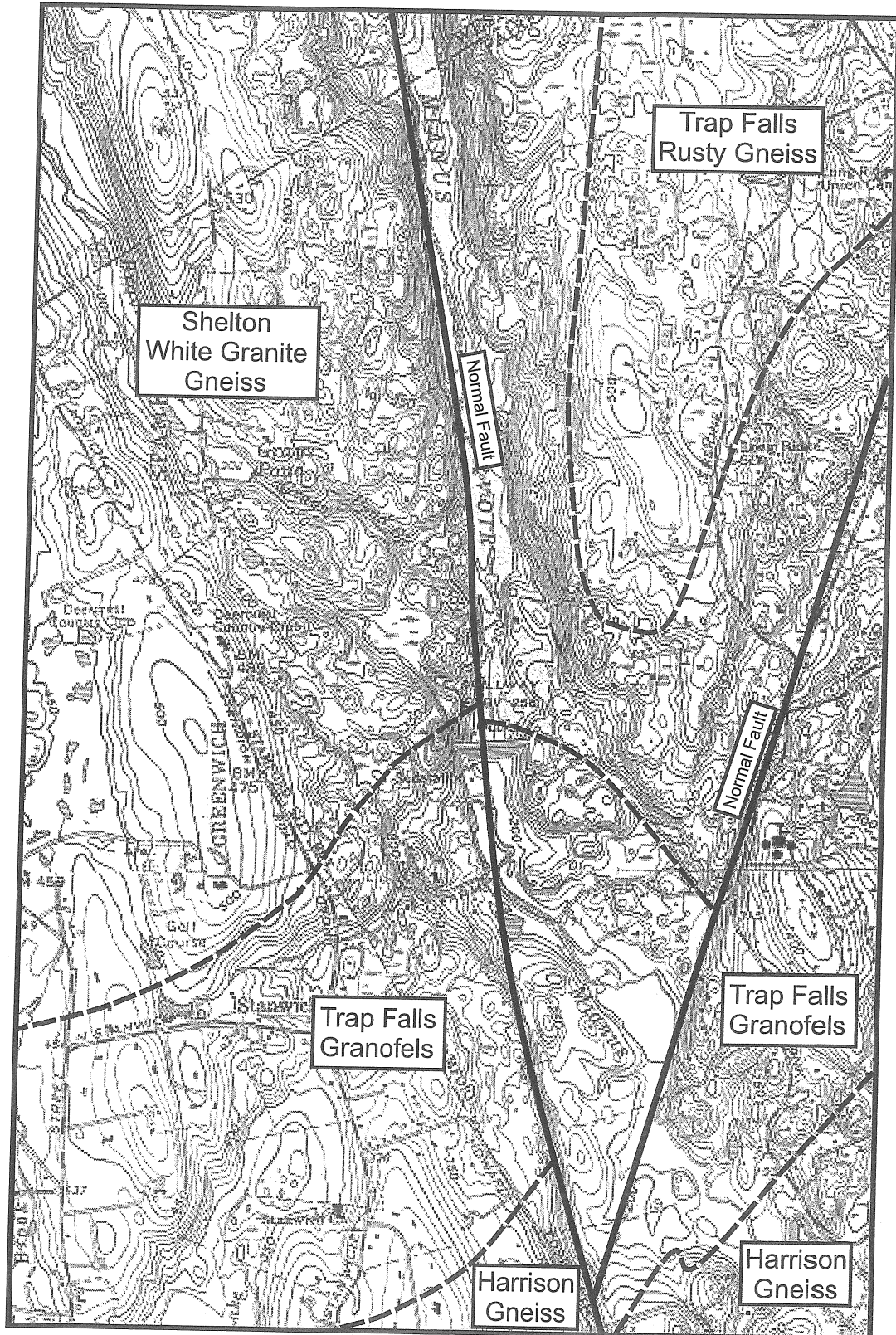
The bedrock geology of the area is poorly and incompletely mapped. A cursory field examination and the preliminary information compiled on the State 1:125,000 Bedrock Geologic Map (Rodgers, 1985) suggests the Upper Mianus State Park and Blake Colman Property are underlain by white colored, coarse-grained slightly gneissic granite (called the Shelton White Gneiss on the state map, OtfS). The rock consists of roughly equal amounts of feldspar and quartz together with less than 10% muscovite and biotite micas. The absence of sulfides is reflected in the pure white weathering rind on exposed outcrops. Groundwater percolating through the widely spaced fractures in this relatively massive and homogeneous rock is unlikely to pick up much iron or acidity from oxidizing sulfides. The area is thus ideally suited for its present primary purpose - a public water supply watershed.

The Shelton White Gneiss is absent in the Lower Mianus State Park parcel. The northern half of the park is underlain by a fine-grained light colored granular rock referred to on the state map as a granofels (OtfG). The bedrock under the southern half of the park is referred to as the Harrison Gneiss (Oh) - an interlayered dark and light gray, medium grained well-foliated gneiss. Where exposed in the Park the rock contained rusty weathering granofel and calc-silicate layers that may affect the quality of the local groundwater.

References

Rodgers, John. 1985, Bedrock Geologic Map of Connecticut. Connecticut Geologic and Natural History Survey.

Figure 6
Bedrock Geology of the Blake-Colman, Mianus
River State Parks Area



Wetland Review

The Town has requested that the team was to "...provide a natural resource inventory and information and recommendations and guidelines for the management of the properties." As this charge relates to wetlands, the Team wetland specialist has created a visual inventory of the wetlands on these three properties. Please refer to Figures 8 through 10 for a graphical representation of the inland wetlands and watercourses as they presently exist on the three subject parcels. This information was derived from existing USDA-NRCS soil surveys, existing intensive soil surveys, aerial photo interpretation and personal site investigations.

According to the Connecticut Department of Environmental Protection's (CT-DEP) Natural Drainage Basins in Connecticut (1981, rev. 1991) all three parcels exist entirely within the Mianus River sub-regional watershed of the Southwest Western Regional Complex contained within the Southwest Coast Major Basin. As indicated on CT-DEP's Water Quality Classification Map of Connecticut (1987) the Mianus River Watershed is assigned a "GAA" designation. This presumes that it's groundwater is "...suitable for human consumption without the need for treatment." The Bargh Reservoir as well as the Mianus River which flows out of it are designated as "B/AA." This means that the present condition of the watercourse is Class B with the designated uses of recreation, fish and wildlife habitat, agricultural and industrial supply; while the future goal is Class AA with the same designated uses as Class B except for the notable addition of existing or potential water supply. Additionally, this designation allows for the restriction of certain recreational uses. The downgrading of this watercourse to a level B designation is most likely due to the presence of an active septic leaching field in the New York portion of the watershed as mapped on the CT-DEP Leachate and Wastewater Discharge Maps.

All wetlands described below are classified according to the "Cowardin" system as palustrine/deciduous/forested unless otherwise stipulated. Likewise, all wetlands

described contain a primary value of water quality attenuation due to its presence within a water supply watershed.

Lower Mianus State Park

For a representation of wetlands and watercourses in the Lower Mianus State Park refer to Figure 8.

The most valuable wetland in this parcel is labeled "1". This wetland could be classified as a "riparian" wetland due to its direct hydraulic connection to the Mianus River. Riparian wetlands are strategically located to provide maximum benefits to its associated watercourse including excess nutrient removal, sediment and pollution removal, water temperature regulation, streambank stabilization and energy/food production. Additionally, this wetland appears to be in various stages of vegetative succession, providing a diverse habitat for wildlife. Hydrologic inputs to this wetland include groundwater inputs influenced by the Mianus River as well as the surface water inputs of the intermittent watercourse draining the central portion of this parcel. Soils within this wetland as classified as part of the Cooperative Soil Survey primarily include "Saco" which is a very poorly drained, alluvial soil. Also included in lesser amounts are "Raypol" - a poorly drained soil formed in stratified sediments with a finer grained mantle over sandy, gravelly glacial deposits, as well as "Ninigret" - a moderately well drained soil with a loamy mantle over stratified sand and gravel deposits.

Wetland 2 is what appears to be a small, permanent water body which has many of the characteristics of a "kettle hole pond", with a Cowardin classification of Lacustrine (deep water pond). These depressions are known to have formed after the last glaciers had retreated, leaving remnant chunks of ice situated among, and possibly within, loose gravelly deposits. As the ice then melted, it left in its place a void which slowly collapsed to leave a concentric depression. Depending on its relation to the local

watertable, these kettle holes may fill with water creating a kettle hole pond. What can make these features unique from a wetland perspective is their tendency to have drastically fluctuating water levels, which could create challenging constraints for the inhabiting flora and fauna. Further study of this feature could reveal interesting ecological dynamics. The hydrology of the pond is most likely entirely supported by groundwater inputs and exists within a mapped unit of "Hinkley" soils which are described as excessively drained soils, typically found in outwash terraces, kames and eskers (glacially deposited, stratified drift, ice contact features).

Wetlands 3 and 4 are small, linear wetlands situated at the top of their local watersheds and associated with intermittent watercourses draining to the south away from the River. These wetlands have soils classified as "Ridgebury", a very common soil map unit described as being stony and poorly drained formed on glacial till (non-stratified, heterogeneous deposits of clay, sand gravel, cobble and boulders). Wetland 5, 6 and 7 can be similarly described, however, wetlands 6 and 7 are larger in size with more developed red maple canopy and with more variation in water depths throughout the year (approximately 6 inches according to observed hydrologic indicators.) Wetland 7 was partially inundated with *Phragmites australis* (common reed) a generally non-desirable invasive, exotic plant. Primary values of the above wetlands include wildlife habitat, food source and cover.

Wetland 8 is a relatively large wooded swamp that spans the northern park boundary. It appeared to be a permanently flooded wetland with a significant amount of standing deadwood observed in the field. This usually indicates a recent increase in the water level creating conditions too wet for the red maples that had matured there in the past. This higher water level may be the result of a beaver impoundment near the outlet located on private property. Visual confirmation was not possible, however aerial photo-interpretation suggests the existence of some type of impoundment, probably beaver, at that location. Primary values of this wetland area are flood control and wildlife habitat due to the standing deadwood which could provide homes for cavity nesting birds. A limited amount of *Phragmites* was also visible in this wetland. This

wetland is mapped as an "Adrian" unit - a very poorly drained soil consisting of thick organic material over sand and gravel deposits.

In general, the watercourses in this parcel are intermittent, barring the Mianus River. As such their primary function is to convey stormwater runoff. Primary function for the Mianus River is as a finfish habitat. Refer to the Fisheries section of this ERT for further information on this topic. Channel erosion was noted in the field, downstream of Wetland 7 which could be explained partially by the steep slope and "flashiness" of the waterflow through the system. Another potential cause may be the intersecting horse trails which are channeling additional water into the course as well as disturbing the streambank with the physical action of the horse hooves.

Blake Colman Property

For a representation of wetlands and watercourses in the Blake Colman Property refer to Figure 9.

It is very likely that Wetland 1 is a vernal pool. The physical and hydrological conditions seem to be consistent with a vernal pool characterization, however a springtime biological census would be needed to confirm the presence of obligatory amphibian species, which is an essential parameter.

Vernal pools are small, shallow, circular depressions in the landscape which fill with water during the wetter periods of the year (spring and late fall), and become drier during the warmer summer months. True vernal pools also support unusually diverse and dynamic assemblages of wildlife. Much of this wildlife is solely dependent on these areas for one or more periods of their life cycle. Because of the absence of permanent water, fish do not live in these ephemeral pools, making these areas very attractive to certain animals which would normally fall prey to these carnivorous fish. Rare and endangered amphibian species are commonly found in these pools. The amphibian life

that use these pools as breeding grounds soon migrate into the surrounding uplands to live out their adult phase and return to the pools only to breed. Migration distances vary significantly between species. One literature search turned up figures ranging from a minimum of 200 feet and a maximum of 750' with an average migration of about 525'. The wood frog has a significantly larger dispersal range, known to be as far as one half mile from their host pool. This wetland is also mapped as an "Adrian" soil map unit. The ephemeral watercourse draining this wetland flows to the southeast directly to the Mianus River.

Wetland 2 appears to be a less remarkable forested wetland. It is classified as a "Leicester" soil map unit which, like the Ridgebury soils is poorly drained, stony and formed from glacial till. Hydraulically connected to, and upstream of, Wetland 2 is Wetland 3, whose soil is similarly classified. However, this wetland seems to have been disturbed judging from the earlier stage of vegetative succession. Instead of the typical red maple and winterberry, this wetland is more open with red-osier dogwood, and sensitive fern dominating. Perhaps this was dug out at one time for a pond. Primary functions for Wetland 3 appears to be wildlife food/cover.

Wetlands 4 and 5 are very small, isolated wetlands with what appears to be poorly drained soils. It is not likely that these are true vernal pools since the requisite hydrologic indicators were absent, however these wetlands seem to have a high aesthetic value due to the presence of steep rocky slopes along their margins. Wetland 6 is a relatively large wooded swamp mapped as a "Carlisle" soil unit. These are very poorly drained soils with deep, very "mucky" organic soils, found in depressions with associated slow moving streams on both glacial till and outwash plain geology. True to form, this wetland seems to have been a depression which slowly filled in with organic material to support the present day red maple association. It appears to have a perennially flowing inlet and outlet. Of all the wetlands mapped on the three parcels, this appears to have the most diverse plant assemblage of all. It contains open water, emergent vegetation, scrub/shrub and forested wetland types. This juxtaposition creates ample opportunity for abundant wildlife to inhabit this

wetland area. Indeed, the Team wetland specialist observed a wood duck nesting box mounted in the deep water section. Like Wetland 8 in Lower Mianus State Park this wetland seems to have been subjected to water level manipulations judging from the amount of deadwood present. However, this time the wetland specialist saw no signs of beaver, but a crudely designed stone impoundment at the outlet.

What appeared to be winged euonymus (*Euonymus alatus*), another undesirable invasive exotic plant was observed near several wetland areas of this parcel. While this plant does not usually grow in wetlands it tends to grow adjacent to them and dominate upland buffer areas, choking out other more desirable plants that could provide more benefit from a wildlife food/cover perspective.

Upper Mianus State Park

This parcel contains no less than 12, small isolated wetland areas. Most appear to exhibit strong vernal pool characteristics. See above for a general discussion on vernal pools. Another phenomenon peculiar to vernal pools is that they often exist, as in this case, in groups, which have been shown to cooperate as a functional whole, with some pools in the group serving as a genetic "source" producing amphibian stock, and others as a genetic "sink" receiving this genetic stock. While research on this phenomenon is on-going, it is suspected that the interplay between individual pools creates a "supergroup". In other words, the whole of the pool assemblage is far greater than the sum of its parts or individual pools. This assemblage would probably serve quite well as a research area for vernal pool ecology. Many of these pools exist along two major intermittent drainage ways. Others are completely isolated hydrologically (refer to Figure 10). Soil map units for these areas are classified as "Ridgebury" (see above for a description).

General Management Recommendations

Being a preserved area with only passive recreation proposed makes the task of providing wetland protection guidelines an easier one. There are several items that deserve mentioning.

- 1) As noted, streambank erosion and surface flow diversions were observed, apparently resulting from horse trail activity. While this certainly is not a critical problem from a wetland/watercourse point of view, remediation should be addressed when needed. In one case a horse trail forded a small watercourse just upstream of a small wooden bridge which could have served as a crossing.
- 2) In keeping with CT-DEP's "Non-Native Invasive Plant Species" policy directive wherein "Non-native invasive species that have a detrimental impact to native plants, wildlife or their habitats will be controlled, reduced, or removed from lands and waters managed by the Department whenever practical," a management plan for the identification and possible control of the invasive plants observed on this property could be devised. (Also refer to the Wildlife Resources section.)
- 3) Any parking lot construction associated with access to these parcels should take into consideration proper stormwater management control to avoid impact to wetlands and watercourses involving sedimentation or stormwater pollution.
- 4) The area between the Blake Colman and Upper Mianus River State Park parcels was investigated for potential interconnections. A trail was observed connecting these two parcels leading north along Wetland 6 crossing Grays Pond Brook in the extreme southern portion of the Upper Mianus River State Park. The stream crossing was unimproved and was difficult as a pedestrian crossing (especially during high water) but presumably would be little challenge for a horse. If maintaining a greenway for foot traffic is to be a priority, it is recommended that an improved crossing be devised at this

location if possible. While the passage between these two parcels is on private land, perhaps an easement could be obtained for this purpose. Formalization of this pathway would add much to the aesthetic experience of the hike because of the interesting juxtaposition of upland forested slopes, a significant watercourse, wetlands and the reservoir.

Soils Map

Scale 1" = 1320'

Figure 7

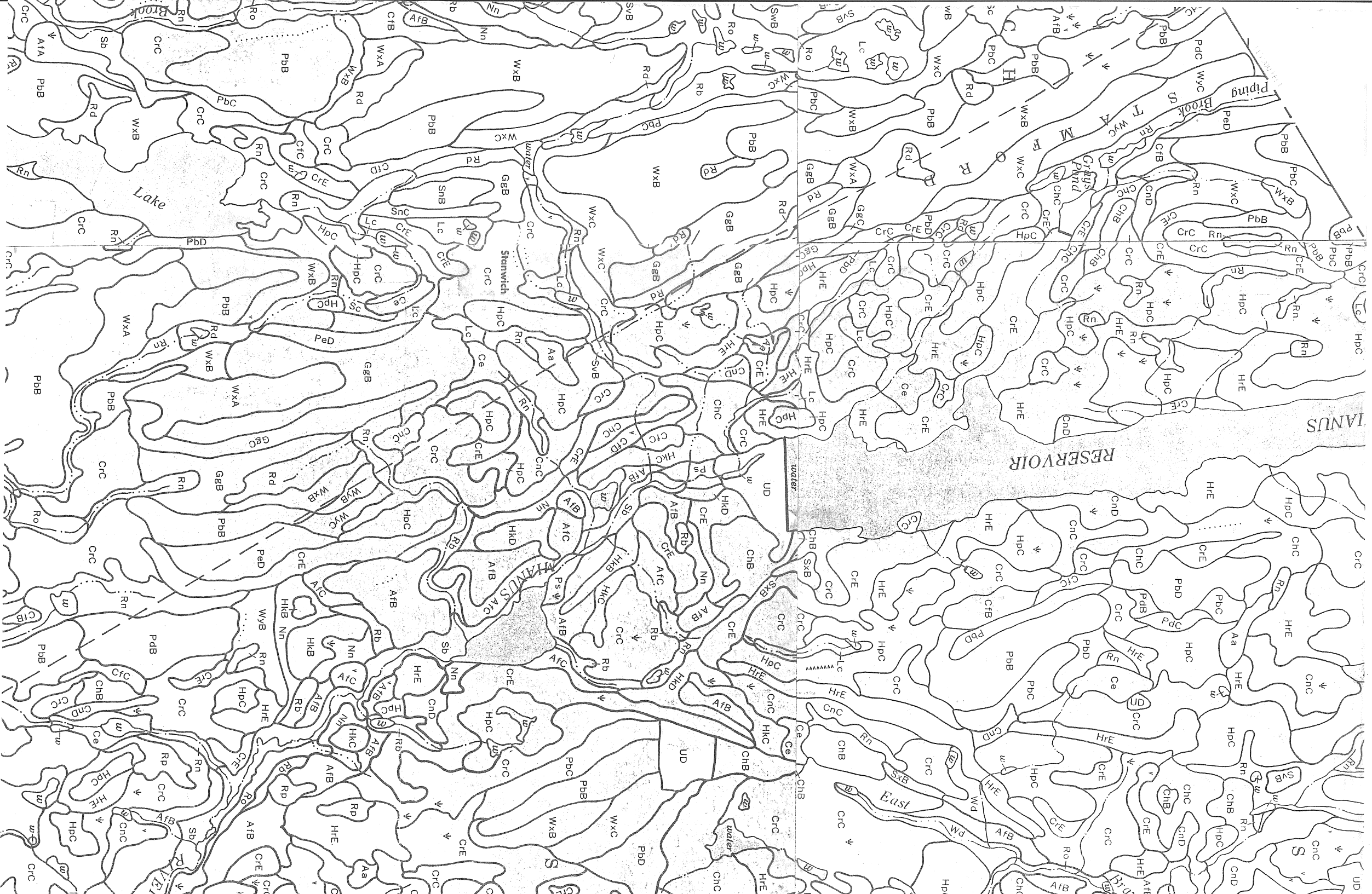


Figure 8 -Lower Mianus State Park



-Approx. Property Line

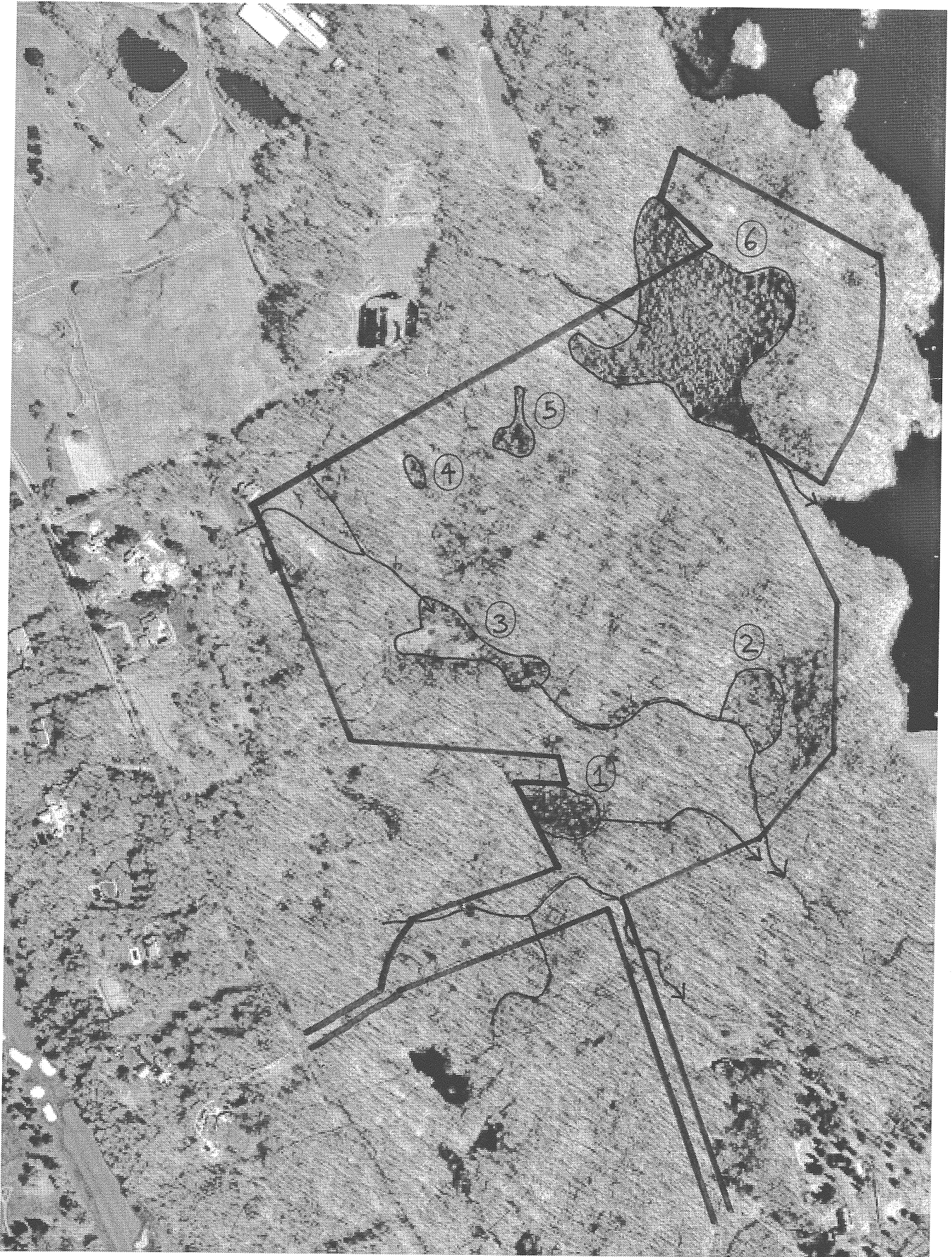


-Wetland



- Watercourse

Figure 9 - Blake Colman Property



- Approx. Property Line



-Wetland



-Watercourse



- Approx. Property Line



- Wetland



- Watercourse

Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding the project site have been reviewed. According to our information, there is a population of *Ranunculus ambigens* (Water plantain spearwort), State Endangered, growing in alluvial soil along the Mianus River within Lower Mianus State Park. The location of this population will need to be factored into any plans that DEP and the municipalities have for recreational use, to prevent direct or indirect impact to this species.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

If you have further questions please contact Ken Metzler at 860-424-3585. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Wildlife Resources

This report will address the following: current conditions for wildlife, educational opportunities, recommendations for habitat management and enhancement, planning for wildlife, and other considerations.

As land becomes developed, natural areas are divided into smaller, isolated pieces. Land that is in private ownership can be managed for wildlife habitat for the long term. In contrast, private land, which consists of 88 percent of the land in Connecticut, usually changes ownership and is mostly not managed for wildlife for the long term. Wildlife habitat near urbanized areas can be places for citizens to enjoy wildlife in close proximity to where they live.

As Stamford's and Greenwich's natural areas become smaller and more isolated, the value of natural areas that are 25 acres or larger will increase in value for wildlife. The remaining natural areas will be important as refugia for wildlife and places to observe natural vegetation and the associated wildlife. Proper planning and consideration to the present and future conditions of the subject open space properties will prove valuable to the towns of Greenwich and Stamford.

Current Conditions

The predominantly forested area which comprises the Blake Colman property, the Upper Mianus State park and the Lower Mianus State park provides habitat for a variety of forested wildlife species. The juxtaposition of these properties with each other makes them valuable as a wildlife corridor along the Mianus river. The riparian habitat along the river and their interconnectivity with the uplands makes these three properties valuable for many types of wildlife. The timing of this environmental review (December) precluded the documentation of breeding birds or amphibians,

however, given the large size of the properties and their proximity to each other in a continuous fashion, diverse wildlife populations can be expected.

Common wintering wildlife were observed during the site visits. The following wildlife were observed during the site visits either directly or indirectly by identifying calls, tracks, scat or other sign: whitetailed deer (*Odocoileus virginianus*), eastern coyote (*Canis latrans*), red fox (*Vulpes vulpes*), gray squirrel (*Sciurus carolinensis*), downy woodpecker (*Picoides pubescens*), red-bellied woodpecker (*Melanerpes erythrocephalus*), American crow (*Corvus brachyrhynchos*), blue jay (*Cyanocitta cristata*), black-capped chickadee (*Parus atricapillus*), tufted titmouse (*Parus bicolor*), white-breasted nuthatch (*Sitta carolinensis*), and winter wren (*Troglodytes troglodytes*). These are just a few examples of the types of wildlife that utilize the habitats on the properties. Unfortunately there are no known historical wildlife reports or censusing for the properties. It can be expected, with more thorough field investigations throughout the seasons of the year, that the forest species list will be large for the properties.

Heavy browsing of the understory by deer is apparent throughout the three properties. Deer sign was abundant. Deer browsing may be limiting the forest's vertical structural diversity and seedling recruitment of highly palatable plants. Effects of heavy deer browsing to forests have been well documented in the scientific literature.

Trails located throughout the properties are experiencing moderate to heavy use by horses. Erosion of soil along trails is evident.

Projected Issues and Management Considerations

The three properties offer opportunities as well as problems for managers trying to maintain a balance between allowing some types of recreation, resource use, and maintenance of biodiversity. The three properties are valuable reserves for area-sensitive wildlife (wildlife needing larger forested areas) as surrounding properties

continue to urbanize. The value of these properties for wildlife will be dependent on many factors including the maintenance of trails, the management of vegetation and the management of white-tailed deer. Although some feel that properties left alone will manage themselves, time and reality dictates that some human intervention will be needed to shape the long term conditions of these areas for wildlife. The maintenance of these continuous forest tracts requires the property managers to think long range and have long term goals and objectives. Activities which maintain or enhance biodiversity should be strived for the properties.

Potential Impacts to Wildlife

Trails:

Trails which lead hikers through the properties provide excellent opportunities to enjoy nature's beauty, seek a getaway from the everyday work place, and learn more about nature. Trails need to be carefully planned so as to not criss-cross the entire property. Only designated trails should be allowed and other unauthorized trails discouraged through enforcement and including access barriers. Wildlife need places that offer some seclusion especially during the nesting seasons. Currently, horse use of trails on the properties are causing some erosion problems which may become exacerbated as time goes on. Rules on when and where this activity can occur should be formulated. Some action should also be taken to prevent erosion of the trails.

Deer Browsing:

The effects of deer browsing on forest ecology is well documented in the scientific literature. Deer are capable of altering plant species abundance and composition by their foraging (Frelich and Lorimer, 1985; Alverson et al, 1988). Management of the deer herd on these properties is recommended. Deer program biologists are available for technical advice from the DEP's Wildlife division (Howard Kilpatrick - Wildlife Biologist, Tel. 860-642 7239).

Recreation Opportunities:

Passive recreation such as hiking and walking through the properties will have minimal negative effects. However, it is important that trails are designated, and well marked. Unauthorized trails should be eliminated and discouraged by signage or barriers. A strict leash law should be instituted to reduce the amount of disruption to ground nesting birds during the nesting season. A portion of the hiking trails can be utilized for nature education opportunities. A trail with markers and an accompanying trail guide can be developed for nature education purposes.

Deer hunting should be considered to allow area sportsmen and women an opportunity to hunt as well as provide some deer population management. Archery deer hunting may be the best option for these types of properties which have multiple uses. Daily permits can be issued to hunters during the regulated hunting season. The DEP Wildlife Division allows archery deer hunting on Sessions Woods Wildlife Management Area in Burlington using daily permits. Daily quotas of 15 bowhunters are allowed on the 450 acre property during the archery season. Please call Steve Jackson, DEP Wildlife Biologist, for more information (860-675-8130). Sessions Woods Wildlife Management Area is unique in that it includes educational trails, hiking trails, bow hunting and other multiple uses. Daily permits for bowhunters allows the DEP Wildlife Managers the ability to communicate special instructions as to when or where hunting is allowed and also regulates the access.

Vegetation Management Opportunities

Wildlife diversity is connected to vegetation diversity (Degraaf et al, 1992). Some vegetation management activities could be employed to enhance conditions for wildlife. The properties contain 80 to 100 year old trees which are valuable for many forest dwelling wildlife species. The Lower Mianus property contains an area with a younger forest which contains early succession plants species. Red cedar is being outcompeted and shaded. Vegetation management is required to maintain these

valuable winter food and cover trees. With Connecticut's loss of Eastern Hemlock due to the exotic wooley adelgid insect, maintaining healthy red cedars can help keep valuable winter cover for overwintering birds. They also provide a persistent winter food source. The berry-like cone of the red cedar is sought by a variety of birds such as the Cedar waxwing (*Bombycilla cedrorum*), Eastern bluebird (*Sialia sialis*), and wild turkey (*Meleagris gallopavo*) during the fall, winter and early spring periods.

Overwintering owls commonly seek the dense cover of red cedars. As Greenwich's and Stamford's woodlands get older, trees like the red cedar will become less common.

Young forests also contain the structural diversity and cover which is sought by several wildlife species. Maintaining vegetative diversity through selective forestry operations can enhance conditions for diverse wildlife species. It is strongly suggested that town conservation officials consult with state and university natural resource professionals to develop a forest management plan which addresses managing the forest to maintain biodiversity.

Cultural uses of the forest which includes maple syrup extraction should be considered as a valuable activity for area residents and students to learn about and understand the utilization of Connecticut's natural resources. The use of the sugar maples for gathering sap will have minimal effect on the overall wildlife diversity. Enhancement of the sugar maples through selective removal of competition will help improve the fall seed production as well as the overall sap production. Sugar maples provide a fall seed source for various mammals and birds.

Other Considerations and Discussion

These publicly-owned properties can be places where habitat is improved and managed for wildlife for the enjoyment and learning experience of area citizens. Citizens can also enjoy passive and active recreational opportunities. As natural areas become smaller and more isolated, the value of natural areas that are 25 acres or larger will increase in

value for wildlife. The remaining natural areas will be important as refugia for wildlife and places to observe natural vegetation and the associated wildlife.

Dead or dying wood is part of habitat for wildlife, especially woodpeckers and a whole host of secondary users such as screech owls (*Otus asio*), bluebirds (*Sialia sialis*) and flying squirrels. A minimum of 3-5 snags (dead or dying trees) per acre should be present or created per acre of forested area. Larger snags are more valuable, although snags as small as 3 inches in diameter are utilized by wildlife. Snags can be created by cutting two complete bands through the bark with a chainsaw or ax (type of trees and technique information is available from Team DEP forester or wildlife biologist).

Although there weren't many invasive exotic plants noted on the properties, removal of invasive non-native plants should be undertaken wherever feasible. Controlling invasive non-native plants will require a diligent application of mechanical removal by hand, pick and shovel, and tractor (back-hoe). Also, application of herbicides may be necessary for some invasives to prevent resprouting of cut stumps (if herbicide use is a major concern - least environmentally sensitive compounds can be used). The need for controlling invasive non natives outweighs the risks of utilizing herbicides. Managing invasive non-natives along trails and on adjacent open space land should be planned and strategies should be implemented to reduce their impacts to the natural habitats. Limited herbicide use should not be ruled out as an option to control some of the particularly aggressive invasive plants. It is advised to consult with the Connecticut Agricultural Experiment Station (Todd Mervosh) at 860-683-4984 for advice on herbicides. Some influx of non-natives was detected along the suburban interfaces. Adjacent house lots contain many of the traditionally planted invasive species such as winged euonymus (*Euonymus alatus*) and Norway maple (*Acer platanoides*).

The following non-native trees, shrubs and vines should not be planted and, if present, should be removed:

- Norway Maple (*Acer platanoides*)
- Tree of Heaven (*Ailanthus altissima*)
- Catalpa (*Catalpa spp.*)
- Autumn Olive (*Elaeagnus altissima*)
- Winged Euonymus (*Euonymus alatus*)
- Privet (*Ligustrum spp.*)
- Amur Honeysuckle (*Lonicera mackii*)
- Morrow's Honeysuckle (*Lonicera morrowii*)
- Tartarian Honeysuckle (*Lonicera tatarica*)
- Common Buckthorn (*Rhamnus cathartica*)
- Glossy Buckthorn (*Rhamnus frangula*)
- Multiflora rose (*Rosa multiflora*)
- Asiatic bittersweet (*Celastrus orbiculatus*)
- Japanese honeysuckle (*Lonicera japonica*)

The properties provide a valuable vegetated buffer to the Mianus river. This vegetative buffer is substantial and will prove valuable as a wildlife corridor as well. Many migratory songbirds can be expected to use this valuable river corridor during their migratory flights. With careful and thoughtful management of the vegetation and wildlife of the properties, citizens can enjoy the recreational opportunities and aesthetics of a diverse forested ecosystem in a rapidly urbanizing section of Connecticut.

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DeGraaf, R. M.; Yamasaki, M.; Leak, W. B.; and J.W. Lanier. 1992. New England Wildlife: Management of Forested Habitats, General Technical Report NE-144, U.S. Government Printing Office, Washington, D.C. 272 pp.

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Aquatic Resources

Site Description

Although not contiguous tracts of land, the State-owned Blake Colman property (± 83 acres), Lower Mianus State Park (± 100 acres) and Upper Mianus State Park (± 100 acres) combine with private land holdings to complete the northern six miles of the 12 mile Mianus River Greenway, Greenwich-Stamford. Perennial surface waters found within the State-owned parcels are two unnamed streams in the Blake Colman property, the Mianus River, two unnamed streams and an unnamed pond in the Lower Mianus State Park and Grays Pond Brook in the Upper Mianus State Park; an assessment of each surface water follows. Each parcel also contained a number of streams with intermittent flow.

Blake Colman Property

Two unnamed streams are found on this parcel, one is a tributary to the Mianus Reservoir (Bargh Reservoir) and the other to the Mianus River. The streams are similar being contained in channels ranging from 4 to approximately 8 feet in top of bank width and normal flow depths averaging 9 inches or less. The moderate gradient channels creates surface flow predominated by shallow riffle interspersed by moving pool. Stream substrate is composed of small boulder, cobble, gravel, coarse sand and sand-silt fines.

Lower Mianus State Park

A reach of the Mianus River, approximately 1000 feet in length, is found completely within this tract of land. The river is contained in a channel nearly 30 feet in top of bank width and normal flow depths averaging 1.5 feet. The low to moderate gradient channel creates surface flow predominated by moving pool interspersed by shallow riffle. Stream substrate is composed of cobble, gravel, coarse sand, and sand-silt fines. A portion of the easterly river bank exhibits previous modification possibly being channelized in conjunction with former land use activities.

The two unnamed streams are similar in characteristic being contained in channels of approximately 6 feet in top of bank width and normal flow depths averaging 9 inches or less. The moderate gradient channels creates surface flow predominated by shallow riffle interspersed by moving pool. Stream substrate is composed of small boulder, cobble, gravel, coarse sand and sand-silt fines.

A pond approximately 1 acre in surface area is found adjacent to the southeastern boundary of the park property. cursory observation indicates the pond is likely to be shallow (less than 5 feet in average depth) and subject to an abundant growth of aquatic plants. The pond is believed to be a remnant of past land use activities. It is artificial in nature, being created by excavating in wetlands at the headwaters of an unnamed stream.

Upper Mianus State Park

Nearly 750 feet of Grays Pond Brook are found on this parcel with the stream marking the southern property boundary. It is approximately 6 feet in top of bank width and normal flow depths averaging 9 inches or less. The moderate to steep gradient channel within a unique ravine landform creates surface flow predominated by shallow riffle. Stream substrate is composed of small boulder, cobble, gravel, coarse sand and sand-silt fines.

Dense growths of hardwoods and woody shrubs predominate as riparian vegetation along the surface waters found within the Blake Colman property, Lower Mianus State Park and Upper Mianus State Park. This vegetation provides near shore shading to the pond and a nearly complete canopy to the streams. Physical inwater habitat within the pond is comprised of aquatic plants and fallen riparian vegetation, a nearly complete canopy. Instream habitat is provided by the water depth in pools, small boulders, gravel deposits, undercut banks, and fallen or overhanging riparian vegetation.

Land use within the Blake Colman property, Lower Mianus State Park, Upper Mianus State Park and adjoining lands of the Connecticut American Water Company has maintained uplands as forest and has offered protection to wetlands. To date these measures have proven to be an effective means of preserving surface water quality. The Department of Environmental Protection classifies the Mianus River tributaries as Class AA surface waters with the Mianus River mainstem receiving Class B/AA classification.

Designated uses for Class AA surface water are existing or potential public drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other purposes. Recreational uses may be restricted. Class B/AA surface

waters may not currently be meeting Class AA water quality criteria or designated uses however, the goal is Class AA.

Aquatic Resources

Based upon channel grade, morphology, and substrate composition, the Mianus River, Grays Pond Brook and the unnamed perennial streams of the Blake Colman property, Lower Mianus State Park and Upper Mianus State Park can be classified as cold water streams. Although never subject to a formal fishery resource survey, the streams are anticipated to support a fishery population similar to that found in streams of similar characteristic streams in the watershed. Species found to be present in these populations include brook trout (*Salvelinus fontinalis*), blacknose dace (*Rhinichthys atratulus*), longnose dace (*Rhinichthys cataractae*), common shiner (*Luxilus cornutus*), cutlips minnow (*Exoglossum maxillingua*), creek chubsucker (*Erimyzon oblongus*), tessellated darter (*Etheostoma olmstedii*), white sucker (*Catostomus commersoni*) and American eel (*Anguilla rostrata*). These species are native to cold water rivers and streams in Connecticut.

In addition, the following warmwater lake and pond species may be present in the Mianus River: largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), pumpkinseed sunfish (*Lepomis gibbosus*), redbreast sunfish (*Lepomis auritus*), and yellow perch (*Percaflavescens*). These species are anticipated to be transient in free flowing sections of the Mianus River and are likely to have established permanent populations in the river's impoundments.

Impacts

As previously mentioned, the Blake Colman property, Lower Mianus State Park and Upper Mianus State Park combine with private land holdings to form the northern 6 miles of the 12 mile Mianus River Greenway. The expressed purpose for creating the

Greenway is the protection of water quality and passive pedestrian recreation. The private and State land holdings in the northern 6 miles of the Greenway to date have offered protection of wetlands and maintenance of forested uplands and have proven an effective means of preserving physical habitat and water quality at levels supportive of intolerant fish species such as brook trout.

However, field observations unveiled significant physical habitat alteration in and adjacent to tributary streams of the Mianus River within the Blake Colman, Lower Mianus State Park and Upper Mianus State Park properties due to extensive equestrian and pedestrian trail development. Trails have been developed adjacent to and have crossed directly through intermittent and perennial streams. In several instances stream flow has been redirected for substantial distances on the trails. The habitat alteration caused by trail development is foreseen to promote adverse impacts to habitat and water quality through stream reaches down gradient in the watershed. Such impacts will result from:

- Soil erosion and subsequent sediment transport through increased runoff from unvegetated areas. Excessive erosion, sediment transport, and sediment deposition can degrade both water quality and physical habitat, in turn affecting the resident fishery population. Specifically, excessive siltation has the potential to cause a depletion of oxygen within the water column; disrupt fish respiration and gill function; reduce water depth resulting in a reduction of habitats used by fish for feeding, cover, and spawning; reduce fish egg survival; reduce aquatic insect production; and promote aquatic plant growth.
- Changes to riparian vegetation eliminating the natural "filtering" effect of vegetation which has the ability to prevent sediments, nutrients, fertilizers, and other non-point source pollutants from upland sources from entry into streams (such non-point source pollutants can degrade habitat and water quality); increase stream water temperature during the summer months (thermal loading) while decreasing winter water temperatures to levels causing a complete ice cover;

decrease stream bank stability thereby increasing surface water siltation and habitat degradation; eliminate or drastically reduce the supply of large woody debris provided to streams (such material provides critical physical habitat features for numerous species of aquatic organisms; reduce a substantial proportion of food for aquatic insects which in turn constitutes a reduction in a significant proportion of food available for resident fish); stimulate excessive aquatic plant growth; and decrease the riparian corridor's ability to serve as a "reservoir" storing surplus runoff for gradual release back into the streams during summer and early fall low flow periods.

Recommendations

The Blake Colman property, Lower Mianus State Park and Upper Mianus State Park should be managed as forested open space as this will best assure the continued aquatic habitat, resource and water quality and tributary streams. Foremost in the management of these parcels is a redesign and/or relocation of the existing equestrian and pedestrian trail network. To be least impacting, trail development should be done in accordance with the following provisions:

1. Trails should maintain, at a minimum, a 100 foot buffer of undisturbed habitat adjacent to the watercourses or Mianus Reservoir. The buffer zone boundaries should be measured from either,
 - (1) the edge of riparian inland wetland as determined by Connecticut inland wetland soil delineation methods or
 - (2) in the absence of riparian wetlands, the edge of the stream or reservoir bank based upon bank-full conditions. Research has indicated that a buffer zone of this widths prevents damage to aquatic ecosystems that are supportive of diverse species assemblages. Buffers absorb surface runoff, and the pollutants they may carry, before they enter wetlands or surface waters. Please refer to the attached

documentation presenting Fisheries Division policy and position regarding riparian buffers for additional information (see Appendix).

2. If required, stream crossing structures should be of span bridge or arch culvert design. These structures most adequately preserve physical in-stream habitat and do not create impediments to fish migration. Ideally, required stream crossings should be located at the site of previous crossings. New crossings should approach streams at a 90° angle.
3. Equestrian and pedestrian traffic should be limited to authorized trails only. The development of unauthorized trails should not be allowed and be eliminated if they are noted.
4. Establish a trail maintenance plan to conduct routine trail inspections and make corrective repairs to those situations potentially causing erosion and sediment events.

Forest Resources

Upper Mianus State Park

This parcel consists primarily of 80 -100 year old trees characteristic of the upland central hardwoods. Common species include white ash, tulip poplar, sugar maple, black birch, hickory, and red oak. Drier sites have more chestnut oak, while moister sites have more red maple.

In general, the understory consists of trees and shrubs that are shade tolerant such as beech, red and sugar maple, black birch, and maple-leaved viburnum.

A grove of sugar maples on the western slope adjacent to Middle Patent Road has been leased to a local individual for maple syrup production for several years. It is recommended that this sugarbush operation be allowed to continue as it has little impact on the health of the forest and doesn't interfere with recreational use of the park. Light thinnings around the sugar maples would give them more room to grow.

Lower Mianus State Park

The forest in the western portion along Howard Road is very similar to Upper Mianus as far as the composition and ages of the trees. Numerous stone walls crisscross the area, evidence of agricultural use up to about 100 years ago. There is a small sugarbush along Howard Road which also is leased for maple syrup production. This operation should be allowed to continue as well. Again, light thinnings around the maples would allow them to grow fuller canopies.

A steep drop-off runs north-south, roughly bisecting the parcel. East of this ridge is a much younger forest, perhaps used for agriculture as recently as 50-60 years ago. Some of this area was planted with Scotch pines and red pines. The red pines died from an

infestation of red pine scale in the 1970's, allowing the establishment of a thick stand of black birch, averaging about 4-6" in diameter. This area may be useful to study the effects of thinnings in young stands such as these, and the Forestry Department at the Connecticut Agricultural Experiment Station has indicated it may be interested.

Wildlife habitat in this younger forest could be improved by cutting down trees that are shading the eastern red cedars. More sunlight would reach the cedars, increasing the amount of berries they would produce and making their crowns fuller. This would greatly benefit overwintering birds.

Some of the horse trails are badly eroded and need to be stabilized. Water bars to direct drainage off the trails, and staying off wet trails, would be beneficial. The trails should be evaluated for potentially hazardous trees.

Blake Colman Property

The forest is predominantly 80 -100 year old mixed hardwoods, including tulip poplar, red oak, black birch, sugar maple, red maple, hickory, and white ash. The understory consists of shade tolerant trees and shrubs similar in composition to the above properties. There is an 8-acre wetland in the northern portion which probably helps buffer the reservoir from runoff in the watershed.

Archaeological Review

A review of the State of Connecticut Archaeological Site Files and Maps shows one prehistoric Native American site located on the project area. This archaeological site is located at the confluence of Gray's Pond Brook and the Mianus River in the town of Stamford. The site represents a prehistoric Indian encampment of hunters and gatherers, probably dating to over 2,000 years ago. Stone tools, including projectile points (i.e., spear and arrow points) have been recovered from an area of approximately 50 square meters. While this is the only recorded archaeological site in the state files, the properties within the review area possess a high sensitivity for undiscovered archaeological resources. The fact that all three parcels involved have been part of the watershed and have been relatively undeveloped suggests that both prehistoric and historic cultural resources which might exist on the property will have a high degree of integrity and may provide important information concerning the historic past.

The proposed Recreation and Natural Heritage Trust Area should have no adverse effects on any cultural resources. However, any future management decisions that may include subsurface disturbances should be reviewed for impacts to archaeologically sensitive areas during the planning process by either the Office of State Archaeology or the CT Historical Commission. A systematic archaeological survey of the parcels should locate numerous prehistoric and historic sites of importance.

As far as we are aware, no archaeologist has conducted excavations on the property, hence, little is known concerning its archaeological heritage. However, the potential for significant archaeological site is extremely high.

Watershed Protection

Project Description

The Blake Colman Property, recently acquired by the Department of Environmental Protection (DEP) with conservation easements by the towns of Stamford and Greenwich, is part of the Mianus River Greenway connecting the state DEP owned Upper and Lower Mianus State Parks. The municipalities and DEP are interested in developing an operations and management plan incorporating all three parcels.

Public Water Supply

The Connecticut-American Water Company owns and operates both the Bargh Reservoir and Mianus Mill Pond as surface water sources (Figures 11 and 12). The Bargh Reservoir, a surface impoundment with estimated total storage volume of 2,135 million gallons (mg), is located behind a dam on the Mianus River. The total watershed area for this reservoir is 16.69 square miles. The Upper Mianus State Park and most of the Blake Coleman parcel are within the watershed of the Bargh Reservoir. The Mianus Mill Pond, impounded behind a dam on the Mianus River approximately five miles downstream of the Bargh Reservoir, has an approximate storage volume of twenty mg. This pond has a watershed area of approximately 11.32 square miles. The Lower Mianus State Park and a portion of the Blake Colman parcel are within this watershed. There are no community water supply wells in the review area. (See location of dots on Figure 13).

Comments and Recommendations

In accordance with the purpose of the conservation easement between the parties the Team water supply planning analyst finds no issue with the proposed recreational

activities. She concurs that any parking lot facilities be small, for a maximum of approximately ten to fifteen vehicles. It is recommended that parking be accessible from both the Upper and Lower Mianus parcels. Any brush clearing or grading should be kept to a minimum and the lot(s) be maintained unpaved to allow for natural drainage and percolation of rainfall.

All trails should be delineated on maps, whether used for horseback riding or foot trails in order for participants to minimize impact on overall parcel vegetation and prevent getting lost. The parties should actively manage sensitive watershed areas, especially steep slopes and wetland areas with periodic assessment of the land parcels. If adverse impacts are identified, appropriate controls should be implemented as well as closing those identified areas to prevent further disturbance of vegetation and accelerated erosion. If basic trail maintenance, trail repair, or trail relocation is needed and it is in an environmentally sensitive area, the repair/maintenance should be consistent with best management practices such that the repair/maintenance results in increased buffers, soil erosion and vegetation control measures are maintained and movement of activities is further away from the watercourse or drinking water source. The same should follow for repair/maintenance of parking facilities.

Should the parties responsible for operation want to limit the number of individuals taking part, planned distribution of maps can be utilized as a mechanism to limit participation. Participatory activities that do not meet the purpose of the conservation easement, such as swimming, wading of pets, and motorized vehicles, should be outlined as prohibited and listed on educational publications/signage.

Signage indicating one is on watershed land ameliorates watershed protection and educates the public. Signs should be posted both ways on greenway trails so participants know they are entering or exiting watershed land.

Sanitary facilities and trash receptacles should be provided at the points of access to the parcels to promote use and watershed protection practices. All body wastes must be

disposed of in sanitary facilities provided. Peak use and the overlap of multiple activities should be considered in the determination of adequate numbers of facilities and receptacles. Sanitary receptacles must be securely fastened to prevent littering, dumping or discharge from vandalism. Usage must be monitored to determine adequate frequency of trash pick-up and pumping of privy holding tanks.

With monitoring and maintenance comes patrolling at sufficient frequencies to discourage discharge of wastes, dumping, erosion, vandalism, or other abuses. If there is evidence of such misuse, frequency should be random and increased. A reporting procedure should be developed and instituted with Connecticut-American Water Company, the drinking water purveyor, in the event of an incident that could have an adverse effect on the water quality or quantity.

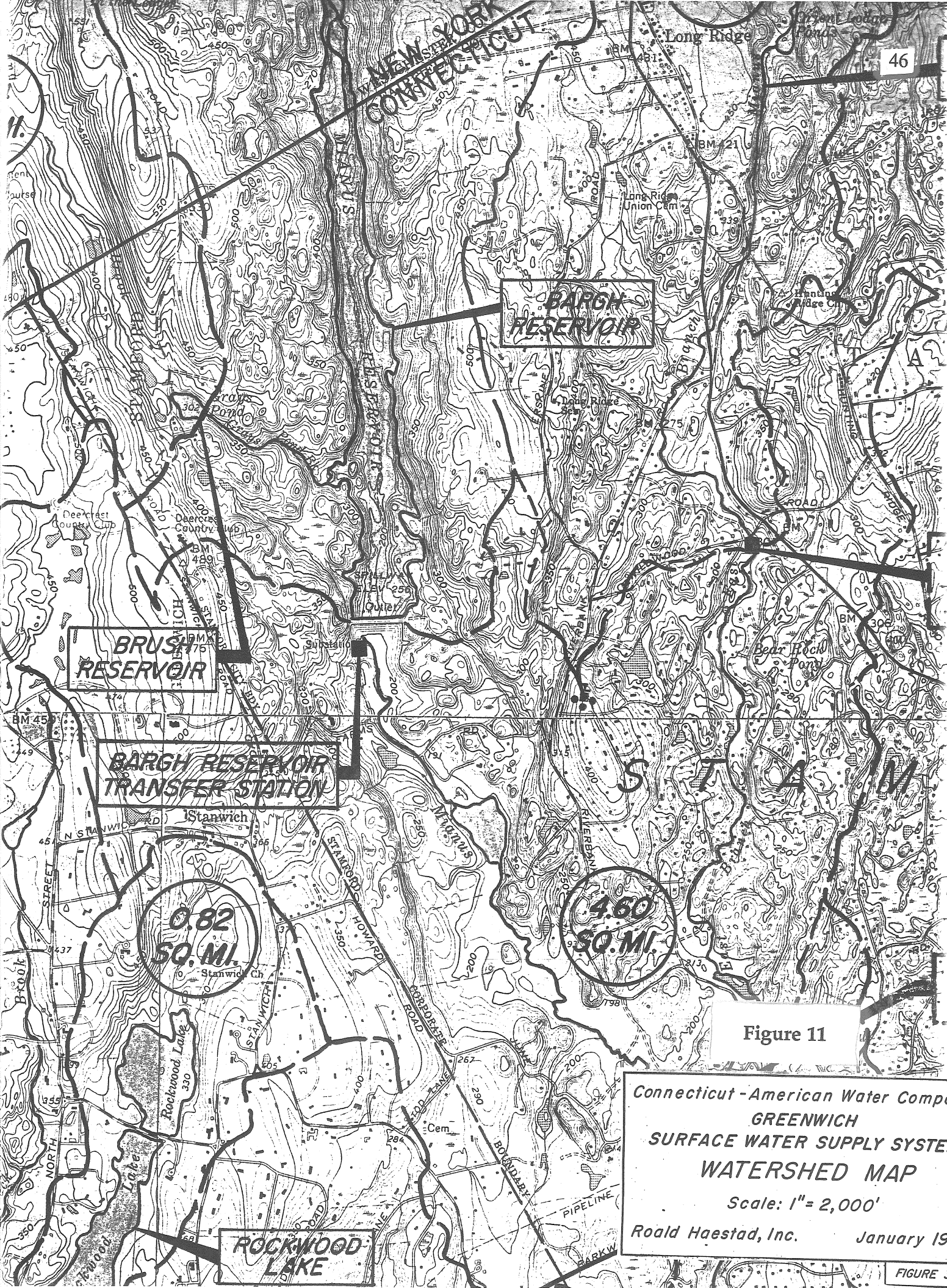
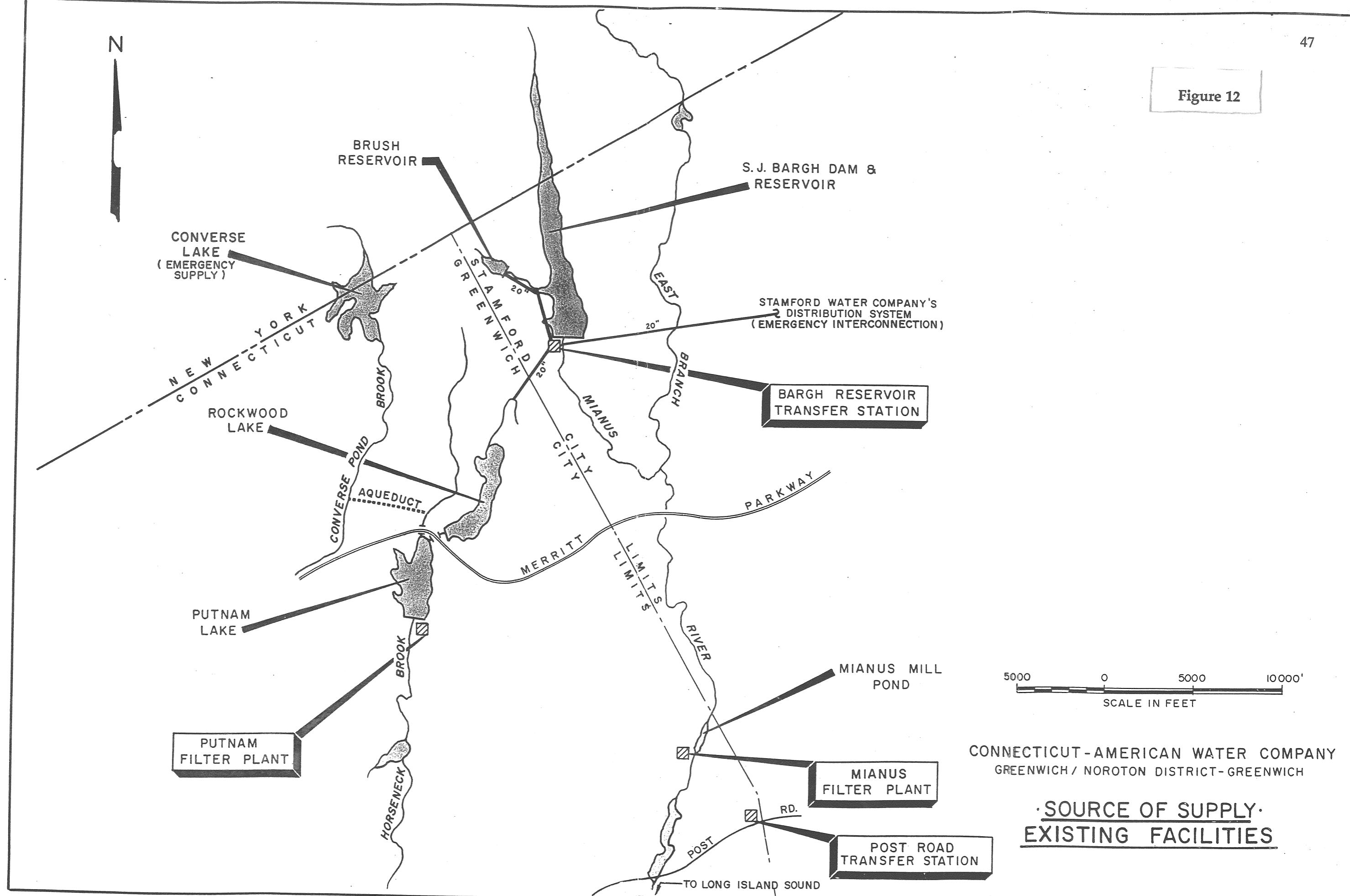


Figure 11

Connecticut-American Water Company
 GREENWICH
 SURFACE WATER SUPPLY SYSTEM
 WATERSHED MAP
 Scale: 1" = 2,000'
 Rold Haestad, Inc. January 1994

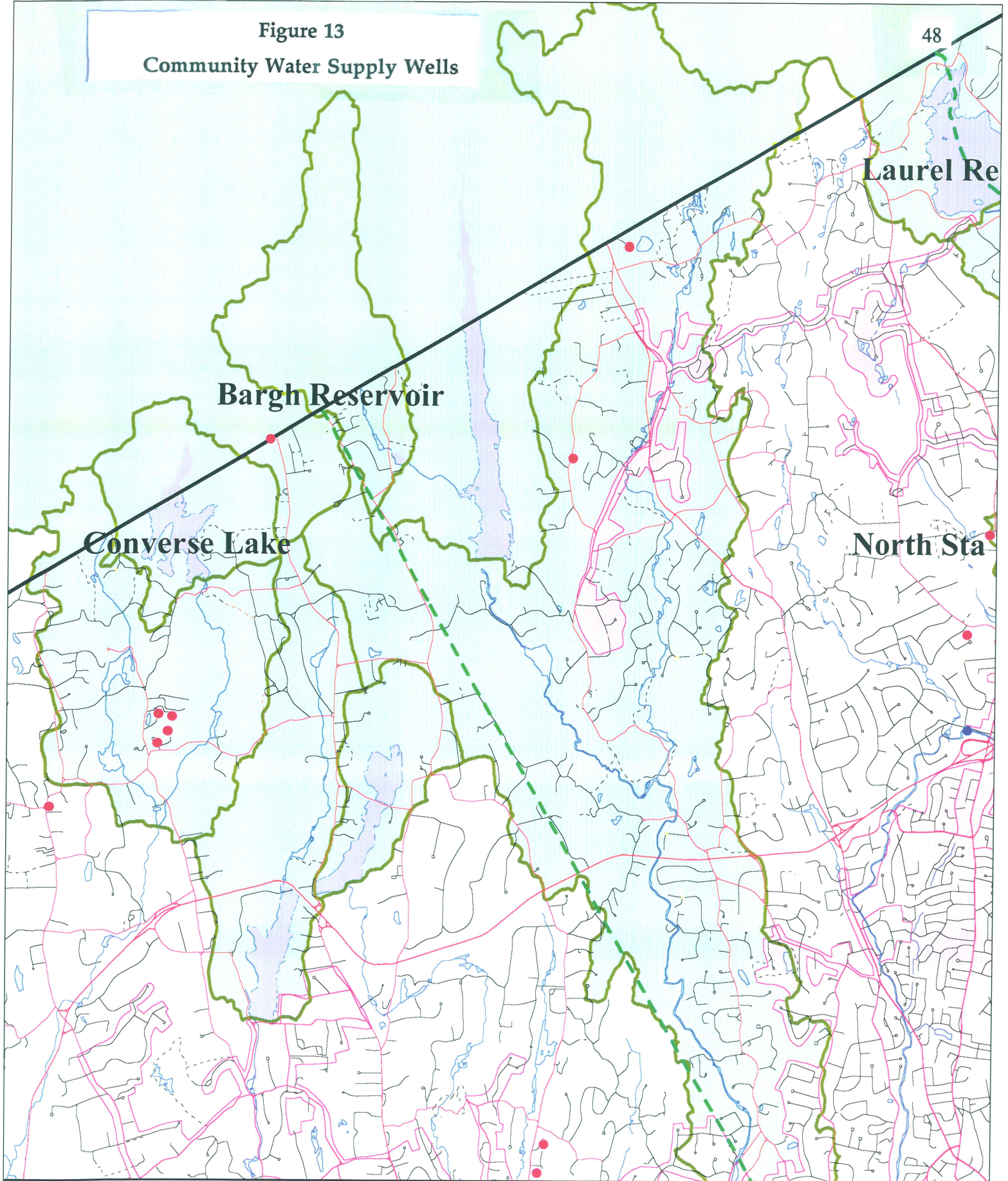
Figure 12



CONNECTICUT-AMERICAN WATER COMPANY
GREENWICH / NOROTON DISTRICT-GREENWICH

SOURCE OF SUPPLY
EXISTING FACILITIES

Figure 13
Community Water Supply Wells



Bargh Reservoir

2083 0 2083 4166 Feet



1:52857



State Parks Review

Property Description

The Blake Colman Property is similar to the Mianus (Upper and Lower parcels) of DEP parklands. This land is located on the Greenwich/Stamford border; with most of the land in Stamford. This property of 83.5 acres creates a linkage between the properties in the Mianus River Greenway.

Management

DEP purchased the property, with conservation easements purchased by Stamford and Greenwich as open space. The property should become part of the state parks, and the use should be the same as at Mianus, which includes undeveloped park for passive recreation.

Land Type and Setting

Blake Colman is comprised of woodlands (old farm pastureland), upland streams, several wetlands, strong rock outcrops and sloping trails/terrain. This area is similar to the Upper Mianus section, but is not used as much as the state land. The trails are not as wide, nor the trees/branches cleared overhead. Not as much trail use either by people or horses (as yet). The trails were marked by GRTA - same as in the state park Mianus land. The two access points are narrow, with one very close to a private home off of Farm Road.

Water Resources

The east side of the Blake Colman property borders the South Barch and the Mianus River, an important water supply for the towns. The reservoir was very low at the time of the ERT field review (12/8/98).

Fishing

It is suggested that fishing be allowed above the reservoir in the Upper Mianus section, but the Connecticut American Water Company had signs keeping "all" away from this reservoir.

Wildlife Habitat

The area supports deer, squirrel and birdlife, with an increased bird population in the summer. In the future the area should be reviewed more closely to determine if some limited hunting would be beneficial.

Recreational Opportunities

This six mile section helps join the Mianus River Greenway which now stretches from Bedford, New York to the Long Island Sound in Stamford. The type of recreational use should be the same as the state park lands in the Mianus Upper and Lower. No development, clearing or construction on the land except perhaps a small parking area adjacent to the road for four or five cars; maybe only one parking lot on the entire trailway. At present fishing is allowed in the Upper section of the Mianus state park, and should be continued on the Blake-Colman property. Only passive recreational opportunities such as hiking, birding, walking, possibly some cross-country skiing (improved trails would be need and/or a lot of snow due to the many small rock outcrops). Also the use by some school groups for interpretive programs in their local

New England land/forest type. Bicycling and horseback riding should be allowed on the Blake-Colman property as it is on the Mianus Upper and Lower state parks.

Recommendations

Some trail development is needed in the steeper sections in order to improve the trails for bicycling and horseback riding. The trails should be above the slopes for watershed and soil protection. Some forest management could/should be allowed to make some improvement. Trail maps and signs could be used to educate the public.

Comments

DEP Officer Rick Peake was present as well as a representative from law enforcement. CEO Rick Peake says that with light use of this area patrol would be on as needed basis, unless some special event was scheduled. General patrol from time to time by DEP personnel would continue as is done with the Mianus state parks.

Soil and Water Conservation District Review

The Blake Colman Property has excellent potential for open space, passive recreation, and educational opportunities.

Educational Opportunities

The Lower Mianus State Park area currently contains a sugar bush which is leased to a local individual for maple syrup production. This regulated activity has the potential to be used as an educational tool that can be open to the public. The production of maple syrup has been a strong part of New England history and culture. The commercial production of maple syrup in Connecticut continues on a much smaller scale than in previous history, but it is still an important part of our forest resources that should be recognized. The Blake Colman Property has some sugar maple sites that can be used for this educational opportunity. This task can be accomplished by the placement of large informational signs or having volunteers to do interpretive talks and demonstrations of the whole process.

There also exists an opportunity to demonstrate wildlife management techniques with an informational trail through the property. This trail would include signs along a pre-determined route that could be used to educate the public about wildlife and would include wildlife management demonstration areas. The property has a late succession even-aged forest growth on most of the acreage. The even-aged stand of trees does not provide for a diversity of wildlife habitat. A wildlife enhancement cutting will increase the biological diversity of species for this area. The early stage forest, for example, will provide necessary habitat for song bird populations. A further study could be conducted by the DEP forestry, wildlife, and fisheries divisions to develop the cutting management plan for species enhancement on this property.

Another educational opportunity for this site is a horse manure management/rotational grazing/paddock management educational trail along the horse riding area. This education is very much necessary for the residents of Fairfield County because of the high number of horses in the county. There is a serious waste management problem related to horse care within Fairfield County. The trail could include informational signs that educate and demonstrate proper horse waste management techniques, pasture management, proper layout of small horse farms, proper drainage and the use of buffer areas. This trail would demonstrate proper environmental planning and techniques to be used for keeping horses in residential areas. The horse trails that exist can be used and adapted for this trail.

Trails in Environmentally Sensitive Areas

The closing of some horse and hiking trails that have been created in environmentally sensitive areas needs to be addressed. Some of these trails have been established through wetland areas and near reservoir storage areas. The trails that have been created in wetland areas should be closed off or rerouted around the sensitive areas or have wooden crossings constructed over sensitive areas. The trails that have been created around the reservoir storage areas should not be open to horse or bicycle traffic, but should only be open to foot traffic. Restricting horse riding along the reservoir will lessen the chances of bacteria entering the public water supply from the horse manure that is left behind.

DEP Greenways Program Comments

Public water supply watershed remains the highest and best use of the Blake Colman parcel. All other proposed activities should reflect this.

Most equestrian usage appeared to be in the Lower Mianus state park parcel, with trails maintained by the Greenwich Riding Trails Association (GRTA). The trails grow narrower and rockier closer to the reservoir and there is not as much use apparent in this area. It is assumed that the water company will continue to monitor activity in the area and advise DEP officials if water quality is being comprised because of recreational activity on the site.

Access to both Lower Mianus State Park and the Blake Colman Property is from small local roads. If the area is intensively developed, traffic could become a problem. Homes in the area tend to be large, upscale homes. Indications from local officials are that local residents would not welcome heavy park usage if it means significant additional traffic.

Terrain in parts of the Lower Mianus state park is fairly flat, wide and smooth. If loop trails were to be developed anywhere, this would probably be the best location. Parking would need to be more fully developed. Because of very dry conditions at the time of the field review, it was difficult to determine how wet the trails might normally be and how wide (and how many) stream crossings would be needed. Some streams currently have small wooden bridges, which many help to prevent erosion at watercourses, and also help to keep hikers' feet dry. How they would withstand high flow episodes is questionable.

Blake Colman adds to the growing list of properties within the proposed Mianus River Greenway. The types of use proposed for the state land may influence future donations of property and easements to complete the project.

Recommended uses:

- Hiking (loop trails in south portion, longer distance trails north)
 - locate trails on Blake Colman away from reservoir.
 - Continue to allow historic equestrian use, but do not publicize the area as a major horse trail.
 - Limited parking and signage should reflect the character of local roads and neighborhoods.

The DEP should continue to work with officials in Stamford and Greenwich to address local concerns, but should emphasize that access will not be limited to local residents (except for equestrian use). Use of mountain bikes on state land should be discouraged or prohibited. Stream crossings should be limited where possible. Continue to work with groups like GRTA on trail maintenance, etc.

Appendix

DEP - Inland Fisheries Division Policy Statement

Riparian Corridor Protection

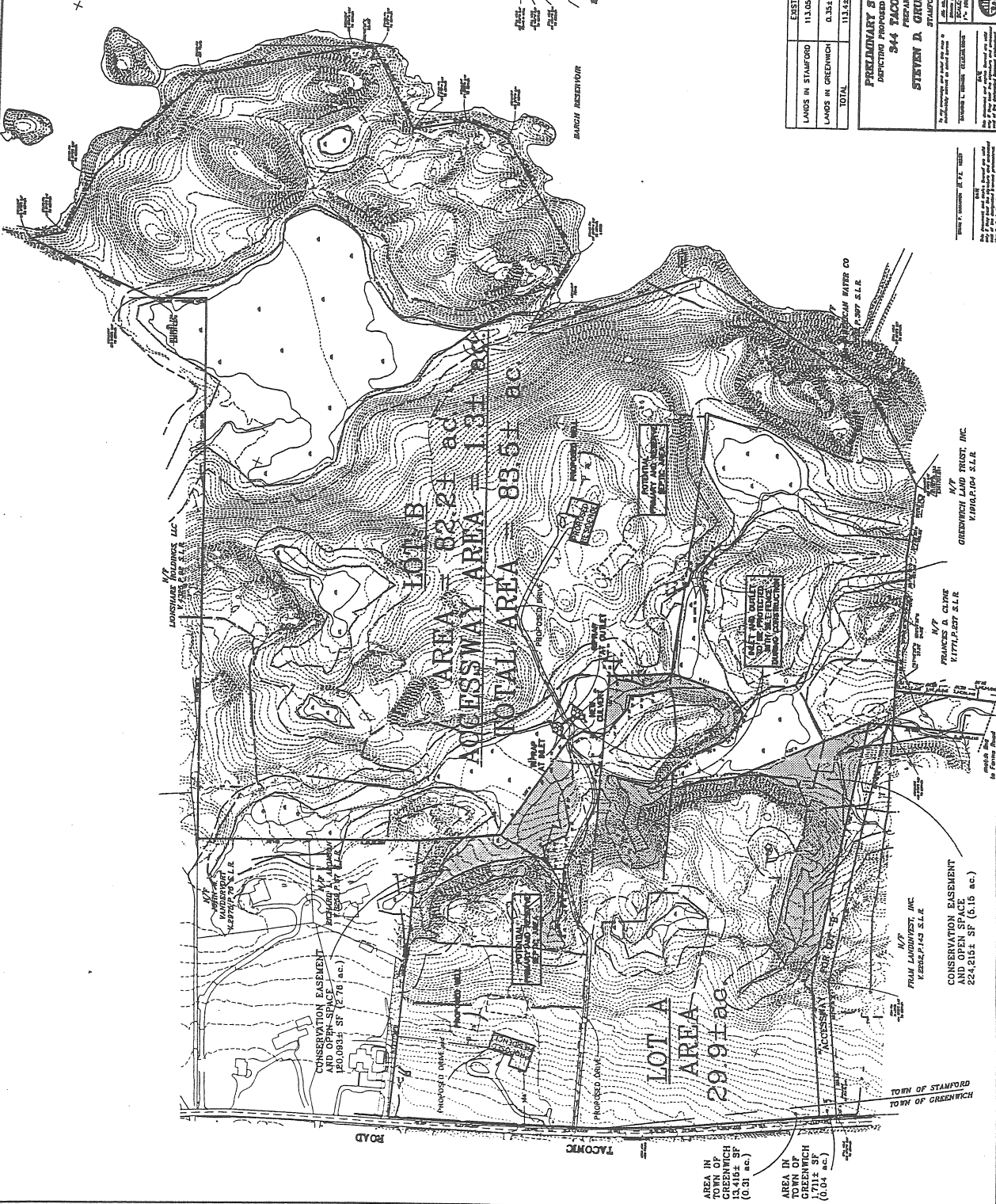
DEP - Inland Fisheries Division Position Statement

Utilization of 100 foot Buffer Zones to Protect Riparian Areas in Connecticu

Blake Colman Map

Conservation Easement

BLOCK 400 ZONE RA-3
STAMFORD, CT. 1" = 800'
ORIENTATION



LANDS IN STAMFORD	EXISTING	PROPOSED
LOT A	113.05± AC	29.9± AC
LOT B	0.3± AC	83.2± AC
TOTAL	113.35± AC	113.1± AC

PRELIMINARY SUBDIVISION MAP
DEPICTING PROPOSED TO LOT DIVISION OF
344 TACOMONIC ROAD
PREPARED FOR
STEVEN A. GRUSHKIN, TRUSTEES
STAMFORD, CT.

REDNISS & MEAD
INCORPORATED
1000 WEST 10TH AVENUE
DENVER, CO 80202
TEL: 303.733.1100
FAX: 303.733.1101
WWW.REDNISS-AND-MEAD.COM

AREA IN TOWN OF GREENWICH
13,412± SF (0.31 ac.)

AREA IN TOWN OF STAMFORD
224,215± SF (6.15 ac.)

CONSERVATION EASEMENT AND OPEN SPACE
224,215± SF (6.15 ac.)

FRANK LANDINVEST, INC.
V. 0806.P.143 S.L.R.

FRANCIS & CLINE
V. 11717.P.057 S.L.R.

GREENWICH LAND TRUST, INC.
V. 1010.P.104 S.L.R.

STAMFORD, CT. 1" = 800'
ORIENTATION

TPL copy

COPY

GREENWICH

DEC 14 1998

CONSERVATION COMMISSION

CONSERVATION EASEMENT

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

WHEREAS, The State of Connecticut, a Sovereign, acting herein through its Department of Environmental Protection (hereinafter, "Grantor"), holds title to 83.5± acres of real property (hereinafter, the "Protected Property"), an important upland buffer within the watershed of the Bargh Reservoir, a public drinking water supply, and Mianus River;

WHEREAS, funding for the acquisition and protection of the Protected Property has been raised in a cooperative effort between The Trust for Public Land, Grantor, the Town of Greenwich (hereinafter "Greenwich") and City of Stamford, (hereinafter, "Stamford"), Greenwich and Stamford both being municipal corporations in the State of Connecticut ("Greenwich" and "Stamford" hereinafter collectively referred to as the "Holders");

WHEREAS, in addition to its considerable value as a natural area, the Protected Property is also a scenic resource of the State of Connecticut and can provide significant aesthetic recreational opportunities for the general public;

WHEREAS, the Grantor is a nearby landowner to the above-mentioned property;

WHEREAS, the preservation of the Protected Property land and water resources will yield a significant public benefit for riverine and drinking watershed protection, scenic enjoyment, the protection of important upland and wetland habitat, and the establishment of a scenic, wildlife, and open space greenway corridor of protected lands along the Mianus River;

WHEREAS, the anticipated use of the Protected Property by Grantor is consistent with the Holders' conservation and preservation interests, and all the parties have a shared interest in seeing that these conservation-minded practices continue;

WHEREAS, the parties agree that one purpose of the cooperative acquisition of this property is to provide for limited public recreation on the Protected Property consistent with the protection of its natural resources and preservation of the water quality of the adjacent Bargh Reservoir, conservation of those resources having been the primary reason for its acquisition by the parties;

NOW, THEREFORE, Grantor, for One Dollar and other good and valuable consideration received to its full satisfaction of the Holders, and in consideration of the mutual covenants, terms, conditions and restrictions herein contained, on behalf of itself, its successors and assigns pursuant to C.G.S. Section 26-3, does hereby give, grant, bargain, sell, convey and confirm in perpetuity unto the HOLDERS and their successors or assigns forever, with Quitclaim Covenants, a Conservation Easement in perpetuity, of the nature and character and to the extent hereinafter set forth, over the Protected

COPY

Property, situated in the Town of Greenwich and City of Stamford, County of Fairfield, State of Connecticut, and described in Schedule A, attached hereto.

1. Purpose. It is the purpose of this Conservation Easement to assure that the Protected Property will be retained forever predominantly in its natural, scenic, forested, and/or open space condition as an important upland buffer to the Mianus River and Bargh Reservoir, a public drinking water supply, for the protection of watercourses associated with this community, as a scenic natural amenity along the Mianus River, to preserve important wetland and upland habitat, and to provide opportunities for public recreation on the Protected Property (hereinafter "Conservation Values or Interests"), while preventing any use of the Protected Property that will significantly impair or interfere with the Conservation Values or Interests of the Protected Property, described above. It is the intent of this easement that any management activities or alterations of the natural landscape or provision for access or recreation shall be consistent with the conservation purposes above.

2. Development Rights and Restrictions. No building, residential dwelling, structure, parking lot, driveway, road or other temporary or permanent structure or improvement requiring construction shall be placed upon the Protected Property except as provided hereinbelow, the following reservations to be consistent with the conservation and public recreation purposes above:

a) Grantor reserves the right to maintain existing unpaved driveways, footpaths and other minor surface alterations; to excavate and fill as necessary to accomplish permitted recreational and silvicultural activities, and to construct, maintain and reconstruct additional unpaved footpaths, unpaved driveways, a small unpaved parking area or minor, roofless rustic improvements necessary or appropriate to assure safe passage, prevent erosion, or to enhance or protect the natural habitat.

b) All rights reserved herein by Grantor may only be exercised subject to all applicable governmental permits and approvals required by law. Nothing herein shall commit Grantor or the Holders to grant any such approval or permit.

c) Grantor reserves the right to manage and monitor the Protected Property for the protection of specific habitat, species and/or resources, such activities include, but are not limited to:

1) The rerouting or closing of trail segments or public access points that pose a substantial threat to the Conservation Values or Interests of the Protected Property, described above;

2) The right to grant access to the site for research;

copy

3) Use of the property for educational and outreach purposes, including limited attendance walks and on-site stewardship training programs.

d) Grantor reserves the right to access the Protected Property at any time by foot or by motorized vehicle as is reasonably necessary in exercising any of the reserved rights of Grantor herein or in the exercise of management of the Protected Property or as required by the police, fire officials, or emergency response units or other local, state or federal government agents in carrying out their lawful duties.

Holders agree that the activities or uses contemplated above shall not unreasonably interfere with the use of the Protected Property by the general public. All rights not specifically granted are hereby reserved by Grantor.

3. Provision of Public Recreation. Recreation on the Protected Property shall be limited to non-mechanized, non-wheeled uses. Grantor may develop and to maintain a system of clearly defined and marked pedestrian trails on the Protected Property, which shall be open for use by the general public for foot traffic from dawn to dusk each day. Said trail system should, whenever feasible, provide access to the majority of the Protected Property and provide opportunities for scenic overlooks of the Mianus River and Bargh Reservoir and its wetland communities. Equestrian trails, clearly defined and marked, or other recreational uses consistent with the provisions of this agreement may be allowed on the Protected Property provided that they are designed and implemented in a manner that minimizes the potential impact to the water quality and natural resource protection purposes hereinabove stated. Grantor may enter into an agreement with one or more other entities to assist it in fulfilling its management responsibilities.

4. Other activities. No quarrying, logging, or mining activities or commercial or industrial activities are permitted on the Protected Property, however, Grantor reserves the right to engage in and permit wildlife management practices, and sound forest management practices, including, but not limited to: (a) selective pruning and cutting to implement recreation and other uses allowed under the provisions of this easement, and to prevent, control or remove hazards, disease or insect damage, fire, or to preserve the present condition of the Protected Property including vistas, woods roads, and trails, or (b) forestry practices in accordance with a plan prepared by a professional forester (which may include the State Forester) designed to protect the Conservation Values or Interests of the Protected Property, including without limitation, scenic and wildlife habitat values.

5. Water Protection and Waste Disposal. The use of chemical herbicides, pesticides, fungicides, fertilizers and other agents must be limited to prevent any demonstrable adverse effect on wildlife, waters, and other important conservation interests to be protected by this Easement.

It is forbidden to dispose of or to store rubbish, garbage, debris, abandoned equipment, parts thereof, or other unsightly, offensive, toxic or hazardous waste material

COPY

on the Protected Property except that vegetative waste may be composted, and other waste generated by permitted uses on the Protected Property may be stored temporarily in appropriate containment for removal at reasonable intervals, subject to all applicable local, state, and federal laws and regulations.

Grantor covenants and represents that, to the best of its knowledge, no hazardous substance or toxic waste exists nor has been generated, treated, stored, used, disposed of, or deposited in or on the Protected Property, and that there are not now any underground storage tanks located on the Protected Property.

6. Costs. Grantor acknowledges that the Holders have no possessory rights in the Protected Property, nor any responsibility or right to control, maintain, or keep up the Protected Property. Grantor is responsible to pay and discharge when due all applicable property taxes and assessments and to avoid the imposition of any liens that may impact Holders' rights hereunder. Grantor is responsible for all costs and responsibility of ownership, control, operation, maintenance, and upkeep of the Protected Property.

7. Subdivision Limitation and Subsequent Transfers. The Protected Property must remain as an entity in a single ownership, and may not be divided, subdivided, partitioned or otherwise separated into parcels or lots, except with the prior written consent of the Holders.

Grantor agrees that the terms, conditions, restrictions, and purposes of this grant or reference thereto will be inserted by Grantor in any subsequent deed or other legal instrument by which the Grantor divests either the fee simple title or possessory interest in the Protected Property; and Grantor further agrees to notify Holders of any pending transfer at least thirty (30) days in advance.

8. Miscellaneous.

a) Grantor represents that as of the date of this grant there are no liens or mortgages outstanding against the Protected Property. The rights of the Holders to enforce the terms, restrictions and covenants created under this easement shall not be extinguished by foreclosure of any mortgage or any publicly or privately placed lien. The Holders may execute limited subordination to this effect upon request by Grantor.

b) If any provision(s) of this Conservation Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this Conservation Easement and the application of such provisions to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

c) Any uncertainty in the interpretation of this Conservation Easement should be resolved in favor of conserving the Protected Property in its natural and scenic state.

COPY

d) If this Easement is extinguished by court order, or the powers of eminent domain, the proceeds of any taking or sale of the unrestricted property shall be divided between Grantor and Holders in the same proportion as the value of their respective interests, so calculated, as of the date of this grant, excepting any part of such proceeds attributable to improvements to the Protected Property made after the date of this grant. The Holders will use such proceeds for conservation purposes.

9. Remedies and Enforcement.

a) This Conservation Easement granted hereby constitutes a conservation restriction on the Protected Property in favor of the Holders and their successors and assigns pursuant to Section 47-42a of the Connecticut General Statutes, as amended. Pursuant to Section 47-42b of the Connecticut General Statutes, as amended ("C.G.S.") this Conservation Easement shall not be unenforceable on account of lack of privity of estate or contract or lack of benefit to particular land. Pursuant to Section 47-42c C.G.S., this Conservation Easement may be enforced by injunction or proceedings in equity, or in any other manner permitted by law.

b) The failure or delay of the Holder, for any reason whatsoever, to enforce this Conservation Easement shall not constitute a waiver of its rights.

c) Grantor is not responsible for injury to or change in the Protected Property resulting from "acts of God" so called, such as, but not limited to, fire, flood, storm, and earth movement, or from any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Protected Property resulting from such causes.

d) The terms and conditions of said easement hereinabove set forth shall be binding upon and inure to the benefit of the Holders and their successors or assigns. However, said Conservation Easement shall not entitle the Holders or their successors or assigns to any right of entry or use of the Protected Property except as provided herein and for periodic inspections in a reasonable manner and at reasonable times to ensure compliance with the conservation and recreation purposes above.

e) The captions herein have been inserted solely for convenience of reference and are not a part of this Conservation Easement and shall have no effect upon construction or interpretation.

10. Notices. Any notice to Holders required hereunder must be made by certified mail, return receipt requested, addressed to:

copy

Town of Greenwich
101 Field Point Road
Greenwich, CT 06830
Attn: Mr. Haden Gerrish

City of Stamford
Stamford Government Center
888 Washington Boulevard
Stamford, CT 06904
Attn: Mr. Thomas Cassone

or such other address as may be furnished in writing.

Any notice to Grantor required hereunder must be made by certified mail, return receipt requested, addressed to each of the following:

State of Connecticut
Department of Environmental Protection
Office of the Commissioner
79 Elm Street
Hartford, CT 06106

or such other address as may be furnished in writing.

Any notices to Holders or requests for Holders' consent, required or contemplated hereunder, must include, at a minimum, sufficient information to enable the Holders to determine whether proposed plans are consistent with the terms of this Conservation Easement and the conservation and recreation purposes hereof.

TO HAVE AND TO HOLD the above granted and bargained Conservation Easement unto the said Holders and their successors and assigns forever.

IN WITNESS WHEREOF, I, Arthur J. Rocque, Jr., Commissioner of the Connecticut Department of Environmental Protection, have hereunto set my hand this 15th day of October, 1998.

copy

Signed, Sealed and Delivered
in the presence of:

State of Connecticut, Department of
Environmental Protection

Lynn Tobin
Witness: Lynn Tobin

[Signature]
By Arthur J. Rocque, Jr.
Its Commissioner

Jill Carr
Witness: Jill Carr

STATE OF CONNECTICUT)
) ss. HARTFORD
COUNTY OF HARTFORD)

The foregoing instrument was acknowledged before me this 16th day of
October, 1998 by Arthur J. Rocque, Jr., Commissioner of the State of
Connecticut Department of Environmental Protection, on behalf of the state.

Elizabeth G. Varhue

Commissioner of the Superior Court
Notary Public
My Commission Expires:

**ELIZABETH A. VARHUE
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 2001**

copy

STATUTORY AUTHORITY

Connecticut General Statutes Section 26-3.

APPROVED:

[Handwritten signature]

Richard Blumenthal
Attorney General

10/26/98

Date

STATUTORY AUTHORITY

Connecticut General Statutes Section 23-75.

APPROVED AS TO FORM:

[Handwritten signature]

William B. Gundling
Associate Attorney General

10/27/98

Date

copy

**SCHEDULE A
DESCRIPTION OF THE PROTECTED PROPERTY**

All that certain plot, piece or parcel of land, situate, lying and being in the City of Stamford and Town of Greenwich being known and designated as Lot B as shown on a certain map entitled "Property Survey Depicting 344 Taconic Road, Stamford & Greenwich, CT, Prepared for the Department of Environmental Protection, State of Connecticut", certified substantially correct by Redniss and Mead, Licensed Land Surveyors, dated 9/22/98 (the "Plan") and which Plan is filed with the office of the Greenwich Town Clerk and the Stamford City Clerk on even date herewith; which Lot B is more particularly described below. SAID Protected Property is conveyed together with any buildings and improvements thereon and all the estate and rights of the Grantor in and to said property and further together with easement rights of pedestrian (and not vehicular) access and egress to and from the PREMISES to and from Taconic Road over the area shown as the "Accessway for Lot 'B' " on the Plan.

Beginning at a point on the easterly side of Taconic Road, said point being 641.24 feet southerly from the intersection of the town line between Stamford and Greenwich and the easterly side of Taconic Road, thence, along the lands of Lot A as designated the Plan, N63°45'36"E a distance of 391.127 feet and along a clockwise curve having a radius of 50.00 feet, a central angle of 15°29'30" a distance of an arc length of 13.519 feet and N79°15'06"E a distance of 766.00 feet and N45°42'00"W a distance of 422.00 feet and N33°12'00"W a distance of 51.00 feet and N26°48'00"W a distance of 24.00 feet and N33°23'00"W a distance of 35.00 feet and N38°05'00"W a distance of 80.00 feet and N68°59'00"E a distance of 53.00 feet and S61°28'00"E a distance of 92.00 feet and S45°21'00"E a distance of 78.00 feet and S65°44'00"E a distance of 34.00 feet and S78°57'00"E a distance of 41.00 feet and N88°13'00"E a distance of 29.00 feet and N35°35'00"E a distance of 22.00 feet and N23°38'00"E a distance of 52.00 feet and N03°40'00"W a distance of 55.00 feet and N03°48'00"W a distance of 115.00 feet and N26°03'00"W a distance of 95.00 feet and N24°53'00"W a distance of 87.00 feet and S71°07'00"W a distance of 168.00 feet and N15°46'00"W a distance of 60.00 feet and N56°49'00"W a distance of 47.00 feet and N79°33'00"W a distance of 339.00 feet and N27°56'05"W a distance of 233.22 feet to land now or formerly of Aronson; thence along said Aronson and land now or formerly of Vandervort, each in part, N22°58'00"W a distance of 634.65 feet to land now or formerly Lionshare Holdings, LLC; thence, along said Lionshare Holdings, LLC, N67°02'00"E a distance of 1565.85 feet and N23°01'45"W a distance of 155.00 feet and N03°02'38"E a distance of 389.57 feet to land now or formerly of Connecticut American Water Company; thence, along land of said Connecticut American Water Company S33°57'22"E a distance of 98.34 feet and S85°38'32"E a distance of 190.41 feet and S66°16'32"E a distance of 420.33 feet and S33°19'52"E a distance of 436.05 feet and S20°45'51"E a distance of 56.60 feet and S39°54'09"W a distance of 257.19

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feet and S32°32'21"E a distance of 156.36 feet and S00°15'56"E a distance of 125.26 feet and S37°51'38"W a distance of 380.43 feet and N84°13'03"W a distance of 248.37 feet and S40°48'34"E a distance of 512.47 feet and S09°22'09"W a distance of 581.47 feet and S40°09'15"W a distance of 314.94 feet to land now or formerly of The Greenwich Land Trust; thence, along said Greenwich Land Trust S72°03'36"W a distance of 111.70 feet and S75°28'36"W a distance of 102.80 feet, thence, along said Greenwich Land Trust and along land now or formerly of Frances D. Clyne, each in part, S67°36'36"W a distance of 107.90 feet, thence, along said Clyne S73°17'36"W a distance of 54.10 feet and S78°54'36"W a distance of 24.60 feet and S70°46'36"W a distance of 162.50 feet and S67°40'36"W a distance of 37.20 feet and S17°27'24"E a distance of 70.70 feet and S19°07'24"E a distance of 88.10 feet and S14°19'24"E a distance of 82.10 feet and S15°14'24"E a distance of 57.10 feet and S00°56'36"W a distance of 11.00 feet, thence; along said Clyne and land now or formerly of Maarten L. Deruiter, each in part, S05°37'24"E a distance of 152.95 feet, thence, along said Deruiter S05°26'24"E a distance of 150.00 feet and S09°15'24"E a distance of 102.30 feet and S12°02'24"E a distance of 85.00 feet and S16°14'24"E a distance of 101.15 feet and S13°24'24"E a distance of 154.95 feet to the northerly side of Farms Road; thence along said northerly side of Farms Road S62°55'38"W a distance of 28.54 feet and S51°16'29"W a distance of 23.82 feet and S21°41'42"W a distance of 21.30 feet and S01°59'34"W a distance of 37.60 feet and S05°40'02"W a distance of 81.96 feet to land now or formerly Fram Landinvest, Inc.; thence, along said Fram Landinvest N14°13'54"W a distance of 496.75 feet and N06°07'24"W a distance of 431.20 feet and N17°09'24"W a distance of 280.95 feet and S79°15'06"W a distance of 771.25 feet and S63°45'36"W a distance of 389.85 feet to the east side of Taconic Road; thence, along said easterly side of Taconic Road N27°42'11"W 50.016 feet to the point of beginning.

Said Protected Property is conveyed together with and subject to the following:

1. Taxes on the List of October 1, 1997, first half paid, second half not yet due and payable, and taxes for all subsequent years.
2. Together with and subject to agreements in the deeds between Dorothea F. Blake and The Southern Connecticut Real Estate Company dated February 20, 1954 and recorded April 28, 1954 in Book 722 at Page 397 of the Greenwich Land Records and dated April 29, 1954 and recorded May 10, 1954 in Book 723, at Page 274 of the Stamford Land Records.
3. Together with and subject to covenants and restrictions in the deed from the Estate of Walter J.M. Donovan to Lillian K. Blake dated October 8, 1936 and recorded in Book 455 at Page 361 of the Stamford Land Records, which subject the PREMISES to the covenants and restrictions in the deed from the Estate of Walter J.M. Donovan to Irving Day dated June 4, 1936 and recorded June 13, 1936 in Book 455 at Page 18 of the Stamford Land Records and in Book 334, at Page 71 of the Greenwich Land Records.

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4. Grant to the Greenwich Water Company from Edwin H. Wetherbee dated May 15, 1905 and recorded in Book 110, at Page 522 of the Stamford Land Records.
5. Grant from Elizabeth Anderson and Bernard A. Anderson to The American Telephone and Telegraph Company dated March 18, 1904 and recorded in Book 108, at Page 520 of the Stamford Land Records.
6. Any state of facts shown on the Plan more particularly described in Exhibit A hereto.

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, soil scientists, foresters, climatologists and landscape architects, recreational 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 - an 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - *free of charge*.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use 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 site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form 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 the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Soil and Water Conservation District and approved by the King's Mark RC&D Executive Council, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977.