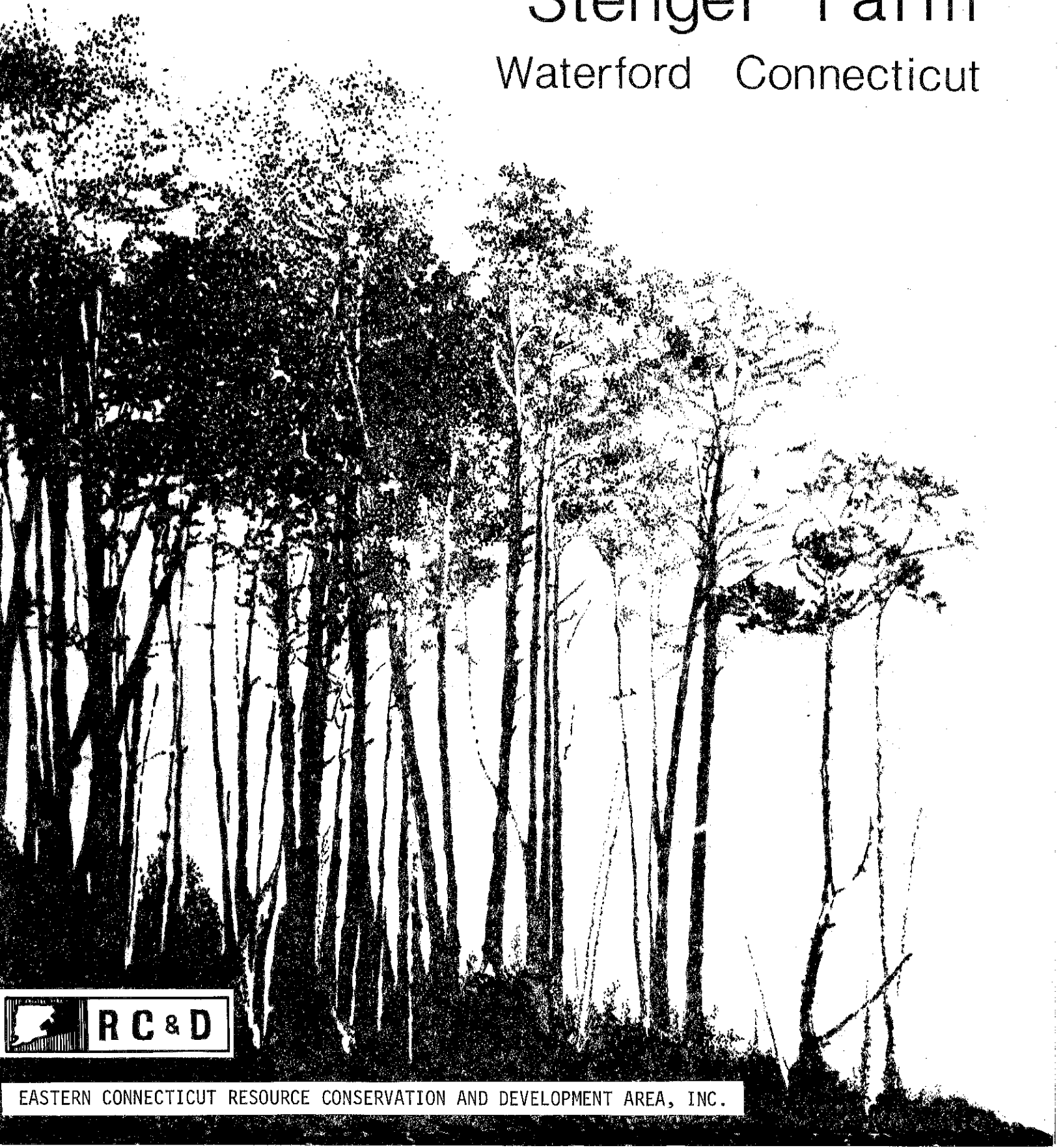


Environmental Review Team Report

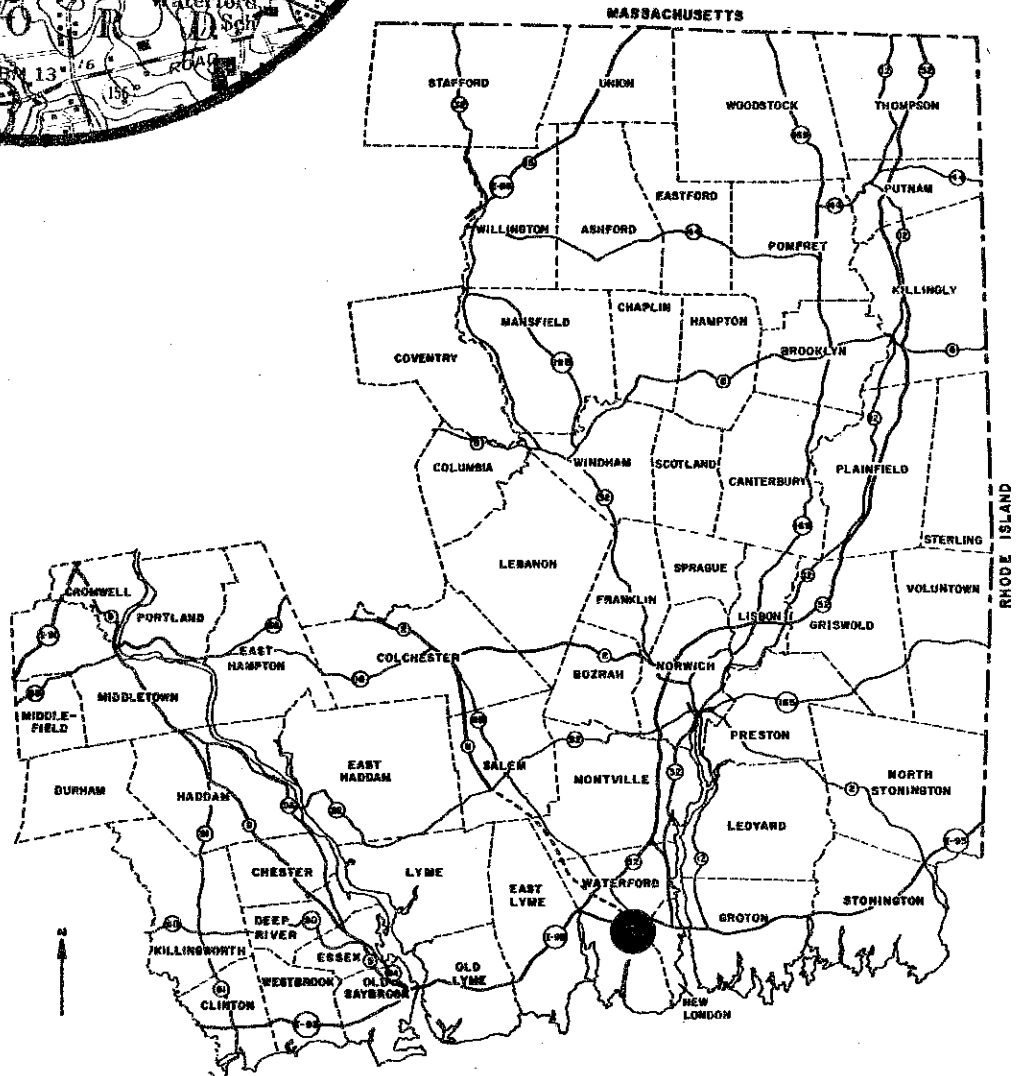
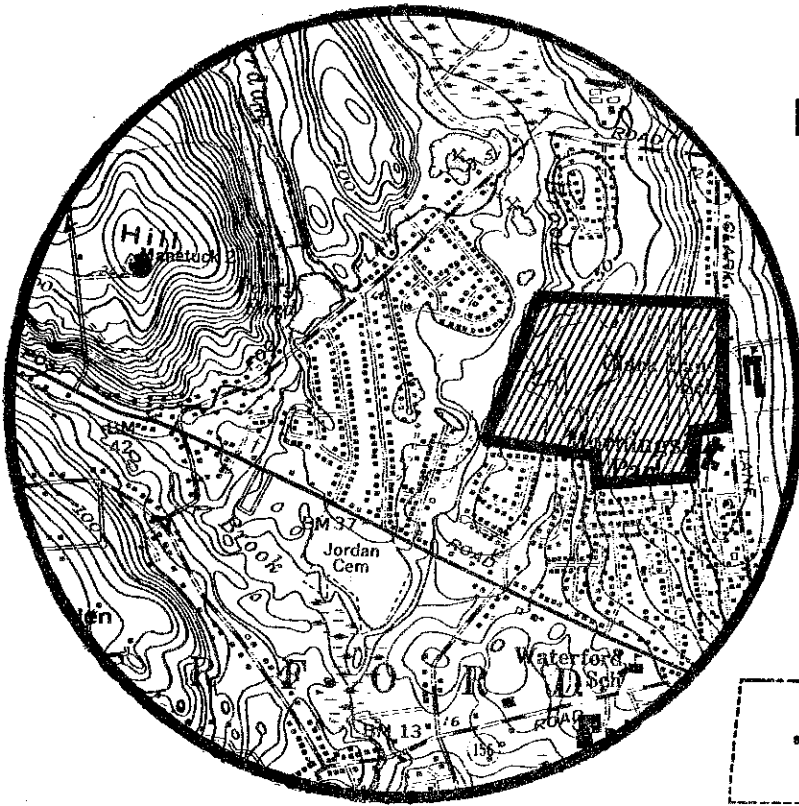
Stenger Farm Waterford Connecticut



EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Location of Study Site

STENGER PROPERTY
WATERFORD, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
STENGER PROPERTY
WATERFORD, CONNECTICUT

This report is an outgrowth of a request from the First Selectman of Waterford, to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource, Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. The request was approved for the RC&D Executive Committee by David Syme, Committee President, and the measure was reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist from the United States Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses and a topographic map showing property boundaries were distributed to all Team members prior to their review of the site.

The ERT that field-checked the site consisted of the following personnel: Gary Parker, District Conservationist, Soil Conservation Service, (SCS); Tim Dodge, Wildlife Biologist, SCS; Pete Merrill, Forester, Connecticut Department of Environmental Protection (DEP); Michael Zizka, Geologist, DEP; Andy Petracco, Recreation Specialist, DEP; Thomas Seidel, Regional Planner, Southeastern Connecticut Regional Planning Agency and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, January 26, 1978. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants. As requested by the Town, this report, which identifies the existing resource base of the Stenger Property, shall constitute the environmental assessment portion of the Town's open space application for Federal Department of the Interior, Bureau of Outdoor Recreation (BOR) funds to assist in the acquisition of the Stenger Property.

The Eastern Connecticut RC&D Area Committee hopes that this report will be of value and assistance in making any decisions regarding this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

DESCRIPTION OF THE PROPOSAL

The Town of Waterford wishes to acquire a 97 acre parcel known as the Stenger Farm as public open space. The tract is presently a portion of the estate of the late John Stenger and in the private ownership of his niece Barbara Stenger Goodson of Hartsville, South Carolina.

The Farm is located on Clark Lane directly to the west of Clark Lane Junior High School. The site is the only large open space in this densely populated portion of town. It consists of several large open fields, a wooded area, two ponds and is bound on the west by Nevins Brook.

Should acquisition funding be available, the Town intends to use the parcel as a passive recreation area, potential uses include but are not limited to, nature trails or nature study areas, outdoor laboratories and other compatible passive recreation facilities.

The Town currently has active recreation facilities at the Town Beach on Long Island Sound and is developing playing fields at a site on Vauxhall Street Extension. The acquisition of the Stenger Farm would complement these active recreation facilities by providing a Town open space in the central portion of town.

The Land Use Plan (July 1977) for the Town, recommends that this area be used for agricultural or natural resource purposes. This plan has been amended to show proposed open space. The adopted Regional Development Plan depicts this area as proposed local open space.

DESCRIPTION OF THE ENVIRONMENT

PAST/PRESENT LAND USES

Past land use of the site was primarily agricultural. The farm was used as a boarding stable and the fields were probably used for haying and grazing. A half mile track in the level Enfield soil adjacent to Nevin's Brook, was built for harness-sulky racing and still exists. The site is presently undeveloped. Approximately 50% of the site is open fields with the other 50% forested or reverting to forest. Surrounding land uses are single-family residential on three sides. Clark Lane Junior High School borders the site on the eastern side of Clark Lane and New London Convalescent Hospital borders the southeast corner of the site along Clark Lane. An undeveloped area exists north of the site off Fog Plain Road. Zoning for the site is residential half-acre lots.

NEW
LONDON

Existing
Land Use



LEGEND



OLD FIELD/
FOREST SUCCESSION



WOODED AREA



OPEN FIELDS

EXISTING SOCIO-ECONOMIC CONSIDERATIONS

Waterford's current population of 18,500 is expected to reach 24,300 by the year 2000. Other than some beach areas, this area has the highest residential density in Waterford. Most of the homes surrounding the site were built before requirements of open space dedication. Judging by the trail bike marks, the area is already serving a recreational function.

EXISTING TRANSPORTATION ROUTES

The Stenger Property is located in central Waterford near the eastern border on Clark Lane about one half mile north of the intersection of Routes 156 and 1A. Waterford is a member of the Regional Transit District and local service is proposed for year two (1982) of the transit program along Clark Lane, Fog Plain Road, 1A, 156, and Spithead Road. From a highway and transit viewpoint the site should be easily accessible to residents of central Waterford. The site is accessible by walking or riding bicycles for the surrounding areas and by car or future buses for other areas. Parking lots could be developed along Clark Lane, although the "C" soils with seasonal high water tables and fragipans will require designs which will not create drainage problems.

TOPOGRAPHIC FEATURES

Two distinct topographic zones, underlain by different geologic units, are found within the Stenger Farm site. The eastern zone, underlain by till, has a slight to moderate slope, averaging 7 to 8% (a 7-8 foot rise per 100 feet). The western zone, underlain principally by stratified drift, is level to slightly sloping, with three ponds of unknown depths. A low ridge is found near the northwest corner of the site.

SURFACE AND SUBSURFACE GEOLOGIC CHARACTERISTICS

A surficial geologic map of the site is provided. This was derived from the U.S. Geological Survey Publication GQ-329, The Surficial Geology of the Niantic Quadrangle, Connecticut by Richard Goldsmith (1964). Bedrock geology is not provided as outcrops were not observed on the site, and the bedrock surface is estimated to be at least 10 feet below the property at all points.

Four surficial geologic units are shown: till, stratified drift, end moraine deposits, and alluvium. Till is a non-sorted, typically stony material that was derived from the abrasion of bedrock and previous surficial deposits by glacial ice. Till is commonly known as hardpan in Connecticut. Stratified drift is a layered, better-sorted material, consisting commonly of sand and gravel, that was deposited by meltwater emerging from a receding glacier. An excavation west of the old race-track exposed approximately seven feet of stratified sand. No gravel was seen at

Topography

Site Boundary

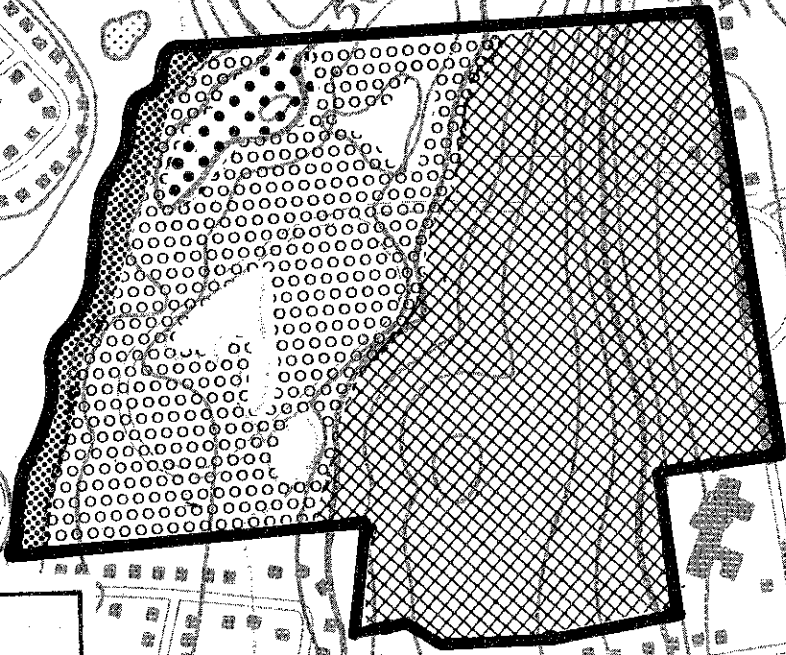
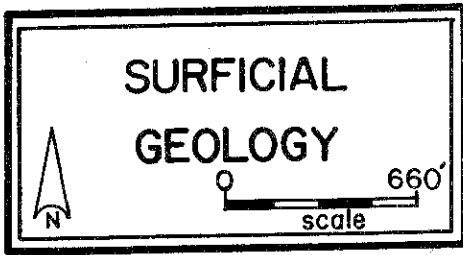
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

NEW
LONDON



NEW
LONDON



LEGEND

-  Ponds
-  End Moraine deposits
-  Alluvium
-  Stratified Drift
-  Till

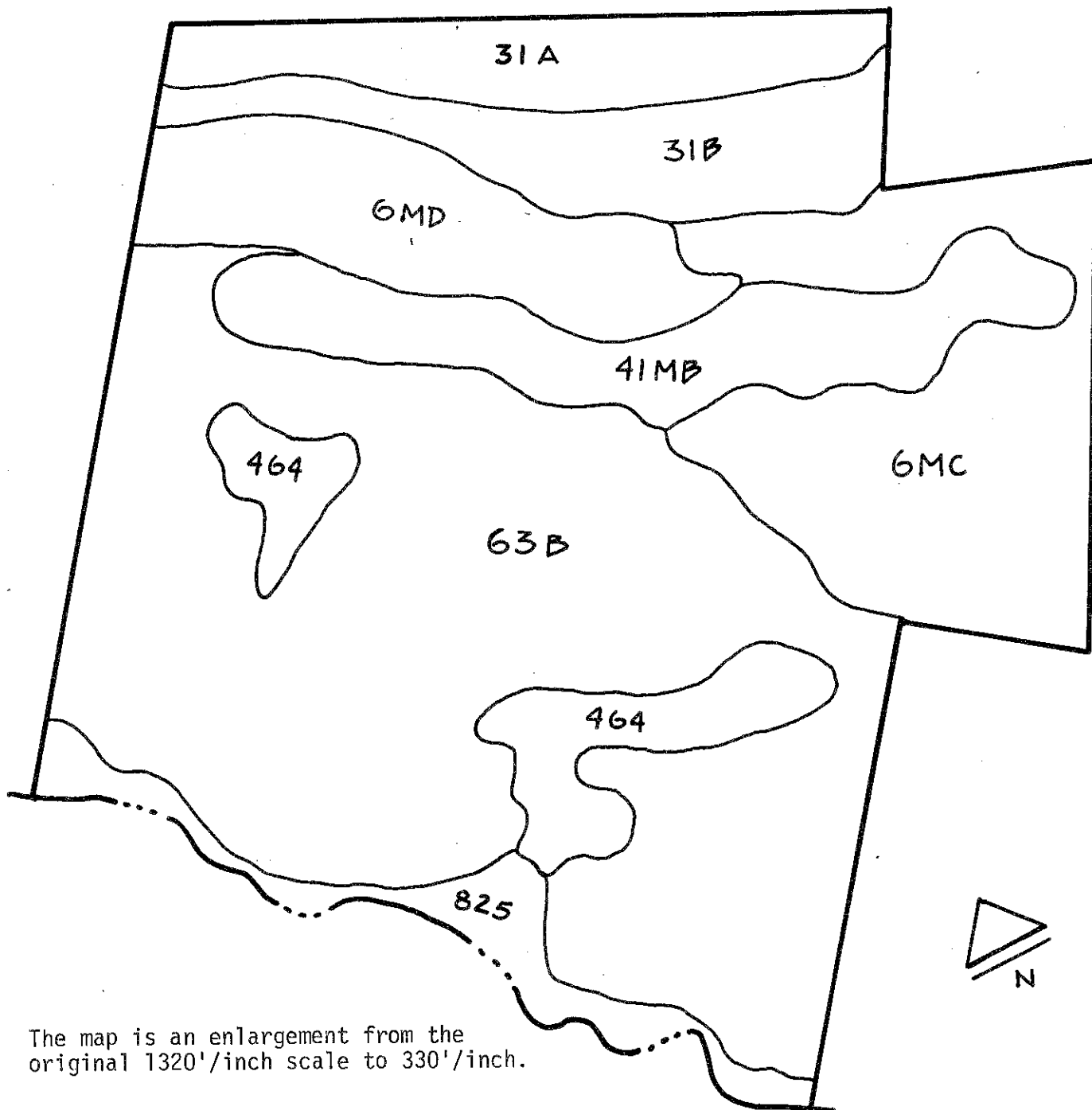
the site, although Connecticut Water Resources Bulletin Number 15 suggests that gravel may lie at depth. End moraine deposits are bouldery accumulations of till and some stratified drift that are formed at the front of an active glacier. The distinct, Hummocky Ridge near the northwest corner of the property is strewn with boulders, and is thought to represent part of an end moraine. Alluvium is poorly sorted silt, sand, and gravel deposited by modern streams.

SOILS

The soils found on the Stenger Property fall into the following categories:

- 1) The Birdsall series (825) consists of deep, very poorly drained soils on low flats or in depressions. They formed in waterlaid deposits of silt and very fine sand. Typically, these soils have a black silt loam surface layer, 8 inches thick. The mottled substratum, from 8 to 16 inches, is gray silt loam and, from 16 to 50 inches, is gray layers of silt and very fine sand. Slopes range from 0 to 3 percent.
- 2) The Haven series (63B) consists of deep, well drained soils on outwash plains and moraines. They formed in water sorted loamy material over stratified gravel and sand. Typically these soils in a wooded area have a dark grayish brown loam surface layer 3 inches thick. The subsoil from 3 to 10 inches is brown loam, from 10 to 19 inches is strong brown loam, and from 19 to 28 inches is yellowish brown gravelly loam. The substratum from 28 to 42 inches is stratified gravelly sand. Slopes range from 0 to 15 percent.
- 3) The Narragansett series (6MC, 6MD) consists of deep, well drained soils on uplands. They formed in silt mantled glacial till. Typically these soils have a dark yellowish brown silt loam surface layer 8 inches thick. The subsoil layers from 8 to 26 inches are strong brown and yellowish brown silt loam. The substratum from 26 to 60 inches is yellowish red gravelly sandy loam. Slopes range from 0 to 25 percent.
- 4) The Raypol series (464) consists of deep, poorly-drained soils on terraces. They formed in silty deposits over sand and gravel. Typically, these soils have a very dark brown silt loam surface layer, 8 inches thick. The subsoil, from 8 to 29 inches, is grayish-brown, dark yellowish-brown, and olive brown silt loam and very fine sandy loam, mottled throughout. The substratum, from 29 to 60 inches, is light olive brown gravelly sand. Slopes range from 0 to 5 percent.
- 5) The Sutton series (41MB) consists of deep, moderately well drained soils on uplands. They formed in glacial till. Typically these soils have a very dark grayish brown fine sandy loam surface layer 6 inches thick. The subsoil layers from 6 to 28 inches are dark brown and yellowish brown fine sandy loam with mottles below 12 inches. The mottled substratum from 28 to 36 inches is brown fine sandy loam and from 36 to 60 inches is light olive brown gravelly sandy loam. Slopes range from 0 to 25 percent.

SOIL MAP
STENGER PROPERTY
WATERFORD, CONNECTICUT



Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
ADVANCE COPY, SUBJECT TO CHANGE.

- 6) The Woodbridge series (31A, 31B) consists of deep, moderately well drained soils on uplands. They formed in glacial till. Typically these soils have a dark brown fine sandy loam surface layer 7 inches thick. The fine sandy loam subsoil from 7 to 18 inches is dark yellowish brown in the upper part and yellowish brown in the lower part. A layer of olive sandy loam is at 18 to 21 inches. The substratum from 21 to 26 inches is olive fine sandy loam. From 26 to 42 inches is a very firm fragipan that is olive gravelly fine sandy loam. Slopes range from 0 to 35 percent.

The soil survey map and the accompanying charts indicating soil limitations for certain land uses further distinguish the soil types and their potential for the listed land uses. As the detailed soils map provided here is an enlargement from the original 1,320'/inch to 660'/inch scale, the soil boundary lines shown, should not be viewed as absolute boundaries but rather as guidelines to the distribution of soil types on the property. The soils map along with "Special Soils Report: Southeastern Connecticut Region" (USDA-SCS 1969), can serve as an educational tool regarding the identification and interpretation of soils.

WATER RESOURCES

The area surrounding the Stenger Farm is presently served by a community water supply. The stratified drift shown on the accompanying map is part of an aquifer that is thought to be capable of yielding a fairly large supply of groundwater (Connecticut Water Resources Bulletin Number 15). However, the quality of the available water is uncertain. Due to the property's relatively low elevation and proximity to the Jordan Cove Estuary, wells in the aquifer would be at least slightly susceptible to seawater infiltration.

Water drawn from several wells within three miles of the property was moderately hard (60-120 parts per million (ppm) of dissolved CaCO_3 or equivalent) to very hard (181 or more ppm). Information provided during the site review indicated that Jordan Brook may be polluted by leachate flowing from an old land-fill site upstream from the Stenger Farm. During dry periods, induced infiltration from the brook to a well on the site might contaminate the water supply. Therefore, for any development of the property that will require potable ground water, test wells should be drilled and water quality analyzed under conditions that approximate those predicted for such development.

The chance of flooding on the western edge of the property, which is considered flood prone, is one percent in any given year.

VEGETATION

The Stenger Farm contains approximately 33 acres of wooded land. Of this acreage, about 16 acres are in third and fourth growth vegetation on old fields. The remaining woody vegetation is a mix of hardwoods along the northern portion of the property and in hedgerow areas surrounding the open fields and pond. On overgrown areas, red cedar are common, as are shrubby types including multiflora

rose, bittersweet, greenbriar, barberry, greystem dogwoods, wild cherry and birches. Other hardwoods include oaks, maples, ash and black walnut.

Two ponds are present on the site, each approximately one and one half acres in size. These ponds grade into marshy conditions along natural drainage areas which are vegetated to dense growths of native aquatic plants. The pond and marsh areas provide nesting and rearing, loafing and feeding opportunities for mallard and black ducks. Muskrat are present in the ponds and utilize the aquatic vegetation for food sources.

Open fields make up the remaining acreage. These field areas are largely vegetated to broomsedge and other native grasses. A burn area in one of the fields covers two or more acres. In this area the duff was burned off, the soil scorched, and trees charred. Revegetation is slow, presently limited to broomsedge and other poverty plants.

The stand of black and scarlet oak in the northwestern corner of the property should be preserved as well as the small stand of black walnut which appears to have been planted. It is the Team's recommendation that this be expanded to form a grove of black walnut and chestnut as the soil seems suitable for their growth.

Aesthetic values of the area are high, due in part to the topography of the site, the diversity of the open and wooded land, and the high quality of the vegetation.

WILDLIFE

The existing pattern of open land, woodland, ponds, and wet marshy areas creates a high quality productive "edge" for a variety of wildlife types. Wildlife habitat is enhanced by the diversity of vegetation on the overgrown fields. This highly productive area acts as a corridor to wildlife, linking together open fields and woodland. Wildlife common to the site include, but are not limited to: seasonal songbirds, black and mallard ducks, raccoon, muskrat, grey squirrel, cottontail rabbit, woodchuck, probably woodcock in wetter areas, ruffed grouse and other small mammals.

Before annual burning practices were established, this site was populated by pheasant and quail. The Stenger Farm could once again fulfill this recreational potential if shrubby ground cover was allowed to persist and the area was stocked in game birds by the State. The site also has the potential of being an ideal fishing area, as it contains two ponds which have been known to supply "Bull Heads" and frogs to the neighborhood children and it abuts Nevins Brook which could be stocked with brook trout.

Food chains for wildlife on the site, presently are stable. However, as vegetation on the old field area, continues toward mature trees, natural production will decrease and food sources will be diminished.

Wildlife are subject to moderate disturbance factors by humans and domestic pets. The relatively large acreage involved lessens this impact. The surrounding land uses, i.e. urban development, increase the value of this site as it represents the only natural habitat in the immediate area.

No rare or endangered species or critical habitat for the same was identified during the inventory.

PROBABLE FUTURE ENVIRONMENT

If the project is not initiated the site will probably develop residentially. Public sewers are currently being installed along the western property line in the Nevin Brook Valley. This, coupled with the availability of public water and quick access to shopping and employment areas in Waterford and New London will most likely put pressure on the site for a higher density zone change. The land will increase in value and the pressure for development will increase. This population increase coupled with the lack of open space in this section of town could cause future delinquency problems.

ENVIRONMENTAL IMPACT

QUANTIFIABLE LAND USE CHANGES

If the site is used for passive recreation such as trails, nature study, hiking and picnic areas there should be little effect on surrounding residents. The site is well buffered from these homes. The site probably has potential for cross country skiing, sliding or tobogganing and skating. In the future, should the site be developed for more active recreation uses, such as baseball, football or soccer, noise levels would increase when the area was in intensive use during the summer months.

TRANSPORTATION ROUTES

Clark Lane is a straight level road in the area of the site, so access from any parking areas should cause minimum congestion. Routes 156 and 1A at the southern end of Clark Lane have high traffic volumes, but access to the site by walking or riding bicycles or buses should not create new traffic problems. Should cars be used for access to the site, their use would most likely be out of cycle with current high traffic flows on Routes 156 and 1A. Recreation travel to and from the site in early evening hours and weekends would not coincide with weekday commuter traffic.

EFFECT ON VEGETATION

If the land is utilized for passive type recreation activities, there will be little disturbance of the vegetative cover. There will be a need for parking facilities which would require the loss of an acre or less of vegetation.

EFFECT ON WILDLIFE

The major impact of site acquisition will be from an increase in human disturbance. Mobility of wildlife will not be restricted by this project. Food chains should remain stable, showing natural shifts within the population as succession proceeds.

MITIGATING MEASURES INCLUDED IN THE PROPOSAL

The acquisition of this property for passive uses would not require mitigating measures at this point. If development should occur at some future time for intensive or other forms of recreation, it is recommended that the New London County Soil and Water Conservation District review the plan and assist in the placement and proper use of erosion and sediment control methods. The site was very windy on the day of the field check. Should any tennis or badminton courts be developed, maintenance of surrounding trees would be desirable.

ADVERSE ENVIRONMENTAL EFFECTS

There are no adverse effects from the acquisition of this property. The increased use by humans will be unavoidable, however, it is not viewed as being an adverse effect.

IRREVERSIBLE COMMITMENTS OF RESOURCES

This project as proposed will not create any irreversible commitments of resources.

SHORT TERM VS. LONG TERM PRODUCTIVITY

If the site is purchased by the Town for open space purposes, current and future citizens will have an open, natural habitat suitable for nature studies and other recreational uses, which is located in central Waterford and accessible to the public.

RECREATIONAL POTENTIAL

The Stenger Farm can provide the Town with diverse recreational opportunities, but given the soil and topography limitations, some of these possibilities could be quite expensive to accommodate. Taking advantage of the site's natural features and designing the activities around them would be least expensive to implement and have the least detrimental impact on the environment. There is always the option for future development of the site as funding becomes available and a comprehensive plan is developed to meet the recreation needs of the area.

If the property is purchased, it would lend itself to a number of recreational and educational activities in its present state. It is now used by local residents, as shown by paths from adjacent back yards, for motorcycling and possibly jogging and fishing. Some of the activities that the site would support in its present undeveloped state are:

SUMMER

outdoor concert area
picnicking
badminton
horse shoes

WINTER

tobogganing
beginner's downhill skiing
cross-country skiing
ice skating

YEAR-ROUND

jogging
cross country track
dog walking
kite flying
landscape painting
frisbee toss
outdoor natural science classroom
model airplane flying

WATER RELATED ACTIVITES

canoeing
sailing model boats
tug of war with water hazard
observing water fowl
ice skating and hockey
fishing

ALTERNATIVES TO THE PROPOSED ACTION

There are several alternatives presently being considered for the Stenger Farm. The Town's purchase is the only current proposal known which would constitute an open space use for the property. The parcel is zoned for residential use and is presently being considered for purchase by two other parties who may wish to use it for that purpose. This would increase the already dense population in this section of Waterford.

A "no-action alternative" should be rejected in this instance. The land in question will come under pressure for development soon. When it does, Waterford will lose an area of natural beauty which could absorb the evident need for open space in this section of the town.

Appendix

Suitability of Soils for Wildlife Habitat

Map Symbol	Soil Name	Potential as Habitat for		
		Openland Wildlife	Woodland Wildlife	Wetland Wildlife
6MC	Narragansett extremely stony silt loam, 3-15% slopes	poor	fair	very poor
6MD	Narragansett extremely stony silt loam, 15-25% slopes	poor	fair	very poor
31A	Woodbridge fine sandy loam, 0-3% slopes	good	fair	poor
31B	Woodbridge fine sandy loam, 3-8% slopes	good	fair	very poor
41MB	Sutton extremely stony fine sandy loam, 0-8% slopes	good	good	very poor
63B	Haven silt loam, 0-3% slopes	good	good	very poor
464	Raypol silt loam	fair	fair	good
825	Birdsall silt loam, sandy subsoil variant	poor	poor	good

Soil Limitations for Selected Uses

Map Symbol	Name	Limitations For						
		Septic Tanks	Roads & Streets	Dugout Ponds	Picnic Areas	Play- grounds	Paths & Trails	Athletic Fields
6MC	Narragansett extremely stony silt loam, 3-15% slopes	moderate	moderate	severe	slight to moderate	slight to moderate	slight	moderate
6MD	Narragansett extremely stony silt loam, 15-25% slopes	severe	moderate	severe	severe	severe	moderate	severe
31A	Woodbridge fine sandy loam, 0-3% slopes	severe	severe	severe	slight	moderate	slight	slight
31B	Woodbridge fine sandy loam, 3-8% slopes	severe	severe	severe	slight	moderate	moderate	moderate
41MB	Sutton extremely stony fine sandy loam, 0-8% slopes	severe	moderate	severe	slight	moderate	slight	moderate
63B	Haven silt loam, 0-3% slopes	slight	slight	severe	slight	slight	slight	moderate
464	Raypol silt loam	severe	severe	slight	severe	severe	severe	severe
825	Birdsall silt loam, sandy subsoil variant	severe	severe	slight	severe	severe	severe	severe

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.