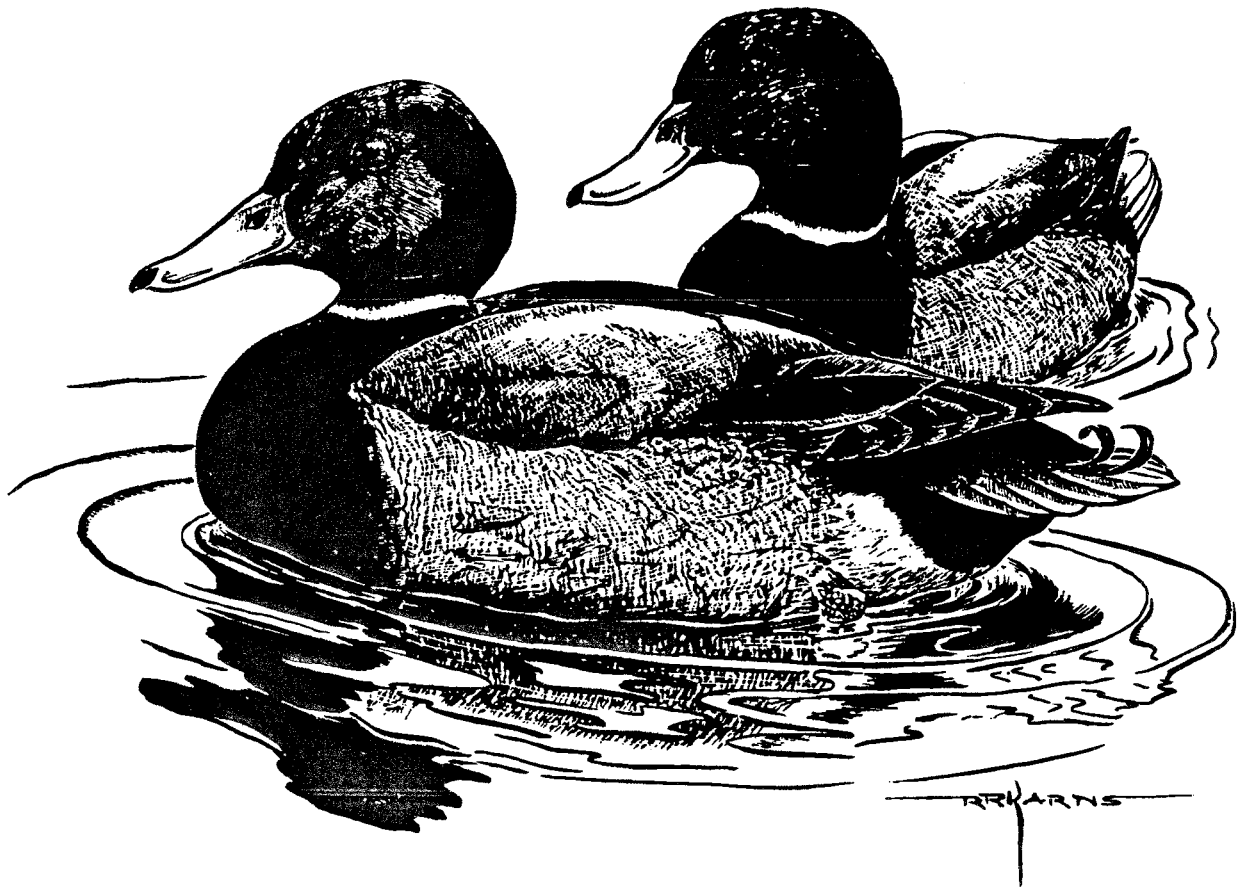


KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

**COLD SPRINGS FARM AND HICKORY  
HILL ESTATES OPEN SPACE AREA**

BRISTOL,  
CONNECTICUT

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

**COLD SPRING FARMS AND HICKORY HILL ESTATES  
OPEN SPACE AREA**

**BRISTOL, 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

Bristol Planning 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 and evaluates its significance to the proposed development and also suggests considerations that should be of concern. 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.

**DECEMBER 1990**

## ACKNOWLEDGMENTS

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- \* William Warzecha, Hydrogeologist  
Department of Environmental Protection - Natural Resource Center  
566-3540
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USDA - Soil Conservation Service  
269-7509
- \* Judy Wilson, Wildlife Biologist  
Department of Environmental Protection - Western District  
485-0226
- \* Malcolm Baker, Planner  
Central Connecticut Regional Planning Agency  
589-7820

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 Paul Strawderman, Assistant City Engineer and Alan Weiner, City Planner for their cooperation and assistance during this environmental review.

## **EXECUTIVE SUMMARY**

### Introduction

The Bristol Planning Commission requested a review of a 17-acre open space area offered to the City. This site contains 2 contiguous open space parcels from the Cold Springs Farm Subdivision and the Hickory Hill Estates Subdivision. The open space site is mostly wetlands with a small pond/marsh. Stormwater from the existing and proposed subdivisions will be discharged into the wetlands.

The review process consisted of 4 phases: 1) inventory of the site's natural resources; 2) assessment of the resources; 3) identification of resource problem areas; and 4) presentation of planning and land use guidelines. Based on the review process, specific resources, areas of concern, development limitations and development opportunities were identified.

### Location, Topography and Land Use

The site is located in southeast Bristol. It is surrounded by residential properties on the west, north and east. Wooded land, which will be developed for the Cold Springs Farm Subdivision, lies to the south. The site is mostly wooded and is located on the side of Redstone Hill. Slopes range from gentle to flat. The site is unused except for a small trail and some unauthorized dumping. Land use in the vicinity consists of single-family residences and condominiums.

### Geology

Bedrock underlying the site consists of New Haven Arkose, a sedimentary rock. The bedrock is not exposed on the site, and depth to bedrock ranges from 12 to 70 feet. Several large boulders are found in the southern part. The boulders are "erratic" and were transported to the site by glaciers. Overlying the bedrock is a glacial deposit, called till, which is silty and compact. Overlying the till in the central parts are organic deposits from the marsh. Most of the site consists of wetland soils, except for a small area of upland surrounding the boulders. There is little potential for active recreation due to the wetlands. Unless a raised hiking trail is constructed, walking or hiking will be limited to the dry times of the year. A trail could loop around the site and around the boulders. The boulders may pose a liability problem for the City. Because of the marsh and boulders, the site could be used for environmental education.

### Hydrology

The entire site eventually drains to the marsh. The outlet stream flows to an unnamed tributary of the Quinnipiac River. The watercourses have not been classified by the DEP and are presumed Class A. Groundwater beneath the site is

Class GA. Careful planning can mitigate the negative effects of post-development runoff on the wetlands. BMPs should be used to treat the stormwater before it enters the marsh.

### Soils Information and Erosion and Sediment Control Recommendations

Soils are glacial-till derived. There are limitations due to wetness. Recreational use of the site should be limited to a trail system. The trails will concentrate the use and direct traffic away from sensitive areas. Intrusion will be minimized with a trail and can be used for education. In the trail layout, wetland areas should be avoided where possible. The site should be protected from sedimentation during construction. The E&S control plan should address controls during and after construction. Stormwater outlets should be properly designed, installed and maintained. Expansion of backyards into the wetland and dumping should be prohibited.

### Wildlife Considerations

The Cold Springs Farm parcel contains palustrine wetland. The Hickory Hill Estates parcel contains pockets of water and a marsh. There is a berm that can be used to control water levels for the marsh. The northern part of the site is surrounded by houses. The southern part is currently wooded. The entire Cold Springs Farm Subdivision land provides good to excellent wildlife habitat because of the diversity of habitat and interspersed types. The site provides good habitat for some species. As the size of an area decreases, it becomes less valuable to wildlife. Providing a buffer of 100 feet around the wetland will preserve the most valuable habitat and add value to the wetlands. It is beneficial to wildlife if travel paths between open spaces are provided. Maintaining good water quality in wetlands is important. BMPs should be used to limit habitat degradation. After development, clearing and filling for lawns and pasturing animals in the wetlands should be prohibited.

As with any development, the impact on wildlife will be negative and long-lasting. The area will be broken-up and lost to roads, driveways, lawns and houses. Increased numbers of humans, dogs, cats and cars will also affect wildlife. Certain species which adapt well may become a nuisance. The potential for wildlife management is limited on the site. Certain measures can minimize the effects of development on wildlife. These measures include buffer strips, natural landscaping techniques, maintaining field borders and early successional stage vegetation and maintaining wildlife requirements.

### 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. Historic records show that Nuttall's Milkwort was found in the general area. It may still occur in the area, if the dry, open, sandy soil habitat still exists.

## Planning Considerations

Upon completion of the Cold Springs Farm Subdivision, the site will be totally surrounded by single-family residential development, with easy access at several points. The Regional Plan of Development proposes this area for residential development. Creation of open space is consistent with the plan. The 17-acre site is the largest and most usable of the open space areas in southeast Bristol. The land should be acquired for open space, regardless of the actual recreational potential of the site which is moderately good. The main feature is an open marsh. The remainder of the site is mostly wetland, except for the glacial boulder field where 4 or 5 large boulders were deposited on a tongue of slightly higher land.

The entire site is good for passive recreational uses such as birdwatching, nature walks, environmental education, etc. The area around the boulders and the area along the stream are highly suitable for walking trails. Connecting these areas to form a complete loop walking trail may be problematic due to wet conditions, especially to the northwest of the marsh, but is feasible. Lot 45 of the Cold Springs Farm Subdivision and any lots which fail to win approval by the Inland Wetlands Commission and border the site should be included. A neighborhood organization could be established to monitor unauthorized dumping. Future developers should establish buffers around wetland boundaries to prevent encroachment on wetlands. In areas with significant wetlands, cluster development may eliminate the need for encroachment on wetlands. The resulting larger open space area could then be more suitably and more easily managed for public recreation.

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# INTRODUCTION



## INTRODUCTION

The Bristol Planning Commission requested a review of a 17-acre open space area offered to the City. This site contains 2 contiguous open space parcels from the Cold Springs Farm Subdivision and the Hickory Hill Estates Subdivision. The site is located on the Southington and Plainville Town Lines.

The open space site is mostly wetlands with a small pond/marsh. Stormwater from the existing and proposed subdivisions will be discharged into the wetlands and may change the water regime. Access to the open space area is provided by 2 proposed roads in the Cold Springs Farm Subdivision and 1 road in the Hickory Hill Estates Subdivision.

The purpose of this review is to inventory and assess existing natural resources and discuss recreational opportunities, erosion and sediment (E&S) controls and the maintenance and regulatory activities necessary to maintain the functions of the open space area. Specific objectives include:

- 1) Assessing the hydrological and geological characteristics of the site, including geological development limitations and opportunities;
- 2) Determining the suitability of existing soils to support recreational development;
- 3) Discussing soil erosion and sedimentation concerns;
- 4) Assessing the impact of recreation and stormwater on wetland resources;
- 5) Assessing the impact of recreational development on wildlife, including management alternatives for consideration; and
- 6) Assessing planning and recreational issues.

## THE ERT PROCESS

Through the efforts of the Bristol Planning Commission, the Assistant City Engineer, the City Planner and the King's Mark ERT, this environmental review and report was prepared for the City. 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:

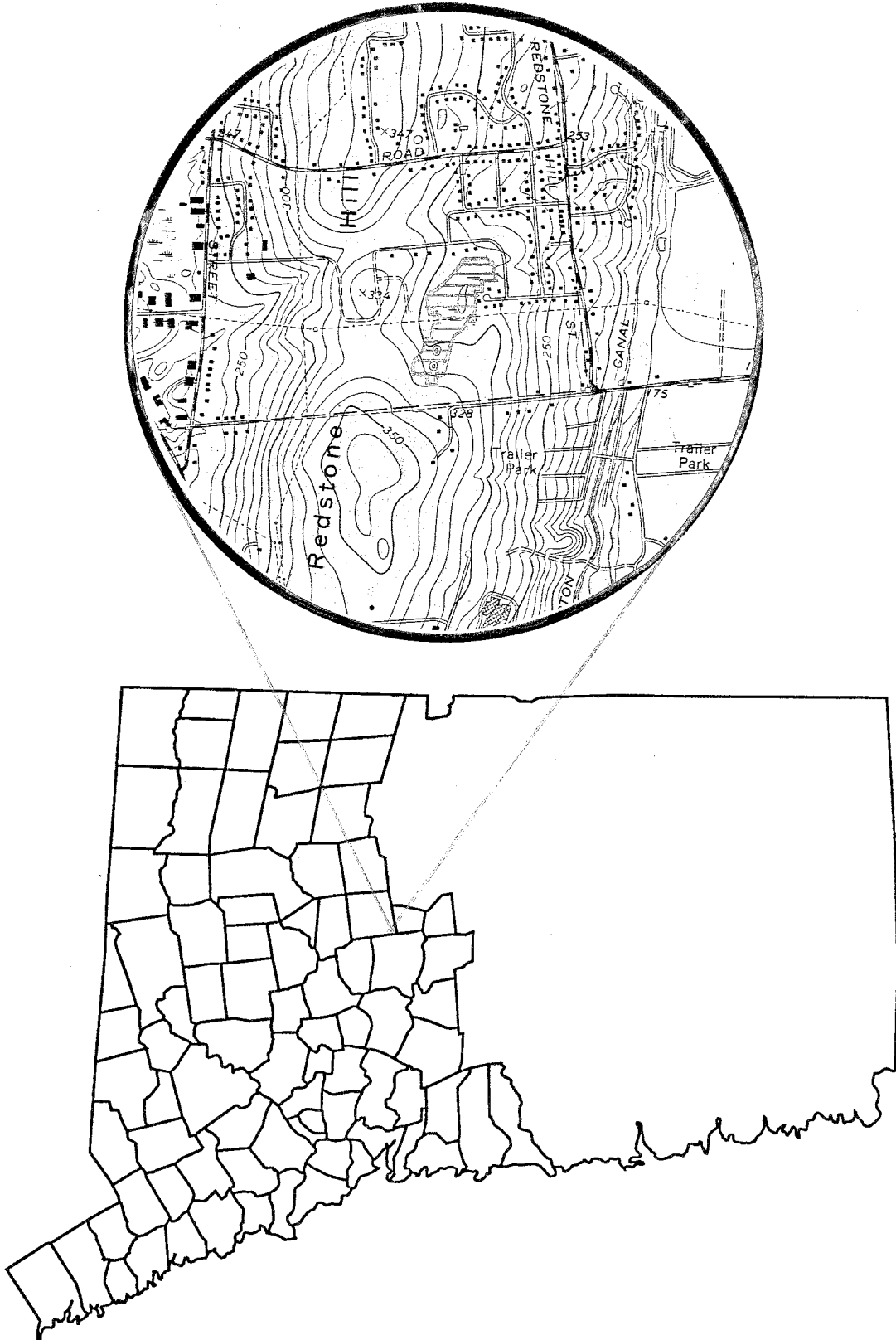
- 1) Inventory of the site's natural resources (collection of data);
- 2) Assessment of these resources (analysis of data);
- 3) Identification of resource problem areas; and
- 4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on November 14, 1990. Field review and inspection of the site proved to be a most valuable component of this phase. The 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.

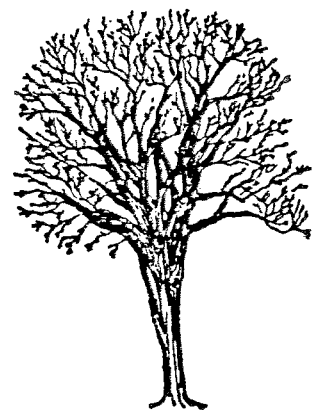
Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Results of this analysis enabled Team members to arrive at an informed assessment of the site's natural resource opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

Figure 1

LOCATION OF STUDY SITE



# NATURAL RESOURCE CHARACTERISTICS



## LOCATION, TOPOGRAPHY AND LAND USE

The site currently under consideration for acquisition for open space by the City of Bristol consists of approximately 17 acres located in southeast Bristol. The site includes 2 contiguous parcels that were designated as open space land by 2 residential subdivisions: Hickory Hill Estates Subdivision and Cold Springs Farm Subdivision. The parcels are approximately 10 and 7 acres in size, respectively. For the most part, the site is surrounded on the north, east and west by residential properties. To the south, the land is wooded and comprises the Cold Springs Farm Subdivision, a proposed residential development consisting of single-family dwellings. Access to the site is available via Julia Road, Village Street and Laurel Hollow Road.

The site is mostly wooded and is located on the east side of Redstone Hill (see Figure 2). The land surface slopes gently south to north to an open marshy area that was created by an earthen berm, probably for stormwater management. Standing water is visible in the middle of the marsh. Generally flat slopes occur in the marshy area and east of the impoundment. The outlet stream for the impoundment is routed eastward to the Quinnipiac River floodplain.

Currently, the site is mostly unused, especially the Cold Springs Farm parcel. Based on visual observations made during the field review, the Hickory Hill Estates parcel is used by local residents, based on the walking paths along the top of the earthen berm and near the erratic boulders on the Cold Springs Farm parcel. Additionally, unauthorized dumping is occurring along the northwest boundary of the Hickory Hill Estates parcel. This dumping includes mainly brush, lawn-clippings and construction debris disposed along the perimeter of the parcel. Surrounding land uses presently consist of medium density residential uses. Also,

the proposed Cold Springs Farm Subdivision is medium density (1 to 2 families per acre). A condominium project lies east of the subdivision land.

The area surrounding the parcel is served by municipal sanitary sewage and water lines.

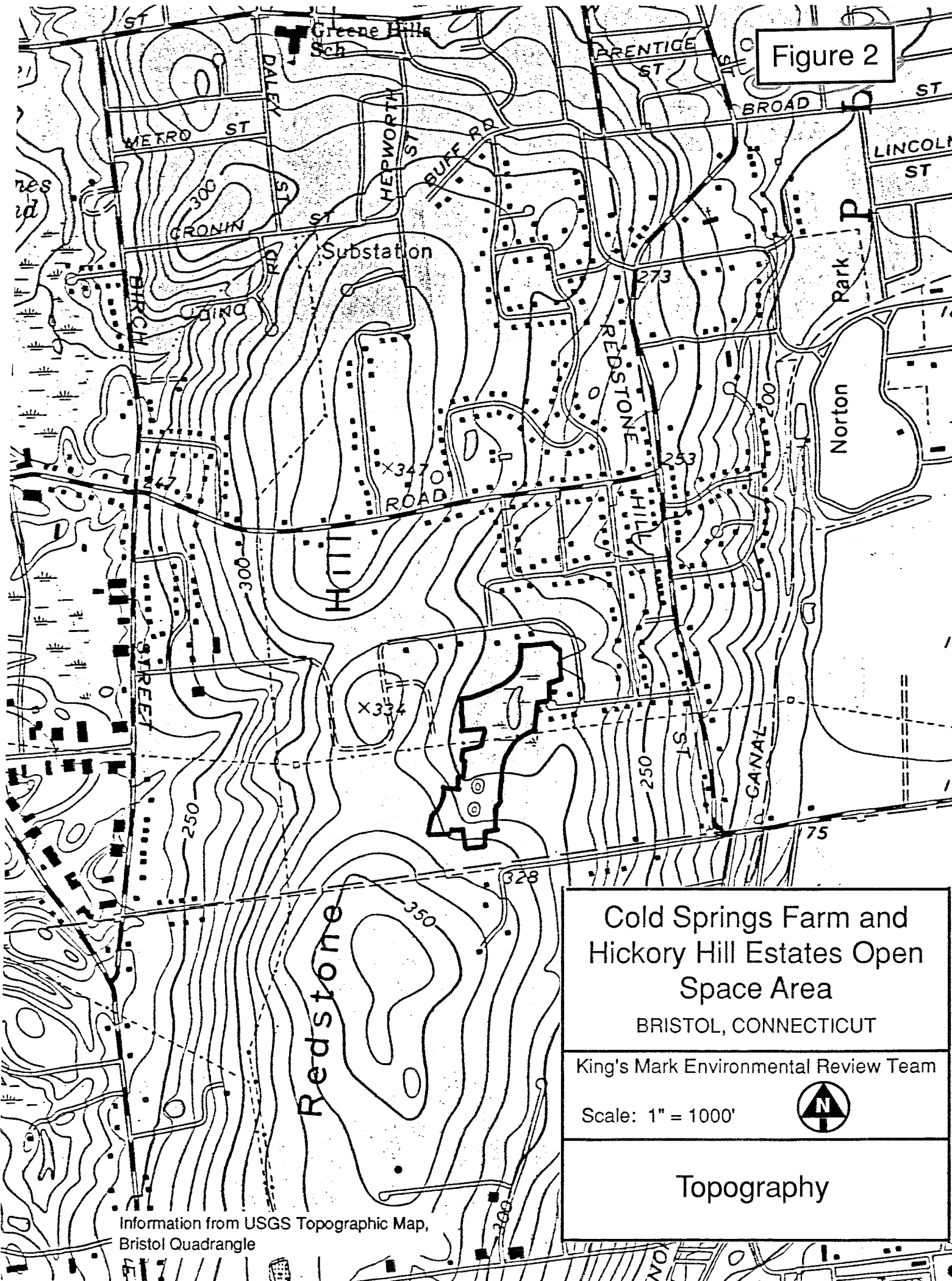
## GEOLOGY

The site is located entirely in the Bristol quadrangle. A surficial geologic map (GQ-145, by Howard E. Simpson) for the quadrangle has been published by the Connecticut Geological and Natural History Survey. No bedrock map for the quadrangle has been produced to date. Preliminary bedrock geologic information available for the quadrangle at the Department of Environmental Protection (DEP) Natural Resources Center and John Rodger's Bedrock Geologic Map of Connecticut (1985) were referenced.

Bedrock is not exposed on the site. The log of well completion reports for residential wells on Julia Street and Poitras Road suggests that the depth to bedrock in the vicinity of the site, particularly the northern parts, ranges between 12 and 70 feet. Several very large diameter boulders are scattered in the southern parts of the Cold Springs Farm parcel.

The site is underlain by New Haven Arkose, a unit of middle to late Triassic age approximately 200 million years old (see Figure 3). Most of the rock consists of reddish-brown feldspathic (i.e., rich in feldspar minerals) and micaceous (i.e., rich in mica minerals) sandstones and siltstones. It is the most common sedimentary rock of Connecticut Central Valley and is locally known as brownstone. Brownstone was quarried for use as building stone. Sedimentary rocks are formed by the deposition and concentration of eroded material derived from igneous, metamorphic or other sedimentary rock.

Figure 2



Cold Springs Farm and  
Hickory Hill Estates Open  
Space Area  
BRISTOL, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'

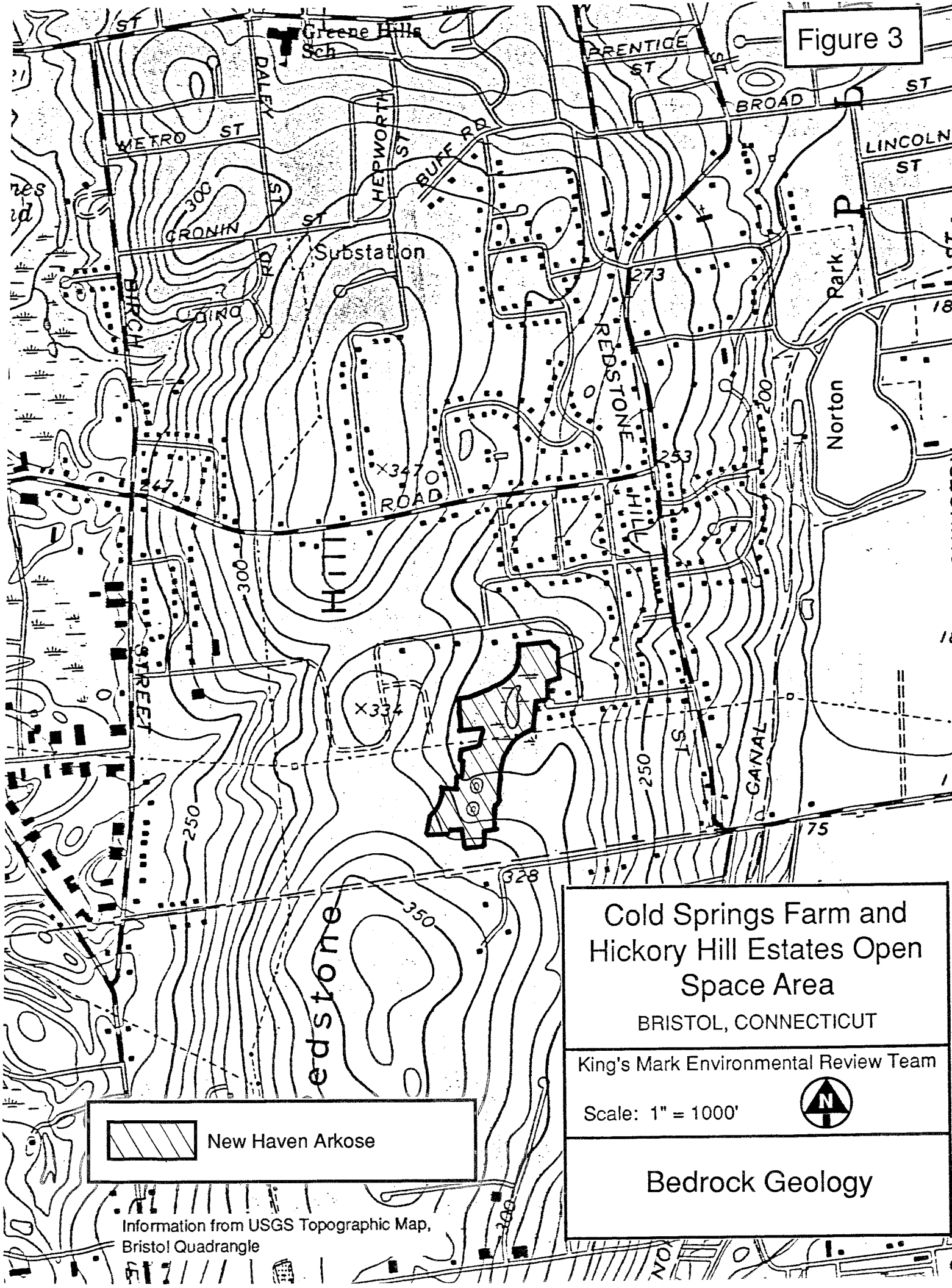


Topography


Information from USGS Topographic Map,  
Bristol Quadrangle



Figure 3



 New Haven Arkose

Cold Springs Farm and  
Hickory Hill Estates Open  
Space Area  
BRISTOL, CONNECTICUT  
King's Mark Environmental Review Team  
Scale: 1" = 1000'   
Bedrock Geology

Information from USGS Topographic Map,  
Bristol Quadrangle

The large diameter boulders on the Cold Springs Farm parcel are basaltic, a volcanic rock rich in iron- and magnesium-bearing minerals. The diameter of these boulders ranges between 20 and 40 feet, and the boulders are 10 to 15 feet high. Since these boulders comprise a rock type different from the bedrock that lies beneath them, they are termed "erratic" boulders and were transported to their resting place by glacial ice. The nearest basalt rock outcrop, from which the boulders may have originated, is approximately 2 miles north and east of the site.

Overlying bedrock across the site is a glacial geologic unit called till (see Figure 4). Till is a mixture of particles of various sizes derived from the glacial erosion of the landscape followed by the transportation and deposition of the debris by glacial ice. Due to a typically high percentage of silt, clay and fine sand, there is a compact soil zone, commonly called hardpan, 1.5 to 3.0 feet below ground level in the till. This hardpan layer is slow to transmit water. During the wet time of year or following periods of precipitation, a high and/or seasonal watertable condition occurs in the more permeable zone that typically occurs above the hardpan layer.

Overlying till in the central parts of the Hickory Hill Estates parcel is a marshy area consisting of decayed organic material (i.e., peat and muck) mixed with some silt, clay and sand. Since predominant vegetation in this wetland area comprises grasses, sedges or marshes (no trees), its proper hydrological name is marsh rather than swamp. For the most part, the land surrounding the marsh area is swampy with very little uplands. Additionally, most of the 7-acre Cold Springs Farm parcel consists of wetland soils. Dry land occurs only in a small area at the parcel's southern limits.

There is obviously little potential for active recreational or other development of the site due mainly to widespread wet conditions. Unless a raised hiking trail is constructed through the site, walking or hiking is probably limited to only dry times of the year. An existing trail, which utilizes the bermed area on the Hickory Hill

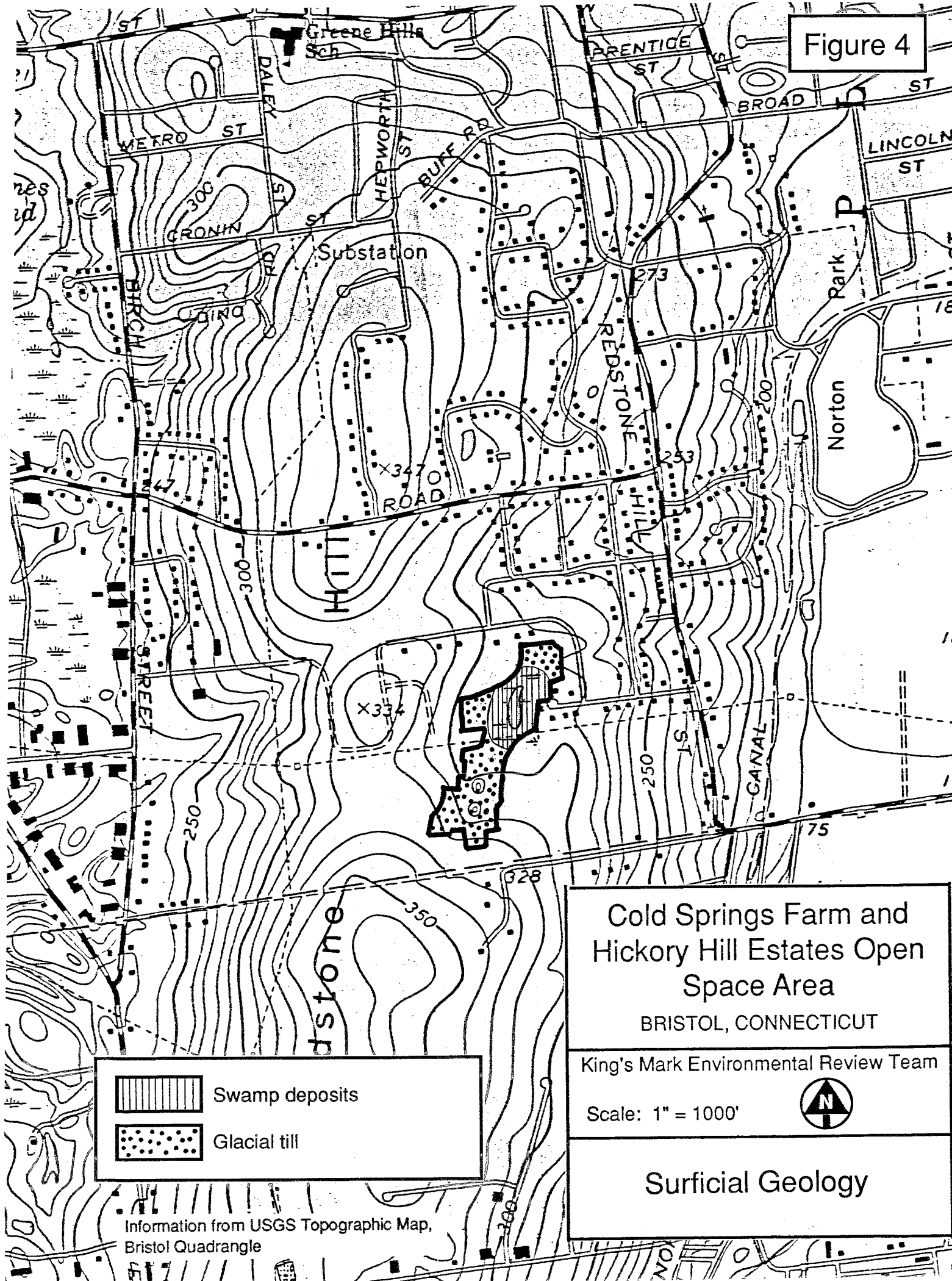
Estates parcel and which is accessible via Julia Street, provides an opportunity for a short, peaceful walk that provides hikers a panoramic view of the marshy area. A raised hiking trail which loops the east and south side (the north side is probably too wet most of the year) of the marsh could link to a trail that loops through the Cold Springs Farm parcel, preferably in the area of the large diameter erratic boulders. On the other hand, the erratic boulders may pose a liability problem for the City. Because of the marsh and erratic boulders, the site could be used for environmental education purposes.



### HYDROLOGY


The entire 17-acre site drains to the marshy area on the Hickory Hill Estates parcel. The outlet stream for the marsh flows approximately 2,400 feet in an easterly direction to an unnamed Quinnipiac River tributary. From its intersection with Evelyn Road, the outlet stream for the marsh drains an area approximately 82 acres (see Figure 5).

The watercourses occurring on the site have not been classified by the DEP, but are presumed to be Class A water resources. Class A water resources are suitable for drinking, recreational or other uses and may be subject to absolute restrictions in the discharge of pollutants, although certain discharges may be allowed. Groundwater beneath the site is classified as GA, which means that it is suitable for private drinking water supplies without treatment. The bedrock underlying the site (i.e., New Haven Arkose) may be a source of water for low-yielding or even high-yielding wells, but considering the unfavorable development potential of the parcel for active recreational uses and availability of public water supply mains, it is very unlikely that such wells are needed.

Figure 4



	Swamp deposits
	Glacial till

Cold Springs Farm and Hickory Hill Estates Open Space Area	
BRISTOL, CONNECTICUT	
King's Mark Environmental Review Team	
Scale: 1" = 1000'	
Surficial Geology	

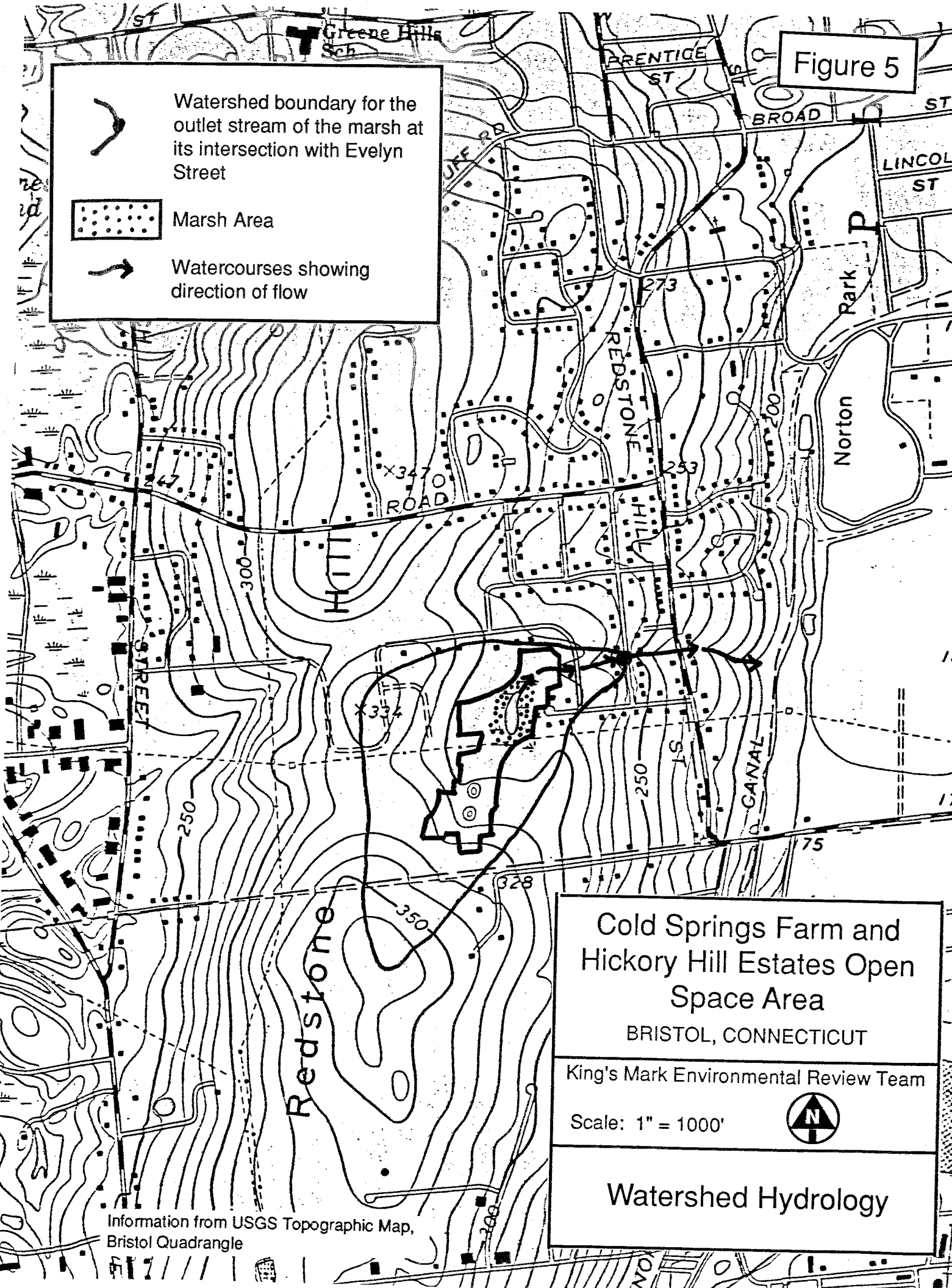
Information from USGS Topographic Map,  
Bristol Quadrangle

Figure 5

Watershed boundary for the outlet stream of the marsh at its intersection with Evelyn Street

Marsh Area

Watercourses showing direction of flow



Cold Springs Farm and  
Hickory Hill Estates Open  
Space Area  
BRISTOL, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1000'



Watershed Hydrology

Information from USGS Topographic Map,  
Bristol Quadrangle

Careful planning, perhaps including the usage of the natural cleansing abilities of the marshy area on the Hickory Hill Estates parcel, can mitigate the potential negative effects of post-development runoff from future development that takes place in the 82-acre watershed. Additionally, the marsh might be useful for controlling post-development increases in runoff, which are expected to be substantial considering zoning (i.e., medium density residential and industrial) in the watershed.

If the marsh area serves a stormwater management function, it will need to be maintained from time to time. However, to reduce potential adverse impacts of stormwater runoff, Best Management Practices (BMPs) should be employed at pre-treating stormwater runoff from all developments in the watershed before it enters the marsh.

#### SOILS INFORMATION AND EROSION AND SEDIMENT CONTROL RECOMMENDATIONS

Soils on the site are shown in Figure 6. This map is a refinement of mapping information in the Soil Survey of Hartford County, Connecticut. Roy A. Shook, Jr., a soil scientist with Environmental Resource Associates, performed the field work on the Cold Spring Farm parcel for this refinement on April 11, 1989. The area of shallow peats and muck encircling the pond on the Hickory Hill Estates parcel has been added to Mr. Shook's delineation to complete the soils map for the site.

Soils on the site are glacial till-derived, mainly from red Triassic rocks and some basalt. Detailed soils information is presented in Appendix A. All of the soils have significant limitations due to wetness for most low intensity recreational uses being considered. The use which will have the least physical impact on the site, if designed, installed and maintained properly, is a trail system.

Recreational uses of the site should be limited to trails and areas along trails for these reasons:

- 1) Most of the site is wetland. Trails tend to concentrate and direct traffic away from sensitive areas.
- 2) Management measures such as litter pick-up and conservation practices are facilitated by limiting users to selected corridors.
- 3) Intrusion on wildlife and overall site deterioration are minimized.
- 4) The trail, if designed properly to expose users to the variety of plant life, animal habitats and glacial features on the site, will serve educational purposes, a recognized use of wetlands.

In trail layout, wetland areas should be avoided wherever possible. Where this is not possible, wooden platforms or wood shavings should be placed along the trail route. These areas will require regular inspection and maintenance. To ensure user safety, hazardous rocks should be removed along with dead limbs and trees near the trail. If the trail is to be used for cross-country skiing, all tree branches along the trail should be removed to a height of 10 feet in light snow areas and 12 feet in heavy snow areas. Branches should be pruned flush with the trunk of the tree. Access to the site for users and for fire protection should be considered.

The site should be protected from possible sediment influx during construction of the Cold Spring Farms Subdivision. Efforts to retain soil in the construction area are especially critical because little or no buffer is provided between residential lots and the wetland on the site. Wetland crossings are planned at 3 locations. The E&S control plan should address E&S control during road construction and later during development of the individual lots. Any stormwater outlets to the site should have properly designed, installed and maintained E&S control measures. Non-point source pollutants such as road sands and salts and petroleum products from the

Figure 6

THIS MAP FOR PLANNING PURPOSES ONLY



CCRPA - 12/4/90

LoB	Ludlow loam, 3-8% slopes
MoA	Menlo silt loam, 0-3% slopes
PmA	Peats and mucks, shallow
WsA	Wilbraham stony silt loam, 0-3% slopes

**Cold Springs Farm and Hickory Hill Estates Open Space Area**  
BRISTOL, CONNECTICUT

King's Mark Environmental Review Team  
Not To Scale



**Soils**

Information from Roy A. Shook, Jr, soil scientist and the Hartford County Soil Survey



subdivision will be an on-going concern if there is a direct stormwater outlet to the open space site.

Because there is little or no buffer around the wetland and because the lots are small, there are likely to be subtle expansions of backyards into the open space area. This activity, which may involve dumping of grass clippings, leaves and debris and filling of wetlands to create more useable yard space, should be prohibited.

## WILDLIFE CONSIDERATIONS

### Description of Area/Habitats

The Cold Springs Farm Subdivision, a 53-acre development, includes approximately 9 acres of wetlands, of which 7 acres are proposed as open space. This parcel is adjacent to the 10-acre Hickory Hill Estates parcel already designated as open space.

The Cold Springs Farm parcel contains palustrine or deciduous forested type wetland which is dominated by red maple, but contains a variety of other trees, including white ash, black locust, grey birch and shrub species such as witch hazel, serviceberry, spicebush and blueberry. Ground cover species include ferns, sedge grasses and skunk cabbage. Much of the wetland area looks as if it has standing water most of the year, which adds to its diversity by supporting different types of vegetation, and therefore different types of wildlife.

The wetland on the Hickory Hill Estates parcel has been bermed. The small berm or dike has a control structure that currently does not have wier boards. Although this area could be flooded with water to create a shallow pond, it currently has only pockets of water. This wetland area is dominated by sedges and herbaceous vegetation and is surrounded by shrubs such as spice bush and trees such as red maple. This wetland is totally surrounded by homes, except where it lies adjacent to

the proposed Cold Springs Farm Subdivision. Although this wetland does not have a great degree of vegetational diversity, it does provide some habitat for wildlife, mainly birds and small mammals. It adds value to the wetland on the Cold Spring Farms parcel because it increases the size of the wetland area and adds diversity to the entire wetland.

#### Wildlife Habitat

Wildlife habitat is the complex of vegetative and physical characteristics that provide for all the requirements of wildlife, including food, shelter, resting, nesting and escape cover, water and space. Different habitat or cover types may provide for some or all of an animal's needs, depending on the species, quality of the habitat, its location with respect to other types of habitat, etc.

Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife species there are using an area. The Cold Springs Farm Subdivision land, including the wetlands, provides good to excellent wildlife habitat because of its diversity of habitats and high degree of interspersion. The fairly diverse deciduous wetlands (i.e., the 9 acres) along with the 10-acre Hickory Hill Estates wetland, adds to the value of the site for wildlife habitat. The surrounding upland habitat, consisting of old field and deciduous woodland, increases the value of the wetland for wildlife, and conversely, the adjacent wetland increases the value of the forestland and old field for wildlife.

A variety of species utilizes this undeveloped area to serve all their needs, while many other species find it a place to meet some requirements. These species include deer, weasel, raccoon, fox, opossum, catbirds, sparrows, juncos, and chickadees, reptiles and amphibians.

When considered independently, the entire Cold Springs Farm and Hickory Hill Estates Open Space Area provides some or all of the habitat for a variety of wildlife species. In general, as the size of the wetland area decreases, it becomes less

valuable to wildlife. Providing a buffer of at least 100 feet of undisturbed vegetation around the entire wetlands will preserve the most habitat value while still allowing for considerable development. Preserving an area of upland habitat adds to the value of the wetland habitat. Preserving the interior portion of the Cold Springs Farm wetland (i.e., the 7 acres) will provide wildlife with some habitat of value, but it will be limited by size and the encroachment of the development around the wetland.

Ideally, a variety of habitats in addition to wetland should be set aside to maintain habitat diversity. Setting aside the entire Cold Springs Farm wetland (i.e., the 9 acres) with a 100-foot buffer of undisturbed vegetation surrounding it, along with an area of old field habitat and forestland, will be the most beneficial to wildlife.

#### Valuing Open Space

In general, conserving any open space areas, especially those that join other open space areas, is worthwhile. The value of the wetlands on the site will be increased by providing at least a 100-foot buffer around the wetlands. This buffer has several functions, including reducing disturbance to the wetland habitat, filtering and trapping silt and sediments and providing additional wildlife habitat.

Generally, it is beneficial to wildlife if open space areas are connected to other open spaces through the use of corridors or strips of open space. This gives wildlife an area to travel through to move from one open space area to another. Ideally, open space areas should contain various types of habitats, and in general, larger areas are better. Setting aside islands of open space surrounded by development is less desirable.

#### Wildlife Habitat Recommendations

The entire Cold Springs Farm Subdivision land contains good to excellent wildlife habitat, considering the urbanized nature of the surrounding area. The subdivision land includes deciduous wetlands, old field and hardwood forest, including both pole-sized and mature-sized trees. Small openings scattered on the

northern side of the field contain extremely thick tangles of grape vines and bittersweet. The wetland area on the Cold Springs Farm parcel provides good to excellent deciduous wetland type habitat, but its value would be greatly enhanced if it encompassed the entire central wetland area along with a 100-foot buffer. The open space area would be even more valuable for wildlife habitat if an area of old field and forestland were set aside also.

Although the value for deciduous wetlands may not be as "high" as for some other types of wetlands (i.e., marsh or emergent type habitat), they are still wetlands and are sensitive areas important to many species of wildlife. Because deciduous wetlands are often viewed as "less valuable," allowances are sometimes made that impact on these wetlands. Many times these deciduous wetlands are used to build ponds, construct detention/retention basins, build roads across, etc., resulting in a net loss of habitat and degradation of remaining habitat.

#### Wetlands Protection During and After Construction

Because wetlands increase the habitat diversity of an area and offer 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 to their value as wildlife habitat, 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. Detention basins should not be constructed in wetlands.

Maintaining good water quality in wetlands is important for people as well as wildlife. Silts and oils from runoff can smother invertebrate life forms and affect the food chain in the wetland. Oil separators should be installed in catch basins. An observable effect of siltation is the change in vegetation caused. Road salts can alter water chemistry and alter what types of wildlife can ultimately utilize a wetland

area. All precautions should be taken to insure that any water entering the wetlands during and after development is of good quality. **Best Management Practices** should be used to limit habitat degradation.

After development, clearing and extending lawns into the wetland area, filling, creating gardens and pasturing animals in the wetlands should be restricted. These activities degrade wetland areas.

As with any development of an undeveloped area, the impact on wildlife habitat will be negative. The impact at this site will probably be fairly extensive because of the density of the proposed development, addition of roads and proximity to wetlands. Large portions of wildlife habitat will be broken-up and lost in the constriction of homes, roads, parking lots and walkways. Additionally, habitat will be altered where cover is cleared for lawns and landscaping. Another impact is the increased human presence, vehicular traffic and free roaming children, dogs and cats. This could drive the less tolerant species from the immediate area of development and areas where there has been no physical change. The value of the open space area for wildlife habitat correspondingly decreases as the amount of development in the area increases.

Certain species which are adaptable to man's activities may increase due to his presence, and associated nuisances may occur. Typical species which can become a nuisance include pigeons, starlings and raccoons. Species sensitive to man's presence will either move away or perish.

#### Additional Considerations

Wildlife management potential of the site is limited. Habitat management could include raising the water level of the pond to encourage emergent vegetation growth, but this might interfere with use of the wetlands as a stormwater discharge area. The wetlands may be adversely affected due to increased sediment loads from streets and driveways.

The potential for wildlife-based recreation is limited. The area is too small to support hunting activities in relation to the surrounding development, and use of the area for wildlife viewing is also limited because of its size. A trail should probably be elevated, otherwise much of it would be muddy and might add to siltation problems. This could cause some degradation of the habitat. Also, disturbance to wildlife will probably be considerable, due the small size of the open space and its location in the center of development.

In a small but heavily developed and populated State like Connecticut where available habitat continues to decline on a daily basis, it is critical to maintain and enhance, where possible, existing wildlife habitat.

These recommendations can reduce some of the negative impacts of development to wildlife and wildlife habitat:

- 1) Maintain a 100-foot (minimum) wide buffer zone of natural vegetation around all wetland/riparian areas to filter and trap silt and sediments and to provide some habitat for wildlife.
- 2) Utilize natural landscaping techniques, avoiding lawns and chemical runoff, to reduce acreage of habitat lost and possible wetland contamination.
- 3) Stonewalls, shrubs and trees should be maintained along field borders.
- 4) Early successional stage vegetation (i.e., field) is an important habitat type and should be maintained if possible.
- 5) Detention basins should be excavated out of the wetland boundaries.
- 6) Water draining into wetlands should be of the best quality possible to prevent degradation of the wetland. BMPs should be used. Oil separators should be installed in catch basins.
- 7) Proper E&S controls should be maintained throughout the length of the construction. Degradation can occur during construction as well as after.
- 8) Where possible, use bridges instead of culverts.

- 9) Where applicable, some provision such as a deed restriction or conservation easement should be made to restrict activities such as pasturing animals in a wetland or filling wetlands for extra lawn and/or garden space, after the development has been constructed.
- 10) During land clearing, care should be taken to maintain certain forest wildlife requirements:
  - a) Encourage mast producing trees (i.e., oak, hickory and beech). A minimum of 5 oaks per acre, 14 inches dbh or greater, should remain.
  - b) Leave 5 to 7 snag/den trees per acre because they are used by birds and mammals for nesting, roosting and feeding.
  - c) Exceptionally tall trees, used by raptors as perching and nesting sites, should be encouraged.
  - d) Trees with vines (i.e., fruit producers) should be encouraged or can be planted as part of the landscaping in conjunction with the development, especially those that produce fruit which persists through the winter (i.e., winterberry). See Appendix B for a list of suggested shrub and tree species that can be encouraged and/or planted.
  - e) Brush debris from tree clearing should be piled to provide cover for small mammals, birds, amphibians and reptiles.

#### THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

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

Records indicate that *Polygala nuttallii*, Nuttall's Milkwort, was historically found in this general area. This plant is proposed for State Endangered Species status (Public Act 89224). *Polygala nuttallii* grows on dry, open sandy soils. Because the historic source of this information is extremely accurate, the plant probably still occurs in the area, if appropriate habitat still exists.

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.



# LAND USE AND PLANNING CONSIDERATIONS



## PLANNING CONSIDERATIONS

The site consists of 2 contiguous parcels of land in southeast Bristol. Both parcels are leftover sections of single-family developments. Upon completion of the Cold Springs Farm Subdivision, the site will be totally surrounded by single-family residential development, with easy access at several points. More generally, the site has medium density residential uses to the north and east, industrial land uses to the northwest and southeast and undeveloped land to the southwest.

The Regional Plan of Development proposes this area for residential development. Creation of open space enclaves within developments is consistent with the Plan, tying in with several of the Plan's goals and objectives. The Bristol Plan of Development includes a goal of providing various recreational opportunities and adequate open space for all residents. The Plan does not explicitly recommend southeast Bristol as an area in which to acquire open space, but does recommend giving attention to the size, location and quality of open space parcels established through the subdivision process to assure that they become assets and not liabilities. Map 3 of the site plan depicts the area of the Cold Springs Farm Subdivision as a residential area more than a mile from public recreational facilities. Other areas of the City beyond this 1-mile radius boundary, such as southwest and northwest Bristol, have significant areas of private or water company land, which residents can potentially utilize for passive recreation. However, the southeast corner of the City is mostly developed. Very little vacant land remains aside from small parcels set aside during subdivision, generally because of their unusability for residential use. The 17-acre site is, by a significant margin, the largest and most usable of these open space areas. This circumstance suggests acquisition of the land for open space, regardless of the actual recreational potential of the site.

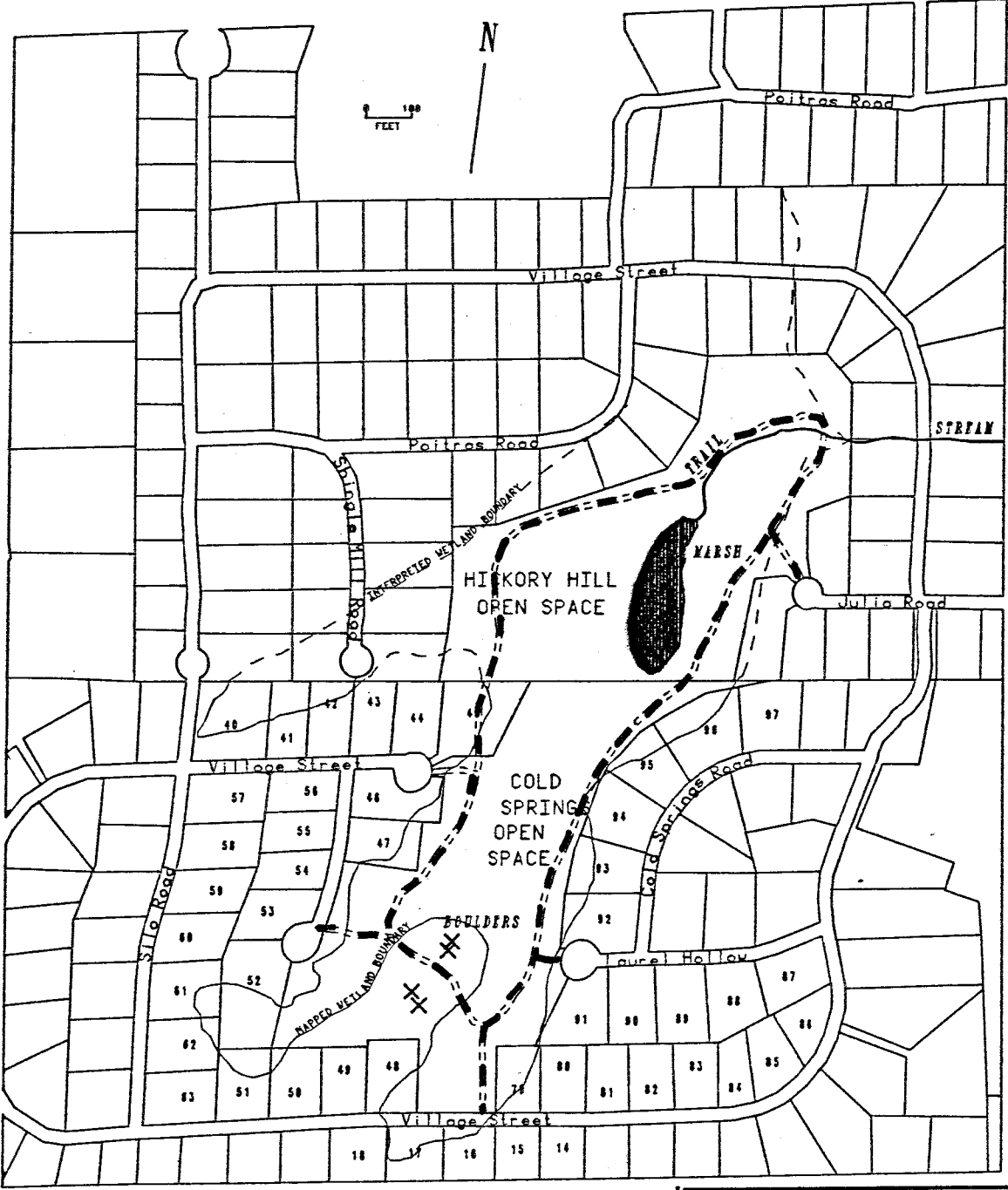
The recreational potential of the site is moderately good. The site has a pleasing diversity of features and special interest areas. The main feature of the site is an open marsh of small to moderate size, with a profuse growth of marsh plants. A small stream drains this marsh, exiting through a break in the flood control berm, and winds through open woods in an easterly direction to the site boundary, eventually through residential yards and under Village Street. The remainder of the site is mostly wetland, feeding the marsh, forested densely with fairly low trees. The exception is the site's most interesting area, a glacial boulder field where 4 or 5 boulders of immense size were deposited. These boulders are on a tongue of slightly higher land which sticks out into the wetlands.

The entire site is abundantly good for passive recreational uses such as birdwatching, nature walks, etc. The site is appropriate for children's nature instruction and appreciation of wildlife, plant life or glacial boulders. The area around the boulders and the area along the stream are highly suitable for walking trails. Connecting these areas to form a complete loop walking trail may be problematic due to wet conditions, especially to the northwest of the marsh, but is feasible. A possible loop trail is sketched in Figure 7, showing access points. Boardwalks could be used in swampier areas, or use of the complete loop could be seasonal.


If Commission members decide to acquire the site, Lot 45 of the Cold Springs Farm Subdivision should be included in the open space because that lot seriously interferes with the continuity of the site. Any lots which fail to win approval of the Inland Wetlands Commission and border the site (such as Lot 79) should be included also in the open space area. A neighborhood organization could be established to monitor dumping of leaves and brush from residential yards into the open space, which is already occurring in some places from the Hickory Hill Estates Subdivision, and possibly to organize a yearly cleanup.

Figure 7

THIS MAP FOR PLANNING PURPOSES ONLY



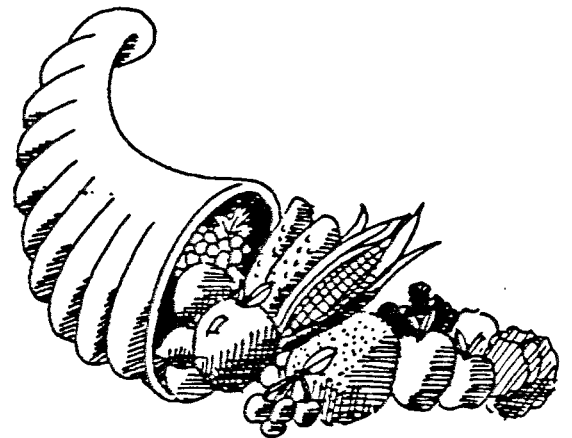
CCRPA - 12/4/90

<h3>Cold Springs Farm and Hickory Hill Estates Open Space Area</h3> <p>BRISTOL, CONNECTICUT</p>	
King's Mark Environmental Review Team	
Not To Scale	
<h3>Possible Trail Route</h3>	

The site is recommended as an open space resource. Its main drawback is a lack of land that is not wetlands, which makes passive recreation uses more difficult, but not impossible.

Future developers should be required to establish buffers around wetland boundaries to eliminate encroachment on wetlands in backyards or in open space tracts. In areas with significant wetlands, cluster development may eliminate the need for encroachment on wetlands, while allowing developers the number of building lots they would normally get from the subdivision. The resulting larger open space area could then be more suitably and more easily managed for public recreation.

# APPENDICIES



**Appendix A: Soil Limitation Chart**

Major Limitations to the Development of:

Map Unit Name	General Soil Properties	Drainage Class and Depth to Seasonal High Watertable	Camp Areas	Picnic Areas	Playgrounds	Paths and Trails
LoB - Ludlow loam, 3-8% slopes	Very deep soils formed in compact glacial till, derived mainly from red Triassic rocks	Moderately well-drained 1.5-2.5 ft. Nov-Apr, perched watertable	Wetness, percs slowly	Wetness, percs slowly	Small stones, wetness	Wetness
*MoA - Menlo silt loam, 0-3% slopes	Very deep soils formed in glacial till derived mainly from red Triassic rocks and some basalt	Very poorly drained +1.0-0.5 ft. Jan-Dec, perched watertable	Ponding	Ponding	Ponding	Ponding
*PmA - Peats and Mucks, shallow	Organic soils in varying stages of decomposition which occupy low areas where the watertable is at or near the surface most of the time, thickness of organic matter ranges from about 18-36 inches	Very poorly drained +1.0-1.0 ft. Nov-May	Ponding, excess humus	Ponding, excess humus	Ponding, excess humus	Ponding, excess humus
*WsA - Wilbraham stony silt loam, 0-3% slopes	Very deep soils formed in compact glacial till derived mainly from red Triassic rocks and some basalt	Poorly drained 0-1.5 ft. Nov-Apr, perched watertable	Wetness	Wetness	Wetness	Wetness

\* Inland Wetland soils



**Appendix B: Suitable Planting Materials for Wildlife Food and Cover**

## SUITABLE PLANTING MATERIALS FOR WILDLIFE FOOD AND COVER

Herbaceous/Vines	Shrubs	Small Trees
Panicgrass	Sumac	Hawthorn
Timothy	Dogwood	Cherry
Trumpet creeper	Elderberry	Serviceberry
Grape	Winterberry	Cedar
Birdsfoot trefoil	Autumn olive	Crabapple
Virginia creeper	Blackberry	
Switchgrass	Raspberry	
Lespedeza	Honeysuckle	
Bittersweet	Cranberrybush	
Boston ivy		

## 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.