

Environmental Review Team Report

Holden Property

South Windsor, Connecticut

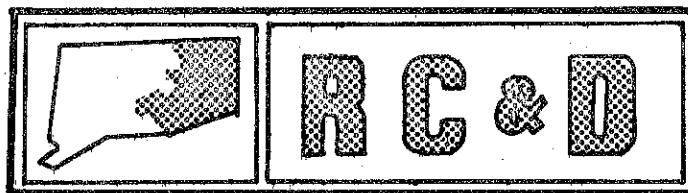


EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team
Report
on

Holden Property
South Windsor, Connecticut

August 1979

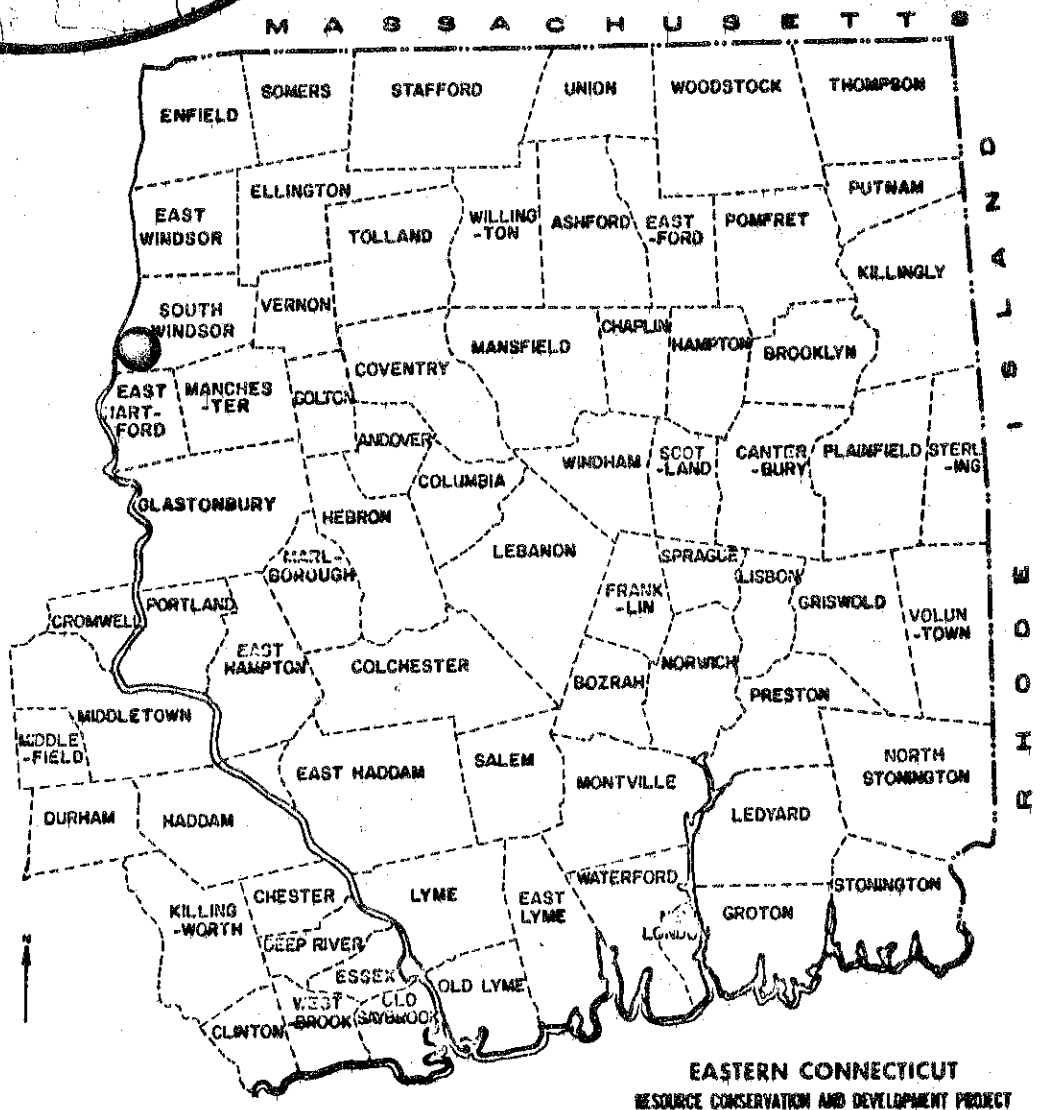
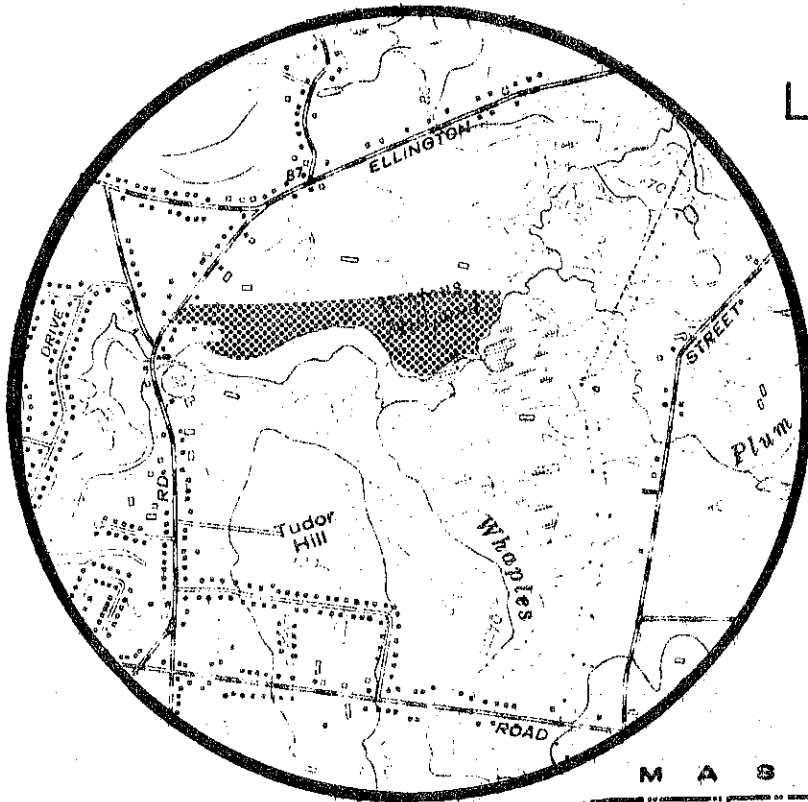


eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

HOLDEN PROPERTY
SOUTH WINDSOR, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
HOLDEN PROPERTY
SOUTH WINDSOR, CONNECTICUT

This report is an outgrowth of a request from the South Windsor Conservation Commission to the Hartford 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, 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.

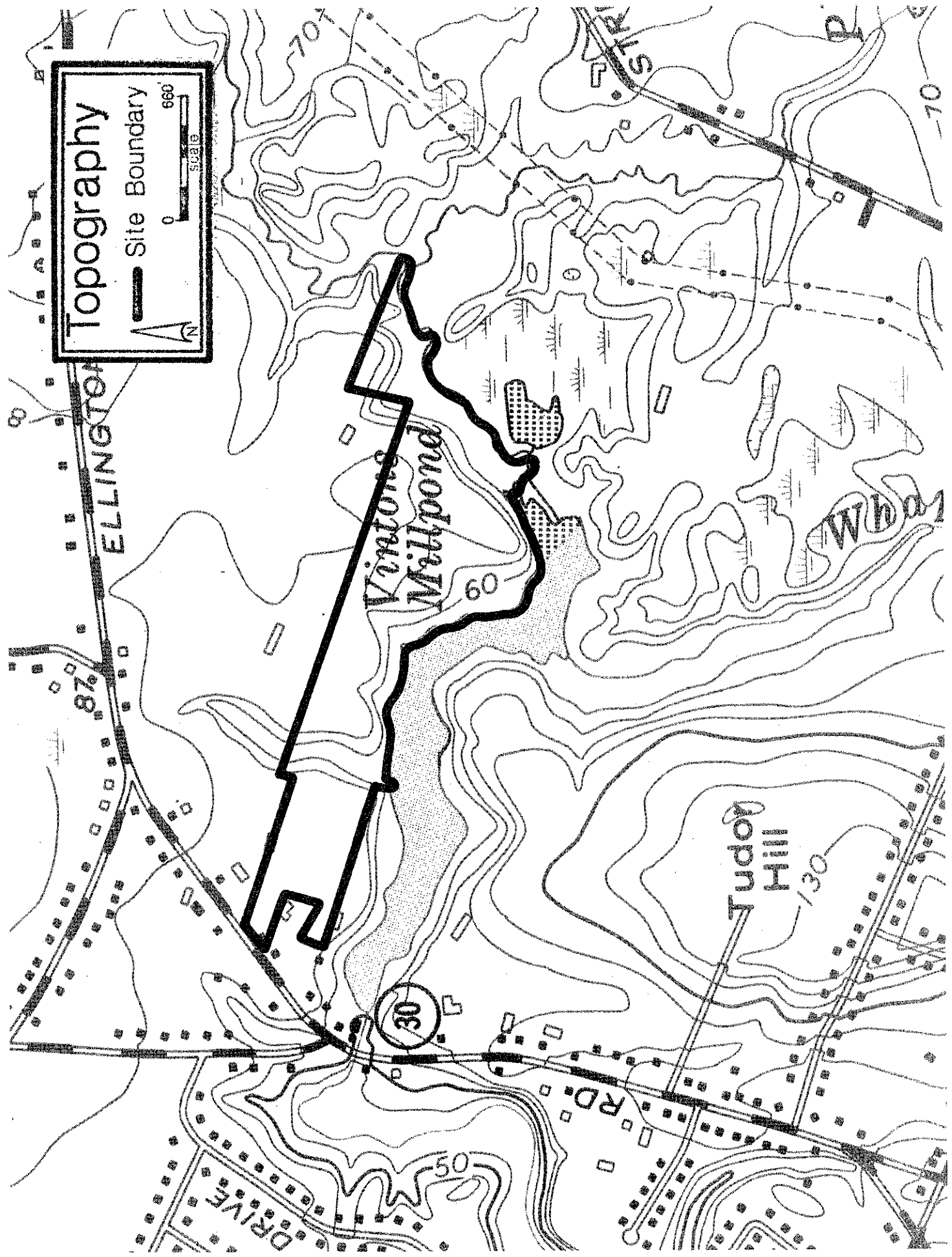
The ERT that field-checked the site consisted of the following personnel: Vern Anderson, District Conservationist, (SCS); Michael Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Rob Rocks, Forester, (DEP); Andy Petracco, Recreation Specialist (DEP); Chuck Phillips, Fisheries Biologist, (DEP); and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, May 31, 1979. 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 Holden Property, shall constitute the environmental assessment portion of the Town's open space application for Federal Department of the Interior, Heritage Conservation and Recreation Service funds to assist in the acquisition of this 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.



Topography

Site Boundary

660
Scale

0

↑

ELLINGTON

Vinton
Millpond

Tudor
Hill

RD.
DRIVE

30

50

60

70

70

130

DESCRIPTION OF THE PROPOSAL

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for the Holden Property, a 34± acre parcel located on Ellington Road (Route 30) in South Windsor. The South Windsor Conservation Commission wishes to acquire this site for open space and recreational purposes with funding assistance from the Heritage Conservation and Recreation Service.

The property lies on the north side of Vinton's Millpond, a shallow scenic pond which originates in a swampy area. The pond is a primary recreational resource associated with the Holden property. The potential purchase does not include access rights to the pond; however, if access could be obtained, desirable forms of recreation such as canoe or rowboat fishing may be possible. The north shoreline of the pond features a very gently sloping bottom, which makes shoreline fishing somewhat difficult. The Town is interested in both active and passive forms of recreation; swimming, however, is not included. Basically, the Town intends to establish ballfields, picnic areas, and nature trails if the site is purchased.

The site is located in the south central part of Town and is intended for use primarily by Town residents. The area is one of mostly middle income residences with some comparatively new apartment units toward the rear of the site.

DESCRIPTION OF THE ENVIRONMENT

PRESENT/PAST LAND USES

The Holden Property was no doubt used at one time for farming practices and general open space. Minimal use would have occurred in the swampy and steeply sloping areas of the site. Large flat areas are still in use as cropland in the western and northeastern sections of the site.

SOCIO-ECONOMIC CONDITIONS

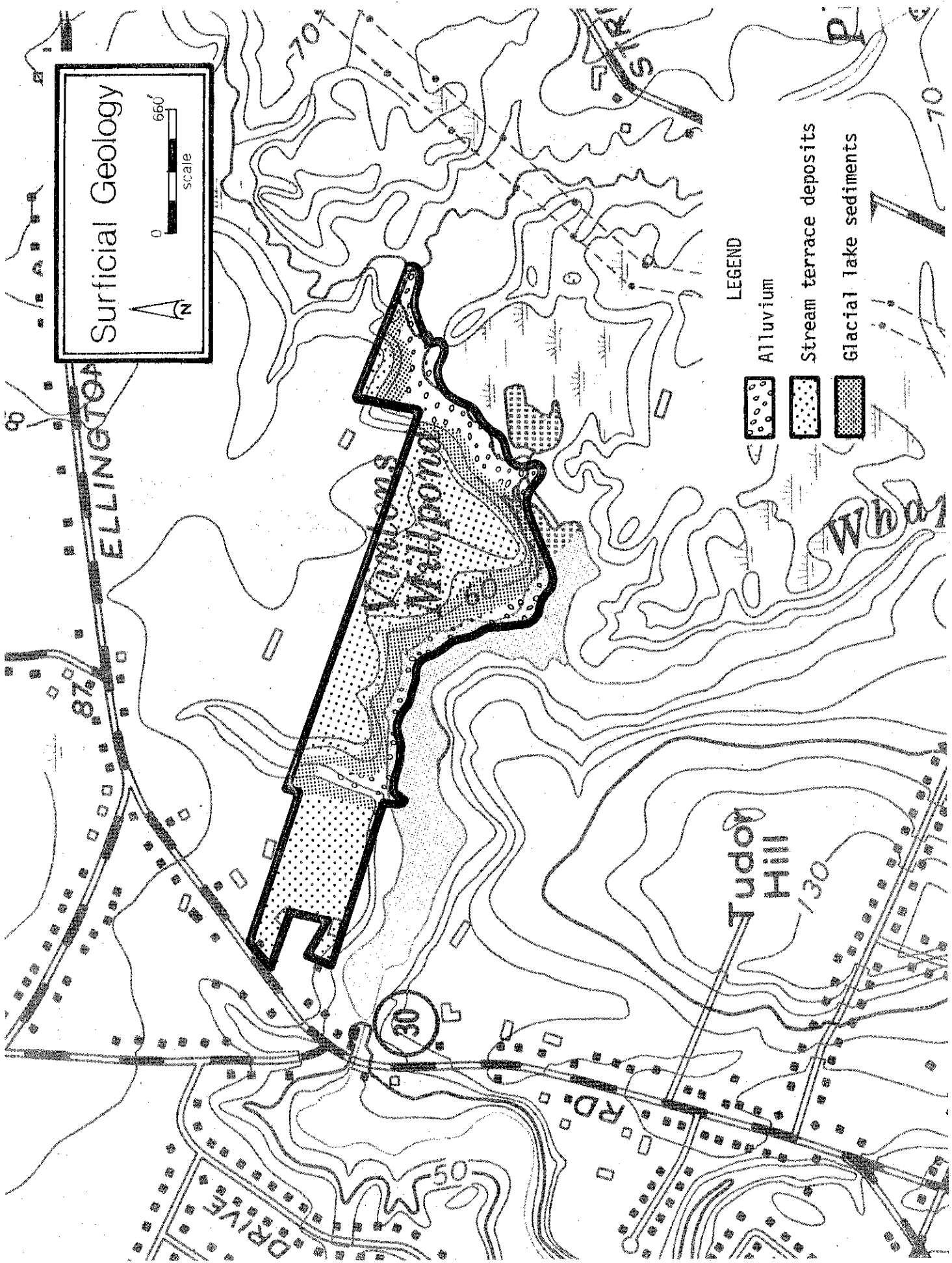
The Town of South Windsor currently has a population of approximately 18,000. Industry, sales and service types of employment provide approximately 6,200 job opportunities within the Town.

TRANSPORTATION ROUTES

The site is accessible from State Route 30, a two-lane highway which bisects the Town of South Windsor. Route 30 is approximately 50 feet in width, with concrete pavement and macadem shoulders in good condition. The site is also accessible by minor connecting roads to Route 30 throughout the Town.

SURFACE AND SUBSURFACE GEOLOGIC CONDITIONS

The surficial geology of the Holden Property is included in "Geologic Map



Surficial Geology



LEGEND

- Alluvium
- Stream terrace deposits
- Glacial lake sediments

of the Manchester Quadrangle, Connecticut," U.S. Geological Survey Map GQ-433, by Roger B. Colton (1965). The distribution of deposits on the site, as adapted from GQ-433, is shown in an accompanying illustration. Essentially, three types of deposits are shown: glacial lake sediments, stream terrace deposits, and recent alluvium. The lake sediments consist of laminated clayey silt and sand grading downward into varved clay and silt. These materials were deposited in a lake created by the damming of the present Connecticut River valley by glacier ice. The stream terrace deposits consist of well-laminated sand, silt, clay, and some gravel. These materials were deposited on top of the lake sediments following the disappearance of ice from the area. Recent alluvium consists of silt and sand deposited by the modern Podunk River. A thin blanket of windblown silt and fine sand caps the three mapped deposits over much of the site.

The generally fine texture of the surficial materials precludes their use for most construction-related activities. In some parts of South Windsor, however, the clay layers in the glacial lake sediments have been commercially exploited for brick-making.

SOILS

Soils typical of the Holden Property include:

The Swanton series (SzA) consists of deep, poorly-drained soils on glacio-lacustrine, marine, or outwash plains and deltas. They formed in a loamy mantle 18 to 40 inches thick over clayey sediments. Typically, these soils have a very dark grayish-brown, fine sandy loam surface layer 6 inches thick. The mottled subsoil from 6 to 16 inches is grayish-brown fine sandy loam, from 16 to 21 inches is light brownish-gray sandy loam, and from 21 to 29 inches is olive silty clay loam. The substratum from 29 to 60 inches is olive silty clay and clay. Slopes range from 0 to 8 percent.

The Ninigret series (NnA, NsA) consists of deep, moderately well-drained soils on terraces. They formed in glacial outwash deposits. Typically, these soils have a very dark grayish-brown, fine sandy loam surface layer, 8 inches thick. The subsoil from 8 to 26 inches is yellowish-brown, fine sandy loam with mottles below 16 inches. The mottled substratum, from 26 to 60 inches, is pale brown, loose, loamy sand. Slopes range from 0 to 15 percent.

The Windsor series (WvA, WvB) consists of excessively drained brown podzolic soils that have a sand or loamy sand base and have developed on sandy deposits laid down by water, wind, or both. These soils occur in scattered areas on undulating to sloping terraces. Slopes range from 3 to 15 percent.

A small amount of the poorly drained SzA, Swanton very fine sandy loam, is found along the north boundary. This soil presents severe limitations for most land uses. A sizable amount of NnA, Ninigret fine sandy loam, a moderately well-drained soil, is located in the open field at the west end of the site. This soil presents limitations during periods of seasonal high water table. The Te, Terrace Escarpment of sand and gravel, has severe limitations for most land uses because of steepness of slope. This soil borders the bank of Vintons Millpond. The entire slope is currently wooded.

The WvA and WvB, Windsor loamy fine sand, has the capability for the greatest amount of land uses with few limitations.

WATER RESOURCES

The fine-grained surficial geologic materials that predominate on the site constitute only a moderate to fair aquifer in terms of potential yields. A map entitled "Groundwater Availability in Connecticut," by Daniel B. Meade of the Natural Resources Center, Department of Environmental Protection (1978), indicates that these deposits may be expected to yield between 1-100 gallons per minute. A study of wells in the vicinity of the site suggests that 10-15 gpm would be an average yield.

The natural quality of the groundwater on the site is probably moderate to good. The surficial materials lack the high iron content of the reddish deposits found elsewhere in the valley. In addition, development of the adjoining property to the north (with the exception of a cluster of apartment buildings) has not been intense.

VEGETATION

The forested sections of this tract are presently being used for passive recreation, specifically hiking and access to Vinton's Millpond for fishing. Motorcycle use on this tract is apparent but not causing any problems with accelerated erosion or soil loss at this time. Past use of this area has probably been limited to grazing or wood production by the steep slopes present.

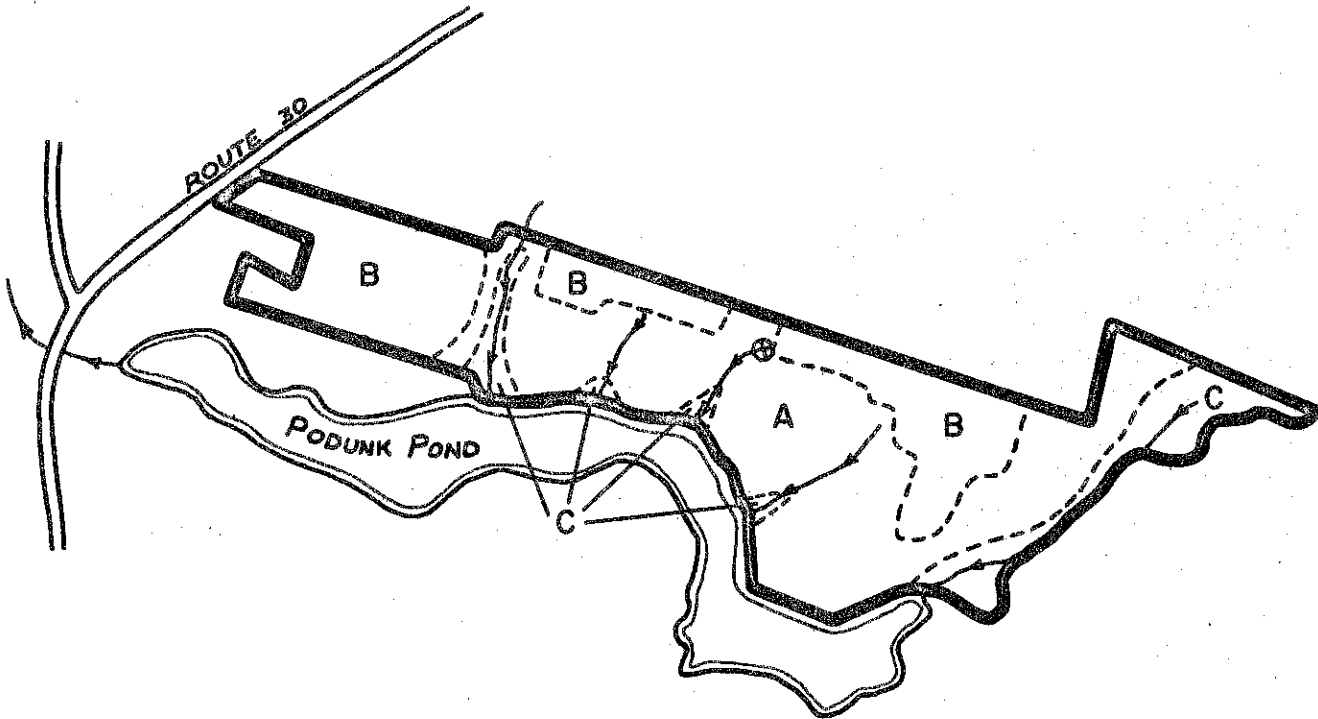
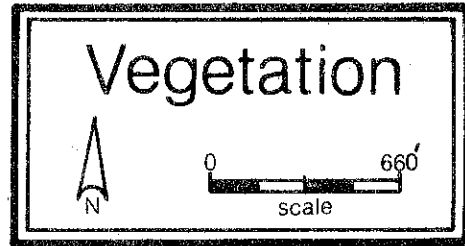
The open fields located on the northern parts of this property are presently idle. Sand is exposed where top soil and vegetation have been disturbed. In the past, these fields were probably planted to tobacco or corn.

Vegetation Type Descriptions

Stand A. (Mixed Hardwoods.) This 18-acre fully-stocked stand is made up of predominantly sawlog-size red oak, black oak, white ash, sugar maple, and black birch. The trees in this stand are healthy. Hickory and cherry seedlings are present in the understory along with flowering dogwood, alternate-leaf dogwood, Eastern white pine, shadbush, witchhazel, and blue beech. The ground cover in this stand is nearly complete. It is composed of club mosses, barberry, Canada mayflower, skunk cabbage, Solomon's-seal, false Solomon's seal, wood anemone, blue violet, Christmas fern, hay-scented fern, cinnamon fern, and interrupted fern. A black birch about 28 inches in diameter is located in this stand.

Stand B. (Open Fields.) 12-acres of open fields are present on this tract. The top soil has been removed in places causing establishment of vegetation to be slow and difficult. Grasses, a variety of weed species, and goldenrod are present where the top soil has not been removed. Raspberry, staghorn sumac, black cherry (seedling to sapling-size), and other hardwood tree species form a dense hedgerow around the edges of the fields located along the northeastern section of this property.

Stand C. (Hardwood Swamp.) In total, 4 acres of wetlands are present on this tract. Each wetland area is associated with a small intermittent brook which flows into Vinton's Millpond. Pole to sawlog-size red maple, sugar maple, white ash, and red oak are present on the drier parts of this site. Spicebush, highbush blueberry, maple leaf viburnum, speckled alder,



LEGEND

- Road
- Property Boundary
- Vegetation Type Boundary
- Brook
- Black Birch 28 inches in dbh

VEGETATION TYPES*

- STAND A Mixed hardwoods, fully stocked, sawlog-size, 18 acres.
- STAND B Open fields, 12 acres.
- STAND C Hardwood swamp, 4 acres. Pole to sawlog size.

* Seeding-size = less than 1 inch in diameter at breast height (dbh)
 Sapling-size = 1 to 5 inches in dbh
 Pole-size = 5 to 11 inches in dbh
 Sawlog-size = 11 inches and greater in dbh

dogwood, and grape vines make up this area's understory. Sedges, skunk cabbage, and several species of fern, including maidenhair fern, are also present.

FISH RESOURCES

The expected fish population would include golden shiners, dace, sunfish, chain pickerel, and largemouth bass. Fish observed during the review were largemouth bass, carp, and white suckers. The pond's cloudy look can be attributed to the spawning activities of the carp.

PROBABLE FUTURE ENVIRONMENT

If the site is not acquired and designated for Town recreation use, development pressure will probably result in the site's being developed for residential housing of either single or multiple unit type.

ENVIRONMENTAL IMPACT

QUANTIFIABLE LAND USE CHANGE

Acquisition of the Holden Property by the Town for recreational purposes would have little, if any, impact on the existing land use patterns.

SOCIO-ECONOMIC CHANGES

Population projections for the year 2000 show an increase from 18,000 (1980) to 21,000 (2000) in the Town of South Windsor. Considerable economic development will also take place. Manufacturing will show a 30% increase in production and employment opportunities. Increase in retail/wholesale sales employment is also anticipated. Major increases (93%) in service types of employment will be shared with the 14 neighboring towns of Hartford, East Hartford, New Britain, West Hartford, Bloomfield, Manchester, Windsor, Enfield, Farmington, Glastonbury, Newington, Plainville, Vernon, and Wethersfield.

TRANSPORTATION ROUTES

State Route 30 should be able to handle anticipated traffic increases to and from the study site.

EFFECT ON WATER RESOURCES

The proposed recreational development should have no more than a slight effect on surface or groundwater quality. Runoff from parking areas or access roads, particularly if paved, may carry small amounts of contaminants (e.g. salt, spilled oil or gas) into Podunk Pond or down to the groundwater table. These possible occurrences would result in a temporary, localized deterioration in water quality.

These risks are negligible, however, in comparison to those from a standard residential or industrial development, which would be probable alternatives to the proposed recreational plan.

EFFECT ON VEGETATION

The proposed preservation of this property as open space will in itself have little negative impact on the vegetation which is present. In the long run, acquisition of this property for open space will protect it from further subdivision and more intensive development which would have a more extensive impact on the vegetation.

Development of a trail network and a limited number of picnic sites in the forested sections of this tract will have limited impact on the vegetation.

An initial loss of ground cover vegetation will occur as areas are cleared for trails and picnic sites. Later, soil compaction, mechanical root injury, direct trampling of herbaceous vegetation, and vandalism along the trails and within the picnic areas may eliminate more of the area's vegetation.

Soil erosion caused by increased use and reduction of ground cover along the trails may occur if trails are not designed and maintained properly.

The proposed future development of the fields on the western portion of this site into athletic fields will enhance the present vegetation through the establishment of sod cover. Top soil will have to be brought on site before a quality sod cover can be established.

EFFECT ON FISH RESOURCES

The most likely impact on the fish ecosystem would be drainage from the proposed ball fields. The small streams and springs presently draining into the pond on the north side should be protected from exposure to excess runoff by preserving the existing forested area. The western-most stream is presently crossed by a road creating a natural sedimentation basin upstream of the road. This area should continue to be used as a silt trap in order to reduce the amount of sedimentation on the pond's north shore.

MITIGATING MEASURES INCLUDED IN THE PROPOSAL

The loss of ground cover vegetation, shrubs, and trees through extensive soil compaction, root injury, and trampling can be kept to a minimum if trails and picnic areas are well defined and clearly marked. This will limit the actual area which is intensively used. Woodchips, crushed stone, or cinders spread along the trails and picnic sites will help to reduce soil compaction and more clearly define these areas. Wood chips, which are most commonly used for this purpose, tend to rot, losing their effectiveness; they must be replaced periodically. Crushed stone and cinders are more permanent than wood chips; however, they are usually more expensive.

Wise placement of the trails and erosion control techniques, such as well-placed water bars, should help to reduce soil loss caused by runoff.

Death of some trees caused by soil compaction and root injury, even with the addition of wood chips, crushed stone, or cinders, is unavoidable. As these trees die, they should be removed to prevent potential hazards to trail and picnic area users.

Provision of parking, trail maintenance, and litter pickup should be established before the trails or picnic areas are developed.

ADVERSE ENVIRONMENTAL EFFECTS

Acquisition of the Holden Property will cause no adverse effects to the environment. Loss of some vegetation cannot be completely avoided. The vegetation that will be eliminated by trail and picnic area development and use is insignificant when compared to the vegetation that will be preserved if this area is acquired and designated as open space.

SHORT TERM VS. LONG TERM PRODUCTIVITY

The proposed development of a trail network and picnic areas will have little impact on the vegetation and should not significantly alter the long-term productivity or quality of this area.

If asphalt parking lots or permanent facilities are developed on the open fields within this site, the long-range vegetative productivity may be somewhat lowered. This trade-off is well justified, however, by the increased recreational potential generated.

RECREATION POTENTIAL

The front of the tract, along Ellington Road, is composed of an irregularly shaped open field of approximately 6-7 acres which would lend itself well to the ball field, tennis and basketball courts, playground or other active recreation use being sought. Parking would logically be located in this open area since this would entail the smallest expenditure of time and money for parking lot construction. Hauling in processed gravel would probably be necessary for minimal upgrading since the field is quite sandy. Dust problems may dictate installation of a paved parking lot and entrance road. Strategic configuration and layout of the facilities and parking lot(s) locations would help minimize loss of play area to parking.

Addition of top soil or gradual build-up of the organic content in the soil should be planned, if grass areas (as with a ballfield) are to be located here. To effect a buildup of organic content, the site could possibly be used for disposal of roadside leaf litter cleaned up in the fall. This litter, as well as comparable non-garbage type organic material, would gradually decompose and could

be tilled into the existing soil, thereby helping to build up the soil structure and organic content. Water retention and fertility would be improved, making it easier to grow grass, which would be more apt to stand up to the heavy traffic expected in a recreation area. Such a procedure would preclude use of those portions of the site. Phased, limited use of this portion of the tract would be necessary under such a plan. The alternative would be to apply sufficient top soil to grow a vigorous lawn. This (open field) portion of the tract is not immediately adjacent to the pond.

The middle and eastern (farthest from the road) portions of the tract are primarily wooded but do have two long narrow cornfields along the northern boundary. The southerly portion of the tract is bounded by swamp and the pond. This part of the site is intended for passive recreation. The woodland, open fields, and, to a lesser extent, the pond's edge would be well-suited to a foot trail layout for bird-watchers.

The manure or fertilizer is applied to the open, sandy area above the pond, either before or after grass is fully established, precautions should be taken to reduce the chance for runoff from a severe storm. Runoff and, to some extent, leachate will enhance the chance of algal bloom and accelerate pond eutrophication, since the pond appears to be shallow and slow moving.

A dirt road provides potential vehicle access to the eastern most (rear) part of the property. The road crosses a swale and would need some reconstruction at the culvert pipe to provide safe vehicle passage. If passive recreation considerations for the middle and rear portions of the site are strictly adhered to, the road could be gated at the edge of the open field with emergency and service vehicle access only permitted.

Some low-density picnic sites could be considered in the wooded area on the hilltop near the middle of the tract. With vehicles excluded, these could be 2 to 5 table clusters located close enough to the service road for service vehicle access (garbage pickup, table repair, etc.). Picnickers would have to walk from their cars parked at the lot near Ellington Road.

An alternate to picnic site location(s) east of the first swale would be to put a picnic site or sites along the eastern edge of the large field along Ellington Road. If supplemental shade is desired, trees could be planted in this area. This setup would, of course, permit parking relatively close to the picnic tables and permit purely passive use of the remainder of the tract.

Location of any heavy use areas should be on relatively level ground.

A foot trail routed along the pond's edge poses the problem of crossing a few wet swales. Passage over these swales might be via a corduroyed path with a flow-through provided or a path constructed of cobbles or a combination of the two. A slightly elevated wood walkway would be a more elaborate and costly method of accomplishing this. A pond's edge path would afford access to the pond. Path routing on the high ground, either through the woods or along the corn fields, poses no particular problem.

The only man-made structures along the pond's edge are the dam and Podunk Mill Restaurant on the west end of the pond. The remainder of the pond is surrounded by wooded slopes and a wooded swamp on the inflow end, giving a scenic, relatively unspoiled appearance.

Acquisition of even a comparatively narrow land corridor comprising the slopes around the pond would be desirable from the standpoint of ensuring no further development of this protective perimeter. The pond's south side (across from the Holden tract) appears similarly attractive and would enhance possibilities for a longer trail system.

The pond would be an attractive one to canoe. Boating, if access is provided, should be limited to no motor use. The steep slopes and property line location, as they relate to the pond and proposed parking location, pose a problem to ready access. A "carry to and from" path from the road or parking lot above might serve the purpose. It should, however, be of the gentlest gradient possible and should be built well to minimize the potential for erosion and unsafe footing while carrying a boat. Restricting boat access to "hand carry only" effectively minimizes the chance of motors being used on the pond and disruption of the pond's edge through installation of a more elaborate boat launch needed for car/boat trailer system.

The two corn fields located on the middle and rear portions of the tract could be used for such activities as frisbee tosses, pickup soccer, and football games, etc. To provide for this use, the fields should be planted to grass and mowed periodically. With the heavier recreation use anticipated for the tract, it is doubtful that a farmer could expect to get a corn or hay crop from these fields. Pilferage or trampling would effectively eliminate any crop anticipated. An attempt to cut for hay could be tried, but planting of corn should probably not be considered. If any recreation activities are planned for these fields, they should be maintained in grass.

Gay City is the closest state park offering water-based recreation. It is approximately 10 miles away. There is a swimming area in town approximately 5 miles from the site.

To sum, recreation possibilities for the property are: picnicking, hiking, jogging, fitness, nature trail, birdwatching, basketball court, tennis courts, bocce court, fishing, boating, horse shoe toss, ice skating or ice fishing, and ball field.

SITE MANAGEMENT POTENTIAL

Vinton's Millpond is approximately 21 acres. The upper one-third is very shallow. A concrete dam is located at the lower end. A high amount of silt and loam soil particles are transported downstream from storm flows. This is mainly because of the silts and loams characteristic of the watershed area. Larger particles of this sediment have a tendency to filter out generally in the upstream part of the pond. The pond will need more than normal maintenance as a recreation and fish pond. It should be cleaned out and deepened for more effective use. A mud cat would be effective but probably costly to clean out the pond. A large area for deposit of removed sediment would be necessary. Another choice is a dragline with a 70-foot or longer boom working from the shores. This alternative could do part of the job. Again, an area for deposition of sediment would be necessary. A third possibility is draining the pond and letting the pond bed dry out. Then a combination of bulldozers, backhoes, and trucks for transportation could be used to clean out and deepen the pond. The pond sideslopes should generally be at a 3:1 (3 feet out to 1 foot down).

The pond dam would need to be examined for possible defects before the cleanout operation would start.

It would be best for warm water fish to be stocked in the pond.

It is possible for a boat dock to be located just into the wooded area adjacent to the open field in the front. If so, every precautionary measure, such as a gravel bedding, will be necessary to control erosive action.

There is a possibility to install a dam at the lower end of the major brook flowing into Vinton's Millpond. The pond could be permanent or could be drained part of the year. It could be used for fish derbies and ice skating. If it is to be permanent the pond could be used as a nature study area.

This brook extends off the property to the north. Runoff waters from an apartment complex drain into it. Prior to a decision for a pond in this area, further investigation for possible pollutants upstream should be completed.

Two agricultural fields exist. The west field has 1.6 acres and the east field has 3.9 acres. Crops have recently been planted in the fields. These two fields can continue to be rented out for annual crops. If so, a cover crop of 1-1/2 bushel of rye should be planted on the fields after harvest each fall before October 15. The Town can use these fields for community gardens.

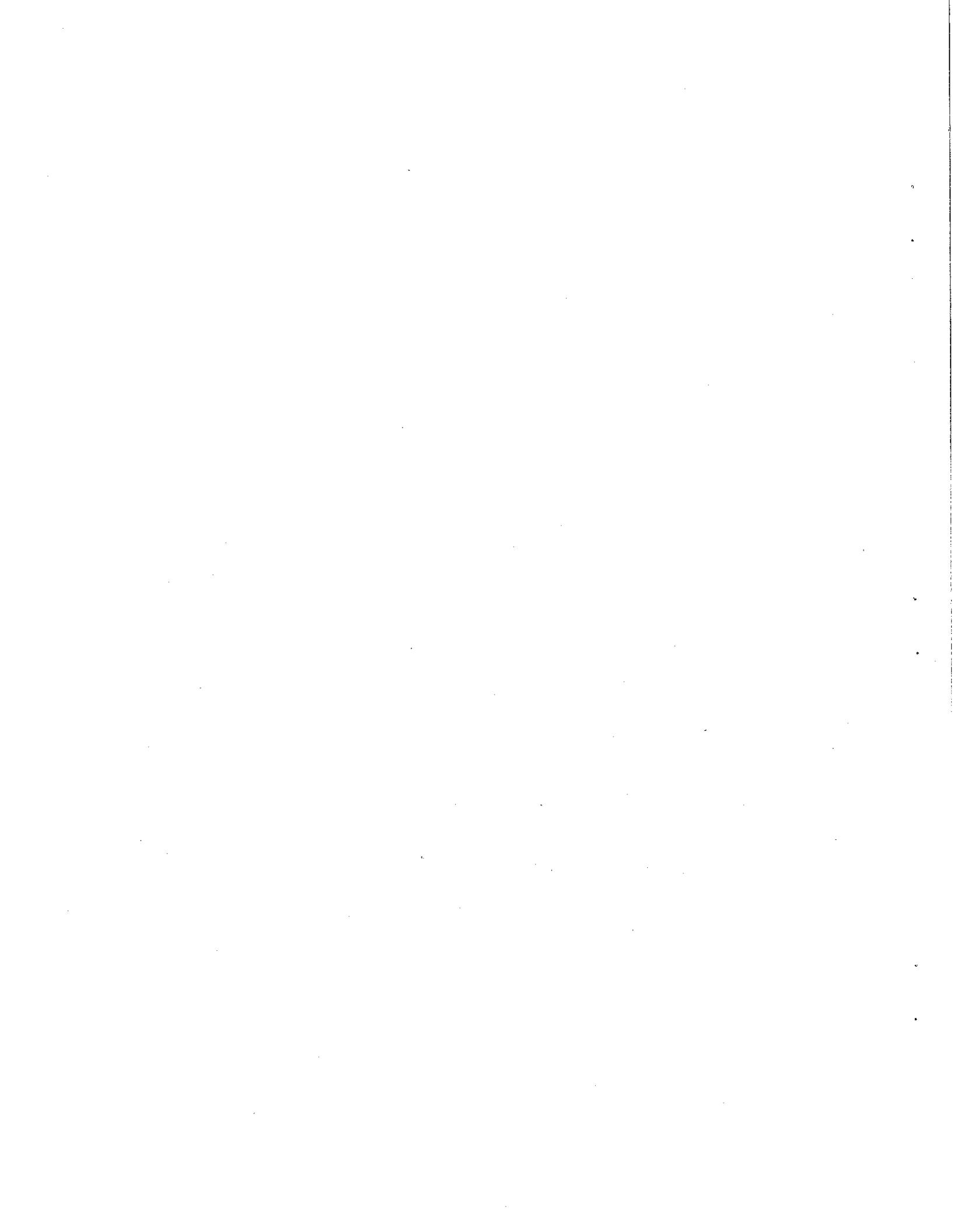
Hay, such as vernal alfalfa and timothy, can be planted as a cash crop. Lime and fertilizer would be necessary for establishment of a good stand.

These open areas could be used for Town-owned nursery stock or possibly Christmas trees for youth groups to manage.

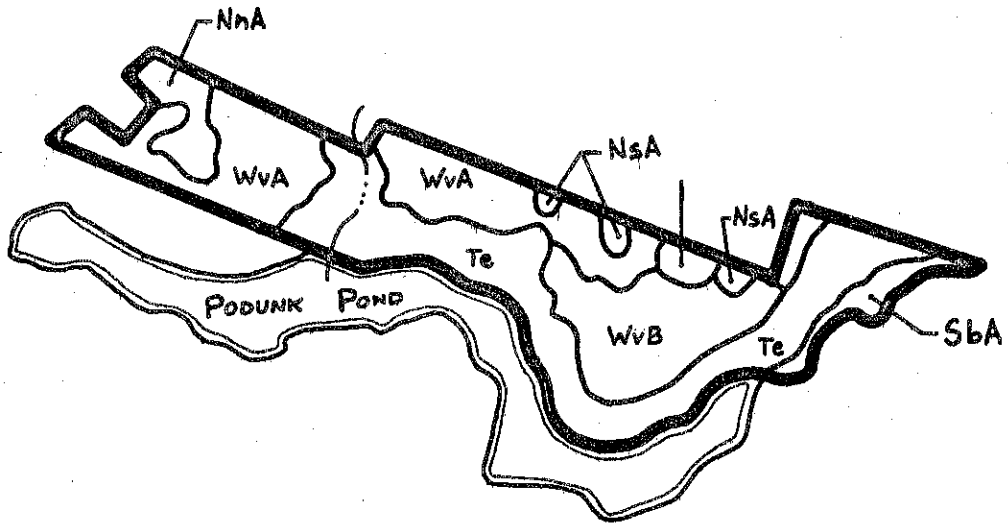
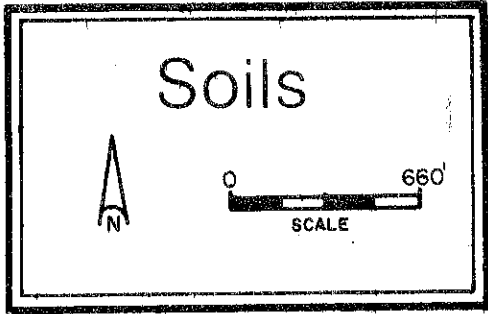
There is a possibility of these two areas being developed into a wildlife area by planting native shrubs and trees for wildlife uses.

A plan drawn up by a professional would be important for these land uses. The plan would include establishment and maintenance of the land for erosion and sediment control.

There are several small gullies in the wooded area that flow into Vinton's Millpond. These gullies are presently stabilized. Any disturbance of the area can easily cause further bank cutting and gullying. Whenever any unvegetated areas occur, the areas should immediately be reshaped and seeded with a shade-loving grass. Rock riprap, if needed, can be installed in more critical areas. It is suggested that no trees be removed within existing gullied areas.



Appendix



<u>Soil Symbol</u>	<u>Soil Name</u>	<u>Slope</u>
WvA	Windsor loamy fine sand	0-3%
WvB	Windsor loamy fine sand	3-8%
Te	Terrace Escarpments	0-15%
SzA	Swanton very fine sandy loam	0-3%
NnA	Ninigret fine sandy loam	0-3%
NsA	Ninigret very fine sandy loam	0-3%
SbA	Saco silt loam	0-3%

SOIL LIMITATIONS
 HOLDEN PROPERTY
 SOUTH WINDSOR, CONNECTICUT

SOIL TYPE	DRAINAGE	PERMEABILITY	ERODIBILITY	LAWNS	CAMP & PICNIC AREAS	PLAYGROUNDS	PATHS AND TRAILS
WVA & WVB - Windsor loamy fine sand 0-8% slope	droughty	Fast	slight to medium	slight	slight	slight to moderate-slope	slight
MnA - Ninigret fine sandy loam	moderately well drained	high seasonal water table	high	slight	slight	moderate-wetness	slight
NsA - Ninigret very fine sandy loam 0-3% slope	well drained	fast	medium	severe-slope	severe-slope	severe-slopes droughtiness	moderate-slope
Te - Terrace Escarpment - sand and gravel 0-15% slope	poorly drained	high water table	high	moderate wetness	severe wetness	severe wetness percolates slowly	severe wetness
SzA - Swanton very fine sandy loam 0-3% slope	frequently flooded very poorly drained	high water table	medium	severe-floods wetness	severe-floods wetness	severe-floods wetness	severe-wetness
SbA - Saco silt loam 0-3% slope							

SOIL LIMITATIONS
 HOLDEN PROPERTY
 SOUTH WINDSOR, CONNECTICUT

SOIL TYPE	DRAINAGE	PERMEABILITY	ERODIBILITY	SEPTIC TANK ABSORPTION FIELDS	DWELLINGS W/BASEMENTS	LOCAL ROADS
MVA & WvB - Windsor loamy fine sand 0-8% slope	droughty	Fast	slight to medium	slight	slight	slight
NnA - Ninigret fine sandy loam	moderately well drained	high seasonal water table	high	severe wetness	severe wetness	moderate frost action
NsA - Ninigret very fine sandy loam 0-3% slope	well drained	fast	medium	severe slope	severe slope	severe slope
Te - Terrace Escarpment - sand and gravel 0-15% slope	poorly drained	high water table	high	severe wetness percolates slowly	severe wetness	severe wetness frost action low strength
SzA - Swanton very fine sandy loam 0-3% slope	frequently flooded very poorly drained	high water table Floods	medium	severe floods wetness	severe floods wetness	severe floods wetness frost action
SbA - Saco silt loam 0-3% slope						

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.

TERRACE SOILS - OVER SANDS AND GRAVELS

Excessively drained soils with slopes less than 15 percent

A-1a Excessively drained soils with smooth slopes less than 8 percent

A-1b Excessively drained soils with irregular slopes between 3 and 15 percent

These soils occur above floodplains in river and stream valleys. Water deposited beds of sand and gravel are less than 20 inches below the soil surface. Permeability is rapid. The shallowness to sand or gravel severely limits their water holding capacity. Natural fertility is low.

Urban. The permeability of these soils is favorable for the installation and operation of onsite sewage disposal systems. On slopes above 8 percent, the design and site selection for absorption fields require special consideration. The high percolation rate may allow sewage effluent to pollute groundwater.

Soil conditions are favorable for homes with basements. Conditions are favorable for stability of footings and performance of footing drains. The steeper slopes may add difficulty to site preparation. However, the steeper and irregular slopes present opportunities for a wider choice of architectural design.

Land grading for landscaping will expose sand or gravel. Lawns, trees, and shrubs are difficult to establish and maintain because of low moisture holding capacity and low natural fertility. The steeper slopes add further difficulty to these problems.

When constructing streets and parking lots, earth moving is readily done, but stabilizing and vegetating banks is difficult particularly on the steeper slopes.

Recreation. In many places the potential for recreational uses of these soils is enhanced by their proximity to streams, ponds, and sites with potential for water developments. They are favorable for picnic areas and camping sites. Even the level soils present difficulty in establishing and maintaining vegetation for play areas, and the soils with steeper and irregular slopes have severe limitations for play areas.

Wildlife. These soils are poorly suited for the production of habitat required by openland and woodland wildlife. A dependable growth of desirable food cover plants is limited by the low natural fertility and low moisture holding capacity. Food and cover can be established, improved, or maintained, but it is difficult and expensive, especially for openland wildlife. Results are not always satisfactory. It is impractical to create wetland wildlife habitat on these soils.

Woodland. Productivity for wood crops is poor on these soils because natural fertility and moisture holding capacity are low. High mortality of natural or planted seedlings can be expected. White pine should produce a greater yield than hardwoods.

Cropland. Droughtiness and low natural fertility severely restrict the use of these soils for crop production. Irrigation with intensive fertilization is essential for satisfactory yields of crops including tobacco, corn, vegetables, and hay. If cultivated crops are grown on the steeper slopes, measures for controlling erosion and runoff are necessary. Wind erosion is a hazard particularly on loamy sands.

TERRACE SOILS - OVER SANDS AND GRAVELS

A-1c Excessively drained soils with slopes more than 15 percent

These soils occur above floodplains in river and stream valleys. They consist of sandy or gravelly material on slopes steeper than 15 percent, and occur mainly on terrace breaks along drainage slopes. They have a low moisture holding capacity and low natural fertility:

Urban. These areas have severe limitations for most urban uses. They provide contrast in the landscape and often overlook streams. When undisturbed by development, their natural values enhance the environment.

Recreation. These soils have severe limitations for picnic areas, camp sites, and play areas.

Wildlife. These soils are poorly suited for the production of habitat required by woodland wildlife. Dependable growth of desirable food and cover plants is limited by the low natural fertility and low moisture holding capacity. Food and cover can be established, improved, or maintained, but it is difficult and expensive. It is impractical to create openland or wetland wildlife habitat on these soils.

Woodland. Productivity for wood crops is poor on these soils because natural fertility and moisture holding capacity are low. Because of droughtiness, high mortality of natural or planted seedlings can be expected. White pine should produce a greater yield than hardwoods. Equipment operations is difficult because of the steep slopes.

Cropland. Because of their steep slopes and droughtiness, these soils are unsuited for the production of cultivated crops.

TERRACE SOILS - OVER SANDS AND GRAVELS

Moderately well drained terrace soils

A-2 Soils with moderately high seasonal water table

These soils occur above floodplains in river and stream valleys. About 20 to 40 inches of friable, loamy soil material overlie beds of sand and gravel. They have a high water table during wet seasons. In periods of highest saturation, usually in the spring, the water table remains 15 to 20 inches below the soil surface. Permeability is moderate or rapid above the water table.

Urban. The seasonal water table limits successful year around operation of onsite sewage disposal systems unless special measures are used, such as drainage and land fill.

For homes with basements, the water table causes construction difficulties during wet seasons. Measures such as footing drains are necessary to prevent seepage into basements.

Soil conditions are favorable for the establishment and maintenance of lawns, trees, and shrubs.

The seasonal water table presents problems in the design, construction, and maintenance of streets and parking lots. This may be overcome by drainage or other measures.

Recreation. During the main season of use, these soils have moderate limitations for use as picnic areas, camp sites, and play areas. Drainage is needed to lower the seasonal water table on playing fields for intensive use and to extend the period for picnicking and camping.

Wildlife. Habitat for openland and woodland wildlife species is easily established, improved or maintained on these soils. They are well suited for the dependable growth of a wide variety of desirable food and cover plants. It is difficult and expensive to develop habitat for wetland wildlife on these soils.

Woodland. Productivity for wood crops ranges from fair to good. Both hardwoods and conifers are well suited. Competition from hardwoods is a problem when managing for pine, spruce, or larch. These soils are suitable for the more valuable hardwoods such as black walnut, yellow poplar, and red oak.

LAKE TERRACE SOILS - OVER STRATA HIGH IN SILT AND CLAY

Poorly and very poorly drained soils

G-3a Soils with high seasonal water table

G-3b Soils with high water table during most of the year

These nearly level soils occur in areas where glacial lake sediments accumulated. In most places the finer textures lake sediments are covered by coarser loamy or sandy material from several inches to 3 feet thick. The permeability rate of the lake sediment is slow. The poorly drained soils in group 3-3a have a high water table that is 0 to 6 inches below the soil surface during the wettest part of the year. The high water table may persist into late spring or recur after prolonged or heavy summer rains. The very poorly drained soils in group G-3b have water ponded on the surface for significant periods during the winter and early spring. The water table usually remains within 3 feet of the soil surface throughout the year.

Urban. These soils have severe limitations for most urban uses. Intensive drainage and land fill measures are necessary to overcome the high water table.

Recreation. These soils have severe limitations for picnicking, camp sites, and play areas. However, they have potential for development of ponds and conservation uses for environmental enhancement.

Wildlife. These soils are poorly suited for the production of openland wildlife habitat. On the poorly drained soils in group G-3a, habitat requirements of woodland and wetland wildlife species can be developed, improved, or maintained but moderate treatment is required.

The very poorly drained soils in group G-3b are poorly suited for the production and management of woodland wildlife habitat but are well suited for the development, improvement, and maintenance of wetland wildlife habitat.

Woodland. Productivity is poor on these soils. Wetness causes severe problems of equipment use, survival of tree seedlings, windthrow of trees, and competition from other plants. Red maple, elm, and willow are adapted to these soils.

FLOODPLAIN SOILS

Poorly and very poorly drained soils

E-3a Soils with a high seasonal water table

E-3b Soils with a high water table during most of the year

The poorly drained soils in group E-3a have a water table that remains within 6 inches of the soil surface during the wettest part of the year. This high water table often persists into late spring and may recur during periods of high stream flow.

The very poorly drained soils in group E-3b have water ponded on the surface for significant periods in winter and spring. The water table usually remains within 3 feet of the soil surface throughout the year.

Urban. Because of flood hazard, the wetness these soils have very severe limitations for urban uses. They have many natural values for environmental enhancement.

Recreation. These areas have severe limitations for use as picnic areas, camp sites, and play areas.

Wildlife. These soils are poorly suited for the production of openland wildlife habitat.

On the poorly drained soils in group E-3a, the habitat requirements of woodland wildlife can be established, improved, or maintained, but moderate treatment is required. In the spring these areas provide natural habitat for wetland wildlife. The fluctuating water table limits the period of use and flood hazard restricts the construction and management of water developments.

The very poorly drained soils in group E-3b are poorly suited for the production and management of woodland wildlife habitat. The habitat requirements of wetland wildlife habitat can be developed, improved, or maintained but moderate treatment is required.

Woodland. Productivity of wood crops ranges from fair to very poor depending on the degree of wetness. Wetness causes severe problems in the use of equipment, the survival of tree seedlings, tree windthrow, and competition from other plants.

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, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is 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, sanitary landfills, commercial and industrial developments, sand and gravel operations, 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 officials 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. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. 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 regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.