

KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR  
**GRACE RICHARDSON AND HOYDEN HILL  
OPEN SPACE AREAS**

FAIRFIELD,  
CONNECTICUT

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

**GRACE RICHARDSON AND HOYDEN HILL**

**OPEN SPACE AREAS**

**FAIRFIELD, 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.

Wallingford, Connecticut

for the

Fairfield Conservation Commission

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base, evaluates its significance to the proposed development and suggests considerations that should be of concern to the Conservation Commission and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

**FEBRUARY 1990**

## ACKNOWLEDGMENTS

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I would also like to thank Susan Anderson, Secretary of the King's Mark Environmental Review Team for assisting in the completion of this report.

Finally, special thanks to Kenneth Placko, Conservation Commission, Town of Fairfield, George Standing, Fairfield Health Department, and Lucinda McWeeney, archaeologist, for their cooperation and assistance during this environmental review.

## EXECUTIVE SUMMARY

The Fairfield Conservation Commission has requested that an environmental review be conducted on the Grace Richardson and Hoyden Hill Open Space Areas. The 2 sites with H. Smith-Richardson Golf Course between them, form an open space area just over 300 acres in northeast Fairfield, west of the south end of Hemlock Reservoir. The Grace Richardson property is 87.4 acres in size and contains mostly second growth forest with a small area of open field, several streams and 2 small ponds. The ponds are being silted-in by runoff from the golf course. The Hoyden Hill parcel is 57 acres in size and is composed of second growth forest and farmland. The golf course has taken over 2 of the farm fields for a driving range.

The Commission is interested in the potential of the site to support recreational development, including agricultural uses, forest management, wildlife management, fishery management and ways to increase the recreational potential through educational trails, etc. The information will be used in the development of a recreation plan, as well as guiding conservation and development in this area.

The purpose of this review is to inventory and assess existing natural resources, particularly wetland and water resources. This environmental information will then be utilized in the development of a new master plan, as well as assisting the Town in guiding conservation and development in this area.

### GRACE RICHARDSON OPEN SPACE AREA

#### Location, Zoning and Land Use

The Grace Richardson Open Space Area is located in the northeast corner of Fairfield. The site is mostly wooded with an open field in the northcentral part. Land use in the area consists of low density residential. The surrounding area is zoned AAA which allows single-family homes on 2-acre lots. Municipal sewers are not available, and on-site disposal will be needed for the construction of sanitary facilities. Water lines are available to the site. Drilled wells are another potential water source for facilities.

#### Topography

Topography of the site is irregular and controlled by the underlying bedrock. Bedrock is exposed in several places. Maximum and minimum elevations are 350 feet above mean sea level and 110 feet above mean sea level, respectively.

#### Bedrock Geology

Bedrock is at or near the ground surface through most of the site. It is described as the Carrington Pond Member of the Trap Falls Formation, a gray, rusty-weathering schist and light gray gneiss. The bedrock is a potential source of water for the site.

## Surficial Geology

The site is covered by a thin layer of till which consists of clay, silt, sand and boulders mixed together. The till on the site is mostly sandy and loose. In the north central field, the till may be finer grained with a firm layer which can cause a seasonal high watertable. The major geologic limitations include ledgerrock, steep slopes, high watertables and thin bands of wetland soils. These limitations will hinder active recreation but not passive recreation.

## Water Resources

Both streams are unnamed and tributary to Cricker Brook. The majority of the site drains to the eastern stream which has 2 small impoundments. The surface waters have not been classified by the DEP and are assumed to be Class A. Groundwater is Class GA. A deep gully was observed in the northern parts and may be a major source of sediment in the ponds. The Town should take steps to prevent the E&S build-up by constructing an energy dissipater and stabilizing the banks of the gully. The Town should also check for additional sediment sources.

Dry vault or pit privies can be approved by the Fairfield Health Department. They should be constructed 100 feet away from wells and surface waterbodies.

## Soil Resources

The site is characterized by upland till soils and bedrock controlled ridges. Wetland soils parallel the streams. The site is suited to the existing recreational uses. Any increased construction will require planning and E&S controls.

## Erosion and Sediment Control

There are numerous E&S control problems on the site. They are primarily caused by the uncontrolled runoff from the golf course. Gullies and ditches are eroding and silting-in the ponds. A planned surface and subsurface drainage system should be installed which addresses the erosion and water quality concerns. The critically eroding areas should be stabilized. Pond restoration is not recommended until the hillsides are stabilized. The pond dams should be evaluated before any work is done.

## Forest Resources

The largest Eastern hophornbeam in Connecticut occurs on the site. It should be given room to grow. The tree appears relatively healthy. Overall the forest appears healthy, and the potential exists for sawtimber, firewood and wildlife management. Interest was expressed in planting Christmas trees. The White spruce in an adjacent field appear to be growing well. The soil in the field should be tested before planting more Christmas trees. A transplant bed is also recommended, as well as mowing the field periodically.

In the field proposed for camping, there are 2 large maples, 1 of which has an almost perfect form. Measures should be taken to protect both trees. Maintenance of all trees is important in a recreational area to minimize potential hazards.

### Wildlife Considerations

Wildlife habitat within the site is comprised of forest, old fields and wetlands, including ponds and streams. The diversity of the site provides good wildlife habitat. Forest management for the site should consider wildlife requirements. The old fields are important habitat types and should be maintained. Wetlands and water are important to wildlife. The ponds are small and contain limited vegetational diversity. Dredging to a uniform depth would only serve to lessen the diversity. Different water levels encourage different types of vegetation. Streams and ponds should be protected from siltation. Vehicles should not be allowed on the site because they disturb the wildlife. Camping should be limited. Small plantations of evergreens will provide greater diversity. All trails should be stabilized to prevent erosion. Any further expansion of the golf course will have a negative impact on wildlife.

### Fisheries Resources

The fishery resources are limited to the unnamed stream with the 2 ponds. The ponds are silted-in and currently have little value for fish. The stream is a coldwater fishery and the ponds have the characteristics of a warmwater fishery. Erosion and sedimentation are having a negative impact on the fish. Uncontrolled runoff from the golf course may degrade the water quality. Recommendations include maintaining a buffer zone around the streams and ponds, implementing a comprehensive E&S control plan, stabilizing the gullies, limiting liming and fertilizing the golf course, augmenting the coldwater fishery and dredging the ponds.

### Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Data Base, there are no Federal Endangered or Threatened species or Connecticut "Species of Special Concern" occurring at the site.

### Archaeology

A rockshelter site is found on the property. This rockshelter is well-known and has been vandalized. Recovered artifacts indicate occupation approximately 3,000 years ago, although earlier artifacts might be found under old rock falls. The rockshelter site is an important resource and could be protected with the creation of an archaeological preserve. The property also contains remnants of a historic mill and 19th century stone walls. These ruins should be preserved, where possible. The fireplace and cistern are more recent and are less significant. Any development on the site should be reviewed by the Office of State Archaeologist for impact on cultural resources.

## Planning Considerations

The Town of Fairfield acquired the site between 1966 and 1970. The State Policies Plan designates the site as Existing Preserved Open Space with the goal of continued open space use. The Regional Plan designates the site for Open Space, Recreation and Conservation. The focus of these designations is to preserve natural features and provide for parks and wildlife. The Fairfield Master Plan designates the site Environmental Area/Streambelt and Steep Slope and includes continued acquisition of open space. The SCORP compares regions on open space and recreational areas per capita. Fairfield has more than the average open space acres per person, but less than the average recreational areas such as ball fields.

Access to the site is by road. Local streets are narrow and have limited traffic. Present parking could be expanded. However, parking spaces should be limited to keep the area in wilderness. Access points should be restricted, and vehicular traffic prohibited, except for emergency use.

## Recreation Issues

The site has a variety of scenic and visual assets. Trails can be developed to take advantage of the natural beauty and varied topography. The current marking system could be improved. Trails should respect the natural areas and disturb as little as possible. Strategic points of interest should be marked and a map created for nature study. There is a potential camping area at the old farm site. Steps should be taken to minimize impacts, including moving fire sites, pit privies, carry-in water and permits for use. The ponds and streams have fishing potential, but the ponds need to be dredged. The ponds are currently used for skating. The area provides great educational opportunities. Groups could adopt a trail or a portion of the tree farm. Supervised work on the archaeological site could also be considered.

## HOYDEN HILL OPEN SPACE AREA

### Location, Land Use and Zoning

The Hoyden Hill Open Space Area is located near the Easton border. The site is mostly farm land and open fields with woods in the northern part. Land use in the area consists of low density residential. The surrounding area is zoned AAA which allows single family homes on 2-acre lots.

### Topography

The site consists of the table lands of Hoyden Hill with some steeper slopes to the north. Maximum and minimum elevations are 450 feet and 370 feet respectively. The site contains one of the highest points in Fairfield.

## Geology

Bedrock is at or near the ground surface in a few places on the site. It is described as the Straits Schist. Depth to bedrock ranges from zero to 10-15 feet over most of the site. Hoyden Hill is a drumlin. It is cigar-shaped and runs in a south-southeast direction.

The till on the site is fine-grained with a firm layer which can cause a seasonal high watertable. Till at the northern limits may be looser, but bedrock is near the surface in this area.

## Water Resources

No major streams were visible on the site. Surface water drains to East Branch Cricker Brook, Morehouse Brook, the unnamed stream running through the Grace Richardson Open Space Area and Hemlock Reservoir. The groundwater flow parallels the surface flows. Public water supply mains are available to the site, and bedrock are another potential water source. Groundwater in the western parts is Class GAA. The remainder of the site is Class GA.

## Recreation Potential from a Geologic Perspective

The geology should not pose problems for either active or passive recreation. Moderate slopes will limit playing fields, but will provide diversity for trails. The seasonal high watertable may hinder playing fields, requiring surface and subsurface drains. Subsurface drainage work may require blasting in the shallow to bedrock areas. Public water is available to the site. Bedrock wells are capable of providing small but adequate yields. If sanitary facilities are needed a small to medium septic system could be constructed.

## Soil Resources

The site consists mostly of Paxton soils which are well drained with a firm layer. PbB soils are classified as Prime Farmland soils. Other soils include Charlton and Woodbridge.

## Erosion and Sediment Control

E&S control needs are slight under current conditions. The farmed areas have commendable erosion control measures. The access from North Street has an erosion problem which could be remedied with water breaks, mulching and seeding.

## Agricultural Production and Recreational/Educational Uses

Maintaining agricultural productivity should be a high priority. The farm could be used for educational demonstrations. Recreational use is currently limited to hiking. A trail could be constructed through the woods to serve as an educational trail.



## Forest Resources

The small fir plantation should be released. The overtopping White ash could be cut for firewood. Stand 1 contains sawtimber-sized tulip poplar and black birch. A thinning will benefit the tulip poplar. A combined cut with the BHC property is recommended because of the small size of the stand. Stand 2 contains birch and red maple. Most of the trees are low quality. There is a great deal of tulip poplar seed on the ground. Patch cuts could be made to allow the tulip poplar to grow.

## Wildlife Considerations

Wildlife habitat within the site is comprised of forest, old fields and agricultural fields. The farm fields are important habitat types and should be maintained. Priority should be given to hay crops followed by corn then truck crops. Hay fields provide nesting areas for many bird species. The apple orchard could be improved for wildlife. Any further expansion of the golf course will have a negative impact on wildlife.

## Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Data Base there are on Federal Endangered or Threatened species or Connecticut "Species of Special Concern" occurring at the site.

## Archaeology

There are no known archaeological sites at the property, but there are several close by. If farming activities continue, an archaeologist should review plowed fields for artifacts. Any development on the site should be reviewed by the Office of State Archaeologist for impact on cultural resources.

## Planning Considerations

The Town of Fairfield acquired the site between 1966 and 1970. Surrounding land uses include BHC land and residences. Several adjacent parcels may be developed. The golf course may be expanding into the site.

Access to the site is by road. Local streets are narrow and have limited traffic. Parking is adequate at present. If more intensive recreational use is planned, more parking may be needed. Access points should be limited, and vehicular traffic prohibited, except for emergency use. The BHC has discouraged access from North Street. If the BHC property is sold for development, additional parking spaces may be available.

## Recreation Issues

The site has a variety of scenic assets, including farm fields and forest. Although the site contains one of the highest points in Fairfield, views are limited because the land is almost level. The existing trails can be enhanced. Strategic

points of interest should be marked, and a map created for nature study. The golf course is heavily used and is encroaching onto the site. Farm fields on the site are scheduled to be planted in spring. Funding sources could be investigated to keep the land in agriculture. Recreational development will have a negative impact on the site. Alternatives include a Christmas tree farm, arboretum or wild forest. Another option includes developing the field near the road and allowing the northern fields to be preserved with the wooded land.

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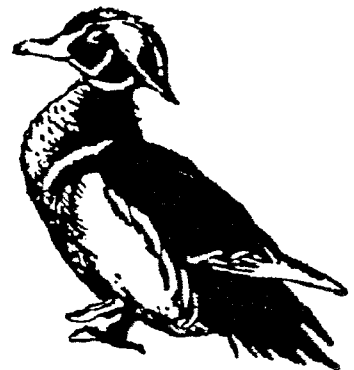
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# INTRODUCTION



## INTRODUCTION

The Fairfield Conservation Commission has requested that an environmental review be conducted on the Grace Richardson and Hoyden Hill Open Space Areas. The 2 sites with H. Smith-Richardson Golf Course between them, form an open space area just over 300 acres in northeast Fairfield, west of the south end of Hemlock Reservoir. The Grace Richardson property is 87.4 acres in size and the Hoyden Hill parcel is 57 acres in size. Access is provided by Congress Street and Morehouse Highway to the south and Hoyden Hill Road and Hoydens Lane to the north.

The Grace Richardson Open Space Area contains mostly second growth forest with a small area of open field, several streams and 2 small ponds. The ponds are being silted in by runoff from the golf course. The Hoyden Hill Open Space Area is composed of second growth forest and farmland. The golf course has taken over 2 of the fields for a driving range.

The Commission is interested in the potential of the site to support recreational development, including agricultural uses, forest management, wildlife management, fishery management and ways to increase the recreational potential through educational trails, etc. The information will be used in the development of a recreation plan, as well as guiding conservation and development in this area.

Specific objectives include:

- 1) Assess the hydrological and geological characteristics, including geological development limitations and opportunities;
- 2) Determine the suitability of existing soils to support recreational development;
- 3) Discuss soil erosion and sedimentation concerns;
- 4) Discuss the agricultural concerns and alternatives for consideration;
- 5) Discuss the forestry concerns and alternatives for consideration;



- 6) Discuss the wildlife concerns and alternatives for consideration;
- 7) Assess the potential of the pond and streams to support fish populations;  
and
- 8) Assess the potential of the site to support trails and educational walks and  
provide planning information.

### THE ERT PROCESS

Through the efforts of the Fairfield Conservation Commission and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning and land use guidelines. The review process consisted of 4 phases:

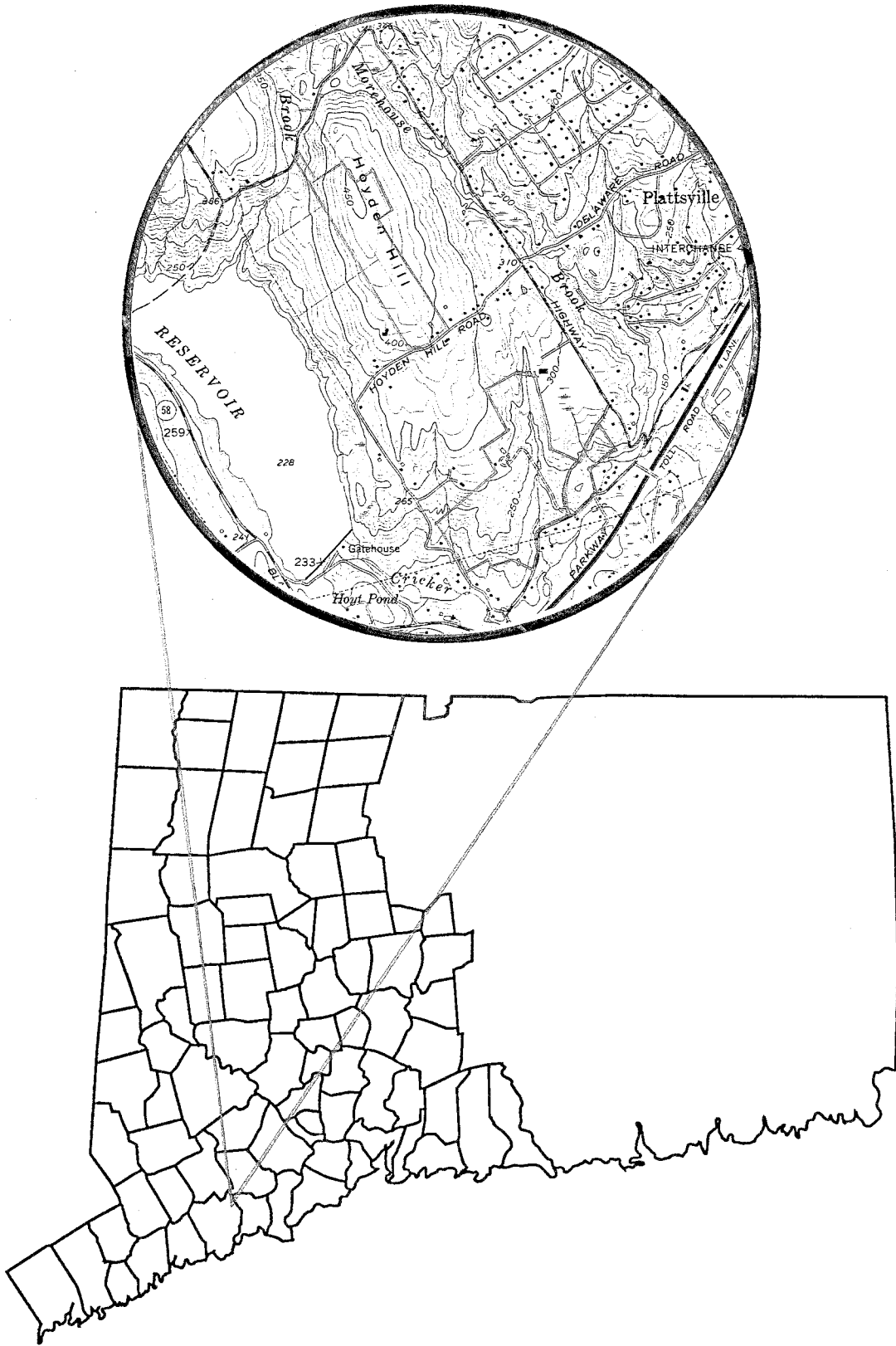
- 1) Inventory of the site's natural resources (collection of data);
- 2) Assessment of these resources (analysis of data);
- 3) Identification of resource problem areas; and
- 4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on January 17, 1990. Field review and inspection of the site proved to be a most valuable component of this phase. Emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused, and specific information concerning the site was collected. Being on-site also allowed Team members to check and confirm mapped information and identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. The results of this analysis enabled the Team members to arrive at an informed assessment of the site's natural resource

# Figure 1

## LOCATION OF STUDY SITE



development opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

**GRACE RICHARDSON**

**OPEN SPACE AREA**



## LOCATION, LAND USE AND ZONING

The Grace Richardson Open Space Area consists of approximately 87 acres and is located southeast of the Hoyden Hill Open Space Area and the H. Smith-Richardson municipal golf course in the Town of Fairfield. The site abuts the golf course on the north, a segment of Congress Street and Morehouse Highway on the east, the lower parts of Hoyden Hill Road and Congress Street on the south and Hoyden Hill Road and residential properties on the west. An 11-acre portion of the site is located on the east side of Morehouse Highway.

Direct access to the major part of the site is available at the confluence of Morehouse Highway and Congress Street in the eastern parts. A managed high tension wire transmission line bisects the southern parts of the site in an east-west direction.

Except for the northcentral parts, the site is wooded. An open field area in the vicinity of the former farm house is located in the northcentral parts. This area encompasses some of the highest points on the site and affords hikers scenic views to the south-southeast. Land use in the area of the parcel consists of low density residential. According to Town officials, the entire site lies in an AAA zone which permits single-family homes on 2-acre lots.

The site is currently used by the Town for passive recreation (i.e., hiking, cross-country skiing, picnicking, bird watching, etc.). A small stand of White spruce trees was planted by the Boy Scouts in the northcentral parts.

Municipal sewers are not available to the site. Therefore, the construction of sanitary facilities will require on-site sewage disposal system(s).

Public water supply mains of the Bridgeport Hydraulic Company (BHC) are available to the site. Drilled well(s) are another potential water supply source for the site.

## TOPOGRAPHY

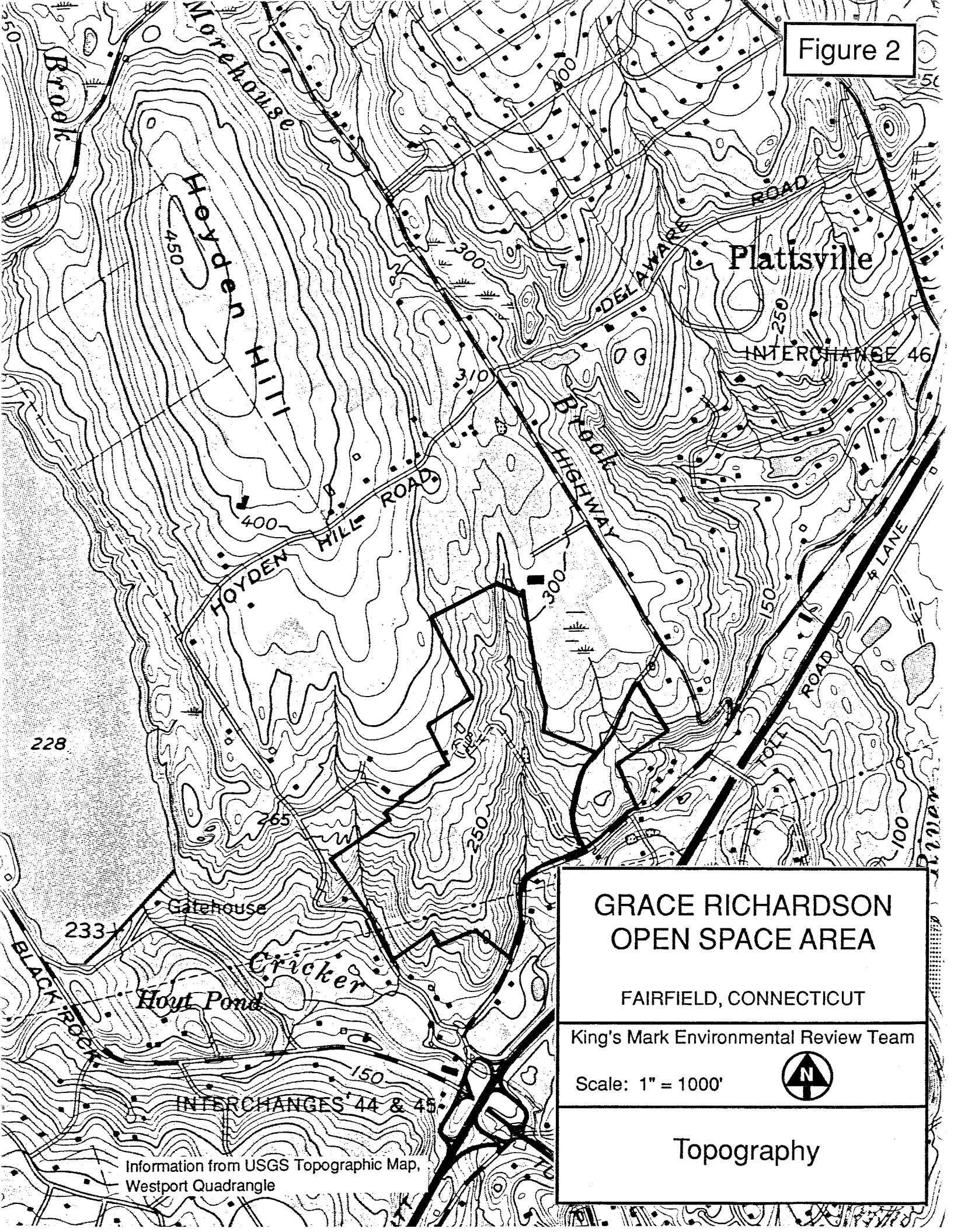
The topography of the site is highly irregular and is controlled by the underlying bedrock which is exposed in many places. Notable bedrock exposures occur along Congress Street and are believed to be archaeologically significant (see Archaeology section). The majority of the site contains moderate to steep slopes. Steep slopes occur mainly in the southern parts of the site and in the valley sides of the 2 unnamed streamcourses. Both streamcourses are tributary to Cricker Brook, the outlet stream for Hemlock Reservoir. Gentle slopes are located in the northwestern parts of the site in the vicinity of the open fields and former farm house. Maximum and minimum elevations on the site are 350 feet above mean sea level and 110 feet above mean sea level, respectively (see Figure 2).

## BEDROCK GEOLOGY

According to soil mapping data and geologic maps, bedrock is at or near ground surface throughout most of the site. According to the Bedrock Geological Map of Connecticut (John Rodgers, 1985), the bedrock core of the site comprises Carrington Pond Member of Trap Falls Formation (see Figure 3). The rock unit is described as interlayered gray, rusty-weathering schist and light-gray gneiss.

Schists and gneisses are crystalline metamorphic rocks that have been geologically altered by great heat and pressure within the earth's crust. Schist and gneiss refer to the textural and structural aspects of the rocks. The rocks underlying the parcel have undergone deformation (metamorphism) during the period following their deposition as deep ocean sediments. The stresses of deformation caused the alignment of platy, flaky and elongate minerals into thin sheets or bands. Where the alignment has resulted in a slabby rock (i.e., a rock that parts relatively easily along

Figure 2



# GRACE RICHARDSON OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

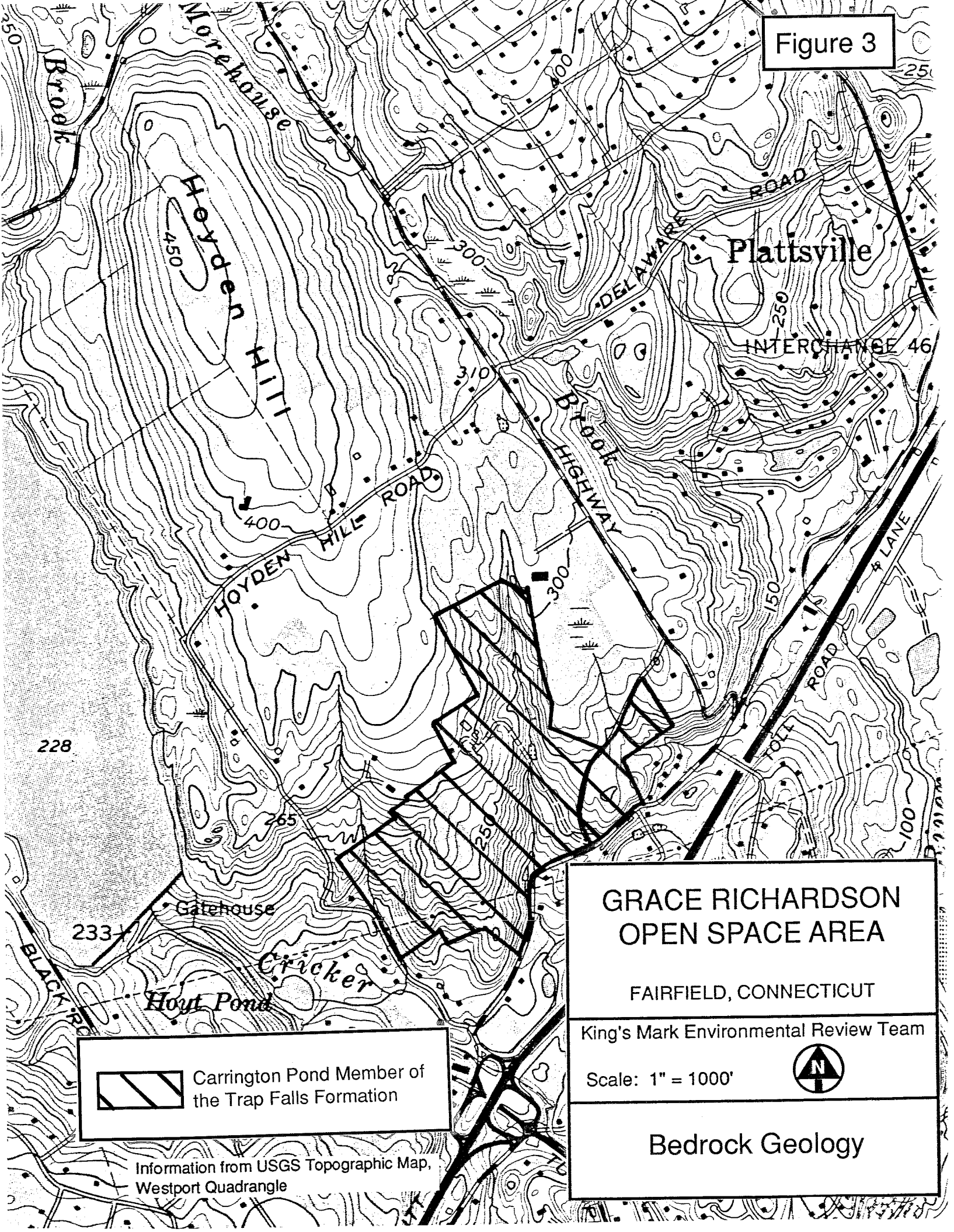
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## Topography

Information from USGS Topographic Map,  
Westport Quadrangle

Figure 3



Carrington Pond Member of the Trap Falls Formation

Information from USGS Topographic Map, Westport Quadrangle

# GRACE RICHARDSON OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



## Bedrock Geology



the surface of mineral alignment or foliation planes), the rock is termed a schist. Where the alignment has resulted in a banded but more massive rock, the rock is termed gneiss. Both rock types may grade into each other in a single outcrop.

The underlying bedrock is a potential source of water for the site. Wells drilled 100-200 feet into bedrock are generally capable of supplying small but reliable yields of groundwater (2-5 gallons per minute). This should adequately serve passive recreational land uses. The quality of the groundwater stored in cracks, seams and fractures in the bedrock should be good. However, there is a slight chance that it may be mineralized by iron and manganese minerals or other mineral residues.

### SURFICIAL GEOLOGY

The entire site is covered by a relatively thin blanket of glacial sediment called till (see Figure 4). Till is a non-sorted glacial sediment in which clay, silt, sand, gravel and boulders are intimately mixed in a complex fashion. The exact thickness of the till on the site is unknown. In most places, it is probably 10 feet thick or less. However, in the open field (northcentral part) area, the till may be more than 10-15 feet thick.

The majority of the till soils on the site are sandy, stony and loose. In the open field area, the till soils are likely to be finer-grained, less stony and very firm. Seasonally high groundwater levels may characterize till soils.

The major geologic limitations of the site include ledgerrock, steep slopes and a high groundwater table. Additionally, relatively narrow bands of wetland soils parallel the unnamed streamcourses on the site, according to soil mapping data. These limitations will be a major hindrance for most types of active recreational developments. On the other hand, they should not be a severe hindrance in terms of

passive recreational uses such as hiking, bird watching, picnicking, cross-country skiing, etc.

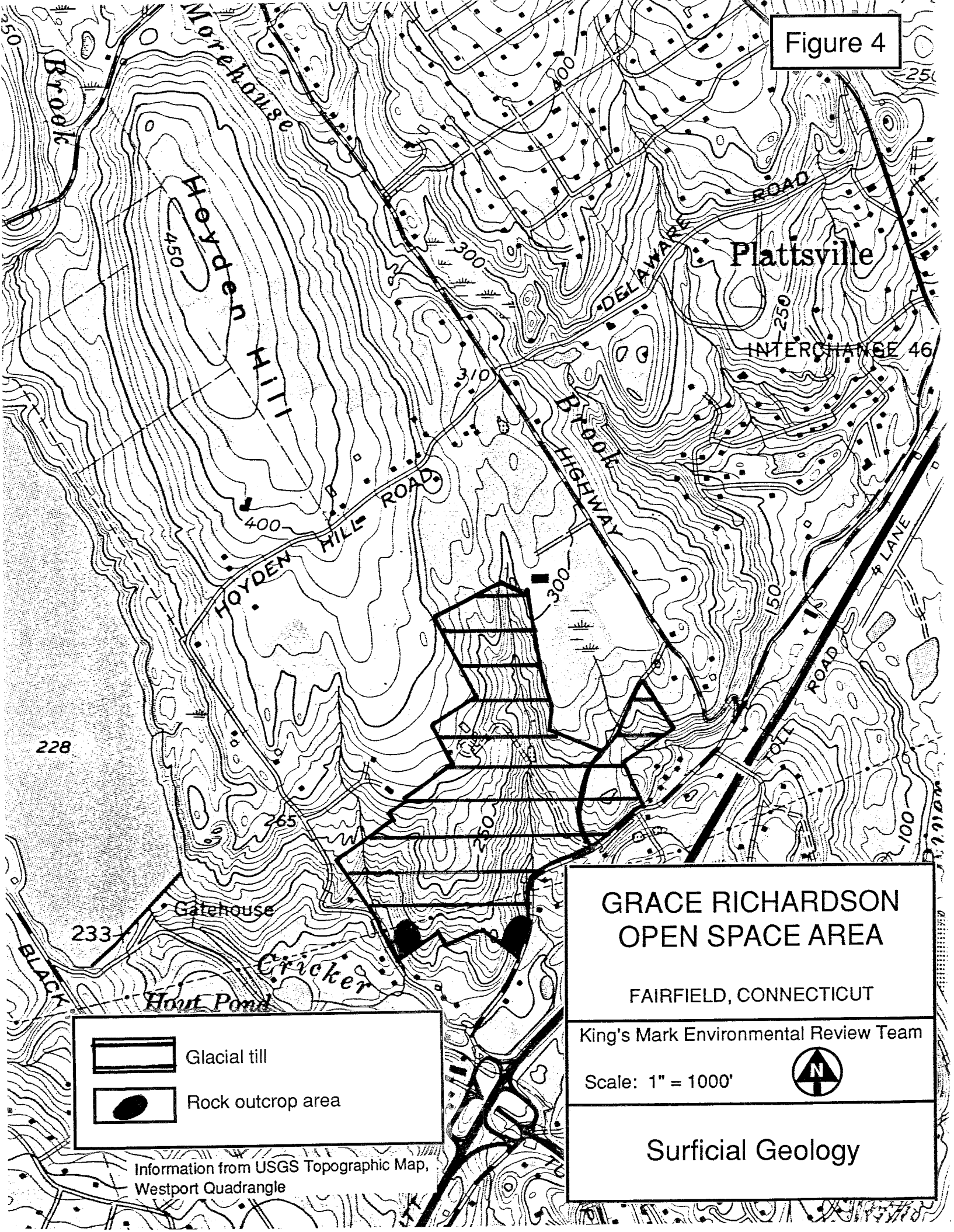
## WATER RESOURCES

Both principal streamcourses occurring on the site are unnamed and are tributary to Cricker Brook, the outlet stream for Hemlock Reservoir. Approximately 20 acres in the western parts of the site drain to an unnamed streamcourse that flows through the western limits in a southerly direction. Surface runoff for approximately 9 acres in the southern parts flows directly to Cricker Brook via topographic swales. The majority of the site, 63 acres, drains to the unnamed streamcourse that bisects the central parts of the site and that ultimately drains to Cricker Brook. This streamcourse, which has been impounded in 2 places on the site to form small ponds, originates on the H. Smith-Richardson Golf Course. Finally, the portion of the site east of Morehouse Highway drains either to an unnamed Cricker Brook tributary or to an unnamed Mill River tributary. Ultimately, all surface waters on the site empty into Mill River (see Figure 5).

None of the surface waters have been classified by the Department of Environmental Protection (DEP) and are considered as Class A water resources, by default. Class A resources may be suitable for drinking, recreational or other uses and may be subject to absolute restrictions on the discharge of pollutants, although certain discharges may be allowed. DEP classifies groundwater within the site as GA, which means it is suitable for private drinking water supplies without treatment.

A deeply incised gully was observed in the northcentral parts of the site, in the vicinity of the former farm house. The gully, which is tributary to the unnamed streamcourse that flows through the eastern parts of the site, appears to be fed by

Figure 4



Plattsville

INTERCHANGE 46

HOYDEN HILL ROAD

DEL AWARE ROAD  
BROOK HIGHWAY

TOLL ROAD  
LANE

228

265

250

233

Gatehouse

Criker

Hout Pond



Glacial till



Rock outcrop area

Information from USGS Topographic Map,  
Westport Quadrangle

# GRACE RICHARDSON OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

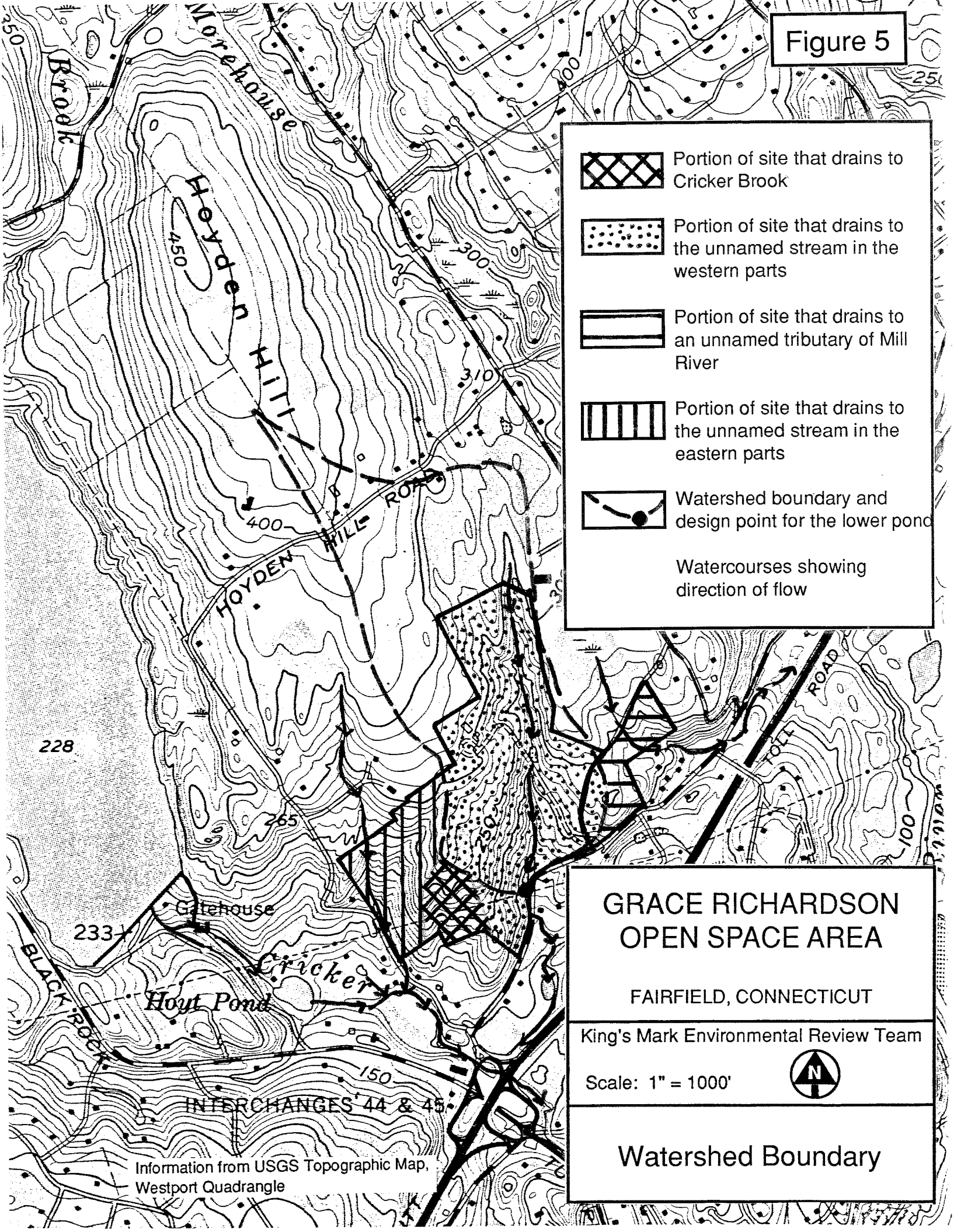
King's Mark Environmental Review Team






Scale: 1" = 1000'



## Surficial Geology

Figure 5



-  Portion of site that drains to Cricker Brook
-  Portion of site that drains to the unnamed stream in the western parts
-  Portion of site that drains to an unnamed tributary of Mill River
-  Portion of site that drains to the unnamed stream in the eastern parts
-  Watershed boundary and design point for the lower pond

Watercourses showing direction of flow

# GRACE RICHARDSON OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



## Watershed Boundary

Information from USGS Topographic Map, Westport Quadrangle

concentrated runoff emanating from the H. Smith-Richardson Golf Course. This erosive condition is probably the major cause of sediment build-up at the inlets of the 2 small impoundments of the streamcourse. From the intersection of the unnamed streamcourse and the southernmost pond on the site, the streamcourse drains an area of 138 acres.

The Town should take steps to prevent streambank erosion and sediment build-up in the ponds, including:

- 1) Construct an energy dissipater for the drainage outlet discharging from the golf course to ensure that the discharge point is properly protected; and
- 2) Investigate the need for stabilizing the banks of the gully, in places, with modified rip-rap or by other means.

If properly addressed, the sediment transport to the ponds on the site should be significantly reduced. Steps should be taken to remove sediment that has built-up in the ponds. This will protect the environmental health of the ponds. The excavated material can be used by the Town for fill on the golf course or for landfill cover. Also, the Town should check for potential sediment sources in the watershed above the ponds, especially the golf course.

Dry vault (pit) privy or privies for recreational facilities can be approved by the local health authority. The Fairfield Health Department should be contacted regarding this matter. Deep test holes will need to be excavated in the area so that subsurface conditions (depth to watertable and bedrock surface) can be determined. A seasonally high watertable will be the major limitation with regard to the construction of a pit privy. Finally, the pit privy or privies should be properly separated from all water supply wells, preferably 100 feet, and from surface waterbodies.

## SOIL RESOURCES

According to the Soil Survey for Fairfield County, Connecticut, this site is characterized by upland till plain Paxton (PbB, PbC) soils giving way to the steep, bedrock controlled ridges as evidenced by the Charlton-Hollis (CrC, CrE) and Hollis-Rock outcrop-Charlton complex (HrE) soils (see Figure 6). The ridges define narrow, steep valleys through which intermittent and perennial streamflow is encountered as shown on the Westport topographic quadrangle and on the Soil Survey.

The existing wetland soils serve primarily as drainageways to convey the intermittent surface runoff from the upland Paxton soils to the valley streambed. They are the Ridgebury (Rd) and Ridgebury, Leicester, Whitman soils (Rn) as mapped on the Soil Survey.

The site is well-suited to the existing recreational uses. Any proposed increased trail construction will require proper planning. Assistance is available from the Soil Conservation Service (SCS) for trail siting and erosion and sediment (E&S) control planning.

## EROSION AND SEDIMENT CONTROL

There are numerous E&S control problems associated with the site. They are derived primarily from the uncontrolled drainage of the municipal golf course surrounding the northern portion of the site. Evidence of concentrated flow is noted by drainage swales, drainage ditches and outlet pipes for subsurface drain lines that have been directed from the golf course towards the site. This has increased streambed erosion, streambank scouring, gully formation and the sedimentation of 2 downstream ponds. Each pond is choked with sediment. A high rate of sediment delivery to the ponds will continue until these erosion problems are solved. One gully

Figure 6


CrC	Charlton-Hollis very fine sandy loam, 3-15% slopes
CrE	Charlton-Hollis very fine sandy loam, 15-45% slopes
HrE	Hollis-Rock outcrop-Charlton complex, 15-45% slopes
Rd	Ridgebury fine sandy loam
Rn	Ridgebury, Leicester and Whitman extremely stony fine sandy loam
Ro	Rippowam fine sandy loam
PbB	Paxton fine sandy loam, 3-8% slopes
PbC	Paxton fine sandy loam, 8-15% slopes
WxB	Woodbridge fine sandy loam, 3-8% slopes

**GRACE RICHARDSON  
OPEN SPACE AREA**

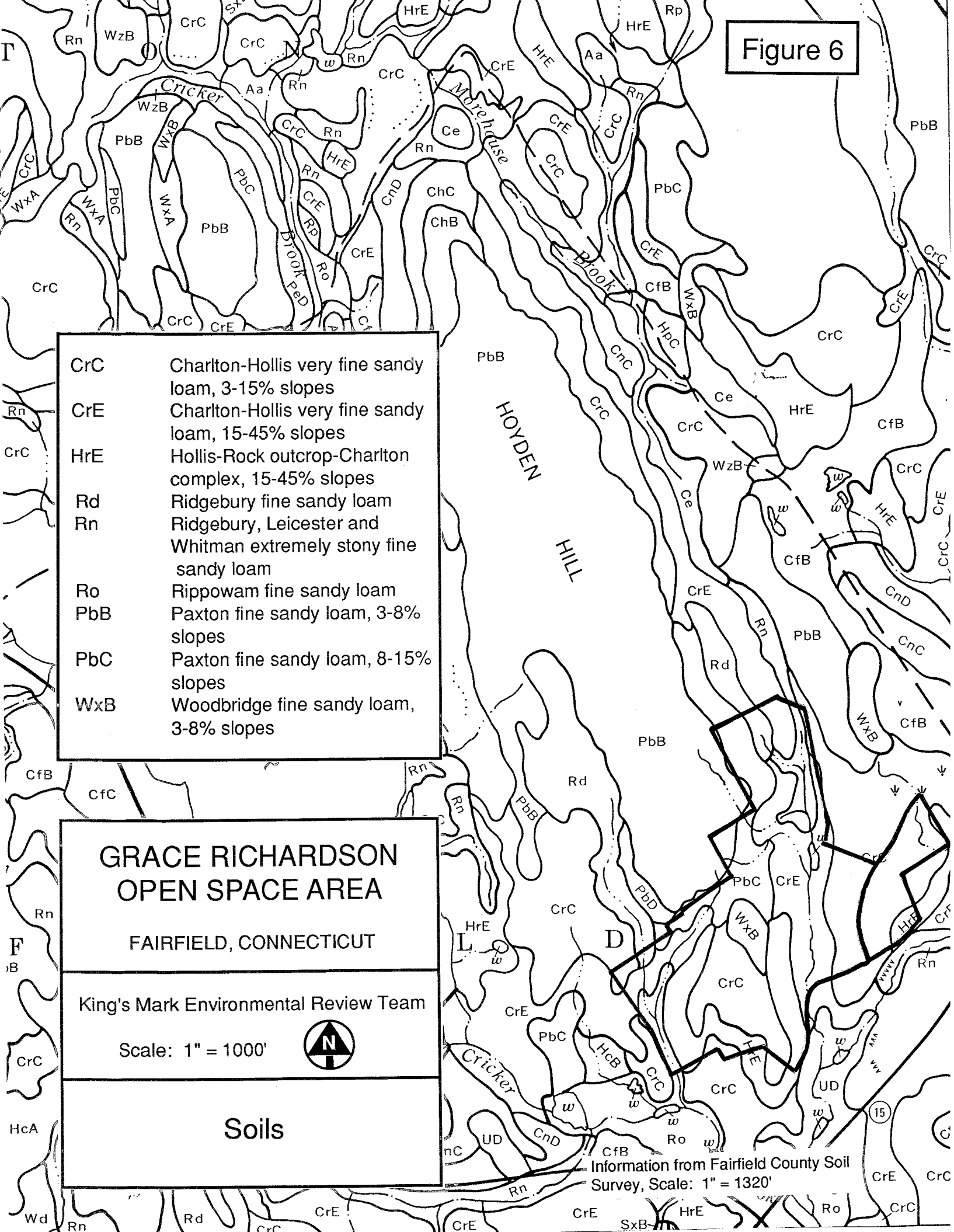
FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



**Soils**



has undermined a concrete cistern on the site and poses a safety hazard to off-trail users of the area. The ditches on the golf course (2 at the northwesterly corner beneath the transmission lines and 1 paralleling the westerly property line of the site) are not properly designed, are eroding and pose a safety hazard to golfers.

A planned surface and subsurface drainage system should be installed which addresses all golf course and site drainage and E&S control concerns to remedy the erosion on the hillsides. A consulting engineer or other qualified professional should draw up the plan.

A thorough inventory of the drainage concerns should be outlined to comprehensively analyze conservation needs. With this data, plans can be developed, and alternatives considered. Comprehensive decision-making will be possible only after the analysis is complete. This recommended planned approach should be integrated with any allowed expansion of the golf course into the site.

During the field review, concern was expressed about the water quality of the surface water runoff from the golf course. The planner should work with the golf course grounds keeper to determine whether or not the planned surface and subsurface drainage system will need to incorporate water quality components.

On a considerably smaller scale, erosion is evident on portions of the accessway from Morehouse Highway past the upper pond and on the main trail.

Recommendations for solving the E&S problems associated with the accessway and the trails include:

- 1) Consider constructing narrow based water breaks at critical points on the trail to divert water to a safe outlet. See Appendix A for an example of typical water break construction. All outlets of the water breaks must be protected.
- 2) Consider bridging stream crossings. Appendix B contains an example of a stream crossing used for logging operations that can be scaled to fit trail stream crossing needs.



As part of the planning process, consider these recommendations for the most critically eroding areas:

- 1) Approximately 600 feet south of the golf course clubhouse, on the easterly side of the northernmost section of the site, there is accelerated erosion and channel formation caused by a swale on the golf course directed towards the valley's lip and down the slope towards the streambed. The swale was apparently constructed to relieve the fairway of temporarily ponded water. This problem appears to be recent (no previous evidence or knowledge of this erosion existed before the field review). Investigate collecting the water in a properly designed sediment control basin and outletted into the existing storm drain approximately 300 feet to the north. The proper point of entry into the storm drain from the sediment control basin must be determined from a survey. Until this is accomplished, erosion control in the form of staked haybale barriers should be established at the swale's outlet and along the newly-formed channel. The erosion channel should be regraded, and the disturbed area limed, fertilized, seeded and mulched according to the recommendations contained in the Connecticut Guidelines for Erosion and Sediment Control.
- 2) The existing storm drain, approximately 300 feet north of the erosion channel, appears to have failed, causing erosion and sedimentation into the stream. It is presently being repaired. The eroded area should be restored by grading and applying the recommended amount of lime, fertilizer, seed and mulch according to the Connecticut Guidelines for Soil Erosion and Sediment Control. Until this is accomplished, temporary E&S control should be established with staked haybale barriers.
- 3) Approximately 800 feet south and east of the northwesternmost point of the site, and approximately 100 feet easterly along the border of the golf course is the confluence of a small ditch and a drainage swale between a tee and a green that has concentrated water, causing a gully to form that is presently undermining a concrete cistern approximately 200 feet below. The drainage area should be analyzed before a control measure is selected. The potential exists for the construction of a properly designed sediment control basin at this point. An underground outlet could be installed from this basin to the streambed below the cistern, and outlet protection provided for. Soils limitations should be addressed, and drainage area calculations should be made to analyze the feasibility of this measure.
- 4) Approximately 500 feet south and east of the northwesternmost point on the site, is what appears to be an outlet for subsurface drainage or catch basin. The outlet has not been properly installed, and the concentration of water has caused erosion and sedimentation into the existing intermittent streambed directly below the outlet. Redirecting the existing outlet to a more suitable and protected area should be pursued. The original plans for the existing drainage system are required for this determination. The outlet may be redirected towards the sediment control basin or its outlet.

A comprehensive surface and subsurface water management control system should be planned and implemented for the golf course/open space area. This system should consider any proposed extension of the golf course into the open space area. No additional drainage work should be accomplished without consulting a professional to analyze needs and propose well-planned conservation measures. Pond restoration is not advisable until the hillsides are stabilized.

The 1971 report prepared by the Yale School of Forestry entitled The Pine Creek and Mill River Watersheds, Fairfield, Connecticut states that the upstream pond's dam leaked. There also appears to have been a breach of the dam. An engineering investigation of the dam's functional value should be performed before the pond's accumulated silt and organic matter is removed.

# BIOLOGICAL RESOURCES



## FORESTRY RESOURCES

The largest Eastern hophornbeam (Ostrya virginiana) in Connecticut occurs at the site. The Connecticut Botanical Society maintains a register of the largest specimens of each species of tree in the State. The following formula is used in which certain parameters are added together to derive a number of points representing the size of each specimen:

$$\text{Total points} = \text{Trunk circumference (in)} + \text{Tree Height (ft)} + 1/4 \text{ Average Branch Spread (ft)}$$

The dimensions for the hophornbeam on the site are:

Trunk circumference	=	64 inches
Tree Height	=	67 feet
Average Branch Spread	=	39 feet
Total	=	141 Points

Previously, the largest Eastern hophornbeam had 128 points when last measured.

The hophornbeam on the Grace Richardson Open Space Area is located next to a cistern beside a stream in the northeastern part of the parcel. It should be given room to grow by removing the trees next to it to create 10 feet of daylight around the canopy. The tree appears to be relatively healthy, and no additional arboricultural measures are necessary. A report of this finding has been sent to the Connecticut Botanical Society for record.

A detailed forest inventory of the remainder of the site, including vegetation type map and specific recommendations for thinnings, sawtimber harvests, etc., is not possible within the scope of the ERT. A consulting forester could be hired for this type of report.

Overall, the forest appears to be relatively healthy, and the potential exists for sawtimber and firewood production and improved wildlife habitat. There are areas near the access road that could be thinned for firewood if the Town desires.

At the field review, interest was expressed in planting the 2.5-acre field in the center of the woodland with Christmas trees to be maintained by youth organizations. A small area adjacent to the field has been planted with White spruce trees which are growing well and have not suffered much deer damage. The spruce trees need to be sheared to avoid becoming spindly and to remove double leaders. They should also be root pruned if they will be transplanted to the field. Because deer prefer to browse on the softer needled trees like firs and pines, only White, Blue and Norway spruces should be planted in the field.

Soil testing in the field is desirable before planting. Establishment of a transplant bed is recommended. This will allow the seedlings to become bigger and have a much better chance of survival when they are planted in the field. Mowing several times a year will reduce grass competition with the young trees. A spacing of 6 feet by 6 feet in the field will require 1,200 trees per acre.

Next to the field in which youth group camping is proposed are 2 very large sugar maples, 1 of which is almost perfectly formed. The layout of the camping area should be designed to prevent excessive vehicular or foot traffic which will result in soil compaction in the root zone surrounding these trees.

Recognizing and removing hazardous trees is important in a recreation area, especially near picnic sites, hiking trails, etc. Trees with dead branches, cavities, mushrooms growing on the trunk and splits or cracks on branches or stems are potential liabilities and should be examined to determine their potential for failure.

## WILDLIFE CONSIDERATIONS

### Wildlife Habitat

Wildlife habitat is the complex of vegetative and local characteristics that provide for all the requirements of wildlife, including food, shelter, resting, nesting and escape, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife there is using an area.

Because there is some variety of habitats and some mixing of these habitat types, the site offers good wildlife habitat. A variety of wildlife is expected to utilize the site to serve all their needs, while many other species find it a place to meet some requirements. These species include deer, ruffed grouse, weasel, raccoon, coyote, various hawks, owls, catbirds, sparrows, juncos, chickadees and a variety of reptiles and amphibians.

A detailed description of the site's vegetation/wildlife habitat is found in the report entitled Natural Resource Inventory of the Hoyden's Hill and Hoyden's Hill South/Grace Richardson Open Space Properties, produced on October 27, 1989 by The Land Group of Monroe, CT.

### Description of Area/Habitats

The 87-acre site is composed of a variety of cover or habitat types. The site includes mature second growth hardwood forest, sapling size forest areas, old field and open field. There are 2 small ponds on the property and several streams.

Forest: Mature second growth forest comprises a major portion of the site. Tree species include tulip poplar, yellow and black birch, white ash, cherry and red oak. Understory species include various dogwoods and spicebush.

Forest land provides food, cover, shelter, roosting and nesting areas for many wildlife species. A variety of age classes of forest land is generally best for wildlife,

unless managing for a particular species. Any forestry cutting should be carried out not only to improve the forest stand, but also to improve forest type wildlife habitat. In most cases, proper forestry management can improve wildlife habitat. Small patch clearcuts to regenerate mature forest growth could be undertaken to provide for future forest habitat needs. Also, selective cutting could be undertaken in areas where the forester considers appropriate (based on tree species, etc.). This will encourage structural diversity in the vegetation. Greater vegetative structural diversity is often linked to greater songbird diversity.

The snag trees (dead trees) on the site are a source of insects which serve as food for many species, including woodpeckers and chickadees. Den trees (trees with cavities) can serve as a nesting or denning place for animals such as squirrels and raccoons.

The tulip popular or tulip trees, which are widespread throughout the forested area, are moderately significant to wildlife. The seeds (winged samaras) occur in cone-like clusters that ripen in the fall. They are eaten by the squirrel and several species of birds such as the purple finch and cardinal. Some of the tulip tree seeds persist in the cones through the winter and are especially valuable for this reason. Whitefooted mice also make use of the seeds.

Birch trees provide catkins and seeds which are used by ruffed grouse, chickadees, pine siskins and tree sparrows. Deer browse on the twigs.

The winged seeds (samaras) of the white ash are eaten by a number of birds and mammals. Rodents and sometimes wild turkeys shuck off the wing and eat the seed inside.

Recommendation:

Where appropriate, create small patch cuts (1/2 to 1 acres) to encourage a diversity of tree age classes and to provide for sustained forest type habitat of varying ages. Selective cutting could be used over part of the forest to encourage diversity in the vegetative structure of the forest.

Old Field: Open and reverting old fields are important types of habitat. These areas provide a diversity of vegetation from grass and herbaceous plants to shrubs and saplings. Both open and old field habitat types are often lacking or diminished in supply, partly because they are usually the first habitat types to be developed.

Old field areas contain cedar, dogwood, multiflora rose, blueberry and other shrubs and trees, along with a variety of forbs and herbaceous growth. Old fields provide habitat for a variety of small mammals, making attractive hunting grounds for species such as fox, coyote and birds of prey.

Cedar trees provide cover, and their fruit is a source of food for wildlife. Mammals such as the fox and opossum make use of the fruits. Many species of birds utilize the fruits, including the bluebird, catbird, purple finch, mockingbird and cedar waxwing. Cedar is readily browsed by deer and rabbits. The cedar stand on the ridge above the field should be encouraged because it provides valuable cover to a variety of wildlife. Chipping sparrows, robins, song sparrows and mockingbirds prefer these trees as nesting sites. Juncos and various sparrows use the dense foliage as roosting cover.

Recommendations:

- 1) Old field habitat should be maintained where and whenever possible because of its diversity and value to wildlife and because this habitat type continues to decline throughout the State. This should be accomplished through periodic mowing (every 2 to 4 years). Encroaching trees along the edges of the fields should be cut as necessary.
- 2) Return some of the grown up seedling/sapling-sized stand areas adjacent to the old field to early successional stage vegetation by cutting. Stumps can be treated with an herbicide to discourage sprouting, and the area can be mowed periodically to encourage herbaceous vegetation. This will add diversity to the site and provide nesting and feeding places for birds.
- 3) Old field areas, with their variety of vegetation and large amount of edge, provide good areas for viewing wildlife. An interpretive trail or bird blind could be established.



Ponds/Streams/Associated Wetlands: Because wetlands increase the habitat diversity of an area and provide a variety of food and cover to wildlife, they are important areas to consider for protection. Acre for acre, wetlands and their associated riparian zones exceed all other land types in wildlife productivity. In addition, wetlands serve other valuable functions, including water recharge, sediment filtering, flood storage, etc. For these reasons, the development of, filling in and/or crossing of wetlands should be avoided or limited whenever possible.

The 2 ponds have limited usefulness for wildlife, mainly due to their small size and limited vegetational diversity. Both ponds have been badly silted-in from runoff from the golf course. This siltation has caused the ponds to become shallow, especially in the area of the inlets. Ponds containing different water levels encourage different types of vegetation. If the ponds were uniformly deep all around, vegetational diversity will be less useful to wildlife. Vegetation in and around the pond closest to Congress Street is limited, partly due to its small size and closed canopy which prevents sunlight from reaching the vegetation around the pond. The other larger pond has a little more vegetational diversity with a few more shrubs around the perimeter and some cattails growing in the inlet. Greater vegetational diversity could be encouraged by selectively cutting around a small portion of each pond. These ponds are limited in their current and potential usefulness to wildlife because of their small size.

The ponds provide habitat for some reptiles and amphibians and perhaps temporary habitat for mammals such as mink and otter during their travels. The streams flowing into the ponds diversify the habitat of the site and provide important wildlife habitat for a variety of species, especially reptiles and amphibians. Birds may utilize the thicker cover along the stream sides in certain areas. Mammals, including raccoons, fox and opossum, tend to use streams to forage along.

### Recommendations:

- 1) The streams and the ponds should be protected from additional siltation and disturbance, if possible.
- 2) Dredging the ponds to a uniform depth will probably not improve their desirability for wildlife and may reduce what vegetational diversity is there currently.
- 3) A buffer zone of at least 100 feet of undisturbed vegetation should be maintained along the streams and around the ponds, where possible, except where selective cutting is performed to improve the structure and diversity of the vegetation.
- 4) Selectively cutting around 1/2 of the edge of the ponds might open up the edge to light and could stimulate the growth of shrubs which benefit songbirds and small mammals.

### Other Recommendations

- 1) Do not allow vehicular recreation on the site because it will disturb wildlife and wildlife habitat.
- 2) Allow camping only in a small area and on a very limited basis to reduce disturbance to wildlife and wildlife habitat.
- 3) Scattered small plantations of evergreens will increase the amount of evergreen cover on the site.
- 4) Plan to use repellants or fencing, at least when the evergreens are small, to reduce deer damage.
- 5) Stabilize all trails to prevent and reduce any degradation to wildlife habitat.

Any further development of the site for intensive recreation (i.e., expansion of the golf course) will have a negative effect on the use by wildlife. The site should be used for passive/non-vehicular recreation to conserve habitat.

## FISHERIES RESOURCES

### Site Description

The fisheries resources associated with the site are confined to an unnamed stream (impounded at 2 points). This unnamed stream is classified by the DEP as Class A surface waters. Designated uses for Class A waters are drinking, fish and wildlife habitat, recreational use, agricultural and industrial supply and other purposes. Certain discharges may be restricted.

The unnamed stream flows within an area of upland hardwood vegetation. The stream averages approximately 10 feet in width and 1 foot in depth. The stream channel is characterized by shallow riffle and plunge pool over a substrate of small boulder, cobble, gravel, coarse sand and sand/silt fines. In-stream riverine fisheries habitat throughout is composed of small boulders and depth afforded by plunge pools. The riparian vegetation provides cooling summertime shade.

The unnamed stream is dammed at 2 locations, creating impoundments less than 1/4-acre in surface area. The impoundments have been excessively silted-in over the course of several years, with accumulated sediments reportedly decreasing pond depths to less than 2 feet. Emergent vegetation is encroaching upon the shorelines. In their present condition, the ponds have little fisheries value.

### Aquatic Resources

The unnamed stream has the physical characteristics of a coldwater stream. Brook trout and blacknose dace were observed in the stream at the field review. Other anticipated species include longnose dace and tessellated darters.

The impounded sections of the unnamed stream are characteristic of warmwater ponds. Fish species associated with this type of habitat include largemouth bass, bluegill sunfish, common sunfish, red breast sunfish, chain pickerel, golden shiner, white sucker and brown bullhead. The ponds have been

severely impacted by siltation, eliminating habitat and the likelihood of a viable fishery population.

### Impacts

Because the site is to be maintained as open space, the corridor of the unnamed stream will remain unchanged. However, changes in land use practice within the immediate watershed can affect the stream. Land use changes/alterations are expected to cause these impacts:

- 1) Soil erosion and sedimentation of the watercourse through increased surface runoff from unvegetated zones is the primary cause of stream degradation. A great potential exists for increased surface runoff, considering the drainage patterns of the site.
- 2) Runoff and leaching of nutrients from fertilizers from the golf course will stimulate excessive aquatic plant growth. Introduction of lawn chemicals may result in "fish kills" and water quality degradation.
- 3) Any water quality problems and habitat degradation within the area of the Mill River due to increased sedimentation, road and stormwater drainage, lawn chemicals and fertilizers will eventually be observed in downstream areas.

### Recommendations

These measures are recommended to adequately protect the unnamed stream:

- 1) Maintain at the **minimum** a 100-foot open space buffer zone along both stream shorelines. No construction or alteration of riparian habitat shall take place within this zone. The buffer zone should be widened in areas of steeper terrain or areas otherwise deemed critical.
- 2) A comprehensive E&S control plan should be submitted and installed prior to the start of any construction and maintained through all construction phases. Mitigative measures should include, but not be limited to, detention basins, catch basins, silt fences and haybales. Surface runoff must not directly enter the unnamed stream. Once construction is initiated, officials from the Town of Fairfield should regularly police any development to ensure that all E&S controls are properly emplaced and regularly maintained.
- 3) Discharge from the municipal golf course irrigation system has severely eroded the banks of an intermittent stream, causing the deposit of

sediments within the 2 ponds. The eroded banks should be stabilized, preferably with stone rip-rap.

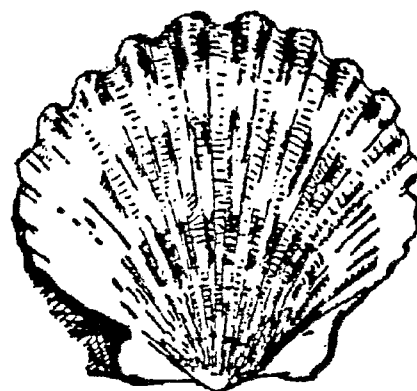
- 4) Limit liming, fertilizing and the introduction of chemicals to areas of the golf course to abate the amount of additional nutrients entering into the unnamed stream.
- 5) The unnamed stream has the capability to support a limited number of brook trout and provide an extremely limited recreational sportfishery. Since the existing trout population may be small, an artificial augmentation through stocking will be required to meet angler demand.
- 6) The impoundments of the unnamed stream could be dredged to remove accumulations of sediments. Once dredged, the impoundments have the potential to support a marginal recreational sportfishery of warmwater species such as largemouth bass or sunfish.

#### THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the Natural Diversity Data Base, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at the site.

Natural Diversity Data Base information includes all information regarding critical biologic resources available 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. Consultation 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. New information is incorporated into the Data Base as it becomes available.

# ARCHAEOLOGICAL RESOURCES



## ARCHAEOLOGICAL RESOURCES

A review of the State of Connecticut Archaeological Site Files and Maps shows 7 prehistoric Indian settlements in the immediate proximity of the site. The Congress Street Rockshelter site (No. 51-18) represents an encampment situated under the ledge of outcropping that would have serviced prehistoric Native Americans as a means of shelter from natural elements such as wind or precipitation.

Unfortunately, the rockshelter site has been vandalized by Indian artifact collectors due to its prominent appearance. However, some archaeological integrity may still remain. Recovered artifacts include quartz projectile points (probably spear points) and shards of clay ceramics, indicating that occupation occurred within the last 3,000 years. However, earlier deposits may still be intact under subsequent rock falls since that occupation. Controlled archaeological testing in the shelter may reveal encampments dating to over 8,000 years ago. Obviously, this is an important cultural resource for the Town of Fairfield. The Town should consider the creation of an archaeological preserve for the rockshelter. This can be coordinated with the Connecticut Historical Commission and the Office of State Archaeology to ensure that no further digging is conducted at the rockshelter site without approval from Town and State agencies. This will provide the Town with some control until proper archaeological testing can be accomplished.

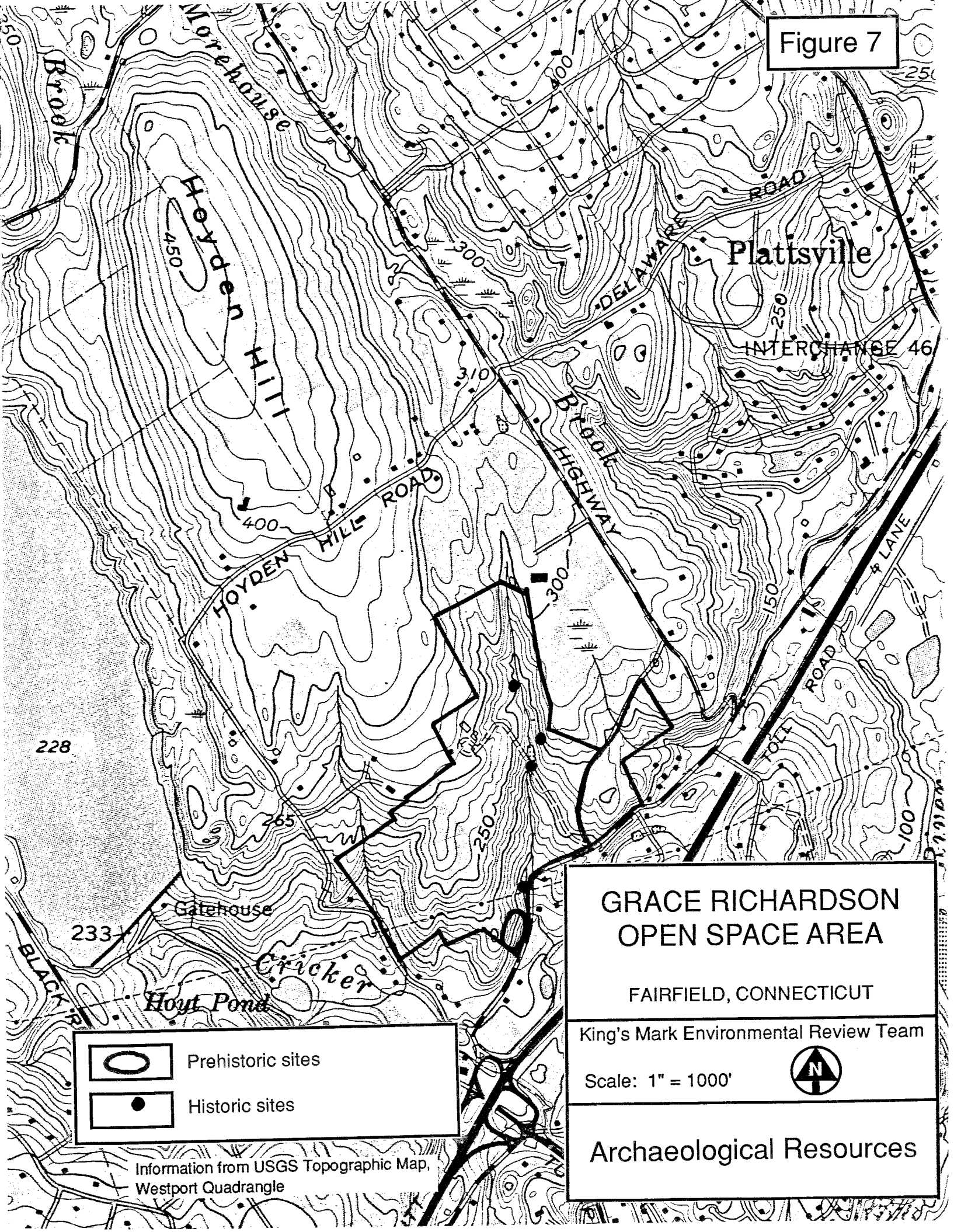
The Grace Richardson Open Space Area also contains remnants of historic mill damming along the brook system that transects the parcel (see Figure 7). In addition, 19th century stone walls are apparent throughout the property. These ruins of early industrial development in the Town should be preserved where feasible. If it is necessary to remove any of the stone structures, they should be properly recorded prior to removal. An archaeologist can photograph, map, conduct documentary research and limited field excavations to preserve the historic

information before removal of any stone work. The fireplace and cistern on the property appear to be of more recent (20th century) construction and are less significant than the 19th century stone works.

Any proposed development project undertaken by the Town on the Grace Richardson Open Space Area that requires any below ground disturbance should be reviewed by the Office of State Archaeology for potential impact on the cultural resources of the area. The Office of State Archaeology is prepared to offer the Town of Fairfield technical assistance in preserving the rich prehistoric and historic resources of the community.



Figure 7



Plattsville

INTERCHANGE 46

Hoyden Hill

HOYDEN HILL ROAD

BROOK HIGHWAY

DELAWARE ROAD

TOLL ROAD

Gatehouse

Cricker

Hoyt Pond



Prehistoric sites



Historic sites

# GRACE RICHARDSON OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



## Archaeological Resources

Information from USGS Topographic Map, Westport Quadrangle

# LAND USE AND PLANNING CONSIDERATIONS



## PLANNING CONSIDERATIONS

### History and Description

The Town of Fairfield acquired the Grace Richardson Open Space Area between 1966 and 1970 with State and Federal funds and by donation. The site is located south of the H. Smith-Richardson Golf Course. The site contained some farmland, but is basically a rugged area being maintained as a wilderness recreation area. A plan was developed for the site, including trails, ponds and boardwalks, but it was never adopted.

### Existing Plans

State Policies Plan for the Conservation and Development of Connecticut, 1987-1992: The State Plan designates the site as Existing Preserved Open Space. The immediate surrounding areas are classified as Conservation Areas, Preservation Areas and Rural Land.

The strategy for Existing Preserved Open Space is to support the permanent continuation of open space. It is the top State conservation priority. Guidelines limit State action to those actions consistent with preservation, including development only with overriding concerns, encouraging public use in conformance with long range management guidelines and maintaining Class I water company lands in State or utility ownership.

The strategy for Preservation Areas, the second State conservation priority, is to identify and protect heritage and recreational resources of Statewide significance.

The strategy for Conservation Areas, the third State conservation priority, is to manage for food, fiber and water, as well as open space, recreation and the environment.

The strategy for Rural Lands, the fourth State conservation priority, is to avoid development which exceeds the capacity for water and sewage and maintain the open rural character.

Regional Plan of Development, Greater Bridgeport Region (1968): The Regional Plan designates the site for Open Space, Recreation and Conservation, as well as for Residential Development of 1 to 2 dwelling units per acre. This plan was prepared while the site was in the process of acquisition.

The goal of the Open Space designation is maintaining natural resources and preserving them from development to provide for parks, wildlife, natural resources and scientific enjoyment. The Plan seeks to preserve unusual natural features, including rivers, streams and poor soil conditions.

Fairfield Master Plan (1980): The site appears to be designated as an Environmental Area/Stream Belt and Steep Slope by the Master Plan. It is not possible to determine whether any of the site or just its surroundings are designated for a residential density of 0 to 1 unit per acre. Plan policies include continued acquisition and development of open space, as well as development of related educational programs.

Connecticut Statewide Comprehensive Outdoor Recreation Plan (SCORP), 1987-1992: This plan focuses on planning by regions and in terms of policies. The Greater Bridgeport Region is the State's most densely populated and intensively used urban area. Municipal land ownership has the highest ratio of open space to land area. A DEP poll showed the demand for municipally provided activities (in order) were walking, preserving open space, natural swimming areas, protecting natural beauty and picnicking. The poll found the Region was below the State per capita average for athletic fields and courts.

## Demography

Supply and Demand/Land and Population: The supply and demand for land in the Town and the Region is seen from the changes in population and its pressure for recreation and open space.

The population of Fairfield, as shown below, dropped slightly from 1970 to 1988 and is projected to drop significantly by 2010. Meanwhile, the population of the 6-Town Greater Bridgeport Region also dropped slightly from 1970 to 1988, but is expected to climb a little by 2010.

Year	POPULATION Fairfield	Greater Bridgeport
1970	56,487	311,130
1980	54,849	300,897
1988	55,740	307,240
2010	46,050	309,400

Also in recent years, the acres of land devoted to recreation as shown below, has increased in Fairfield and in the Greater Bridgeport Region.

Year	RECREATION Fairfield	Greater Bridgeport
1962	1,015 Acres	2,852 Acres
1974	2,175 Acres	6,498 Acres
1988	2,842 Acres	8,000 Acres

This exceeds the standard of 2.5 acres per 1,000 people or 1 acre for 400 people suggested in a recent study by the Capitol Regional Council of Governments and 5 acres per 1,000 or 1 acre for 200 people suggested by the National Recreation and Park Association in the San Diego General Plan for 1990. Using the 1988 population and 1986 recreation area, Fairfield has approximately 20 persons per acre, and the Region has just under 40 persons per acre. The ratio has improved since then.

Fairfield also exceeds the standard, considering the Town-owned open space of 541 acres which is approximately 100 persons per acre.

The population is expected to decline, and the median age is expected to increase from 38 to 40 in 2010. Therefore, passive rather than active recreation might be appropriate.

The SCORP shows several important factors concerning regional and local recreational needs. The 1985 population densities of 3.28 per gross acre in the region and 2.83 per acre in Fairfield are above the State average of 1 per acre. This is not expected to change much by the year 2000. However, the Town owns 1,459 acres of public open space which is more than 4 times the State average for Town-owned open space. SCORP has a broader definition of open space than the Towns. Fairfield has 1,106 acres of private open space for a total of 2,566 acres. The total of 21 persons per acre of open space is slightly higher than the Regional average of 15.96 and much higher than the State average of 5.92. The SCORP also considered the ratio of athletic fields and courts to population. Fairfield has more people than the Statewide average for baseball diamonds, softball diamonds, football fields, soccer fields, tennis courts and basketball courts. The Region also is below Statewide averages for all uses.

Compatibility: There are several areas in Fairfield and the Greater Bridgeport Region which provide the opportunity for picnicking, hiking and limited camping. In Fairfield, the Brett Woods Open Space Area offers a campsite, trails and a potential for fishing. Perry Mills Pond and Springer Glen offer trail potential. The Town reportedly has more than 21,000 feet of trails. The Connecticut Audubon Center also has some trails. Similar resources are available at Roosevelt Forest in Stratford, Robert G. Beach Memorial Park in Trumbull and Webb Mountain Park in Monroe.

### Surrounding Land Use

The area in Fairfield is zoned for 2-acre single-family development. Across Morehouse Highway in Easton, the area is zoned for 1-acre single-family development. However, not all of the land is developed. West of the site is Class I land owned by the BHC. This land is required for water purity and cannot be sold. There are residential pockets along this border. To the east and west of the site, most land is vacant. There are houses to the south. There is limited development pressure on the eastern side.

### Transportation

- 1) **Roads** - Access to the site is provided only by road. The site can be reached from Merritt Parkway exits 44, 45 and 46, as well as from Black Rock Turnpike. Local access is from Congress Street, Hoydens Lane, North Street, Morehouse Highway and Hoyden Hill Road. The immediate local streets are narrow and have no significant volume of traffic.
- 2) **Parking** - The principal access to the site is along the Morehouse Highway cutoff near Congress Street where an old road leads into the property. At present, approximately 4 to 5 cars can park there. There appears to be limited space for the expansion of the parking area to at least 10 cars as indicated by the Town. This should be the maximum number of parking spaces, considering the desire to maintain the site as wilderness. The old farm entrance should be securely barred to keep out all but emergency vehicles.
- 3) **Access to the Site** - Horseback riders have entered from across Morehouse Highway in Easton. Pedestrians may walk in from the houses on Congress Street. To preserve the site, access points should be limited to 1 or 2, and no vehicle should be allowed on the site, except for emergencies.

## RECREATION ISSUES

### Scenic and Visual Characteristics

The site has a variety of scenic and visual assets. There are 2 ravines in the southwestern portion. The east ravine has a perennial stream, and the west ravine has a seasonal stream. Each ravine has some steeper walls and some flatter slopes.

The ravine channels run from northeast to southwest. There are rock outcrops and a variety of plants along the ravines. Near the east ravine are 2 ponds connected by a stream. Also, east of the east ravine is a chimney structure which may have been part of a house. The site slopes from 350 feet in the northwest corner to 110 feet in the southwest corner. To the northeast of the ravines are 11 acres of rolling fields where a farmhouse stood 20 years ago.

### Hiking/Nature Trail

There appear to be good opportunities to enhance existing trails on the site. All trails should be defined and marked clearly. One trail should follow the path of the existing former road to the old farm house site. Another should follow the ravines as much as possible to take advantage of the natural beauty, including plants, wildlife and bedrock outcrop. A third should wind through the wildlife and conservation areas up to the potential campsite on the flat area where the farm house stood. This trail could go past the ponds and near some of the ruins of old houses and old stone fences which reveal old farms. It should allow access to the stream for limited fishing.

More wood benches would accommodate bird watchers and others near the streams, ponds and other strategic points.

Trail markings could be improved. Over the years, scouts have defined trails with different colored paints. These markings should be obliterated, if possible, and replaced with a single marking system.

The trails should respect the natural areas. On slopes, for example, they should be switched back or run parallel to the ridge. There should be bridges across wetlands.

The trails should be marked at strategic points of interest, including wildlife, plants, ruins, etc. There should be a pamphlet with a map locating these points and explaining each particular interest. These pamphlets can be circulated to the



schools to promote outdoor nature study and/or be available to the general public. The flat area at the north end of the ravine is a good site for picnics. Ponds and benches could be sites for smaller gatherings. To minimize impacts, permits should be required for groups, and groups should be limited in size.

The Fairfield Master Plan suggested a trail along the power lines to connect Town Parks. The path along the power line which runs through the southern portion of the site should be studied for this purpose. Vehicles should be excluded to protect the site.

### Camping

There is a potential campsite near the site of an old farm house. It is a large, flat area which is quite suitable for camping. To reduce impacts, fire sites should be moved around periodically. Also, depending on the soil, pit privies may be practical. Water probably should be carried in because the purity of well water is uncertain. Piping water from the golf course is possible, but expensive. Permits should be required to limit the number of campers. The Brett Woods Open Space Area has more potential as a rugged camping area.

### Ponds and Streams

The ponds and streams have some recreational potential. The amount of use depends on capacity for fishing. Presently, ponds are used for skating in winter. If silt can be removed and kept out, the ponds can be used for fishing in the warmer months. The year-round flow of both streams offers great potential for fishing. However, at present, the streams offer limited fishing opportunities.

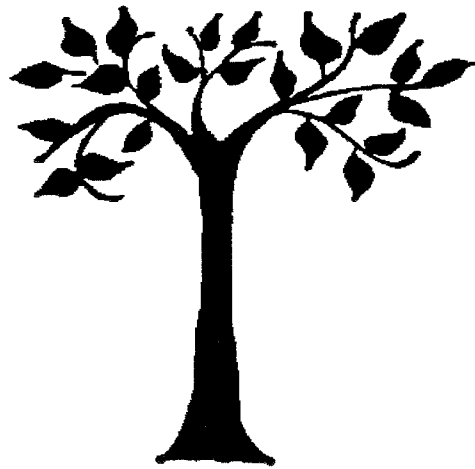
### Educational Use

The diversity of the site provides great educational opportunities. Youth or community groups could adopt a trail or tree farm and work to maintain or develop it. The opportunity exists for supervised work on the archaeological site on the

southwest corner of the site where groups could learn about an earlier civilization which lived in Fairfield.

A nature center was proposed for the site. This might be discouraged because the Audubon Society has a center on Burr Street and because Town officials have expressed an interest in limiting use to preserve the site's natural resources.

**HOYDEN HILL  
OPEN SPACE AREA**



## LOCATION, LAND USE AND ZONING

The Hoyden Hill Open Space Area includes approximately 57 acres and is located on the crest of Hoyden Hill in northeast Fairfield close to the Easton border. Hoyden Hill, which is a cigar-shaped hill, is classified as a drumlin (see Geology section). Site boundaries include Hoydens Lane on the south, wooded, undeveloped land on the east, Beers Road on the north and residential and private, undeveloped land on the west.

The site contains 5 open fields that total approximately 16.5 acres. One field is currently used for a golf driving range. From time to time, a northern field is used for an outdoor shooting range by the local police department. A local farmer uses the remaining fields for growing vegetable crops.

The site and vicinity, which is north of the Merritt Parkway, is characterized by low density residential land uses. It is located in an AAA zone. Permitted uses of the land include low density residential, with minimum lot size of 80,000 square feet or approximately 2 acres. A municipal golf course (H. Smith-Richardson Golf Course) is located south of the site. The golf course manager resides in a house located on the site. Hemlock Reservoir, a 437-acre public water supply reservoir owned and operated by the BHC, is located west of the site. Approximately 1/2 the site (western parts) drains to the public water supply reservoir.

## TOPOGRAPHY

The site encompasses the tableland of Hoyden Hill. Most of the site is characterized by flat to gentle slopes. Moderate slopes occur in the northwest corner. Maximum and minimum elevations on the site are 450 feet above mean sea level and

370 feet above mean sea level, respectively (see Figure 8). The top of Hoyden Hill is one of the highest points in Fairfield.

## GEOLOGY

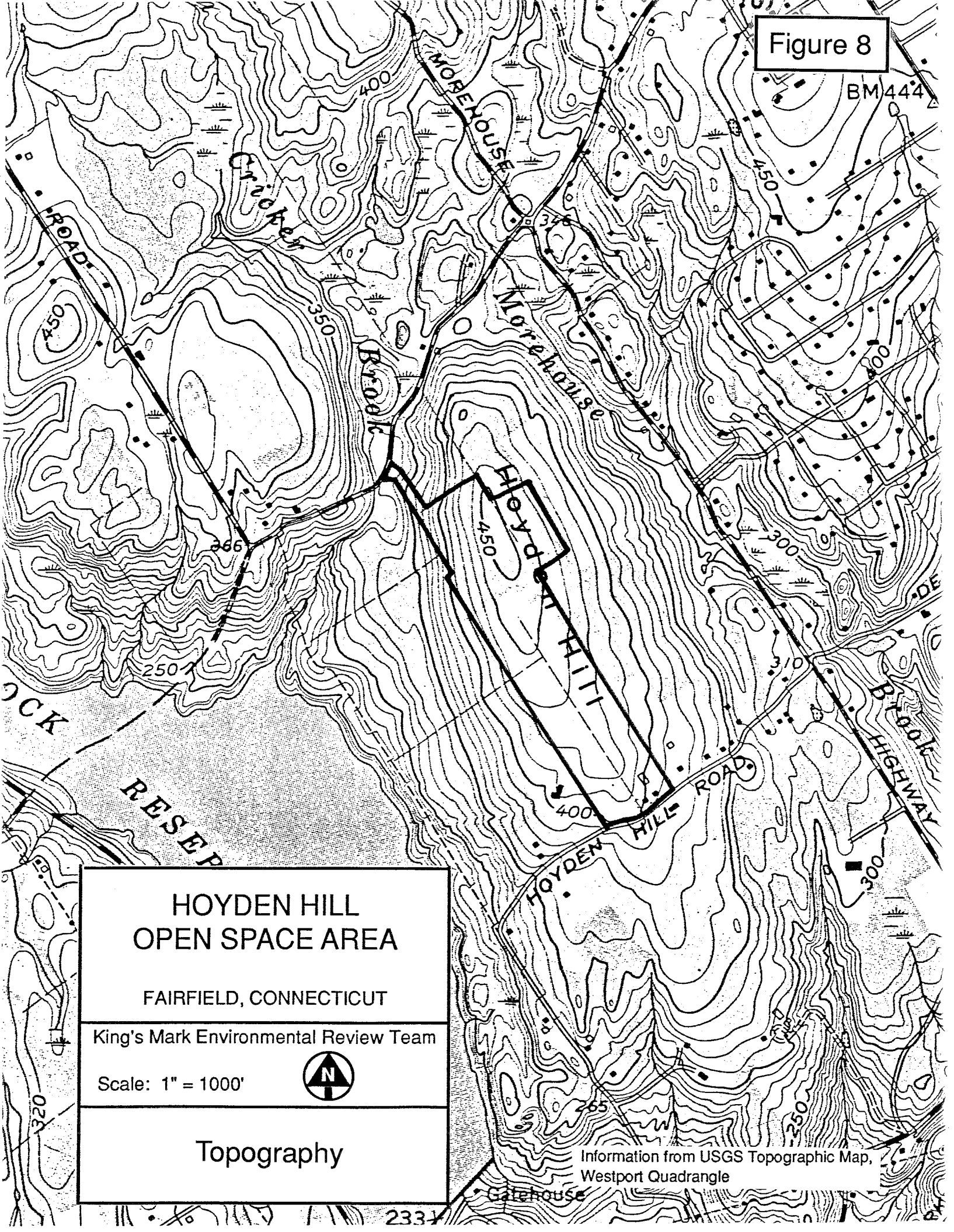
The surficial geology of the site is shown in the Geological Survey publication MF-1295, Surficial Geology of the Westport and Sherwood Point Quadrangles (Janet Stone and H. London, 1981). No bedrock geologic map has been published to date for the quadrangle. The Bedrock Geological Map of Connecticut (John Rodgers, 1985) was also referenced.

During the field review, bedrock was observed at the ground surface in a few places at the southeast corner of the field with the driving range. Rodgers describes the rock core of Hoyden Hill as Straits Schist (see Figure 9). It is described as a silvery to gray, coarse-grained schist. The principal mineral constituents in the rock include garnet, biotite, plagioclase, muscovite and quartz. Schists are characterized by the predominance and parallel orientation of mica minerals (biotite and muscovite). This structure gives the rock a slabby appearance and often allows the rock to be easily split along the layers. No economic concentrations of minerals are believed to be present in this type bedrock. For homes located outside of the BHC service area, the underlying bedrock probably serves as the principal water supply source for domestic purposes (drilled wells).

Depth to bedrock on the site ranges from zero where it is exposed in the driving range field, to 10-15 feet in most other places.

Hoyden Hill is a drumlin. Drumlins are hills composed of a glacial sediment called till which was deposited directly from an ice sheet and which was simultaneously or subsequently overridden and streamlined by the ice (see Figure 10). Till consists of varying proportions of sand, silt, gravel, clay and boulders.

Figure 8



**HOYDEN HILL  
OPEN SPACE AREA**

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



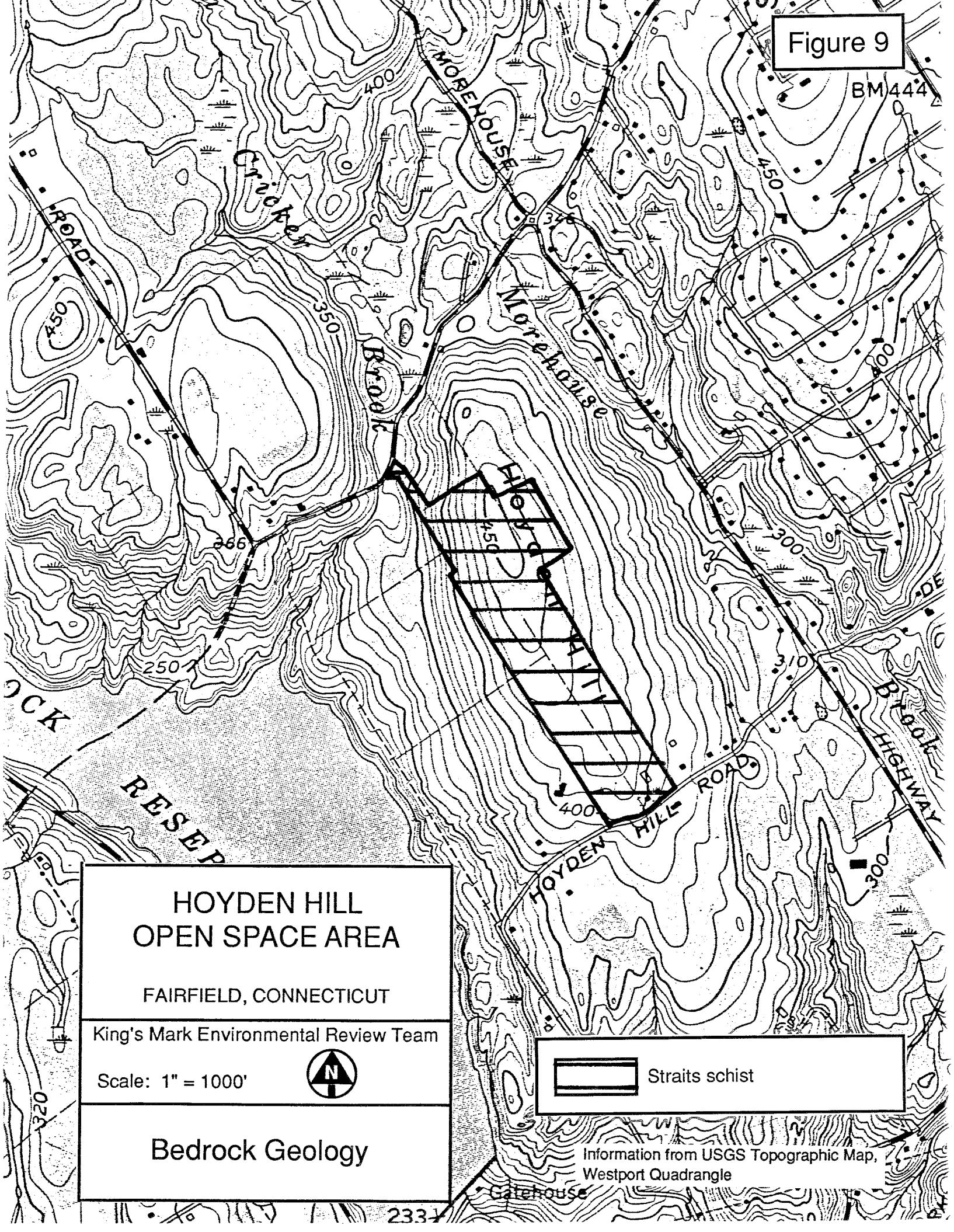
Topography

Information from USGS Topographic Map,  
Westport Quadrangle

Catchhouse

2334

Figure 9



**HOYDEN HILL  
OPEN SPACE AREA**

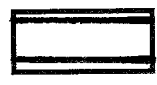
FAIRFIELD, CONNECTICUT

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Scale: 1" = 1000'



**Bedrock Geology**



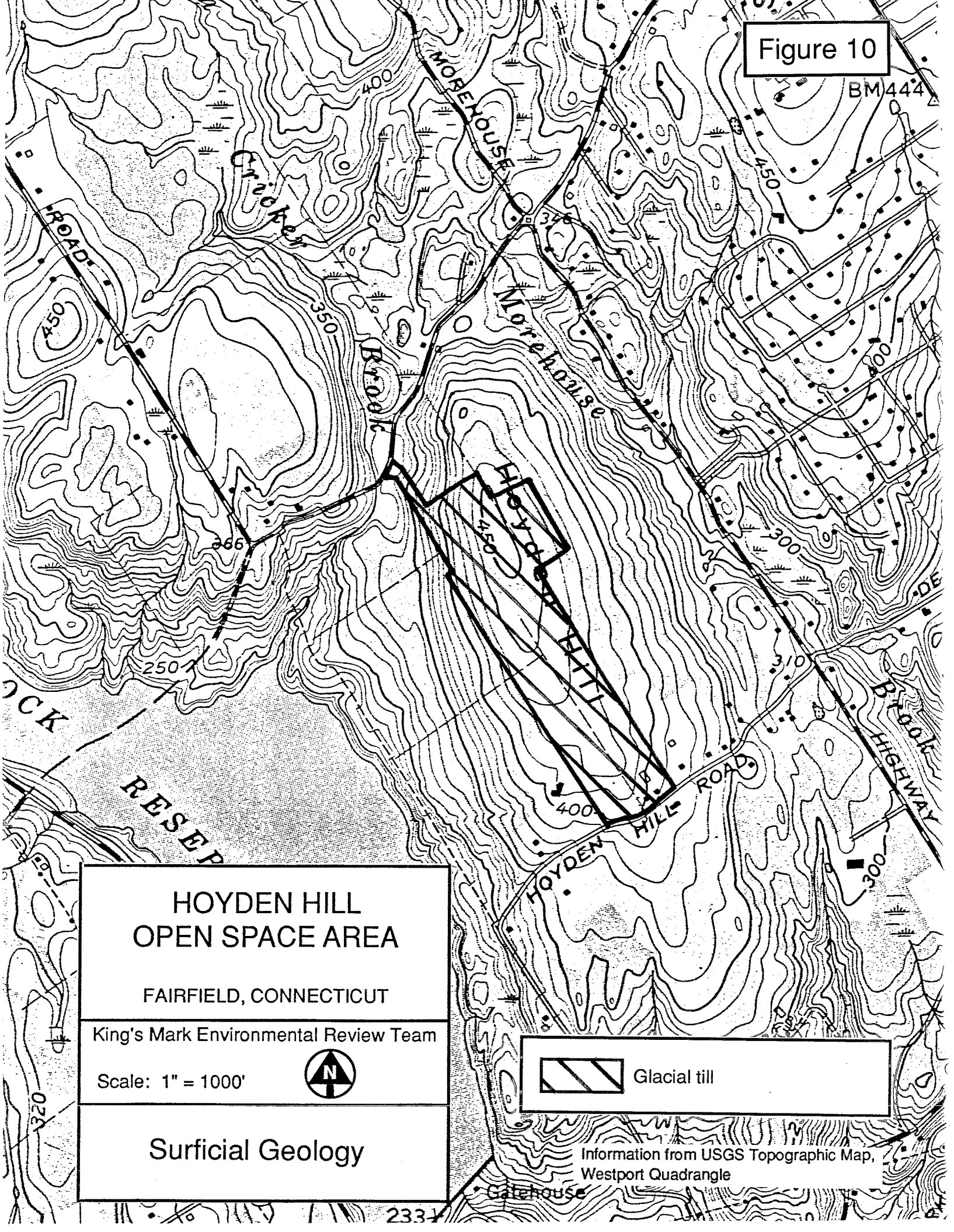
Straits schist

Information from USGS Topographic Map,  
Westport Quadrangle

Gatehouse

2331

Figure 10




**HOYDEN HILL  
OPEN SPACE AREA**

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



 Glacial till

**Surficial Geology**

Information from USGS Topographic Map,  
Westport Quadrangle



Figure 10 Surficial Geology

Particles of different sizes are generally mixed together in a complex fashion. Drumlins are most commonly shaped like the bowl of an inverted spoon but may also be cigar-shaped. The long axis of the hill is oriented in the direction of ice movement. Hoyden Hill indicates a movement of ice to the south-southeast. Other notable drumlins in the area, including Catamount Hill, Merwins Hill, Powells Hill, Campfield Hill, etc., are consistent with this direction.

According to the Soil Survey of Fairfield County, Connecticut, the majority of the till on the site consists predominantly of fine sand. Typically, a very firm soil layer is encountered in these soils at approximately 2 feet in depth. This slowly permeable zone (hardpan) impedes the downward movement of groundwater, which results in a seasonally high groundwater table condition. During periods of precipitation, the more permeable soil zone above the hardpan becomes saturated with water causing a high groundwater table condition. The till soil at the northern limits generally lacks the hardpan soil zone. However, the bedrock surface may be at or near the ground surface in this area.

The exact thickness of the till sediments on the site are unknown. Except for the area of bedrock exposures in the central parts and areas of shallow to bedrock soils at the northern limits of the site, the till is generally greater than 10-15 feet thick.

## WATER RESOURCES

No major streamcourses were visible on the parcel during the field review. The site drainage can be divided into 4 principal areas (see Figure 11). Most of the eastern part drains in an easterly direction via surface drainageways to Morehouse Brook, which is tributary to Mill River. A small section drains to the unnamed stream running through the Grace Richardson Open Space Area. The northern limits of the site drain in a westerly direction to East Branch Cricker Brook. East


Branch Cricker Brook discharges to Hemlock Reservoir, a public water supply reservoir. The remainder of the western part drains downslope to surface drainageways that route the water directly to Hemlock Reservoir. Hemlock Reservoir, which has an estimated safe yield of 29.8 million gallons per day is a major water resource in the region. Assuming a per capita water usage rate of 75 gallons per day, the supply is capable of providing approximately 400,000 persons with potable water.


The general groundwater flow patterns on the site parallel the surface flow pattern to a large degree. The flow patterns of the various local watercourses are controlled by bedrock structure and drumlins in the area. The shape of the watertable (that level below which all spaces in the soil and bedrock are filled with water) is largely conformable with the surface topography, although minor surface features may not be reflected in the watertable. Rainfall reaching the ground may pass overland as surface runoff, or it may be absorbed into the ground. If absorbed, the water may either be returned to the atmosphere through evaporation or transpiration, or it may trickle down to the watertable and become groundwater. Ultimately, groundwater and surface water may be discharged at the surface in the form of a spring, seep, wetland or stream.


Public water supply mains are available in the area by the BHC. However, if there is a need for an on-site water supply, the bedrock aquifer appears to be the best source of water. The metamorphic bedrock underlying the site should be capable of providing small (probably less than 5 gallons per minute) yields to wells. If the development of a small water supply well for active/passive recreational uses is desired, the underlying bedrock should be adequate.


Because of a slowly permeable substratum and because the watertable fluctuates in the till drastically from season to season, the upland till covering the site is


Figure 11

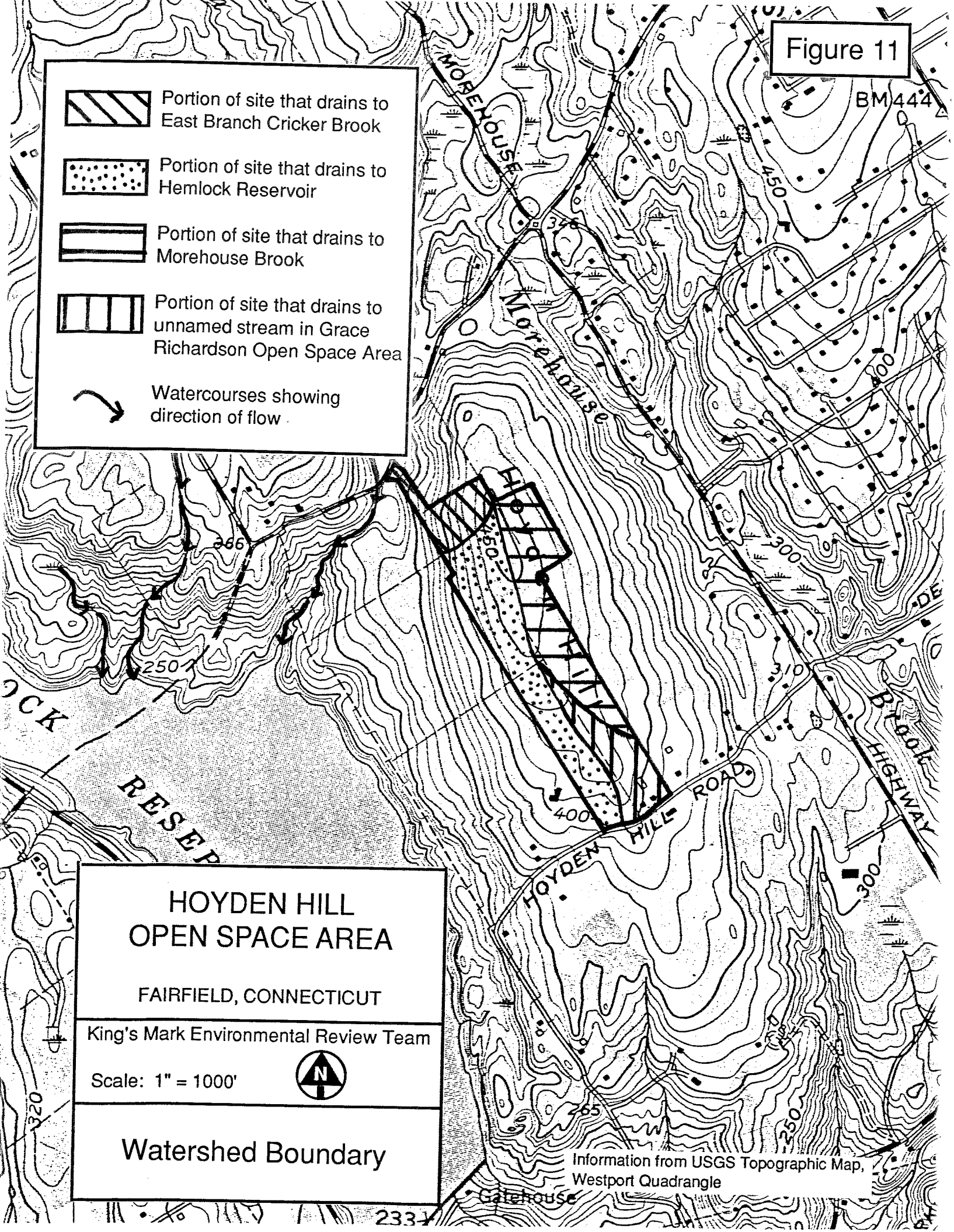
 Portion of site that drains to East Branch Cricker Brook

 Portion of site that drains to Hemlock Reservoir

 Portion of site that drains to Morehouse Brook

 Portion of site that drains to unnamed stream in Grace Richardson Open Space Area

 Watercourses showing direction of flow



# HOYDEN HILL OPEN SPACE AREA

FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



## Watershed Boundary

Information from USGS Topographic Map,  
Westport Quadrangle

Galehouse

generally not a dependable aquifer. During a dry season or summer months, the watertable may be below the till soils.

The western 1/2 of the site drains to Hemlock Reservoir. The Water Quality Classification Map of Connecticut (Murphy, 1987) classifies groundwater for this part of the parcel as GAA. This means that groundwater is presumed suitable for direct human consumption. The State's goal is to maintain that condition by banning almost all discharges to groundwater. The remaining parts of the parcel (eastern 1/2) are classified as GA by the DEP. This means that it is suitable for private drinking water supplies without treatment.

#### RECREATION POTENTIAL FROM A GEOLOGIC PERSPECTIVE

The geology of the site should not pose a major problem with respect to active and/or passive recreational development uses. However, the moderate slopes in the northwest corner will limit the usefulness of this area for certain active recreational uses such as playing fields. On the other hand, the diverse terrain allows for the development of a more challenging or rigorous hiking trail segment, if desired.

The seasonal high watertable that characterizes the soils on most of the site (open field areas) may be an obstacle with respect to the development of playing fields. Unless drainage is installed to intercept groundwater, wetness may limit their usefulness during certain times of the year. Surface and subsurface drainage will probably be needed. This type of drainage work, as well as the possibility for blasting ledgerrock in the central parts of the site, will probably raise the site development costs for the construction of playing fields.

Existing or other potential uses of the parcel include environmental education, cross country skiing, bird-watching and picnicking. The geology of the site should pose no problems with these potential active and passive recreational uses.

Public water supply mains are available to the site by the BHC. If the need for drinking water arises, public water should be extended to serve the site. The bedrock underlying the site may be a source of water for low-yielding wells. Typically, they are capable of yielding small (2-5 gallons per minute) but adequate yields to wells.

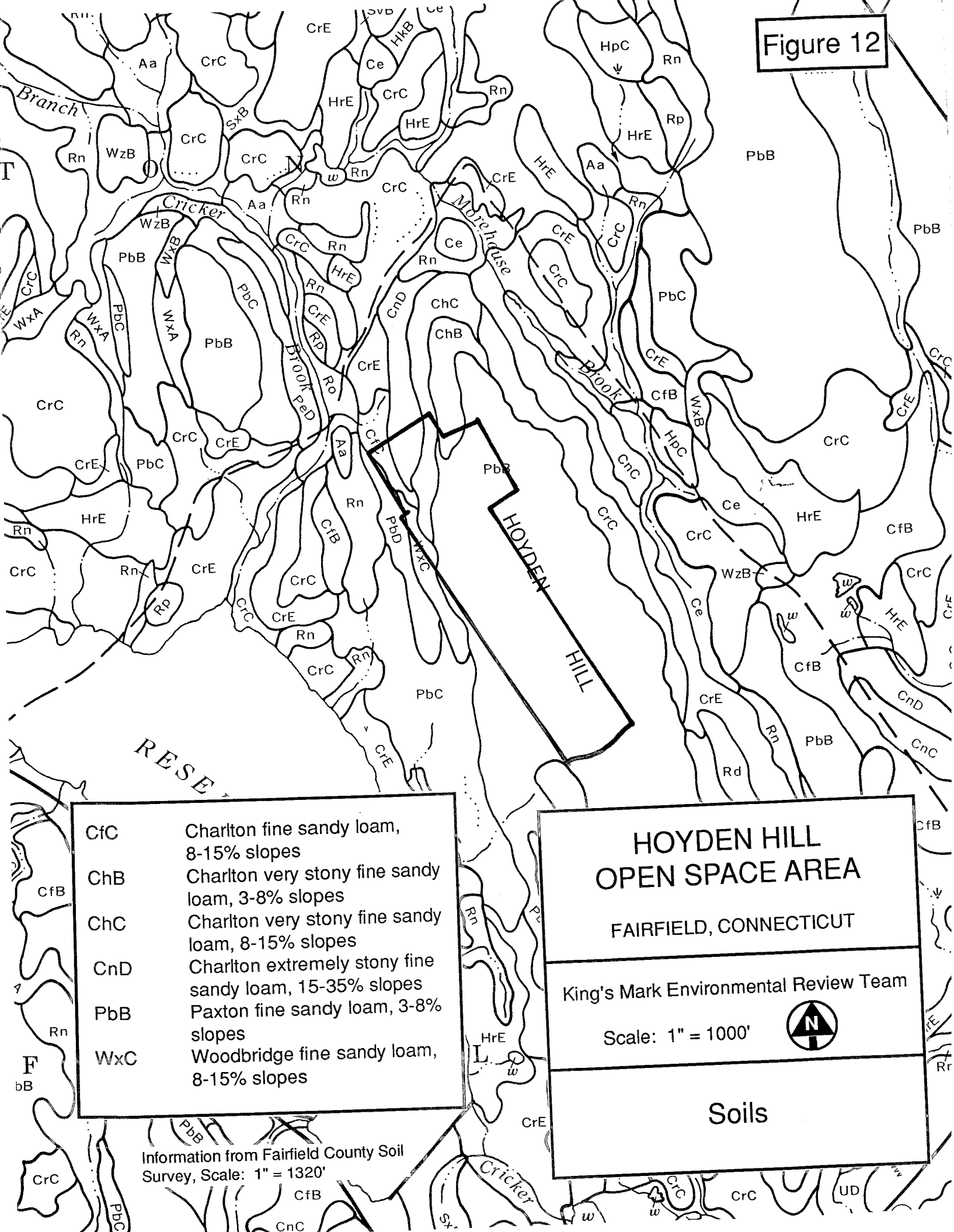
If sanitary facilities (toilets and showers) are needed, a small- to medium-sized septic system could probably be constructed on the site. Sanitary sewers are not available to the site. Detailed soil testing is required to determine subsurface conditions. The major limitations are a seasonally high watertable condition and slow percolation. Due to these limitations, it is likely that the septic system will need to be engineered. Soil testing should be coordinated with the local health department.

### SOIL RESOURCES

The 57-acre site is mostly composed (75%) of Paxton fine sandy loam soil with 3-8% slopes (PbB) (see Figure 12). The drainage class is well-drained with, typically, a surface layer of fine sandy loam 9 inches thick. The subsoil is gravelly fine sandy loam 22 inches in depth. This soil exhibits a very firm substratum of gravelly sandy loam up to 60 inches or more. The permeability of the soil is moderate in the surface layer and subsoil and slow or very slow in the substratum.

There is a perched watertable over the substratum from February to April. PbB soils are considered Prime Farmland soils in the State of Connecticut. Prime Farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed grain, forage, fiber and oilseed crops, and is also available for these uses. The land could be cropland, pastureland, rangeland, forestland or other land, but not urban built-up land or water. Prime farmland has the soil quality, growing season and moisture supply needed to economically produce

Figure 12




CfC	Charlton fine sandy loam, 8-15% slopes
ChB	Charlton very stony fine sandy loam, 3-8% slopes
ChC	Charlton very stony fine sandy loam, 8-15% slopes
CnD	Charlton extremely stony fine sandy loam, 15-35% slopes
PbB	Paxton fine sandy loam, 3-8% slopes
WxC	Woodbridge fine sandy loam, 8-15% slopes

**HOYDEN HILL  
OPEN SPACE AREA**

FAIRFIELD, CONNECTICUT

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King's Mark Environmental Review Team

Scale: 1" = 1000' 

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**Soils**

Information from Fairfield County Soil Survey, Scale: 1" = 1320'

sustained high yields of crops when treated and managed according to traditional farming methods.

As mapped by the Soil Survey for Fairfield County, Connecticut, other soils on this parcel, located in the northerly forested limits include Charlton very fine sandy loam, 8-15% slopes (ChC), Charlton extremely stony fine sandy loam, 15-35% slopes (CfC) and Woodbridge fine sandy loam, 8-15% slopes (WxC).

The Charlton soils are well-drained with moderate to moderately rapid permeability. The Woodbridge soils have a seasonal high watertable at a depth of approximately 20 inches from late fall until spring over a dense substratum. The permeability is moderate or moderately rapid in the surface layer and subsoil and slow to very slow in the substratum.

All soils described are upland soils, formed in glacial tills.

### EROSION AND SEDIMENT CONTROL

E&S control needs are slight under existing conditions and are unlikely to change in the near future.

The woodland area is stable and no concerns were expressed during the field review. The farmed areas (3 well defined cropland fields) had commendable erosion control measures installed with the practice of cross-slope farming and the application of cover crop over winter. The other areas, including the golf course driving range and the open areas, have adequate vegetative cover to prevent soil erosion.

The accessway to this parcel from North Street has a continuing erosion problem, evidenced by ruts, presumably caused by intermittent vehicular traffic. This can be remedied by installing narrow based, shallow water breaks at selected critical points, filling the ruts, applying the recommended seed and mulching to



protect the seeding. An example of water break construction is found in Appendix A. Seed and mulch recommendations are found in the Connecticut Guidelines for Soil Erosion and Sediment Control.

Any proposed woodland management practices or trail construction plans should incorporate E&S controls.

### AGRICULTURAL PRODUCTION AND RECREATIONAL/EDUCATIONAL USES

Maintaining agricultural productivity should be a high priority, considering the loss of farmland to development in Fairfield County. The existing cropland fields, Prime Farmland soils now rented to an Easton farmer, should remain in agricultural production.

While it is probable that the current farmer may discontinue his arrangement with the Town of Fairfield, there remains the likelihood that other agricultural enterprises can profit from the use of the land. The existing barn constitutes an added incentive.

A report issued in 1971 entitled The Pine Creek and Mill River Watersheds, issued by the School of Forestry, Yale University, suggests that the remaining cultivated land has an educational value to urban and suburban school children to demonstrate the relationship between agricultural production and the final market product. This recommendation could be pursued within the Town of Fairfield's school system. Considering the current interest expressed by teachers in Fairfield County in the Soil and Water Conservation District's Conservation Teacher of the Year Award, an effort in this direction is warranted. This approach can be integrated with a demonstration of wildlife protection, conservation measures and woodland management techniques.

Presently, recreational use on the site is limited to hiking on the existing accessway and cart paths. The potential exists for a trail to be constructed through the northern forested area as originally outlined in the 1971 study. This could also serve as an educational trail. Proper planning is required to keep the trail on the contour as much as possible and to provide for E&S control. More detailed planning assistance can be provided by the SCS.

# BIOLOGICAL RESOURCES



## FOREST RESOURCES

The recommendations by The Land Group report of 1989 and the Westover and Beals report of 1971 regarding releasing of the fir plantation west of the driving range are sound. The overtopping hardwoods (mostly White ash) tend to have many forks and will not produce quality sawtimber, but they are the ideal size for firewood. There are very few evergreens elsewhere on the property, so it is desirable to favor these conifers. These trees are Douglas firs, not Balsam firs as stated in the Westover and Beals report.

An inventory of the 22-acre forested piece north of the fields revealed that there are basically 2 stands (see Figure 13).

### Stand 1

Stand 1 contains 6 acres of sawtimber-sized tulip poplar with black birch poles in the understory and a heavy growth of greenbriar and barberry on the ground. The tulip poplars are in good condition, but are too closely together for optimum growth. A thinning would be beneficial, but the small acreage does not make it commercially feasible. The Town should examine the forest management plan for the adjacent property owned by the BHC. It may be possible to combine a scheduled forestry activity on the BHC property with the Town's land. The black birch are heavily infected with a common, naturally-occurring fungus called Nectria canker, causing stem tissue to die and creating pockets of decayed wood along the trunk. These pockets greatly reduce the value of the wood for lumber (although they are still suitable for firewood) and are points of weakness. Sometimes an infected tree will snap off at these points and become a hazard if it is over a hiking trail or other recreational site. This is a good place to start a firewood cutting program for Fairfield residents because the terrain is fairly level and a woods road already exists.

## Stand 2

Stand 2 contains 16 acres of poletimber red maple and black birch with greenbriar in the understory. Most of this stand is stocked with very low quality trees. Most of the birches are cankered, and the red maples are generally heavily forked. However, there is a great deal of tulip poplar seeds on the ground. If 1-acre patch cuts were made to allow more sunlight to reach the forest floor, there should be enough germination of these seeds to produce a vigorous growth of tulip poplar saplings, making the forest more productive. While tulip poplar is not the most valuable tree for wildlife, it is very resistant to defoliation by gypsy moths. The level terrain and the proximity to an access road make cordwood cutting a possibility.

## WILDLIFE CONSIDERATIONS

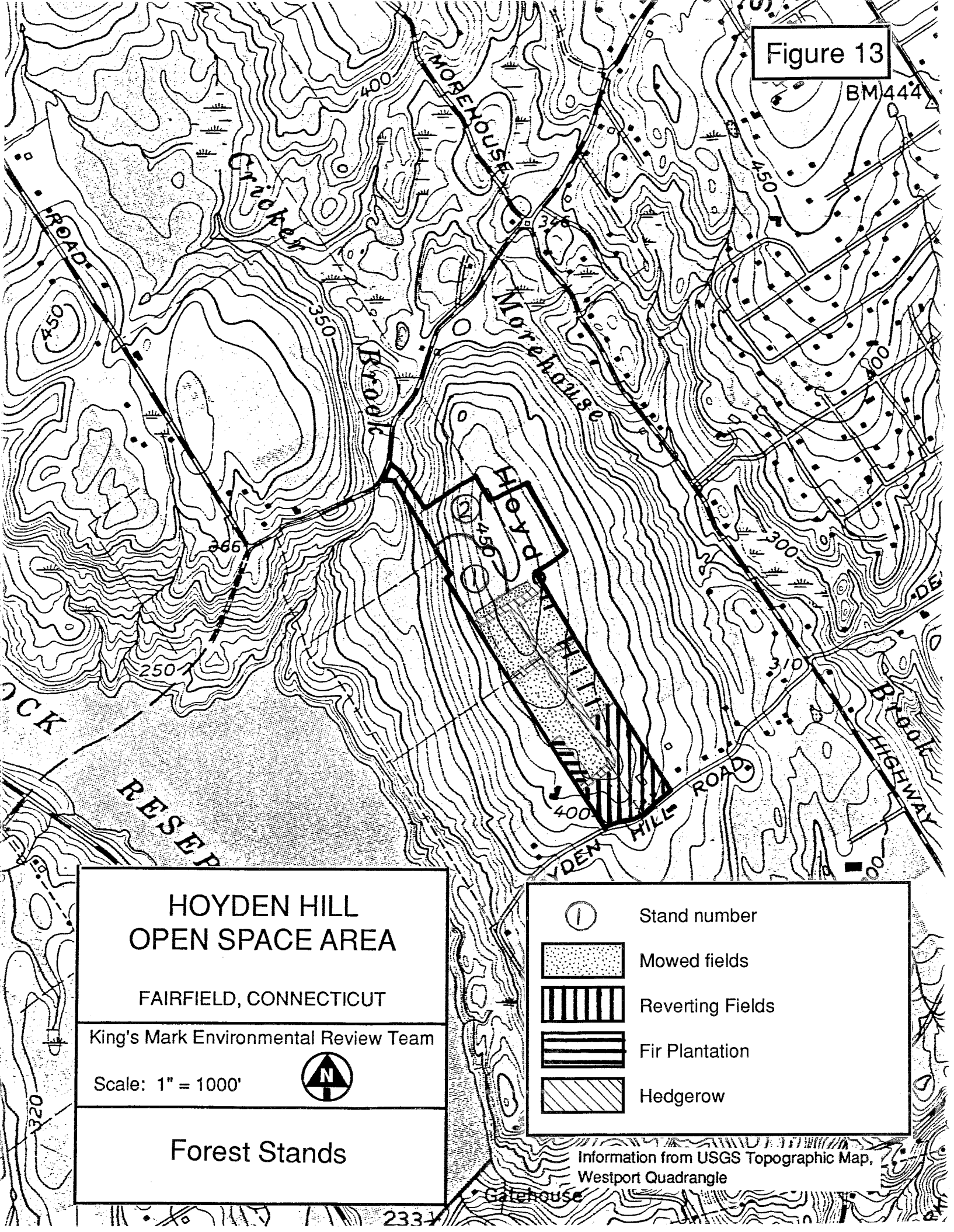
### Wildlife Habitat

Wildlife habitat is the complex of vegetative and local characteristics that provide for all the requirements of wildlife, including food, shelter, resting, nesting and escape, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife there is using an area. Because there is some variety of habitats and some mixing of these habitat types, the site offer good wildlife habitat.

A variety of wildlife are expected to utilize the site to serve all their needs, while many other species find it a place to meet some requirements. These species include deer, ruffed grouse, weasel, raccoon, coyote, various hawks, owls, catbirds, sparrows, juncos, chickadees and a variety of reptiles and amphibians.

A detailed description of the vegetation/wildlife habitat of the site is found in the report entitled Natural Resource Inventory of the Hoyden's Hill and Hoyden's Hill

Figure 13



# HOYDEN HILL OPEN SPACE AREA


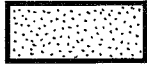

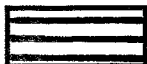
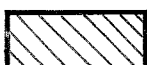
FAIRFIELD, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



## Forest Stands

-  Stand number
-  Mowed fields
-  Reverting Fields
-  Fir Plantation
-  Hedgerow

Information from USGS Topographic Map,  
Westport Quadrangle

Catchhouse

South/Grace Richardson Open Space Properties, produced on October 27, 1989 by The Land Group of Monroe, CT.

Description of Area/Habitats

The 57-acre site contains forestland, agricultural land that is currently being farmed and a very overgrown apple orchard.

The forestland contained on the site is much the same as that found on the Grace Richardson Open Space Area. The understory/groundcover is very thick with greenbriar and honeysuckle. It is especially thick in areas where the trees are younger (areas of black birch) and areas where the understory has not been shaded for long. The value of this forestland to wildlife is much the same as that discussed for the Grace Richardson Open Space Area.

Approximately 20 acres are open agricultural land, separated by stonewalls and trees that support a tangle of vines. These hedgerows are attractive to birds. Because little agricultural land exists in the immediate area and continues to dwindle, and because this type of habitat is important to a variety of wildlife, priority should be given to maintaining this land as open land. Grass/hay field habitat, if managed correctly, is very important to field nesting species such as the bobolink, the field sparrow and other birds that feed extensively on grass and forb seeds. These fields have the potential to provide more optimal habitat for wildlife than they presently do.

If a farm lease agreement is continued, priority should be given to farmers who want to plant hay, if possible, followed by those that want to plant sweet corn, followed by those that want to plant truck crops, etc. Hay fields are of more value to wildlife than are fields of silage corn, sweet corn or truck crops. Hay fields provide cover for a longer period during the year. They also provide food in the form of seeds eaten by birds and small mammals and forage eaten by various mammals. Ideally, the hay field should be cut once a year, and not before July 1st to provide time for field

species to complete nesting activities. Mowing the hay every other year is even better, as long as woody vegetation does not encroach.

The apple orchard is badly overgrown and could be improved for wildlife. Apple trees need to be trimmed and released by cutting out any competing surrounding vegetation. Trees that are too old or decadent should be replaced with new trees. Apple trees provide buds and fruits eaten by a variety of birds and mammals.

Any development of the site for intensive recreational use or expansion of the golf course will have a negative effect on the use of the site by wildlife. The site should be used for passive/non-vehicular recreation to conserve habitat.

### Recommendations

- 1) If the site is leased to a farmer, try to have as much land maintained in hay as possible.
  - a) Under an agricultural agreement or under a management plan, the hay should not be cut before July 1st of any year.
  - b) The fields could be made even more attractive to wildlife if hedgerows were allowed to grow down the middle of the fields, thus increasing edge. This increases the amount of food and cover available, especially during the times of year when the adjacent hay is short. These hedgerows could be mowed on a periodic basis to prevent woody vegetation from encroaching into the fields.
- 2) The hedgerows around the fields should be maintained as overgrown tangles of vines, shrubs and trees. Trees should be cut as necessary to allow for new growth.
- 3) Reclaim and/or replant the apple orchard. This will benefit wildlife and may also provide an added attraction to people visiting the area, especially during flowering time.
- 4) If no farmer can be found to lease agricultural fields, the fields should be allowed to grow up to hay and should then be mowed every 2 to 4 years to maintain them in hay.
- 5) Do not allow vehicular recreation on the site because this will disturb wildlife and wildlife habitat.



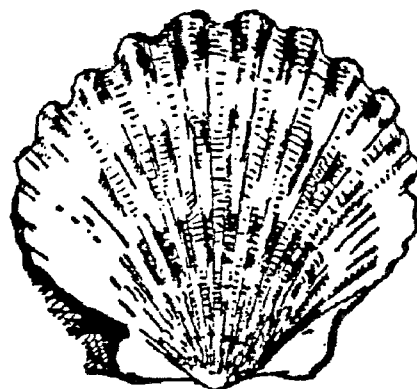
- 6) Scattered small plantations of evergreens will increase the amount of evergreen cover on the site. Plan to use repellants or fencing, at least when the evergreens are small, to reduce deer damage.
- 7) Stabilize all trails to prevent and reduce any degradation to wildlife habitat.
- 8) Encourage the stand of remaining Douglas firs, to increase the amount of evergreen cover on the site.

#### THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the Natural Diversity Data Base, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at the site.

Natural Diversity Data Base information includes all information regarding critical biologic resources available 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. Consultation 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. New information is incorporated into the Data Base as it becomes available.

# ARCHAEOLOGICAL RESOURCES



## ARCHAEOLOGICAL RESOURCES

A review of the State of Connecticut Archaeological Site Files and Maps shows 7 prehistoric Indian settlements in the immediate proximity of the site.

While no sites are listed on the Hoyden Hill Open Space Area, archaeological sites have been recorded to the north (No. 51-24) and south (No. 51-40) along Hemlock Reservoir. The parcel has a moderate to high potential for prehistoric cultural resources due to its lack of slope and proximity to watercourses. If farming activities are permitted in the near future, archaeologists should be provided access to the fields for walkover surveys of the recent plowed fields. This will allow the location of any artifactual materials on the property and a more accurate assessment of the distribution of prehistoric land use.

Any proposed development project undertaken by the Town on the Hoyden Hill Open Space Area that requires any below ground disturbance should be reviewed by the Office of State Archaeology for potential impact on the cultural resources of the area. The Office of State Archaeology is prepared to offer the Town of Fairfield technical assistance in preserving the rich prehistoric and historic resources of the community.

# LAND USE AND PLANNING CONSIDERATIONS



## PLANNING CONSIDERATIONS

### History and Description

The Town of Fairfield acquired the Hoyden Hill Open Space Area between 1966 and 1970 with State and Federal funds and by donation. The site is north of the H. Smith-Richardson Golf Course and Hoydens Lane, west of Morehouse Highway and south of North Street. The site contains 57 acres, including 14 acres of cultivated fields, a driving range, a short-term police shooting range, woodlands and the house of the golf course superintendent.

### Surrounding Land Use

To the north and east of Hoyden Hill, the BHC plans to sell 20 acres of Class III land. This sale could have a mixed effect on the property. More significantly, residential development could reduce the buffer for plants and wildlife, but on the positive side, a developer might allow more parking at the narrow trail access from North Street which the BHC has opposed.

To the northeast, a proposed 10-acre development on a steep wetland area went bankrupt in the 1970s. Off North Street, further to the northeast, there is a 12-unit development. To the east, a developer has announced a 26-unit development on 80 acres. To the south of Hoydens Hill and north of the Grace Richardson Open Space Area is the public H. Smith-Richardson Golf Course. Actual annual use is 56,000 rounds of golf instead of the originally projected use of 32,000 rounds. The site is protected by the golf course to the north and on the west by Hemlock Reservoir and BHC Class I land.

### Transportation:

- 1) **Roads** - Access to the site is provided only by road. The site can be reached from Merritt Parkway exits 44, 45 and 46, as well as from Black Rock Turnpike. Local access is from Congress Street, Hoydens Lane, North

Street, Morehouse Highway and Hoyden Hill Road. The immediate local streets are narrow and have no significant volume of traffic.

- 2) **Parking** - The principal access to the site is from Hoydens Lane. There is a parking lot for 20 to 30 cars for the driving range which is part of the site. This may be adequate, if the property is limited to its present uses. Alternatives involving more intensive recreational use may require additional parking spaces.

At the north end of the site, there is a narrow trail providing access from North Street to the forest area which has potential for preservation in a natural state. The BHC has discouraged access. If the BHC sells the property, the Town might work out an agreement with the buyer for space to park some cars.

- 3) **Access to the Site** - To preserve the site, access points should be limited to 1 or 2, and no vehicle should be allowed on the site, except for emergencies.

## RECREATION ISSUES

### Scenic and Visual Characteristics

The site contains 3 cultivated fields and a driving range with trees along either side. North of the fields is a woodland area which slopes to North Street. It contains one of the highest points in Fairfield. However, no view of Long Island Sound is possible because the surrounding area is almost level and is forested. The best view of the Sound is reportedly from the adjacent golf course.

### Hiking/Nature Trail

There appear to be good opportunities to enhance existing trails. There is a trail between the fields and along a stone fence which goes through the forest area to North Street. This trail may have been an old road and should be marked. A pamphlet and map could locate and describe the site's natural highlights.

### Golf Course Impact

The Town-owned golf course adjacent to the site is very heavily used. It could have significant impact on the relatively flat Hoyden Hill Open Space Area. The golf

course is already encroaching on the site: 1 of the large fields is being used as a driving range, the golf course superintendent lives in the farm house at the south end of the site and the golf professional shares the barn with the absentee farmer who has a long-term lease to cultivate the fields. Development of the site as a golf course will have a negative effect on its preservation as a natural area.

### Farming

The fields on the site have been lying fallow the past season and should be planted next year. Town officials expect the absentee farmer to cultivate the land only a few more years. The amount of farmland in Fairfield reportedly is declining. Local financial support may not exist to make the 3 fields a demonstration project to educate urban and suburban children about growing food and bringing it to the market. There is a demonstration farm in Redding. Funding sources should be explored more intensively.

### Recreational Development

Recreational development will have a negative effect on natural preservation of the site. The SCORP supports the demand for recreation. However, the site is far from the population centers.

There are some alternatives for the development of the site. These include a Christmas tree farm, arboretum or wild forest. If these options are not possible, active recreation could be allowed on the field near the road, and the northern fields could be merged with the woodland area further back as a natural preservation area.

# APPENDICIES

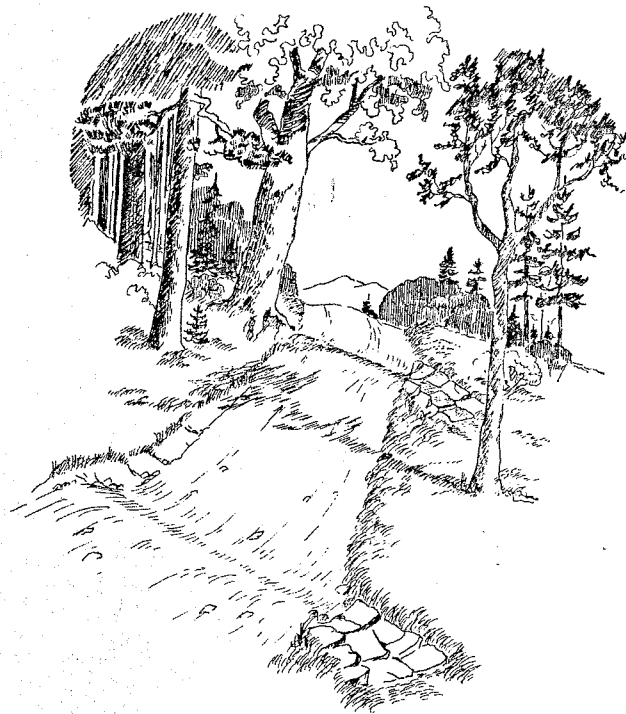




## Appendix A: Water Breaks

# **WOODLANDS** **of the Northeast**

## **EROSION & SEDIMENT CONTROL GUIDES**



Prepared by the  
U. S. Department of Agriculture  
Soil Conservation Service  
Northeast Technical Service Center  
Broomall, Pennsylvania  
and  
Forest Service  
Northeastern Area State and Private Forestry  
Upper Darby, Pennsylvania  
1977

## FEATURES OF A PROTECTED ROAD



1. Water break at head of slope.
2. Water break at proper distance midslope.
3. Water break at about  $30^{\circ}$  angle down slope.
4. Riprap of stone at diversion outlet.
5. Road is outsloped.

## WATER BREAKS

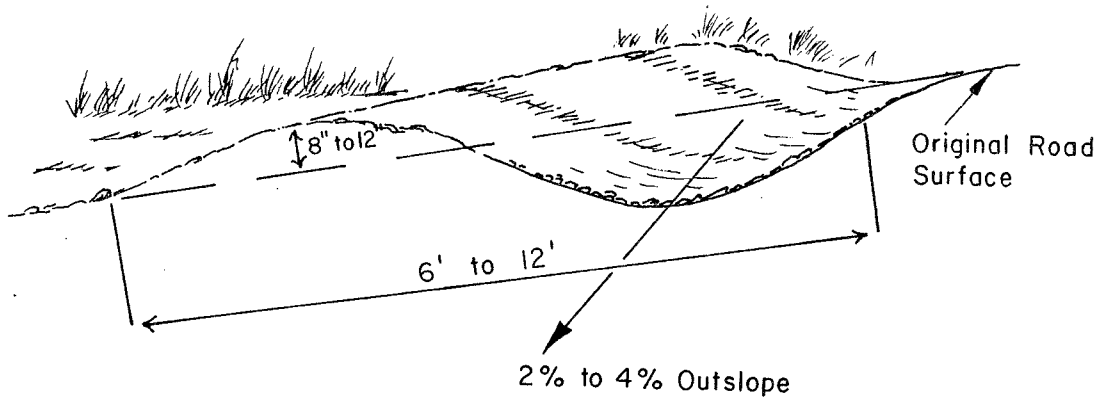
Water breaks (sometimes called water bars) should be installed after logging is completed. The structures may be shallow or deep depending upon the need. The deep breaks are usually used on roads or skid trails to be closed to vehicle traffic. The structures can be constructed with hand tools but bulldozers are most commonly used. It is best to start at end of road or trail and work out so that the breaks are not damaged by frequent crossing by machinery.

As a supplement to water breaks, logging slash can be lopped and scattered and/or grass planted on roads that will be closed. Water breaks should be installed at about a 30-degree angle down slope. The out flow end of the water break should be open to keep water from accumulating, and be protected by a buffer or filter zone to clean the sediment out of the water and prevent erosion.

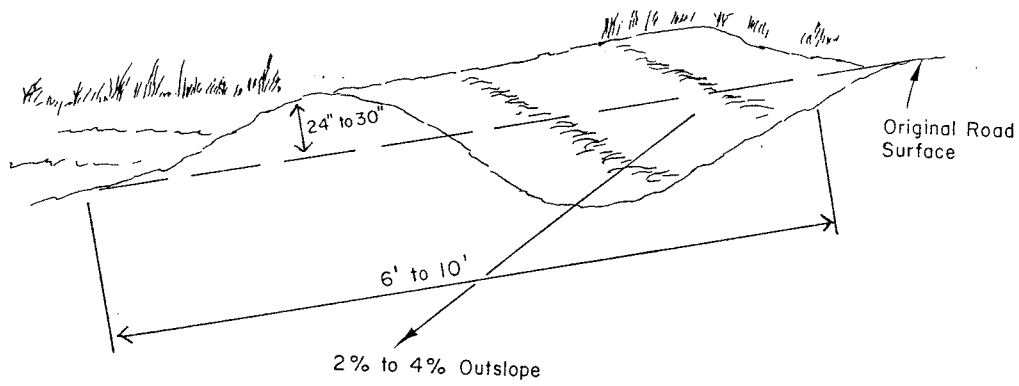
The following tabulation presents the recommended spacing:

<u>Road Grade (percent)</u>	<u>Approximate Distance Needed Between Water Breaks (feet)</u>
1	400
2	245
5	125
10	78
15	58
20	47
25	40
30	35
35	32
40	29

# NARROW BASED WATER BREAKS



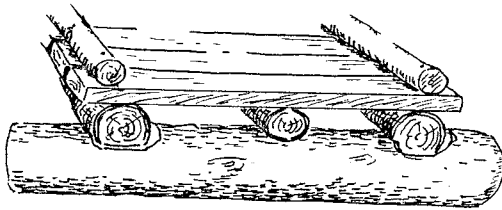
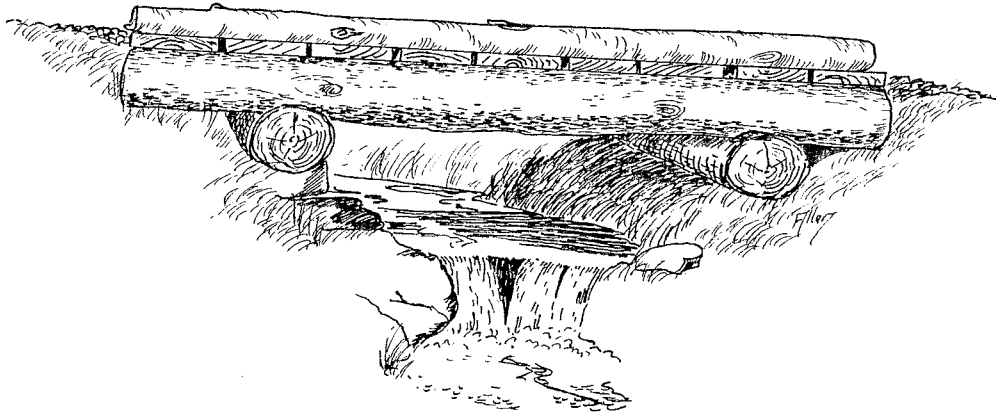
SHALLOW WATER BREAK



DEEP WATER BREAK

Appendix B: Bridge Design

## A SIMPLE LOGGING ROAD BRIDGE DESIGN



1. Bridge streams crossings if there is a potential sediment or pollution source.
2. Use alternate road location to avoid the necessity of a bridge, if possible.
3. Bridge crossing should be located where the stream channel is straight with an unobstructed flow of water.
4. Abutments should be in a direction parallel to the stream flow and imbedded in good foundation material.
5. Locate at right angles to stream flow where approaches are reasonably level for a minimum of 50 feet from both sides.

## NOTES



# 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, 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 and/or developers 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 and/or developers in the review of sites proposed for major land use activities. 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 recreational/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 land owner/developer allowing the Team to enter the property for purposes of review and a statement identifying the specific areas of concern the Team should investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two (2) reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or Nancy Ferlow, ERT Coordinator, King's Mark Environmental Review Team, King's Mark RC&D Area, 322 North Main Street, Wallingford, Connecticut 06492. King's Mark ERT phone number is 265-6695.