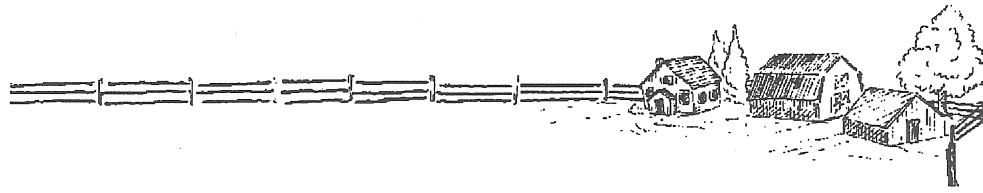


Bosco Property

Killingworth, Connecticut

Eastern Connecticut Environmental Review Team Report

**Eastern Connecticut
Resource Conservation and Development Area, Inc.**



Bosco Property

Killingworth, Connecticut

Environmental Review Team Report

**Prepared by the
Eastern Connecticut Environmental Review Team
of the Eastern Connecticut
Resource Conservation and Development Area, Inc.**

**for the
First Selectman
Killingworth, Connecticut**

October 2000

**CT Environmental Review Teams
1066 Saybrook Road, P.O. Box 70
Haddam, CT 06442
(860) 345-3977**

Acknowledgments

This report is an outgrowth of a request from the Killingworth First Selectman to the Middlesex County Soil and Water Conservation District (SWCD). The SWCD referred this request to the Eastern Connecticut Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

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

The field review took place on Thursday, July 20, 2000.

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Middlesex County Soil & Water Conservation District
(860) 346-3282

I would also like to thank David LeVasseur, first selectman, for his cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given additional information. Some Team members made separate or follow-up site visits. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the town and landowner. 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 town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in reviewing this proposed town purchase of land.

If you require additional information please contact:

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Introduction

Introduction

The Killingworth First Selectman has requested assistance from the Eastern Connecticut Environmental Review Team in conducting a review of a proposed town purchase of land for open space and recreational purposes.

The ±133 acre site is located on the east side of Route 81, south of Route 148. Site access is from Route 81. Adjacent land uses include Cockaponset State Forest and private residential properties. A stream flows through a portion of the property to the Menunketesuck River. The historic use of the property is a farm. The site contains an 1815 house and more recent outbuildings. More recent uses include a "resort" during the 1950's and a turkey farm (1960's) where birds were raised and processed. The site contains a small portion of lawn around the home, about 40-50 acres of cleared fields (starting to revert) and the remainder is forestland. The home is currently leased to tenants.

Objectives of the ERT Study

The Town plans to use the property for open space and recreation and has asked for a review to determine if there are any potential environmental problems or concerns that they should be aware of prior to purchase.

The ERT Process

Through the efforts of the first selectman this environmental review and report was prepared for the Town of Killingworth.

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

The review process consisted of four phases:

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

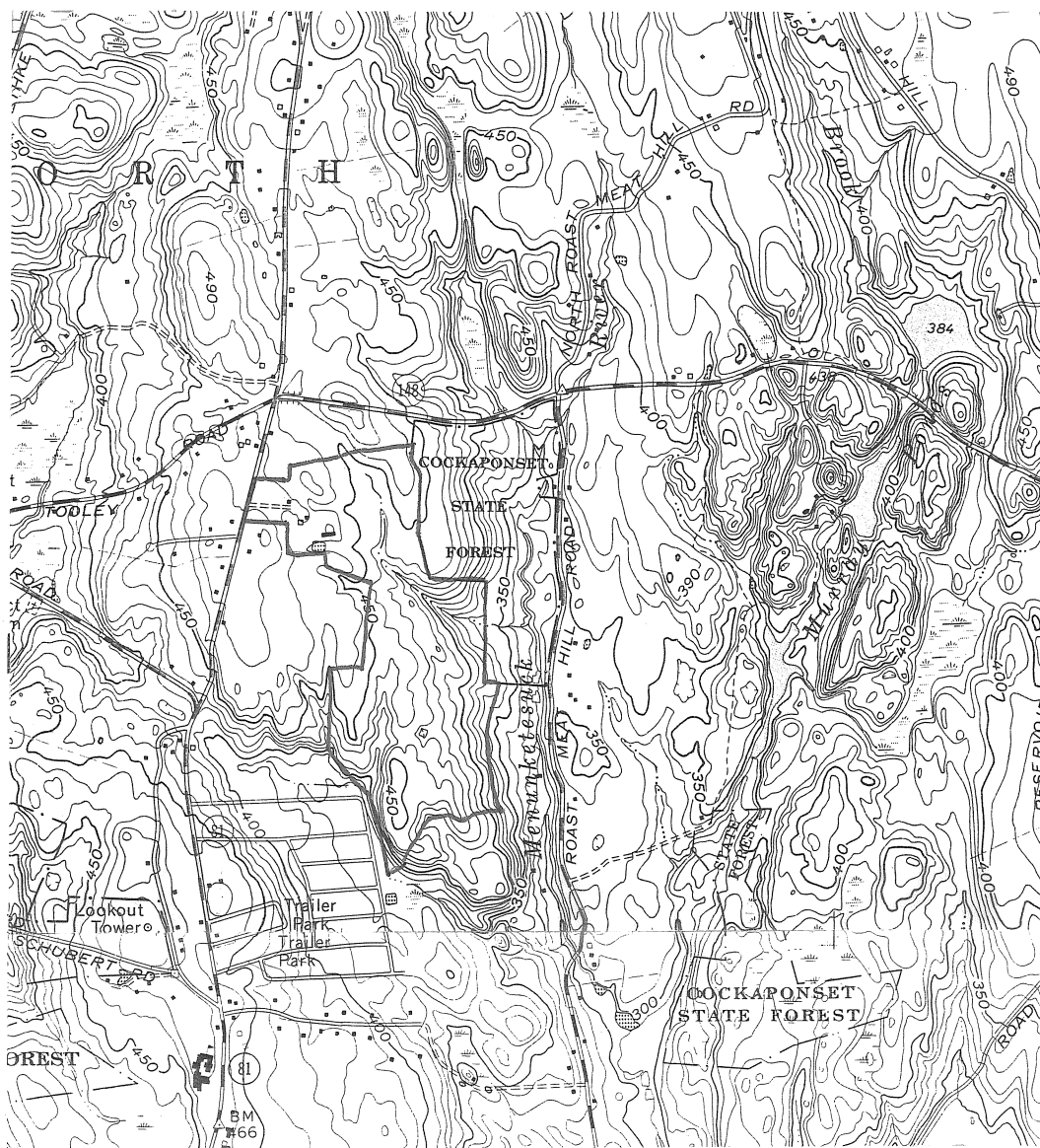
The data collection phase involved both literature and field research. The field review was conducted on Thursday, July 20, 2000. Some Team members made additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

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

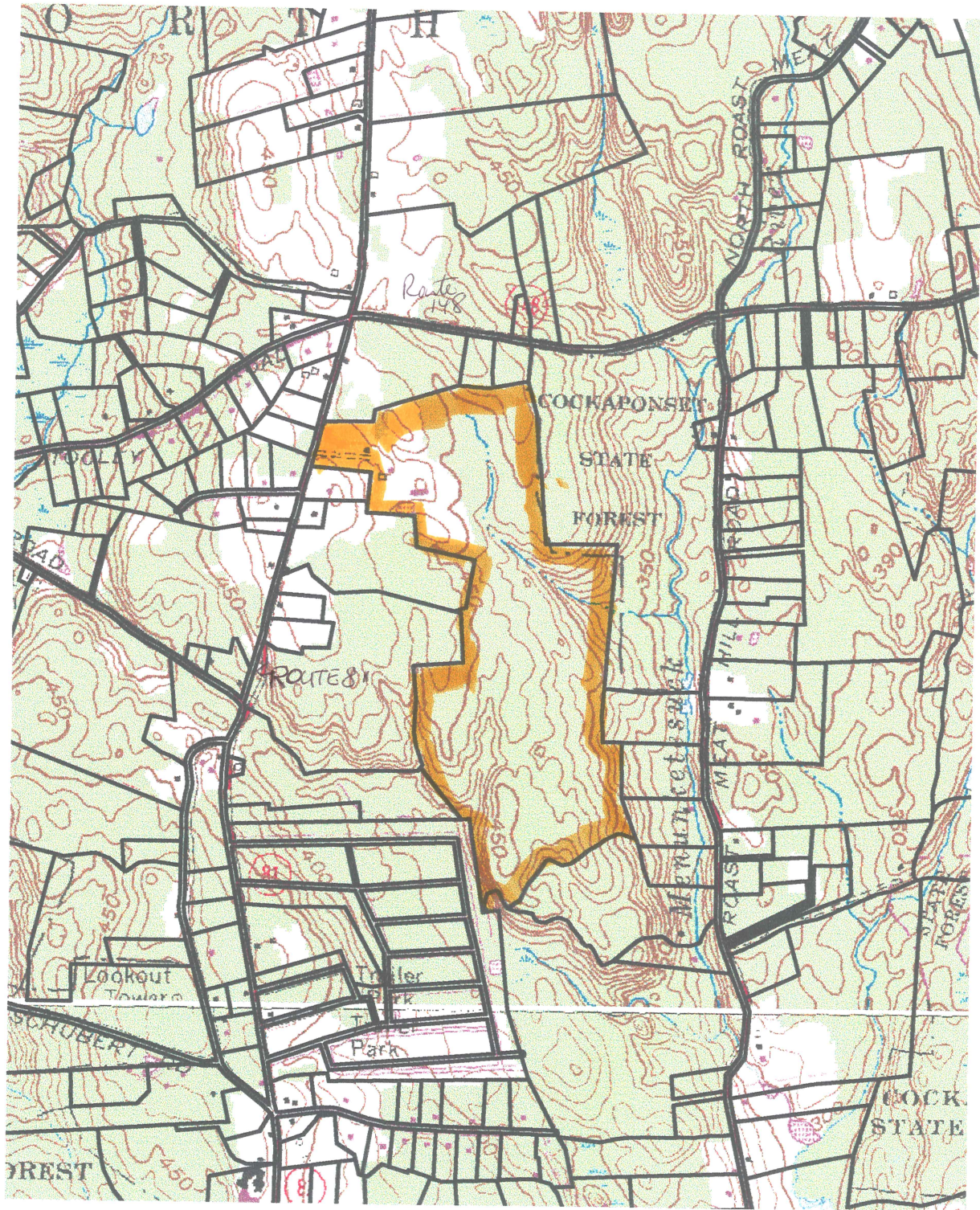
Topographic Map

Scale 1" = 2000'

— Approximate Site



Bosco Property



Potential Contamination Issues

The Bosco Property was used as a turkey farm from the late 1950's until approximately 1971 . Turkeys were raised and processed on site. This historic use raises concerns of site contamination with pesticides, nitrates from animal waste streams, and refrigerants from the processing plant.

An environmental site assessment is warranted to determine if contaminants are present in surface soils and the underlying ground water. Surface soil contamination may pose a risk based on future land use. The Town of Killingworth has indicated that the site would be used for active recreational sports, including ball fields and hiking. The areas where ball fields are to be constructed ought to be evaluated for surface contamination with pesticides. The ground water under the processing plant and turkey barn should be evaluated for nitrates, pesticides, and volatile organic compounds (including refrigerants). Any potable drinking water well should be tested for nitrates, volatile organic compounds, and pesticides.

A concentration of contaminants found in soil and water can be compared against the CT Remediation Standards (RSRs). The RSRs are mainly relevant to sites undergoing remediation, and can also be used for reference in other sites where contamination may be a concern. The RSRs are generally health risk based standards. The CT Department of Health and Regional Health Offices should also be consulted when evaluating levels of contaminants discovered on site.

Soil and Water Conservation District Review

The site is located in the Menunketesuck River Watershed. Predominant site drainage is to a small stream which eventually flows to the Menunketesuck River.

Soils Suitability

The western and less steep portion of the site is characterized by fine sandy loams with low to moderate slopes (3 to 8 percent). Because of the low permeability of these types of fine loamy soils they are wet from late autumn until spring and briefly during summer storms. Portions of this site are also very stony. The wet soils could potentially cause problems for the proposed ball fields and may need to be compensated for with an engineered drainage system.

The addition of a drainage system can cause a short-circuiting of lawn chemicals from the maintained fields directly to the Menunketesuck River. Therefore, a management plan for the use of fertilizers and pesticides as well as parking lot runoff should be established.

The proposed use as hiking areas for the more easterly portion of the site - which is characterized by steeper and stonier soils - is appropriate.

Natural Diversity Data Base

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

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

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Vegetation

The Bosco Property may be divided into several broad vegetation categories. These include Mixed Hardwoods, Hardwood Swamp and Old Field. Below are brief descriptions of each of these vegetation categories. The location and acreage of these areas were obtained from 1995 aerial photographs and are only approximate. They are depicted on the Forest Vegetation Map. The field inventory of vegetation types was conducted in July. A more comprehensive inventory of the herbaceous vegetation, that is present in each of these categories, should be made at different times throughout the year by a botanist.

Shallow to bedrock soils, numerous rock outcrops and wetlands dominate the forested portions of this property. Most of the accessible forested portions of this tract were harvested in the late 1980's. At that time many of the merchantable trees were removed leaving the smaller and less vigorous trees to grow in the residual stand. Some larger trees however, were left in the valleys and scattered throughout the high ground. Many of these larger trees provide excellent mast for wildlife. In areas where the timber harvest was heaviest, a dense growth of sapling size hardwoods originating from stump sprouts has become established.

At this time, forest management aimed at improving forest health that generates revenues from the sale of sawtimber is not feasible. Removal of unhealthy, poor quality pole size trees to reduce crowding and improve forest health would only be feasible if a strong fuelwood market were to develop as a result of rising fossil fuel prices. The condition of this forest should be re-evaluated in approximately ten years to determine the suitability of management at that time.

The forested portions of this property are well suited to passive recreation. Upgrading the old logging roads that are present into hiking trails would not be difficult. Loop trails could be developed by connecting existing trails. Property

boundaries should be located and clearly marked before trail improvement or establishment begins.

Vegetation Type Descriptions

A. Mixed Hardwoods

This Mixed Hardwood vegetation type totals approximately 70 acres and is generally restricted to areas that have well drained soils. This type is dominated by reasonably healthy pole and small sawtimber size trees which range from 60 to about 110 years of age. Larger and older trees are present but they are few in numbers and scattered. The overstory in this vegetation type is dominated by black oak, red oak, white oak, scarlet oak, chestnut oak, black birch, red maple, shagbark hickory, pignut hickory and mockernut hickory with lesser numbers of American beech, sassafras and sugar maple mixed in. Red maple, white ash, red oak, yellow birch, black gum and tuliptree dominate where the mixed hardwood type makes a transition to the Hardwood Swamp type and also along streams and seeps. The understory vegetation that is present includes mountain laurel, hardwood tree seedlings, maple leaved viburnum, hophornbeam, American hornbeam, azalea, American chestnut sprouts, witch-hazel, highbush blueberry, lowbush blueberry, spice bush and sweet pepperbush. Ground cover vegetation includes poison ivy, Virginia creeper, green briar, rattlesnake plantain, Canada mayflower, wild sarsaparilla, wood aster, club moss, evergreen wood fern, hayscented fern, Christmas fern and many other species of grasses, sedges and wild flowers. Sensitive fern, cinnamon fern, royal fern, skunk cabbage, false hellebore, trillium and jack-in-the-pulpit are present along the streams.

B. Mixed Hardwoods (Oak Ridge)

The Mixed Hardwood (Oak Ridge) vegetation type occupies approximately 27 acres of this property. This vegetation type is found on the excessively drained,

very stony shallow to bedrock knolls and side hills that are present. The vegetation, which dominates these sites, is made up of somewhat stunted and malformed pole sized chestnut oak with scattered scarlet oak, white oak, black oak, mockernut hickory and pignut hickory. Red maple, black birch, sassafras and American beech are also present in the overstory, but in lesser numbers. Understory vegetation includes lowbush blueberry, huckleberry, hardwood tree seedlings, mountain laurel, American chestnut sprouts, witch-hazel, mapleleaved viburnum and green briar. Ground cover consists of Pennsylvania sedge, Canada mayflower, club moss, poison ivy, Virginia creeper, hayscented fern and bracken fern. Common polypody is present on some of the rock outcrops.

C. Hardwood Swamp

There are approximately 19 acres of the Hardwood Swamp vegetation type present within this parcel. The vegetation that is present is somewhat variable with all size classes and age classes of trees represented. These wetlands are dominated by red maple and may include occasional yellow birch, black gum, white ash, sugar maple, sassafras, red oak, gray birch, black birch and tuliptree. Some of the larger trees that are located in the wetland areas adjacent to streams have cavities that make excellent den sites for many species of wildlife. Young seedling and sapling size trees and a dense shrub layer dominate the wetlands that are located adjacent to open areas.

Shrub species that are present include spice bush, sweet pepperbush, highbush blueberry, swamp azalea, multiflora rose, swamp rose, buttonbush, winterberry, hophornbeam, American hornbeam and witch-hazel. Skunk cabbage, false hellebore, tussock sedge, club moss, sphagnum moss, poison ivy, green briar, Virginia creeper, cinnamon fern, Christmas fern, sensitive fern, evergreen wood fern, royal fern, Canada mayflower, Solomon's seal, false Solomon's seal, violets,

trillium, larger blue flag, nettles, wild geranium, wild sarsaparilla, aster spp., sedges and other wild flower species are present throughout as ground cover.

D. Old Field

Open fields adjacent to the farmstead have been abandoned at different times throughout the years creating 17 acres of the old field vegetation type.

Unfortunately many non-native invasive plant species have become established. These include Asiatic bittersweet, Multiflora rose, Japanese barberry, autumn olive, tatarian honeysuckle, Japanese honeysuckle, common reed and purple loosestrife. Although some of these species provide wildlife with food and cover, they are aggressive competitors with native plant species. In some areas the presence of one or more of these species has precluded the establishment of other more desirable native plant species. Mechanical removal or chemical control of these plants is effective but will become more difficult as they become more widespread.

Other plant species that are present include white ash, red maple and cherry seedlings, eastern red cedar, choke cherry, apple, crab apple, spice bush, smooth sumac, winged sumac, staghorn sumac, grape, poison ivy, Virginia creeper, raspberry, and wineberry. Herbaceous vegetation includes grasses, sedges, ragweed, goldenrod, daisy fleabane, cinquefoil, wild carrot, Asiatic dayflower, black-eyed Susan and ox-eye daisy. Open areas along the streams and pond site include grasses, sedges, cattail, jewelweed, hawkweed, blackberry, wild strawberry, elderberry, hayscented fern, cinnamon fern, sensitive fern and skunk cabbage.

FOREST VEGETATION MAP
Bosco Property Acquisition
Killingworth, CT
133+- Acres

NORTH



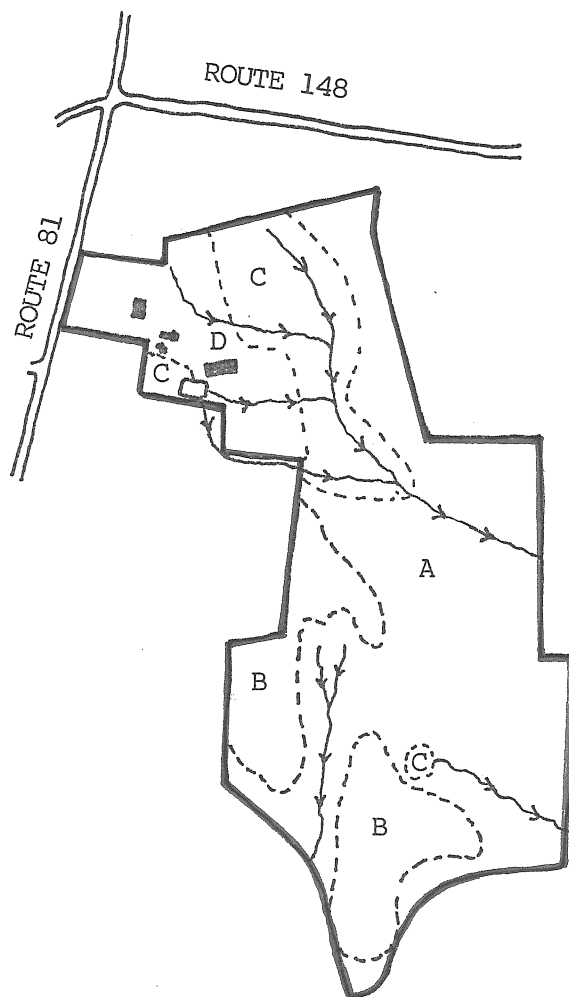
SCALE 1"=1000'

VEGETATION TYPES

- A. Mixed Hardwoods.....70+- ACRES
- B. Mixed Hardwoods.....27+- ACRES
- C. Hardwood Swamp.....19+- ACRES
- D. Old Field.....17+- ACRES

LEGEND

- PROPERTY BOUNDARY
- VEGETATION TYPE BOUNDARY
- PAVED ROAD
- BROOK
- POND
- STRUCTURES



Archaeological Review

A review of the State of Connecticut archaeological site files and maps shows no known archaeological sites on the Bosco property. However, there is one Native American site located to the northeast of the property within Cockaponset State Forest and associated with the Menunketesuck River.

An environmental and topographic review of the project area suggests that the area has a high probability of Native American resources. It would be expected to locate a series of small hunting and gathering camps that may date back as many as 6,000 years ago. These would be camps where Native Americans were utilizing the natural resources of the area especially the area where the brook flows into the Menunketesuck River. Confluences of two water systems were often very desirable as campsites for Native American populations. It is suggested that the site has a high probability for discovering such sites. Archaeological survey work has never been conducted on this property so the archaeological remnants are relatively unknown. Proper testing could yield that information, however, the landscape and environmental characteristics of the land could be used as an educational opportunity for the town in telling stories about early Native American occupation.

In addition, the old turkey farm and remnants of the historic component there could certainly be used as an educational and historic tool. There may be ruins associated with outbuildings some of which may go back to the early development of the farm and its house in the early 1800's.

The town has a unique opportunity here not only to acquire the site for open space and recreation purposes but also to use this as a tool for educating the people of Killingworth in terms of their history going back thousands of years as well as into the colonial and historic periods.

The Office of State Archaeology is prepared to offer the town of Killingworth any technical assistance in testing the property and also in developing educational and exhibit opportunities for the citizens of Killingworth.

Traffic and Access

This property is accessed by way of Route 81, a two lane state road, which carries the bulk of north-south traffic through town. Route 81 continues through Haddam and connects with Route 9 approximately 10 miles north of the property. It is therefore a major thoroughfare for the town, carrying commuter traffic for Hartford to the north, or points East and West by connecting with I-95 to the south. Route 81 also intersects with Route 148, a major east-west connector through town.

According to the Department of Transportation traffic division, the measured percentile speeds along Route 81 in the vicinity of this intersection are 51 miles per hour (MPH). The posted speed limit is 45 MPH. In 1999, there were seven (7) accidents within a mile of the proposed site, however, the data does not show any clear cause. See accompanying map for Average Daily Traffic count data and accident data (Figure 4).

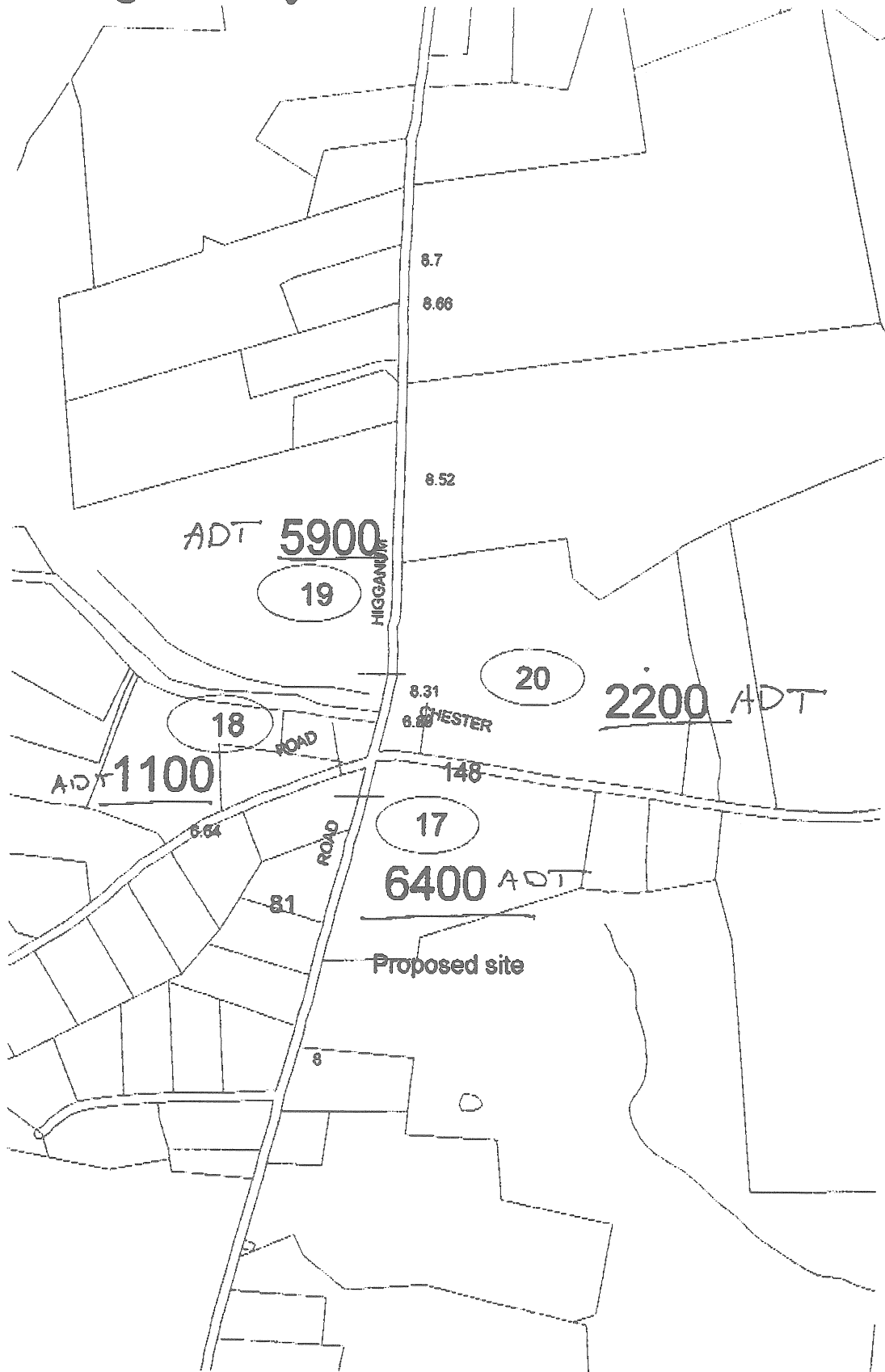
The geometry of the roadway does not seem to present any hazardous situations as the driveway entrance is on a flat surface and the section of Route 81 in front of the entrance is a straight road. There should be some selective clearing to maintain a safe site distance.

Not a great deal of data exists for trip generation for recreational parks, however, according to calculations based on the Institute of Transportation Engineers trip generation manual, a city park of 143 acres would generate approximately 200 trips on a weekday. This number would likely increase significantly on a weekend. It is reasonable that Route 81 can accommodate this increased level of service. However, because of the nature of this development, a recreational park for children and adults, additional safety considerations should be taken into account when the site is developed. Such measures as a sign indicating "Park

Entrance Ahead", or flashing lights to indicate the upcoming entrance may be warranted.

Town officials may be aware of a recreation complex in Clinton which called attention to concerns of pedestrian safety on such a high traffic, high speed road. While Killingworth does not have the same situation as Clinton (other town facilities close by and on the opposite side of the street) the town may want to take special considerations for the design of the park entrance such as a pull off area or a roundabout to allow a transition for the high speed traffic off of Route 81.

Killingworth, CT Average Daily Traffic



ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area — an 86 town region.

**The services of the Team are available as a public service
at no cost to Connecticut towns.**

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, landfills, commercial and industrial developments, sand and gravel excavations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

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

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.