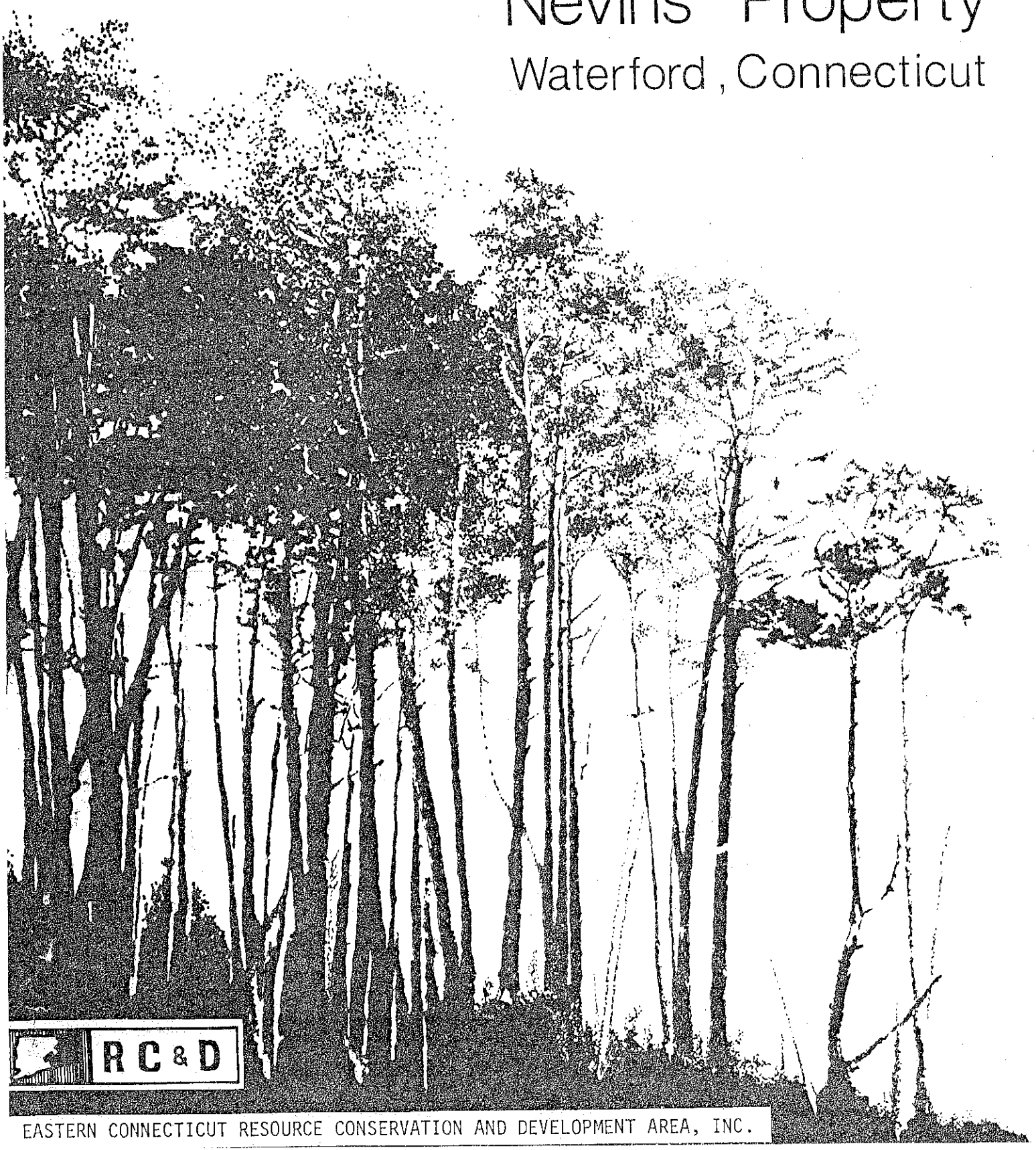
Environmental Review Team Report

Nevins Property

Waterford, Connecticut

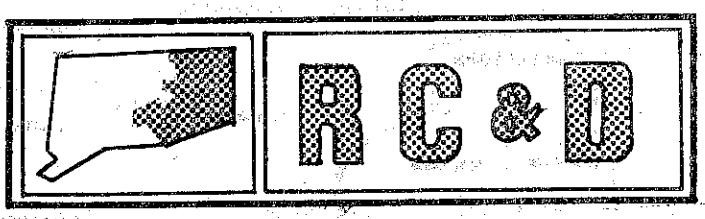


RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report on Nevins Property Waterford, Connecticut

December 1980

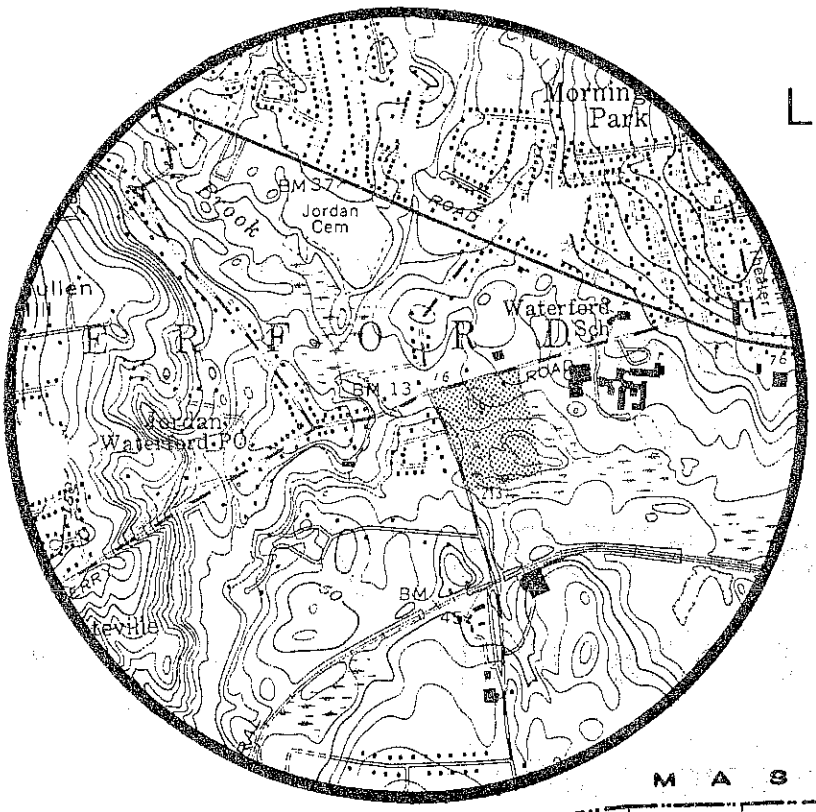


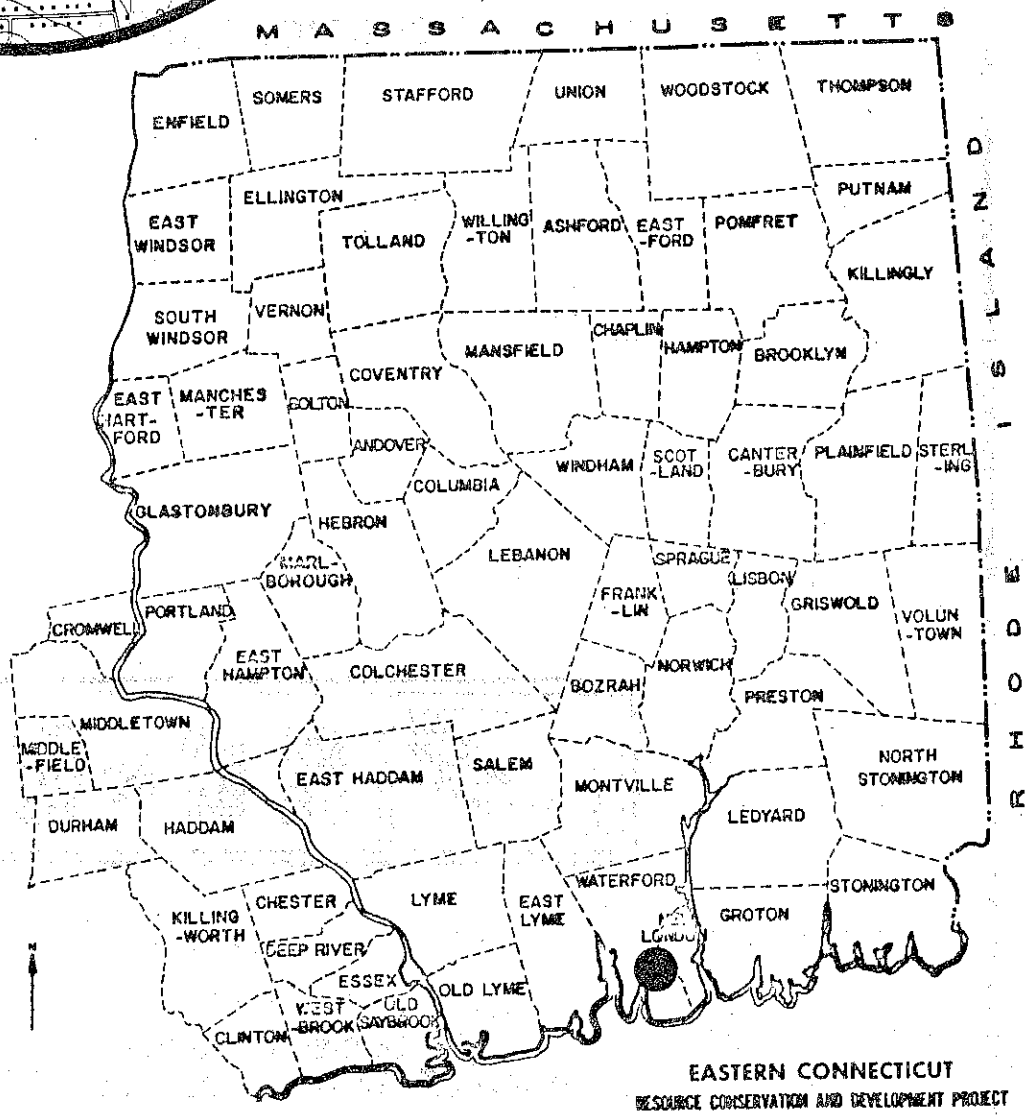
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

NEVINS PROPERTY
WATERFORD, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
NEVINS PROPERTY
WATERFORD, CONNECTICUT

This report is an outgrowth of a request from the Waterford Conservation Commission 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 as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS). Reproductions of the soil survey map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Nels Barrett, Wildlife Ecologist, DEP; Tom 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, September 25, 1980. Reports from each 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 by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests consideration that should be of concern to the developer and the Town of Waterford. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

The Eastern Connecticut RC&D Project Committee hopes you will find this report of value and assistance in making your decisions on 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.

largely the result of removing vegetation and of covering permeable soils with impervious surfaces, such as roofs and driveways. The magnitude of the increases would depend upon the initial permeability of the soils that are covered and the percentage of the overall watershed that the developed area represents. In this case, the soils are highly permeable so that, following development, the amount of extra surface runoff that would be generated during periods of precipitation would be considerable. On the other hand, the developed area would make up only about 3 percent of the overall watershed.

It is possible to estimate the magnitude of the peak flow increases that would result from development. Several methods may be used toward such an estimate. The Team normally uses the SCS runoff curve-number method (technical release number 55) which takes into account soil types, land usage, slopes, and other factors. Because of time constraints, the complexity of land usage in the watershed, and uncertainty as to the effects of prior drainage work in the watershed, the Team did not attempt to calculate specific peak flow rates for various storms. The town may wish to seek such calculations from the developer. The Team did undertake a less complex analysis of the potential magnitude of the development's effects on peak flows. This analysis suggests that peak flows would increase by 10-20 percent for storms of 10-year frequency and for larger storms.

In two of the three alternative development schemes proposed, two connected ponds would be created on the site. These ponds would be located in the wetlands along the northern branch of the tributary stream. Material would be removed from the wetlands in order to give the ponds a depth of at least 8 feet. In proposal SD-2, the ponds would extend beyond the wetland boundaries in a few areas, and other wetland areas would be filled. In proposal SD-4, virtually no area outside the wetlands would be used for the ponds, and slightly more wetland area would be filled than in SD-2. In proposal SD-3, the wetlands would be left entirely intact.

The proposed ponds would have a greater relative effectiveness during moderate peak-flow periods than during very high peak-flow periods. The ponds' water levels may be expected to be approximately the same as the present surface water and water table levels in the wetlands. Any increase in storage capacity would therefore have to be supplied above the extant water level. For example, the removal of soil beneath the present water level would not cause that water level to drop over the long run and therefore would provide no additional storage volume for the excess flows during major storms. Removal of a tree or a soil-plant hummock that extends above the extant water level, on the other hand, would provide additional storage space. Generally, however, the soil-vegetation complex in the wetlands has little depth, and a water level rise of only a few inches may flood a substantially greater portion of the complex. Hence, the importance of removing the complex in terms of providing additional storage diminishes as the peak flows become larger.

Proposal SD-4 would restrict the ponds almost entirely within the area of the present wetlands. Any added flood storage space would therefore be derived virtually exclusively from the removal of the wetlands' surficial soil-vegetation complex. Proposal SD-2, on the other hand, calls for excavation of some areas lying outside of the wetland boundaries. These areas would yield additional flood storage space for both moderate and high peak flows. It must also be noted, however, that both of these proposals involve filling of other wetland areas. Such filling may offset any flood storage gains that the ponds might otherwise provide.

Nevertheless, to the extent that proposal SD-2 would create a more consistently usable flood-flow reserve, and also would involve a smaller amount of wetland filling, this proposal is better from a hydrological standpoint than proposal SD-4.

Proposal SD-3 would require neither wetland filling nor excavation and therefore leaves the present flood-storage capacity of the wetland intact. Assuming no other engineering controls, peak flow increases would be handled in one of two ways. If the culvert through which the streamflow from the site passes under Route 213 presently would be at capacity during a 25-year or larger storm, the additional water from development would be retained in the site's wetlands, causing higher flood elevations. This may or may not have an impact on the condominiums, depending upon their own elevations. If the culvert would flow at less than capacity during 25-year or larger storms at present, the additional flow from development may also be passed through the culvert, causing higher water levels along the streambanks between Route 213 and Jordan Cove. Again, the elevations of the existing homes in that area would determine whether or not they might be affected by such increases.

In summary, it appears that proposals SD-2 and SD-3 are both more practical from a hydrological standpoint than proposal SD-4, which affords little compensation for the wetland area that would be filled. Creation of the ponds should not have deleterious effects upon streamflows, except that, during very dry periods, the water may become very sluggish or stagnant. The most suitable development scheme may actually be one that combines certain elements of SD-2 and SD-3: creation of ponds including the excavation of some non-wetland area to provide additional storage for the anticipated peak-flow increases, and forbearance from filling wetlands.

SOILS

A detailed soils map of this site and detailed soils descriptions are included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication, New London County Interim Soil Survey Report, can aid in the identification and interpretation of soils and their uses on this site. "Know Your Land: Natural Soil Groups for Connecticut" can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

Merrimac sandy loams occupy the nearby level, sloping stream terraces, outwash plains, kames and eskers. The soils are designated by the mapping unit symbols 70B and 70C. The letter "B" represents a 3 to 8 percent slope, the letter "C" an 8 to 15 percent slope. The soils formed in water-sorted outwash. The soils are well drained. Merrimac soils have moderately rapid or rapid permeability in the surface layer and subsoil and rapid permeability in the substratum. Merrimac

soils have slow to medium surface runoff.

Sudbury sandy loams occupy the nearly level terraces or outwash plains. The soil symbol is 456A, the letter "A" denotes a 0-3 percent slope. The soils formed in water sorted outwash. Sudbury soils are moderately well drained and have moderately rapid permeability in the surface layer and subsoil and rapid permeability in the substratum. The seasonal highwater table is 18 to 24 inches. Surface runoff is slow to moderate.

The gently sloping landforms are occupied by Canton-Charlton fine sandy loams. The mapping unit symbols are 11B and 11XB. The letter "X" denotes very stony conditions, and "B" denotes a 3 to 8 percent slope. The Canton soils formed in a fine sandy loam mantle underlain by gravelly sandy glacial till, derived mainly from gravel and gneiss. The Charlton soils formed in deep loamy glacial till. Canton soils have moderately rapid permeability. Surface runoff is medium in Canton soils and medium to rapid in Charlton soils.

The following soils qualify as Prime Farmlands. Prime farmland, as defined by the U.S. Department of agriculture, is the land that is best suited to producing food, feed, forage, fiber and oil seed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources. Farming results in the least damage to the environment.

(11B) Canton-Charlton fine sandy loam
(70B) Merrimac sandy loam
(456A) Sudbury sandy loam

The availability of public water and public sewer lessen the chance of pollution to shallow groundwater supplies on this site. The main concern in developing this site is runoff water control and the altering of soil areas designated as wetlands to accommodate the runoff.

The south section of the project would occupy a terrace of sandy and gravelly soils. These soils are mapped as Merrimac sandy loams (70B, 70C) and have a low runoff potential because of soil texture. Building on these soils will cover part of the area with roof tops and road surfaces and eliminate areas of soils that would normally collect water by infiltration.

The north section of the project already has some buildings on it and others are planned. These soils are mapped as Canton-Charlton fine sandy loams (11B, 11XB) and have a low to medium runoff potential due to soil texture. Building on these soils also eliminates infiltration areas and will increase the volume of runoff.

Several measures can be taken that will reduce or delay runoff. The practicality of installing these measures must also be examined by the developer and planning groups.

Parking lots can be designed to reduce the volume of runoff by using gravel instead of pavement. Vegetated ponding areas around the parking lots can also be used. If the lot is paved, gravel trenches around the lot will be helpful in reducing runoff. To delay runoff on a paved area, grassy strips can be planned

Vegetation

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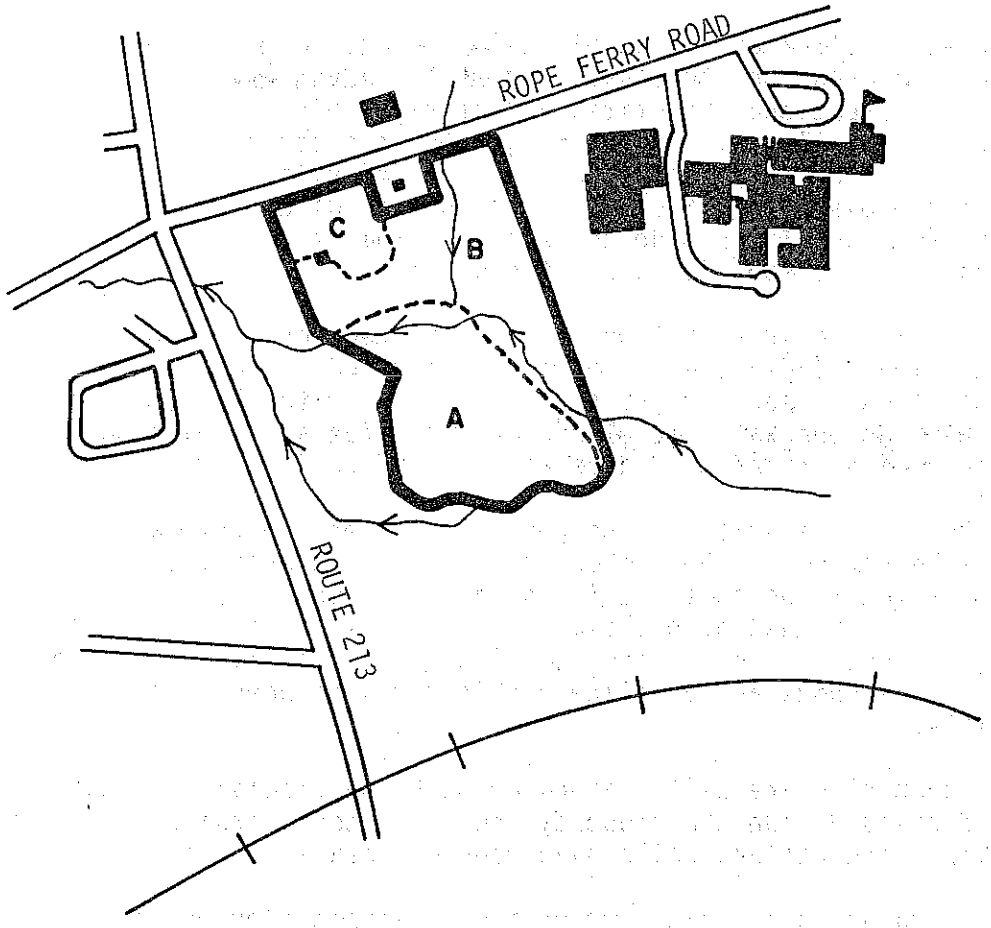
scale

N



LEGEND

- Road
- Property Boundary
- Vegetation Type Boundary
- Stream
- Buildings

VEGETATION TYPE DESCRIPTIONS*

TYPE A. Plantation, 9± acres, Over-stocked, pole size with occasional sawtimber-size trees.

TYPE B. Hardwood swamp, 8± acres, Over-stocked, sapling-size with occasional pole-size.

TYPE C. Old field, 1± acres, shrub and vine species dominant.

* Seedling-size = Trees less than 1 inch in diameter at 4 1/2 feet above ground (d.b.h.)
Sapling-size = Trees 1 to 5 inches in d.b.h.
Pole-size = Trees 5 to 11 inches in d.b.h.
Sawtimber-size = Trees 11 inches and greater in d.b.h.

within the lot. If detention basins are used, grassed waterways can be used to carry water to the basins. The residential areas can be improved to reduce and delay runoff by using gravel sidewalks, increasing lawn space and by having gravel alleys between buildings.

Two suggested alternatives to planning the development show a pond that will be developed and used for storm water control. Advantages to this concept are runoff delay, recreational benefits, and storage which can control large drainage areas with low release. Disadvantages to this concept are the use of acreage, maintenance costs for weed control and removal of silt, mosquito breeding and siltation of the basin, particularly at points of discharge into the pond. An engineering study should be made to determine what the outflow will be under developed conditions at specific storm frequencies.

The soils in the area that would be excavated for the pond are mapped as Sudbury sandy loam (456A). As a source of sand and gravel, these soils are rated as good. As a pond reservoir ara the soils are limited because of seepage. During dry periods the water level can drop considerably which can lead to excessive weed growth around the edges of the pond during the summer months.

The method of excavation of the pond will depend on how many cubic yards of fill will be removed. The Sudbury soils can have unstable sidewalls after construction which means that the finished back slopes would have to be graded to at least 3:1. The use of bulldozers may be limited depending on what depth water is encountered at and on the stability of the soil. If bulldozers can not be used, large backhoes and dragline machines may be needed to remove saturated soil materials.

The soils on site are well drained outwash and glacial till soils. Moderately well drained soils divide the property and more poorly drained soils are also found on site. The wetland soils have been delineated on site.

The well drained soils can support the development proposed, however, storm water control is also an important part of the plan. The soils have a low to medium runoff potential and this can be used as an asset by leaving as much open original ground as possible. This is the most basic way to approach this problem along with other measures mentioned in the report.

The suggested pond for storm water control has advantages and disadvantages as listed in the report. An engineering study should be made to determine the feasibility of this pond specifically addressing the outflow of the pond during peak flows.

VEGETATION

The $20^{\pm}$ acre site proposed for development may be divided into three vegetation types. These include: conifer plantation, $9^{\pm}$ acres; hardwood swamp, $8^{\pm}$ acres and old field, $1^{\pm}$ acre (see Vegetation type map and Vegetation type description).

Vegetation Type Descriptions

Type A (Plantation). This 9± acre plantation is comprised of pole and occasional sawtimber-size Eastern white pine, hemlock, red pine, and scotch pine. Included in this stand are occasional healthy sawtimber-size white oak and red oak. The conifer trees in this over-stocked stand are declining in health and vigor as a result of their crowded condition. The understory species present in this stand include black cherry seedlings, black birch seedlings, highbush blueberry and scattered Eastern white pine seedlings in the more open areas. Groundcover vegetation is dominated by club moss, poison ivy and Canada Mayflower.

Type B (Hardwood Swamp). Sapling to sawtimber-size, sweet gum, red maple and swamp white oak along with scattered American elm and black gum are present in this 8± acre over-stocked stand. Sweet pepper bush, arrowwood, withe-rod, highbush blueberry, spice bush and occasional shadbush form this stand's understory. Ground cover vegetation consists of cinnamon fern, royal fern, sensitive fern, sedges, spirea, cat-green brier and in the drier areas, club moss and Canada Mayflower.

Type C (Old Field). This 1± acre old field area is vegetated with red osier dogwood, red maple-seedlings, elderberry, multiflora rose, holly, arrowwood, Japanese honeysuckle, oriential bittersweet, poison ivy, Virginia creeper, grasses, goldenrod, Joe-pye-weed, touch-me-not and assorted other weed and wildflower species.

Trees in vegetation type A (Plantation) were planted during the late 1930's or early 1940's. Many of these trees are in poor condition and stunted in growth, primarily due to a lack of management in the past. There are some trees, however, which are relatively healthy and much larger than the rest. These trees should be considered for retention if the area is developed. These healthy trees have high aesthetic value and are more stable than the unhealthy trees.

Buffer strips of natural vegetation if retained between building clusters would provide a vision and sound screen. Once building cluster locations are determined in the field, buffer zones should be designated. It would be desirable to remove approximately one quarter to one third of the trees in these buffer areas. Only poor quality and damaged trees should be removed. This thinning would reduce competition between residual trees for space, sunlight water and nutrients, resulting in healthier more stable trees over time. This thinning will also remove trees which are a potential hazard because of their poor quality. If one third of the trees are removed, enough sunlight should reach the forest floor to stimulate the growth of ground cover and understory vegetation. To form a more complete visual barrier, hemlock seedlings could be underplanted in these areas. Spacing of these seedlings should be approximately 8 feet by 8 feet.

Care should be taken during the construction period not to disturb the vegetation which is to be retained.

Trees are very sensitive to the condition of the soil within the entire area under their crowns. Development practices near trees, such as excavating, filling and grading for construction of roadways and buildings may disturb the balance between soil aeration, soil moisture level and soil composition. These disturbances may cause a decline in tree health and vigor, potentially resulting in tree mortality within three to five years. Mechanical injury to trees may cause the same results. Dead trees reduce the aesthetic quality of an area and may

become hazardous and expensive to remove if near roadways, buildings or utility lines.

The proposed development of ponds for storm water management and aesthetic appeal in the wetland areas (hardwood swamp) will have a great impact on vegetation. Pond development will demand almost complete vegetation removal in these areas. The ponding of water in conjunction with clearing operations will substantially alter the nature of this wetland area, turning it from a hardwood swamp to open water.

If development of ponds in the wetland area is not desirable or feasible, retention of these areas as open space should be considered. These areas if not substantially altered have the ability to store and slow the speed of water during peak flows. These areas will also be able to help regulate the discharge of storm water flow resulting from the proposed development.

It is good practice to avoid any alteration of normal drainage patterns that will cause water to pond over tree roots. Blocking or restricting natural drainage flows which cause a ponding of water over roots may cause vegetation mortality.

The potential for windthrow is high in the wetland areas. This condition is caused by shallow root systems and saturated soils which do not allow trees to become securely rooted. Clearing in or near these areas may aggrevate this situation by allowing wind to pass through rather than over these stands.

If the wetlands are to be retained as open space, a light fuelwood thinning would help to stabilize residual trees by reducing the crowded conditions. A crown thinning of approximately one quarter of the volume will stimulate crown and root growth in residual trees. Only damaged trees, poor quality trees and unhealthy trees should be removed, high quality healthy trees should be retained. This thinning should be done during the summer months when the ground is dry or the winter when the ground is frozen, to avoid permanently rutting the soil.

Utilization of the trees which are cleared in the development of the site for fuelwood would be desirable. With efficient air tight wood burning stoves, softwoods such as these present on the property can be burned with little chance of creasote build-up, providing the stove has been properly installed.

WILDLIFE

Much of the Nevins property exhibits areas of introduced and disturbed veteta-tion. A great percentage of the uplands are dominated by scotch pine (Pinus sylvestris) plantations. Wet lowlands support sweet gum (Liquidambar styraciflua). Sweet gum occurs natively in Connecticut as a coastal plain tree at its northern range limit in the extreme western portion of the state. Sweet gum is classified as rare in Connecticut. Presumably, it has been planted on the Nevins site. The forested/scrub-shrub (Acer rubrum/Vibernum spp.) wetlands have been disturbed by ditching.

Below the canopy of the pines, lack of a dense undercover provides an excellent habitat for the red fox (Vulpes fulva). A substrate of well-drained sandy loam is ideally suited for providing dry subterrainean den and tunnels of the red fox.

Thirteen entrances were observed within a cross-section of the plantation, suggesting at least more than one den, each with several entrances. Since kinship ties are strong among foxes, an "extended" family may occupy one area if food is available. However, of all entrances examined only two may be presently considered active, all others abandoned. Within a fox' home range, small mammals, insects and turtles of the adjacent wetlands would likely comprise some of a fox' diet.

Evidence of deer browse was not observed during the field reviews. High six-foot cut stone walls within and surrounding the Nevins property isolates these areas.

Although disturbed, the wetlands provide habitat for local birds and mammals, as well as providing fruit and seed for migrant songbirds.

It is suspected that adjacent development and land use patterns have had a negative impact upon wildlife. Development of the Nevins property will completely eliminate habitat for the red fox.

Excavation of the wetland area for ponds is not recommended. Eutrification by puddle ducks (Anatinea) may be expected.

The wetlands area should remain intact to maintain local species diversity and to preserve sweet gum which is successfully reproducing in the understory.

LAND USE

Surrounding land uses are institutional (school and library) open space, commercial, residential, and undeveloped. On a land use basis, a well designed multi-family development would be compatible. The area is zoned for multi-family uses, utilities are available, governmental and shopping facilities are nearby and bus service is available. Since the north side of Rope Ferry Road (Route 156) is publicly owned there will be no further development along the road in this area. Since this is an urbanized section of Town, it would be desirable to provide a sidewalk along the main internal loop road of schemes SD-2 and SD-4 and the single access road of SD-3, all of which connect with Rope Ferry Road. This would permit the occupants to use the existing sidewalk along Rope Ferry Road to reach governmental facilities, the high school, and the commercial-office facilities along Boston Post Road. These facilities are within 1/2 - 2/3 of a mile of the site. It might also be desirable to provide a bus shelter along Rope Ferry Road at this location. In addition to providing access off site, the sidewalk could also be tied to internal trails, paths, wlakways or jogging paths.

TRAFFIC/TRANSPORTATION CONCERNS

The proposed project will generate new traffic along Rope Ferry Road. A CONNDOT study indicated an average of 5.3 vehicle trips per weekday generated by condominiums.* This figure would produce 816 daily vehicle trips which is about 6% of the 13,200 average daily traffic on Rope Ferry Road. Another study of CONNDOT** indicated a volume/capacity ratio of 1.0171 for this segment of Rope Ferry Road which means

* Trip Generation of Various Land Uses, Supplement A, CONNDOT, 1975.
** Vehicle/Capacity Ratio, CONNDOT, 1979.

that the road is in the congested category, but below the intolerable threshold of a 1.25 ratio.

In light of this, having separate driveways from Rope Ferry Road for the condominiums and the Better Business Bureau to the east only compounds the problem that traffic from the site will present to Rope Ferry Road. Consideration should be given to combining these to a single road entrance with some type of median to channel traffic to proper internal locations. Consideration should also be given to turning lanes at this point on Rope Ferry Road as well as to the proposed western entrance to the site across from the library. Consultation with CONNDOT might be in order to determine if this proposed project would be classified as a major traffic generator.

Since the 5.3 vehicle trip figure was devloped before the energy price increases of 1979, this figure may now be high. It was also developed in a rural area with no mass transit. The site under review is served by two bus runs of SEAT providing hourly service to Waterford shopping areas, to the Harkness Memorial Park area of town (Great Neck), and to New London-Groton. A weekday commuter bus to the Groton Industrial area is also available from East Lyme and Waterford.

HISTORICAL/ARCHEOLOGICAL SIGNIFICANCE

The twenty acre site on Rope Ferry Road in the town of Waterford which is proposed for development by Lombardi and Waldo has both historic and prehistoric potential which should be considered by the Conservation Commission of the town in their approval of any plan of development.

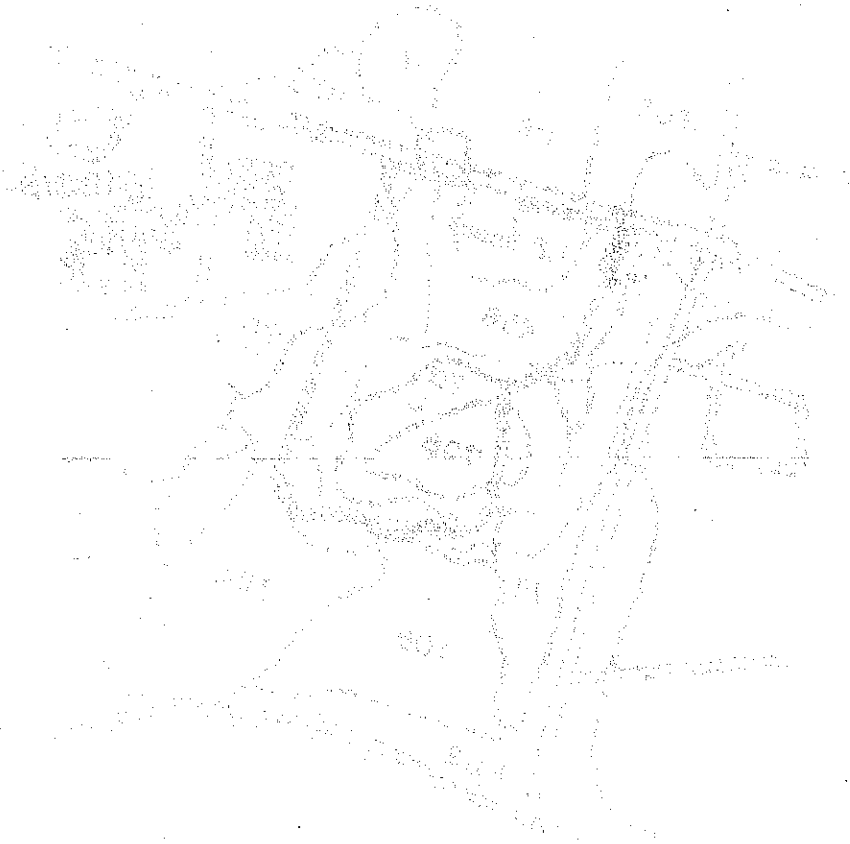
The historic archaeological potential of this property is the most obvious as it consists of large mansion house and attendant gardens, outbuilding barns and stables. The house is a large wooden and brick structure which suggests several building periods. The current north facade facing Rope Ferry Road may be a Federal Revival period addition of the late 19th-early 20th century. The west ell suggests Greek Revival influences and may date to the 1830's or 40's. The east ell consists of a two-story semi-detached brick building constructed in an Italianate style probably dating from the 1850's with most of the original ironwork and shutters intact. The earliest artifacts collected around the periphery of the house consisted of pale blue transferprinted whiteware dated circa 1830-1860 which would concide with the hypothesized dates for the architecture.

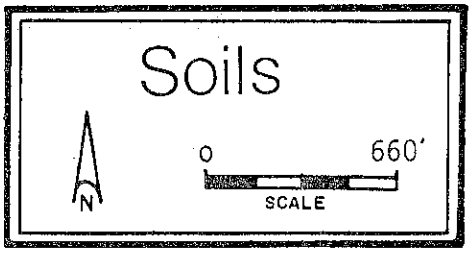
To the east of the house are several small outbuildings which have in the recent past been used for human habitation. Beyond these buildings are the remains of a series of barns and stables which may date from the late 19th century. The stables are within a yard of approximately one acre enclosed by a six foot cut and dressed stone wall that may have defined a corral and riding yard. The garden and formal lawns now completely overgrown may have at one time been four acres or more in extent and contained a number of ornamental trees, shrubs and planted flowers. Beyond the wetlands that drain into Jordan Cove lies a seven acre pine covered sandhill bisected by what may have been riding paths. At some point a portion of this hill was mined for sand and gravel and lately it has been used as a repository for abandoned automobiles and other refuse.

Evidence of prehistoric occupation is less direct but nonetheless compelling. The proposed development site consists of two types of soil. One type consists of

Canton-Charlton, and Merrimac soil series, well-drained gravelly soils generally made up of collapsed kame terraces and ice contact water deposits. The second type consists of Sudbury soils which are generally made up of swamp deposits. These swamp deposits drain into Jordan Cove, an estuary approximately one-half mile to the west. Extensive surveys in the eastern Connecticut uplands by the Public Archaeological Team have demonstrated that these types of soils in conjunction with wetlands are a prime habitat for prehistoric peoples in New England. Although this model has been constructed chiefly for the highland, a series of individual site studies on the eastern Connecticut coast would suggest that a similar pattern existed in this region (McBride et. al. 1979; Wadleigh 1979; Praus 1942; Rogers 1943). An absolute determination of the prehistoric archaeological potential of this property cannot be made without on-site testing, but the geomorphological composition of the immediate vicinity strongly suggests that the potential may be significant.

Appendix

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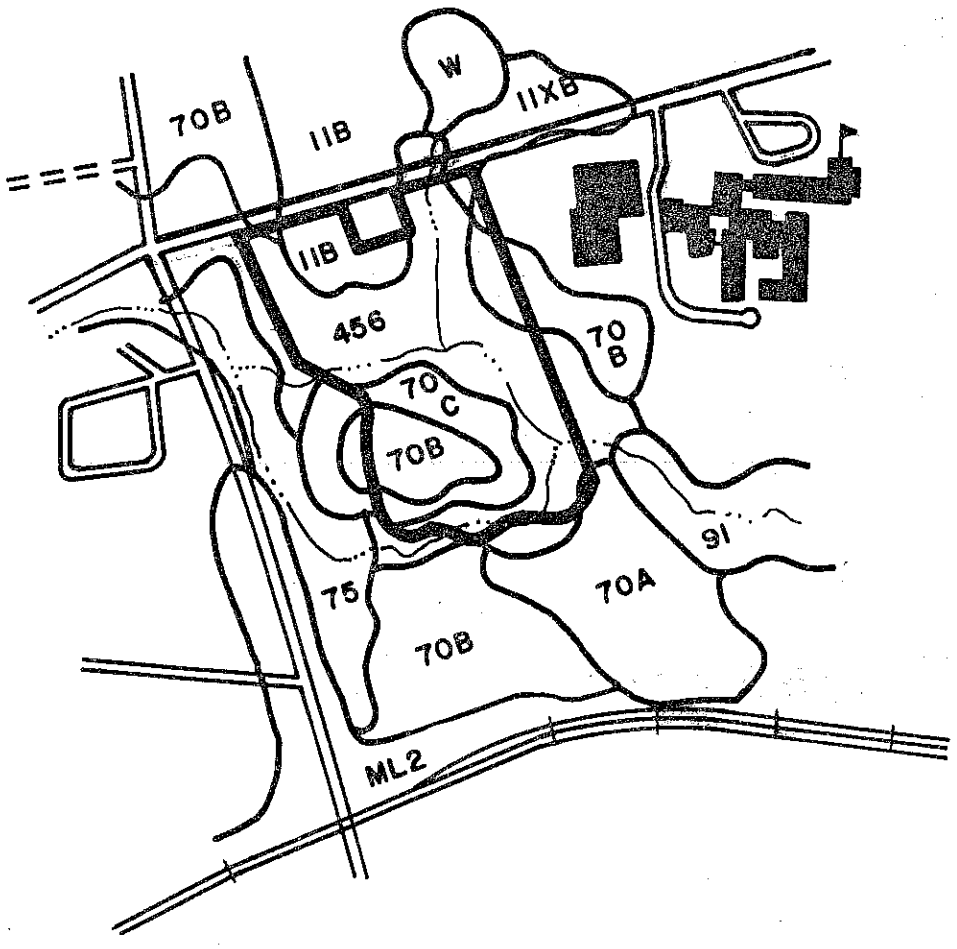
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70C
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91
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70A
70B
ML2

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.

NEVINS PROPERTY
WATERFORD, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
					On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
Canton-Charlton	11B	3	14		1	1	1	1
Canton-Charlton	11XB	1	4	Large stones	2	2	2	2
Merrimac	70B	3	14		1	1	1	1
Merrimac	70C	4	18	Slope	1	2	2	2
Sudbury**	456A	11	50	Wetness, frost action	3	3	3	3

Limitations: 1=slight, 2-moderate, 3-severe.

** Regulated wetland soil under P.A. 155.

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.