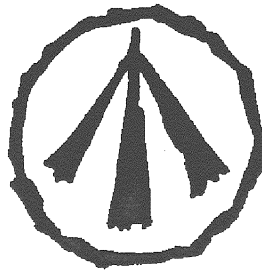




# **Timberlands Property Proposed Municipal Golf Course**

**Guilford, Connecticut**

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



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

# **TIMBERLANDS PROPERTY PROPOSED MUNICIPAL GOLF COURSE**

**GUILFORD, CONNECTICUT**

**DECEMBER 1992**

Environmental Review Team Report

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

Haddam and Wallingford, Connecticut

for the

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

# ACKNOWLEDGEMENTS

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

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I would also like to thank members of the Conservation Commission, Greg Bugbee, Jerry Silbert and Carol Schutz and Town Planner George Kral for their cooperation and assistance during this environmental review.

# EXECUTIVE SUMMARY

## Introduction

The Guilford Conservation Commission have requested an environmental review for a proposed municipal golf course at the Timberlands Property. Timberlands was purchased by the town in 1975 and encompasses a total of 600 acres. It currently is used for a town managed forest with woodcutting by permit in the northern sections, and a multiple use trail system suitable for horseback riding, hiking and mountain biking. The trails serve as a link in a continuous horse trail system leading north through state forest land to water company property. An abandoned 9-hole golf course is situated in the southeast section of the property.

The Ad-Hoc Golf Course Committee is proposing an 18-hole golf course on the northernmost 200 acres of the Timberlands property. The proposal is in a very preliminary stage with no detailed plans or mapping. The Conservation Commission and the Golf Course Committee want a natural resource inventory of the site and information concerning the suitability of the site to be developed in a golf course.

The review process consisted of 4 phases: (1) inventory of the site's natural resources; (2) assessment of these 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. The major findings of the ERT are presented below.

## Topography, Geology, and Hydrogeology

The topography of the site is varied. It consists of two segments of a bedrock terrace separated by a steep walled valley. The surface of the terrace is relatively flat.

Rock outcrops are common, and the depth to bedrock is probably less than 20 feet. Large boulders, which are glacial erratics, are strewn over the surface.

Over much of the thin, till covered terrace area near the surface groundwater flow is controlled by the bedrock topography. The overall groundwater flow in the eastern and central area of the site is likely to be directed south-southeast towards the Iron Stream Valley, away from the housing development along the western boundary. Some of the recharge in the western-most section of the property may make its way into private bedrock wells along the west-southwest/east-northeast fracture zones.

## **Soil Resources**

Soils within this parcel have developed primarily in glacial till derived from schist and gneiss.

An effective soil erosion and sediment control plan should be developed for this site prior to any development taking place. Topsoil layers are only moderately erodible, while subsoil layers are more susceptible to erosion by water.

Soils limitations and ratings are found in Tables 1 and 2.

## **Inland Water Resources**

The National Wetlands Inventory recognizes several categories of wetlands on the site, they include:

- ◆ Palustrine, Forested, Broad-leaved deciduous, Seasonally Saturated
- ◆ Palustrine, Scrub/shrub, Broad-leaved deciduous, Seasonally Saturated
- ◆ Palustrine, Forested, Broad-leaved deciduous/Emergent, Seasonally Saturated, created by beavers.

Ponds excavated in wetlands are generally discouraged. The replacement of an existing functional wetland habitat with an open water body simply exchanges one type of habitat with another and does not necessarily result in an improvement of the habitat. Pond creation is possible, but it is very site specific.

The wetland in the southwest corner of the property appears to be the most significant wetland resource on the site and avoidance of this area is highly recommended.

## **The Natural Diversity Data Base**

There are no known populations of Federal or State Endangered, Threatened or Special Concern Species that occur at this site. There are records for the State Endangered Species *Swamp Cottonwood* from a nearby wetland. The Team Forester found no Swamp Cottonwood during his field walk of the area proposed for the golf course.

## **Vegetation**

The vegetation present on the site falls into two broad categories: mixed hardwoods and hardwood swamps.

The trees that are present in areas that have received fuelwood thinnings appear healthy, in areas not yet thinned the trees are crowded and show signs of stress and decline. If the thinnings are continued the residual trees should improve through time.

Should golf course development occur a reconnaissance of the trees to be retained should be performed in order to identify the best candidates to be left. These trees should be healthy and a long lived species such as red oak and sugar maple. Trees to be removed should be tallied and sold as sawlogs and fuelwood.

Development should be sensitive to forested areas because they provide visual and noise buffers and have value in reducing climate extremes, controlling runoff, filtering out pollutants, creating wildlife habitat, recharging aquifers, aesthetic enjoyment, supplying wood fiber and functioning as a carbon sink.

### **Wildlife Resources**

The site provides habitat for typical forest-dwelling mammals, reptiles, and amphibians.

The wildlife species that will benefit from development of a golf course are considered nuisances in many parts of the state. The effect of deforestation (creating a golf course) and creating open space and mowed habitats will change considerably the wildlife species present. The effect on forest interior birds will be negative, and the effect of the development on vernal pools, amphibians, and reptiles needs to be assessed. Additional site specific comments can be made when plans are developed for the golf course.

Bob Askins, of Connecticut College, should be contacted with regard to neotropical bird species that may be located in the site.

Long term natural resource planning is necessary because town open space may serve as important forest habitat in the future.

### **Fisheries Resources**

The only watercourse on the entire 600 acre Timberlands Property that supports fisheries resources is Iron Stream. It is stocked annually by DEP with brook trout. Iron Stream was found to mainly support warmwater fish species when it was sampled near the Twin Bridge Road crossing in 1990.

Surface waters of Iron Stream are classified as "A". Designated uses include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other legitimate uses.

Potential impacts can only be discussed in general terms until specific plans are available for review. Potential impacts include:

- ◆ loss and degradation of wetland habitat, and
- ◆ and soil erosion and sedimentation of Iron Stream.

Recommendations include:

- ◆ investigating prudent and feasible alternatives to the existing proposal;
- ◆ proposals should be designed to minimize wetland losses and avoid encroachment of Iron Stream;
- ◆ developing an aggressive and effective erosion and sediment control plan;
- ◆ the creation of ponds for irrigation with the subsequent withdrawal of groundwater greater than 50,000 gallons per day requires obtaining a water diversion permit; and
- ◆ a detailed groundwater analysis should be conducted regarding riverine flow regimes and groundwater.

### **Land Use Planning Considerations**

A golf course/recreational facility would be allowed by Special Permit in the R-8 Residential District.

General assumptions concerning traffic are that golfers would access the site via the State Highway system and that golf course traffic would be spaced evenly throughout the day and not affect peak hour performance along Route 80.

Some key open space issues are:

- ◆ creation and maintenance of greenbelts, the Timberlands Property is linked to school property and state forest land;
- ◆ large, municipally owned open space parcels are rare;
- ◆ will a golf course provide an adequate buffer to residential neighbors as well as a sufficient area for a wildlife corridor?;
- ◆ How do the residents of Guilford feel about open space and recreation? A citizen survey would be a good way to assess community needs and desires.

Management issues include:

- ◆ who will operate the golf course and any auxiliary uses?
- ◆ check on the financial stability of other municipal golf courses in the region.
- ◆ what is citizen support for the project in this poor economic climate?
- ◆ are there any deed restrictions or other legal roadblocks to developing a golf course on this property?

### **Archaeological Review**

The Office of State Archaeology strongly recommends an archaeological survey for the project area.

Although the site files show no known archaeological resources for the area, there may be undiscovered sites, especially considering the wetland system in the southwest section. Also an

area of potential for Native American settlements exists on the flat terrain above the 200 foot contour line.

The Office of State Archaeology is prepared to offer technical assistance in conserving and preserving archaeological resources on the property prior to any construction.

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# INTRODUCTION

The Guilford Conservation Commission and the Ad-Hoc Golf Course Committee have requested an environmental review for a proposed municipal golf course to be located on the Timberlands Property.

The 600 acre Timberlands Property was purchased in 1975 by the town and is managed by the Conservation Commission. The site is located near the Guilford-Madison town line near Route 80 in north Guilford. The property is managed as forest land with woodcutting allowed by permit in the northern sections, woods roads serve as hiking, horseback riding and mountain biking trails linking to Water Company and State Forest land north of the site. An abandoned 9-hole golf course is located in the southeast portion of the property.

The northernmost 200 acres are under consideration for an 18-hole golf course. The course is hoped to be 6500 yards in length with a club house and maintenance building. Fairways, tees and greens would need to be irrigated preferably from a large constructed pond which would add to the course aesthetics.

The golf course proposal is in very preliminary planning stages and no actual mapping or design work has been done. The Town wants a natural resource inventory and information concerning the site's suitability to be used as a golf course. Major concerns include: soil suitability for construction; topography and geology as to how they relate to course development; hydrology of the site and course development's effect on groundwater and quantity of water needed for course maintenance; vegetation, wildlife and fisheries habitats; impacts on wetlands, ponds and watercourses; discussion of traffic, noise and open space policy; and concern for any archaeologically sensitive areas.

The primary goal of the ERT is to inventory natural resources of the site and provide planning information.

# THE ERT PROCESS

Through the efforts of the Conservation Commission, the Ad-Hoc Golf Course Committee 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 involved both literature and field research. The ERT field review took place on October 15, 1992. Field review and inspection of the proposed development 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 allowed Team members to check and confirm mapped information and identify other resources.

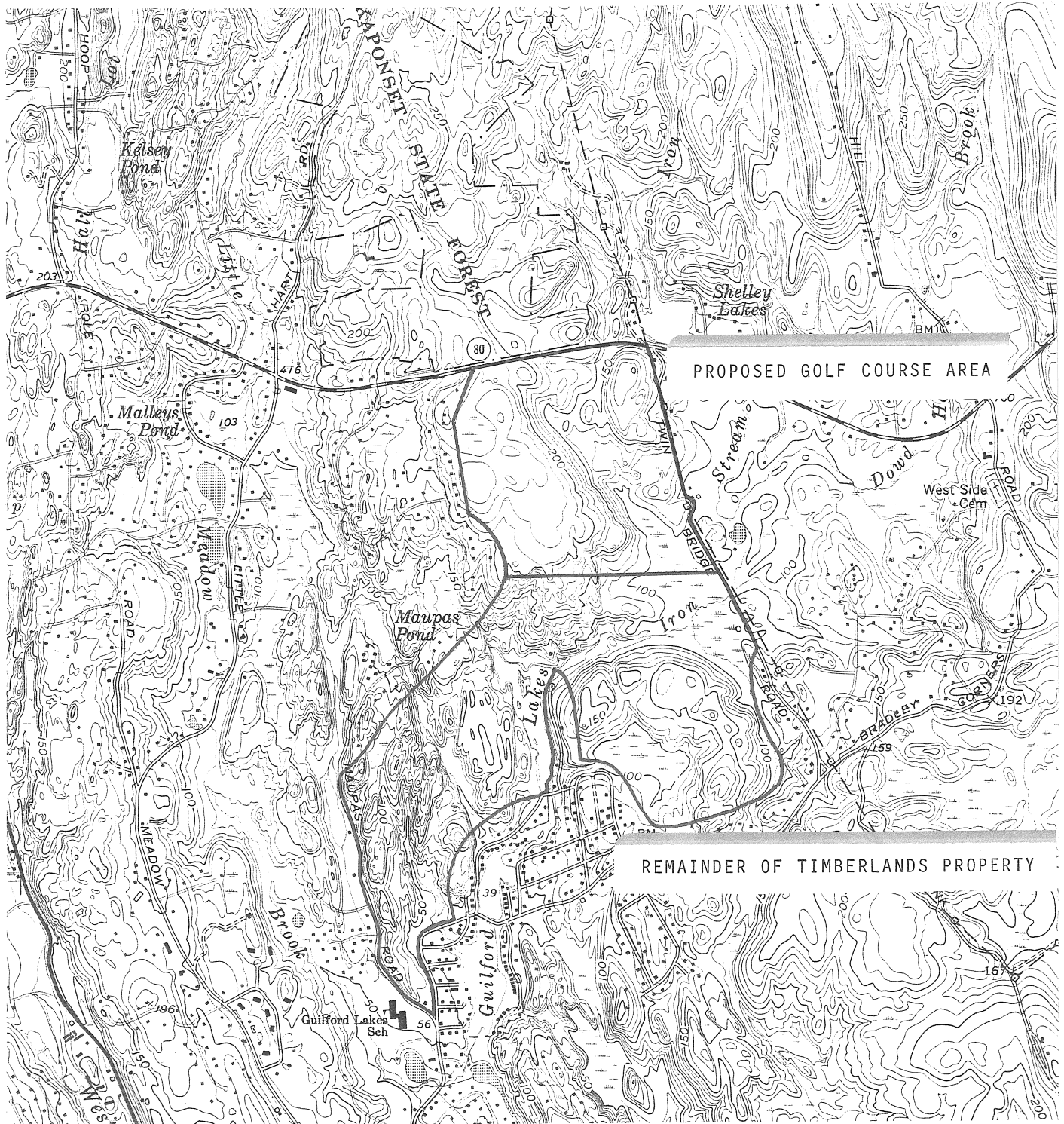
Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. The results of this analysis enabled the Team members to arrive at an informed assessment of the site's natural resource development opportunities and limitations. Individual Team members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



# SITE LOCATION MAP

Scale 1" = 2000'

Approximate Site Boundary



# TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

## Topography

The site of the proposed Timberlands 18-hole golf course consists of two segments of a bedrock terrace separated by a 100 foot deep NNW-SSE steep walled valley. East-West bedrock cliffs and rough, steep topography along the ravine-like section of Iron Stream at the outlet of the Guilford Lakes define the southern edge of the area under consideration. The surface of the terrace is relatively flat. Outcrops are common and the bedrock is shallow, probably less than 20 feet over most of the site. The gently undulating topography has a pronounced NNW-SSE grain reflecting bedrock joints and fractures. The thin blanket of till which covers the terrace surface fills in the deeper bedrock depressions and gives the joint controlled topography a subdued expression.

## Geology

The area is underlain by light to dark-gray biotite-plagioclase-quartz gneisses and black coarse-grained amphibolites belonging to the Early Ordovician Monson Gneiss. Although metamorphosed and deformed, both rock types were originally plutonic; the plagioclase gneisses were granodiorites which intruded more basic gabbroic rocks now represented by screens and xenoliths of the hornblende rich amphibolites. Light colored, coarse-grained quartz-feldspar granite pegmatites cross-cut the Monson gneiss.

Although well developed, the gneissic foliation in the bedrock has had little influence in the development of the topography. An orthogonal set of NNW-SSE and ENE-WSW fractures has apparently had profound effect on the location and orientation of valleys and cliff faces throughout the Guilford area. The steep-walled valley which is incised into the bedrock terrace developed along one of the NNW-SSE fracture zones as did many of the small gullies along the southern boundary of the site.

A thin veneer of sandy ablation till blankets the top of the terrace. The depth to bedrock is probably less than 20 feet almost everywhere. Large boulders 3-5 feet in diameter are strewn over the smooth undulating till surface. These are glacial erratics which were deposited on the surface as the overlying ice melted and are not representative of the till blanket at depth which is likely to be relatively fine grained and compact.

Although not shown on the Surficial Geologic Map of the Guilford Quadrangle a thin deposit of stratified sands and gravel fills the bottom of the NNW-SSE valley incised into the golf course terrace. Some surfaces of the outcrops along the edge of this steep valley are smooth and water-worn into pothole-like scallops. These features suggest subglacial flow was concentrated down this valley during the waning stages of the last deglaciation.

## Hydrogeology

Over much of the thin till covered terrace area near the surface groundwater flow is controlled by the bedrock topography. Small wetlands developed in local bedrock depressions. The major flow of groundwater away from the area of the proposed golf course is concentrated in the underlying fractured bedrock. The pronounced grain of the topography suggest that the predominant fracturing is oriented NNE-SSW. The overall groundwater flow in the eastern and central area of the site is thus likely to be directed SSE towards the Iron Stream Valley and away from the housing development along the western boundary. However, given the favorable topography gradient, some of the recharge in the western-most section of the property may make its way into private bedrock wells along WSW-ENE fracture zones, which although not as prominent as the NNE-SSW set do appear to be present.

## Published Geologic Information

Flint, Richard F., 1971. The Surficial Geology of the Guilford and Clinton Quadrangles. QR28.

***Note that scattered outcrops on the top of the terrace are not shown on this map. The outcrop area along Iron Stream and the unnamed SSE valley are accurately delineated. The fact that the thin sands and gravels along the SSE valley are not shown is consistent with its legend which included small poorly exposed bodies of stratified sediment in its "Till" unit.***

MF-583A, Guilford Quadrangle, Depth to Bedrock.

MF-583C, Guilford Quadrangle Bedrock Contours.

***Both maps are based largely on Flint's (1971, QR28) delineation of outcrop areas. The compilers were thus unaware of the scattered small outcrops on top of the terraced area. Their information should be used with caution in evaluating the proposed golf course design.***

Rodgers, J., 1985. Bedrock Geologic Map of Connecticut.

# SOIL RESOURCES

## Soil Descriptions and Limitations

Soils within this parcel, as described in the National Cooperative Soil Survey of New Haven County, have developed primarily in glacial till derived from schist and gneiss. Soil complexes of the Hollis and Charlton series (HpE, HrC, HsE) have formed in a thin mantle of glacial till on the ridges and knolls of bedrock-controlled glacial till plains. Charlton (CrC) soils are observed where depth to underlying bedrock is generally greater than sixty (60) inches. The moderately well-drained Sutton (SvB, SxC) soils are found in slight depressions and near the base of slopes within the soils of the Ridgebury-Leicester-Whitman (Rn) undifferentiated group predominate. A small area of Adrian and Palms mucks (AA) is located in the southeastern portion of the parcel; these soils have formed in organic materials 16 to 50 inches in thickness.

The limitations of on site soils for a variety of land uses are described in detail in the following tables. Please see page 72 of the Soil Survey of New Haven County (1975) for a more thorough discussion of land use limitations.

## Soil Erodibility

Soil erodibility factors for soils within this parcel are generally similar and of moderate value. However, while topsoil layers are only moderately erodible, subsoil layers are markedly more susceptible to erosion by water, and, prior to any future development, an effective soil erosion and sediment control plan should be developed and implemented.

## Soils Limitations and Suitability Ratings

- ◆ **Slight/Good** - soils are generally favorable for the specified use and limitations are minor and easily overcome
- ◆ **Moderate/Fair** - the soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning or design.
- ◆ **Severe/Poor** - that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required.
- ◆ **Probable** - that the soils in a given area contain sizable quantities of a given material.
- ◆ **Improbable** - that the soils in a given area do not contain sizable quantities of a given material.
- ◆ **Topsoil** - For a discussion of topsoil suitability see page 74 in the Soil Survey of New Haven County (1975).

**SCALE 1" = 1320'**



## SOIL INTERPRETATION REPORT

Map Symbol	Soil Name	Septic Tank Absorption Fields	Small Commercial Buildings	Lawns, Landscaping, Golf Fairways	Topsoil	Irrigation
Aa	Adrian	SEVERE Subsides, Ponding, Peres slowly	SEVERE Subsides, Ponding, Low Strength	SEVERE Ponding, Excess Humus	POOR Excess Humas, Wetness	LIMITATION Ponding, Soil Blowing, Rooting Depth
		SEVERE Subsides, Ponding, Peres Slowly	SEVERE Subsides, Ponding, Low Strength	SEVERE Ponding, Excess Humus	POOR Wetness, Excess Humas	LIMITATION Ponding, Soil Blowing
C/C	Charlton	MODERATE Slope	SEVERE Slope	MODERATE Large Stones, Slope	FAIR Small Stones, Slope	LIMITATION Slope
		SEVERE Depth to Bedrock	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock	LIMITATION Drouthy, Depth to Bedrock, Slope
HPE	Hollis	SEVERE Depth to Bedrock Slope	SEVERE Slope, Depth to Bedrock	SEVERE Slope, Depth to Bedrock	POOR Depth to Bedrock, Slope	LIMITATION Drouthy, Depth to Bedrock, Slope
		SEVERE Slope	SEVERE Slope	SEVERE Slope	POOR Slope	LIMITATION Slope
H/C	Hollis	SEVERE Depth to Bedrock	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock	LIMITATION Drouthy, Depth to Bedrock, Slope
		SEVERE Depth to Bedrock	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock	LIMITATION Slope, Depth to Bedrock
HsE	Hollis	SEVERE Depth to Bedrock, Slope	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock, Slope	LIMITATION Drouthy, Depth to Bedrock, Slope
		SEVERE Depth to Bedrock	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock, Slope	LIMITATION Slope, Depth to Bedrock
Rn	Ridgebury	SEVERE Peres Slowly, Wetness	SEVERE Wetness	SEVERE Wetness	POOR Depth to Bedrock, Small Stones, Area Reclaim	LIMITATION Wetness, Peres Slowly, Rooting Depth
		SEVERE Depth to Bedrock	SEVERE Slope, Depth to Bedrock	SEVERE Depth to Bedrock	POOR Depth to Bedrock, Slope	LIMITATION Slope, Depth to Bedrock
	Leicester	SEVERE	SEVERE	SEVERE	POOR	LIMITATION
	Whitman	SEVERE Peres Slowly, Ponding	SEVERE Ponding	SEVERE Large Stones, Ponding	POOR Wetness, Large Stones, Area Reclaim	LIMITATION Ponding, Peres Slowly, Rooting Depth
SvB	Sutton	SEVERE Wetness	MODERATE Wetness, Slope	MODERATE Wetness	FAIR Small Stones	LIMITATION Slope, Wetness
SxC	Sutton	SEVERE Wetness	SEVERE Slope	MODERATE Wetness, Large Stones, Slope	FAIR Small Stones, Slope	LIMITATION Slope, Wetness

## SOIL INTERPRETATION REPORT

Map Symbol	Soil Name	Shallow Excavations	Local Streets and Roads	Sand	Playgrounds	Paths and Trails
Aa	Adrian	SEVERE Cutbanks Cave, Excess Humus, Ponding	SEVERE Subsides, Ponding, Frost Action	PROBABLE	SEVERE Excess Humus, Ponding	SEVERE Ponding, Excess Humus
	Palms	SEVERE Excess Humus, Ponding	SEVERE Ponding, Frost Action, Subsides	IMPROBABLE	SEVERE Ponding, Excess Humus	SEVERE Ponding, Excess Humus
CnC	Charlton	MODERATE Slope	MODERATE Slope	IMPROBABLE Excess Fines	SEVERE Large Stones, Slope	SLIGHT
	Hollis	SEVERE Depth to Bedrock	SEVERE Depth to Bedrock	IMPROBABLE Excess Fines	Large Stones, Slope, Depth to Bedrock	SLIGHT
HpE	Hollis	SEVERE Depth to Bedrock, Slope	SEVERE Depth to Bedrock, Slope	IMPROBABLE Excess Fines	SEVERE Large Stones, Slope, Depth to Bedrock	SEVERE Slope
	Charlton	SEVERE Slope	SEVERE Slope	IMPROBABLE Excess Fines	SEVERE Large Stones, Slope	SEVERE Slope
HnC	Hollis	SEVERE Depth to Bedrock	SEVERE Depth to Bedrock	IMPROBABLE Excess Fines	Large Stones, Slope, Depth to Bedrock	SLIGHT
	Rock Outcrop	SEVERE Depth to Bedrock	SEVERE Depth to Bedrock	IMPROBABLE Excess Fines	SEVERE Slope, Depth to Bedrock	SLIGHT
HsE	Hollis	SEVERE Depth to Bedrock, Slope	SEVERE Depth to Bedrock, Slope	IMPROBABLE Excess Fines	SEVERE Slope, Depth to Bedrock	SEVERE Slope
	Rock Outcrop	SEVERE Depth to Bedrock, Slope	SEVERE Depth to Bedrock, Slope	IMPROBABLE Excess Fines	SEVERE Slope, Depth to Bedrock	SEVERE Slope
Rn	Ridgebury	SEVERE Wetness	SEVERE Wetness, Frost Action	IMPROBABLE Excess Fines	SEVERE Wetness, Large Stones, Small Stones	SEVERE Wetness
	Leicester	SEVERE Wetness	SEVERE Wetness, Frost Action	IMPROBABLE Excess Fines	SEVERE Large Stones, Wetness	SEVERE Wetness
SvB	Sutton	SEVERE Wetness	SEVERE Frost Action	IMPROBABLE Excess Fines	MODERATE Slope, Small Stones	MODERATE Wetness
SxC	Sutton	SEVERE Wetness	SEVERE Frost Action	IMPROBABLE Excess Fines	SEVERE Large Stones, Slope	MODERATE Wetness

# INLAND WETLAND RESOURCES

The following information is a summary of findings from a review of available resource maps from the DEP Bureau of Water Management Inland Water Resources Division, also included are general comments on golf course development in and around wetlands.

The Soil Survey of New Haven County recognizes two wetland categories on the property. The first group is Ridgebury, Leicester, and Whitman extremely stony fine sandy loams (Rn). This undifferentiated group consists of nearly level to gently sloping, poorly drained and very poorly drained soils in drainageways and depressions on glacial uplands. The Ridgebury and Leicester soils have a seasonal high water table at a depth of about 8 inches from the late fall until mid-spring. The Whitman soils have a water table at the surface from fall through spring and after heavy rains. In many places, they are ponded for several weeks in winter. In summer, the water table may drop to a depth of 5 feet or more.

The second soil group is Adrian and Palms mucks (Aa). This undifferentiated group consists of organic soils in low depressions on outwash terraces and glacial till plains. The organic layer of these soils is 16 to 50 inches thick. The soils in this unit have poor potential for community development. They have a high water table at or near the surface most of the year and are subject to flooding or ponding.

The National Wetlands Inventory recognizes several categories of wetlands:

- ◆ Palustrine, Forested, Broad-leaved deciduous, Seasonally Saturated (PFO1E)
- ◆ Palustrine, Scrub/Shrub, Broad-leaved deciduous, Seasonally Saturated (PSS1E)
- ◆ Palustrine, Forested, Broad-leaved deciduous/Emergent, Seasonally Saturated, created by beavers (PFO1/EM Eb)

The pockets of forested wetlands are scattered throughout the northern half of the site, perhaps connected to one or more pockets of wetlands by small intermittent watercourses. Wetlands in general provide good quality habitat for wildlife populations. Forested wetlands are important to wildlife because they offer a stable habitat. In times of drought, surface water may generally be obtained by animals in wetlands. In times of windy winter cold, wetlands provide windless refuges, producing seeds and fruits that may be consumed as food. Additionally, forested wetlands are often warmer than more open areas because of the close proximity of unfrozen and often flowing surface water and springs, combined with the windbreaking ability of the trees. Thus wetlands offer insurance to animals in times of climatic extremes.

Emergent and scrub/shrub wetlands are important wildlife habitats. The combination of open water communities, emergent grasses and sedges and shrubby tree growth provide many ecological niches. These habitats combined with wooded upland and forested wetlands create a diverse landscape for wildlife to utilize for feeding , cover, water, and reproduction.

Wetlands serve to collect and store overland runoff prior to water's entrance into permanent and intermittent waterways. This storage function becomes increasingly important upon the removal of vegetation and construction of impervious and grassed surfaces which increase the rate of runoff.

In addition to their water storage capabilities, wetlands, by the nature of the soils and vegetation contained therein, also provide pollution abatement functions. Sediments and other nutrients entering wetlands through runoff are filtered by wetland vegetation. With the addition of chemical fertilizers, pesticides and herbicides for the maintenance of manicured greens and fairways this pollution attenuation function becomes very important.

Many golf course developments incorporate ponds into the design. Ponds excavated in wetlands are generally discouraged. Replacing an existing functional wetland habitat with an open water body simply exchanges one type of habitat with another and does not necessarily result in habitat improvement. Further, when ponds act as settling basins, collecting runoff containing chemical fertilizers, pesticides and sediment, they may become unattractive to wildlife that would otherwise inhabit an aquatic environment. Determining the suitability of a particular area for the introduction of an open water body is highly site specific. In some instances, the wetlands involved may be so highly disturbed as to accept pond creation as a welcome alternative. If the primary objective of a pond is for aesthetics, the ponds should be constructed adjacent to, not within, existing wetlands. Habitat replacement should not be an acceptable alternative to wetland loss when those losses are otherwise avoidable. If there is insufficient water to supply ponds outside of wetlands, then perhaps the site is unsuitable for pond creation.

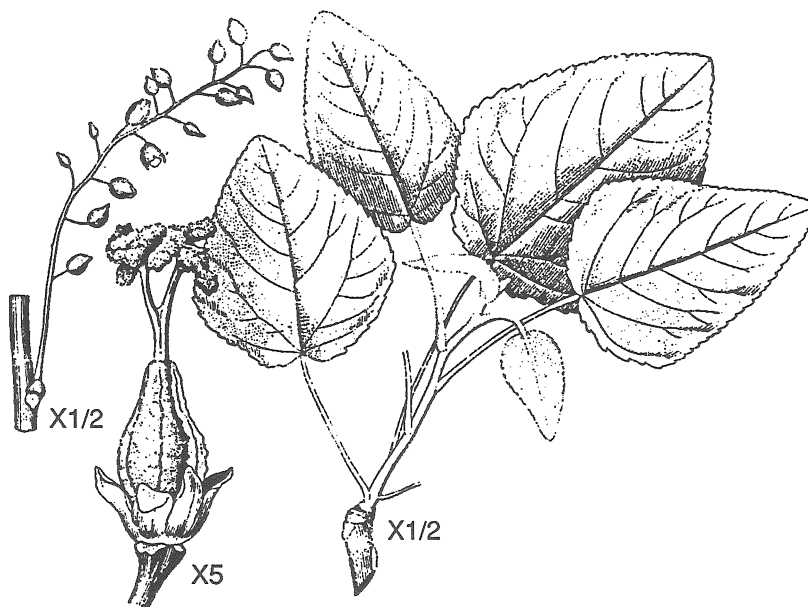
In general, the site appears able to accommodate a golf course while avoiding serious impact to the wetlands on the property. The emergent wetland on the southwest corner of the property appears to be the most significant wetland resource on the property because of its vegetative diversity and the fact that it is connected to other wetland systems off-site. Avoidance of that area is highly recommended.

# THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the project area have been reviewed. According to the information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

It should be noted that we do have records from a nearby wetland for Populus heterophylla.. Swamp Cottonwood. This is a State Endangered Species. This species grows in wooded swamps, alluvial woods and pond borders. Wetlands within project site may support Swamp Cottonwood. It is recommended that the wetlands be looked at to determine if this species occurs on site. (The Team forester found no Swamp Cottonwood in the area proposed for the golf course during his site visit).

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. 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. Such new information is incorporated into the Data Base as it becomes available.



***Populus heterophylla* L.** Swamp Cottonwood

Swamp Cottonwood. Tall tree with shaggy, dull brown bark. Petioles terete, or slightly flattened near the summit only. Blades broadly ovate, 12-20 cm. long, obtuse or rounded, finely crenate-serrate with incurved teeth, cordate at base, tomentose when young, becoming glabrous above at the very base of the blade, glabrous below except on the larger veins. Scales of the catkins long-ciliate. Stamens 12-20. Stigmas 2 or 3, broadly dilated, each elevated on a conspicuous style. Capsules ovoid, 2-3 valved, 7-12 mm. long, on pedicels 10-15 mm. long, forming a loose open raceme.

The swamp cottonwood inhabits shallow swamps, sloughs and wet river bottoms. A mature swamp cottonwood is a medium-sized tree -- 100 feet tall and 3 feet in diameter under favorable conditions, it takes about 40 years to mature. It usually grows alone or in small patches.

# VEGETATION

Approximately 200 acres of the town owned  $\pm 600$  acre tract of land known as the Timberlands Property is being considered for development of a municipal golf course. Since its acquisition by the town in the early 1970's its value as open space has been widely accepted. Several years ago, a study of the property was conducted by The Yale School Of Forestry which suggested long term management of the forest resource to improve forest health and vigor, wildlife habitat, access and recreational opportunities. With the help of professional foresters these goals are being met through an active fuelwood thinning program.

The vegetation present on the Timberlands Property falls into two broad categories: Mixed Hardwoods and Hardwood Swamps. The Mixed Hardwood type dominates the property and is made up of sawtimber size trees (11.1" in diameter at breast height (d.b.h.) and larger) and pole size trees (6.1" to 11" d.b.h.) 60 to 80 years of age. Red oak and black oak are the dominant overstory tree species except on the shallow to bedrock knolls where chestnut oak, black oak and scarlet oak are dominant. American beech, white oak, sugar maple, red maple, hickory, and black birch are present throughout. Tulip tree, white ash and yellow birch are intermixed in the valleys and near the wetlands. Understory vegetation includes hardwood tree seedlings, mountain laurel, maple leaved viburnum, beaked hazelnut, American chestnut sprouts, witch-hazel and highbush blueberry. Lowbush blueberry and huckleberry are dominant on the droughty knolls. Ground cover vegetation includes poison ivy, green briar, club moss, raspberry, dewberry and many species of ferns and wild flowers.

The trees that are present in areas that have received fuelwood thinnings appear healthy and are growing vigorously. In areas that have not as yet received fuelwood thinnings the trees are generally crowded and show signs of stress and decline. If fuelwood thinnings are continued, the residual trees should improve in health and vigor through time.

Several Hardwood Swamps are present within the Timberlands Property. Each is dominated by red maple with occasional black gum, white ash and yellow birch intermixed. Swamp white oak is present in low numbers in at least one of the areas. The size class and age class distribution of the trees in these wetlands are quite variable. Understory vegetation includes spice bush, sweet pepperbush, highbush blueberry, swamp azalea, mountain laurel and arrowwood. Tussock sedge, club moss, sphagnum moss, poison ivy, green briar, cinnamon fern, Christmas fern and sensitive fern are present as ground cover.

Of the 200 acres of this tract that are proposed for development into a golf course, approximately 50% to 75% will be converted to sod. Should development occur, the trees that are to be removed should be tallied and sold as sawlogs and fuelwood. A reconnaissance of the trees in and near the proposed golf course should be performed before development in order to identify the best candidates to be retained. Ideally the trees that are to be retained should be healthy, free of decay and a long lived species such as red oak and sugar maple. These trees may be left in groups or "islands" to reduce the impact of soil disturbance and mechanical injury during

construction. Construction activities that occur too close to trees that are to be retained will adversely effect their health and vigor and potentially create future hazard trees. Trees are very sensitive to the condition of the soil within the entire area of their root systems. Excavation, filling and the general use of heavy machinery will lead to some degree of soil compaction that will adversely affect the soil moisture and aeration balance. This could lead to a decline in tree health and vigor and may even lead to tree mortality within three to five years. Physical damage to the root system (by excavation) or bark damage may allow the introduction of decay organisms which may result in the decline of a trees health. Both individual trees and "islands" can be designated for retention with vinyl flagging or fencing prior to construction so that injury will be avoided. No excavation, filling or driving equipment should occur within 25 - 50 feet (depending on tree diameter - the larger the tree the further away disturbance should occur) of single trees or groups of trees. A general rule to follow is no equipment or excavation within two times the radial spread distance of the tree's crown. When making grade cuts, trees should be removed back from the cut for at least a distance of two feet for each one foot of depth of cut, e.g. 20 feet back for a 10 foot cut. Undisturbed buffer zones of at least 75 -100 feet deep of natural vegetation should be left between the golf course and pre-existing homes to provide a visual and sound barrier.

Trees and forests have value in reducing climatic extremes, controlling runoff, filtering out pollutants from the air and water, reducing noise, providing aesthetic enjoyment, creating wildlife habitat, recharging aquifers, supplying wood fiber and functioning as a carbon sink. Healthy forests provide these long term amenities. Therefore a good relationship between development and the retention of forested open space is essential if generations to come are to enjoy a high quality of life.

# **WILDLIFE RESOURCES**

## **General Background**

The property being considered for development as a golf course is predominantly a forested ecosystem.

The mixed hardwood forest (age 50-75 years old) provides habitat for typical Connecticut forest-dwelling mammals, birds, reptiles, and amphibians.

## **Conversion of Forest to Open and Mowed Habitat**

The habitat change from forest to open mowed field will be detrimental to most forest-dwelling wildlife. Wildlife species such as the Canada goose, Red fox, Woodchuck, Cottontail rabbit, Starling, Cowbird, English sparrow and others will benefit positively with the habitat changes. Neotropical bird (forest interior) species will be adversely affected by the deforestation.

The effect of deforestation on reptiles and amphibians needs to be assessed. Vernal pools need to be located.

## **Discussion of the Wildlife Species Changes**

The wildlife species that will benefit from the proposed changes in habitat are, today, considered nuisances in many parts of the state. In particular, the Canada goose, has been associated with causing nuisance situations on golf courses. They congregate in large numbers, feed on the turf grasses, nest on the ponds, get in the way of golfers, and leave a large volume of feces in and around the greens and waterbodies.

The effect of deforestation on populations of forest interior birds has been the subject of many recent scientific inquiries. The decline in some species of neotropical migrants has been documented by Bob Askins of Connecticut College in New London. It is suggested that he be contacted for input regarding forest interior birds that may be located in the proposed development.

Conversion of forested habitats to open and mowed habitats changes considerably the composition of wildlife species present. Although some species of wildlife may actually benefit from the changes, they are mostly those species that are becoming more common in Connecticut. The effect of the proposed deforestation on forest interior birds will be negative. Effect of the project on vernal pools, amphibians, and reptiles needs to be assessed.

If it is determined that the golf course proposal is a prudent use of the town's open-space property, additional comments that are more specific to the property can be made. A plot plan showing cuts, fills, buffer zones, and water resource improvements, is needed in order to address more specific impacts.

It is important to address how much forested public property Guilford now owns or plans to own. Long-term natural resource planning is necessary because private land development is going to convert a large portion of the town from forest to fragmented smaller lots. Town open space may serve as important forest habitat 200 years from now.

# FISHERIES RESOURCES

This report will address impacts to on-site fisheries resources due to the proposed creation of a 18 hole golf course and delineate appropriate measures to mitigate impacts.

## Fish Population

The only watercourse on the 600 acre parcel that supports fisheries resources is Iron Stream. It is annually stocked by the DEP Fisheries Division in the towns of Madison and Guilford with more than 420 yearling (6-8") brook trout. Iron Stream was found to mainly support warmwater fish populations when sampled just above the Twin Bridge Road crossing by the Fisheries Division Stream Survey Team on June 19, 1990 (Hagstrom et al. 1991). The sample documented the following fish species complex: American eel, fallfish, brown bullhead, chain pickerel, bluegill, pumpkinseed, and redbreast sunfish.

Surface waters of Iron Stream are classified as "Class A". Designated uses for this classification are: potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other legitimate uses.

## Potential Impacts

It is important to note that potential impacts can only be discussed in a very general fashion since specific development plans were not available for review.

◆ **Loss and degradation of wetland habitat.** The proposed golf course should be designed to avoid dredging or filling of inland wetlands. Wetlands are beneficial in several ways. They serve to:

- (1) control flood waters by acting as a water storage basin,
- (2) trap sediment from natural and man-made sources of erosion,
- (3) help filter-out pollutants from runoff before they enter watercourses, and
- (4) provide a diversity of habitats for wildlife utilization.

The loss of wetlands, especially those hydrologically connected with Iron Stream, could degrade water quality and cause reduction of instream flows. Reduced stream flows can significantly elevate stream water temperatures, reduce the availability and quality of instream habitat for fish and aquatic insects, and decrease dissolved oxygen levels.

◆ **Site soil erosion and sedimentation of Iron Stream due to extensive filling and cutting activities.** Without proper safeguards, the placement of fill in concert with land disturbances associated with golf course construction may introduce suspended sediments via surface runoff to this watercourse. If not properly controlled, suspended sediments will cause stream degradation in downstream areas. Sedimentation is of special concern in a meandering, low gradient system such as Iron Stream where deposited sediments take much longer to be washed and transported

downstream by spring freshets. Excessive sediment deposition could damage the aquatic ecosystem in the following ways:

(1) Sediment reduces the survival of resident fish eggs and hinders the emergence of newly hatched fry. Adequate water flow, free of excess sediment particles is required for fish egg respiration and successful hatching.

(2) Sediment reduces the survival of aquatic macroinvertebrates. Since aquatic insects are important food items in fish diets, reduced insect populations levels in turn will adversely affect fish growth and survival. Fish require an excessive output of energy to locate preferred prey when aquatic insect levels decrease.

(3) Sediment reduces the amount of usable habitat required for spawning purposes. Excessive fines can clog and even cement gravels and other desirable substrate together. Resident fish may be forced to disperse to other areas not impacted by siltation.

(4) Sediment reduces stream pool depth. Pools are invaluable stream components since they provide necessary cover, shelter, and resting areas for resident fish. A reduction of usable fish habitat can effectively limit fish population levels.

(5) Turbid waters impair gill functions of fish and normal feeding activities of fish. High concentrations of sediment can cause mortality in adult fish by clogging the opercular cavity and gill filaments.

(6) Sediment encourages the growth of filamentous algae and nuisance proportions of aquatic macrophytes (CT DEP 1989). Eroded soils contain plant nutrients such as phosphorous and nitrogen. Once introduced into aquatic habitats, these nutrients function as fertilizers resulting in accelerated plant growth.

(7) Sediment contributes to the depletion of dissolved oxygen (CT DEP 1989). Organic matter associated with soil particles is readily decomposed by microorganisms thereby effectively reducing oxygen levels.

### **Recommendations**

The following recommendations are provided to the Town of Guilford to assure protection of aquatic resources.

◆ Investigate other feasible and prudent alternatives to the existing proposal. Various regulatory agencies will request that the town review such alternatives. Any proposal should be designed to minimize wetland losses and avoid encroachment of Iron Stream. This objective can be easily accomplished at this site and still satisfy the demand for additional active or passive recreation activities.

◆ Develop an aggressive and effective erosion and sediment control plan. Proper installation and maintenance of erosion/sediment controls is critical to environmental well being. This includes such mitigative measures as filter fabric barrier fences, staked hay bales, and sediment catch basins.

Land disturbance and clearing should be kept to a minimum and all disturbed areas should be restabilized as soon as possible. Exposed, unvegetated areas should be protected from storm events.

◆ The creation of ponds for irrigation and subsequent withdrawal of groundwaters greater than 50,000 gpd (gallons per day) is considered a water diversion, and as such, will require a State of Connecticut Water Diversion Permit. The applicant should contact the DEP Water Diversion Program Coordinator, Mr. Bob Gilmore, at 566-7160 for further details. A detailed groundwater analysis should be conducted and investigate anticipated impacts to riverine flow regimes if groundwaters are hydrologically connected to Iron Stream. The Fisheries Division will also request detailed information regarding the extent to which existing stream flows may be diminished if riparian wetlands are to be impacted.

### **Bibliography**

CT DEP (Connecticut Department of Environmental Protection) 1989. Non Point Source Pollution: An Assessment and Management Plan. CT DEP, Hartford.

Hagstrom, N.T., M. Humphreys, and W.A. Hyatt. 1991. A Survey of Connecticut Streams and Rivers - Central Coast and Western Coast Drainages. Connecticut Department of Environmental Protection, Project Progress Report, F-66-R-3.

# LAND USE PLANNING CONSIDERATIONS

## Site Location

The ±600 acre Timberlands property is located south of Route 80 adjacent to the Madison town line. Access to the property is gained via frontage on Route 80 and various entry points along Maupas Road and Maple Hills Road. The existing land use surrounding the property is predominantly single family low density residential. Just to the north of the site, across Route 80, Cockaponsett State Forest along with an archery range can be accessed with available parking.

## Site Characteristics

The Timberlands property is wooded with terrain ranging from relatively flat, to rolling hills and large ledge outcrops, wetland depressions are interspersed throughout the property. Steep terrain marks the southern terminus of the proposed 18 hole golf course development. There is an active DEP Forestry Management Plan on the site which has helped to keep the growth under control and aided in the maintenance of the trail system and conservation program.

## Zoning

A golf course/recreational facility would be allowed by Special Permit in the R-8 residential district. Residential property located in the R-8 Zoning District requires each lot to have a minimum area of 160,000 square feet. Although the zoning district is R-8 (3 acres), a specialized Development B overlay zone has been created for that area of town to encourage "cluster" development. The Development B zone is characterized by the following land use factors:

- ◆ Substantially or partially undeveloped
- ◆ Includes important conservation resources
- ◆ Lacks public water supply and a suitable network of feeder roads
- ◆ Has soils and/or steep slopes that present severe limitations for land development, including sewage disposal.

The property lies outside of the Aquifer Protection District and is not affected by any other Special Districts within the town.

If the golf course proposal advances the Planning and Zoning Commission would want to design standards which regulate property line setbacks for club house facilities, accessory buildings, and tees and greens, general signage, parking, and restriction of any artificial lighting.

## **Conformance with Other Plans**

The Guilford Comprehensive Plan of Development and Conservation was adopted in 1978. Supplementary reports have been added over the past 15 years dealing with coastal resources and most recently economic development along the Boston Post Road corridor. The Conservation Commission is in the midst of a revision of the Open Space Plan map (1984). A 1986 Open Space "plan" was presented to the town but never adopted, the document is considered an open space guide for the town.

The "draft" Regional Plan of Development does not address the regions' open space at this time. It is anticipated that a future open space element will discuss issues concerning linkage, priority and acquisitions and maintenance problems.

The State Conservation and Development Plan depicts the area as "rural" characterized by single family housing with basic water supply and waste disposal provided by on-lot systems.

The 1987-1992 Connecticut Statewide Comprehensive Outdoor Recreation Plan (SCORP) cites land preservation as the state's major issue based on a wide range of surveys and extensive data gathering. The SCORP plan attempts to offer a strategy for the wise use of Connecticut's outdoor resources for current and future generations. The plan states that the South Central region, which includes Guilford, has the third highest population density (2.2 persons per acre) of the states 15 planning regions. The south central region is expected to have a population growth rate to the year 2000 below the state average, which is projected at a scant 5%. However, the Bureau of Census population figures indicate that the Town of Guilford has experienced the highest population growth rate in the region over the past 20 years.

## **Traffic Circulation / Off-site Impacts**

Using the 1990 Census information it was estimated that close to 1,000 persons live within a one (1) mile radius of the site, and upwards of 125,000 persons live within a ten (10) mile radius of the Timberlands property. Some other distance calculations are listed below:

- ◆ 2.5 miles to the North Madison traffic circle via Route 80.
- ◆ 9 miles to the Madison Town center via Routes 80 and 79.
- ◆ 8 miles to the Guilford Town Center via Routes 80 and 77, Guilford/Durham Lines Routes 80 and 77, and Madison/ Durham Town Line via Routes 80 and 79.

Some general assumptions concerning trip orientation might conclude that the vast majority of users (golfers) would access the site via the state highway system and utilize the local road network. Another general observation might determine that golf course traffic would be generated evenly throughout the day and not affect peak hour performance along the busy Route 80 corridor.

Traffic engineers can supply the town with relevant traffic impact reports, accident and sight distance analysis, along with trip generation rates. The State Traffic Commission (STC) would

need to issue a permit for the golf course proposal. The STC would determine whether the proposed project would impact the state road network and require substantial improvements (widening and turning lanes) or warrant any additional signalization along Route 80.

### **Recreational Opportunities - Open Space Priorities**

Studies, confirmed by congestion on local fairways, reveal that golf is experiencing a recent rise in popularity among all age groups both male and female. Many real estate driven golf development projects have been proposed and/or approved throughout the state but suffer from the current economic downturn and stricter bank lending practices. While the private residential golf developments are caught up in the housing slump, new public 18 hole golf courses are being planned for the area (North Haven and Middlefield (Lyman Meadows expansion)). The National Golf Foundation surveys reveal that approximately 50% of all golf course openings in 1989 were directly related to residential development. By the end of 1992 the amount is anticipated to drop as low as 20%.

According to data supplied by the Guilford Planning Department, the total amount of town owned open space is approximately 1,610 acres of land. That would make Timberlands property one of the largest open space parcels and equivalent to nearly 40% of the gross town owned open space.

Some key open space issues concerning the municipal golf course proposal are listed below:

- ◆ Creating and maintaining “greenbelts” is a very popular open space technique. The Timberlands property is linked to school property and a 9 hole golf course to the south and a large tract of Cockaponsett State Forest to the north (bisected by Route 80).
- ◆ Large municipally owned open space parcels are rare. The high cost of land, as well as limited available funding mechanisms, limits the purchase of large tracts of open space. Providing linkage and multiple use on open space parcels should be encouraged. Are passive recreation pursuits, i.e. riding and jogging trails and/or a nature center, compatible with a municipal golf course? With the proper design, utilizing 150 to 200 acres for the golf course should provide compatible recreational uses while maintaining linkage of open space and advancing overall conservation programs.
- ◆ Will a golf course provide an adequate buffer to residential neighbors as well as sufficient area for any wildlife corridors?
- ◆ How do the citizens of Guilford feel about open space/recreation within the community? Is mixed use of open space land supported? Are there perceived problems with the maintenance of the open space lands? An open space citizen survey might accurately reflect the needs and desires of the residents.

## **Management Issues**

Although any detailed plans for the management of a municipal golf course would take shape after the physical feasibility of the proposal had been determined, some groundwork could be undertaken to investigate certain important elements:

- ◆ Who would operate the facility, and what plans are being made for auxiliary uses - banquet halls, etc.?
- ◆ There is a need for the golf course to be self sufficient. Check on financial stability of other municipal golf courses in the region. Review publications available from organizations such as the National Golf Foundation (NGF).
- ◆ Need to gauge the public sentiment in light of recent failed bond initiatives and poor economic climate. A Citizen Survey seeking input concerning open space and recreation as well as the willingness to support a municipal golf course would not be costly and provide insight.
- ◆ Are there any deed restrictions attached to the property? Any other legal roadblocks concerning development of a municipal golf course on the Timberlands property?

# ARCHAEOLOGICAL REVIEW

A review of the Office of State Archaeology's site files and maps show no known archaeological resources in the proposed golf course area. However, our concerns are that undiscovered sites may be within the project area especially considering the extensive wetland system in the southeast section. In addition, the rather flat terrain above the 200 contour line would provide an ideal place for Native American settlements, especially village and campsites during the prehistoric period. The resource of wetlands in the immediate area and the well drained soil are variables we look for in discovering sites.

The area also has potential for outcroppings of bedrock which would have provided shelter during the colder months. If any blasting is proposed for the construction of the golf course a review for possible rock shelter sites should be conducted prior to that activity.

The Office of State Archaeology strongly recommends an archaeological survey for the project area. The survey can be conducted to test sensitive areas which possess potential for archaeological resources. Areas of low sensitivity can be defined and would not require testing. However, some of the knolls and flatter areas over the wetlands should be prime areas and tested.

All archaeological surveys should be done in accordance with the Connecticut Historical Commission's **ENVIRONMENTAL REVIEW PRIMER FOR CONNECTICUT'S ARCHAEOLOGICAL RESOURCES**. In addition, the Office of State Archaeology is prepared to offer technical assistance to the Town of Guilford in conserving and preserving archaeological resources on the property prior to the construction activity.

# 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 the purposes of review and a statement identifying the specific areas of concern the Team members 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 reviews per month depending on scheduling and Team members.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or the King's Mark ERT Coordinator, King's Mark RC&D Area, Inc., P.O. Box 70, Haddam, CT 06438. The ERT telephone number is 203-345-3977.