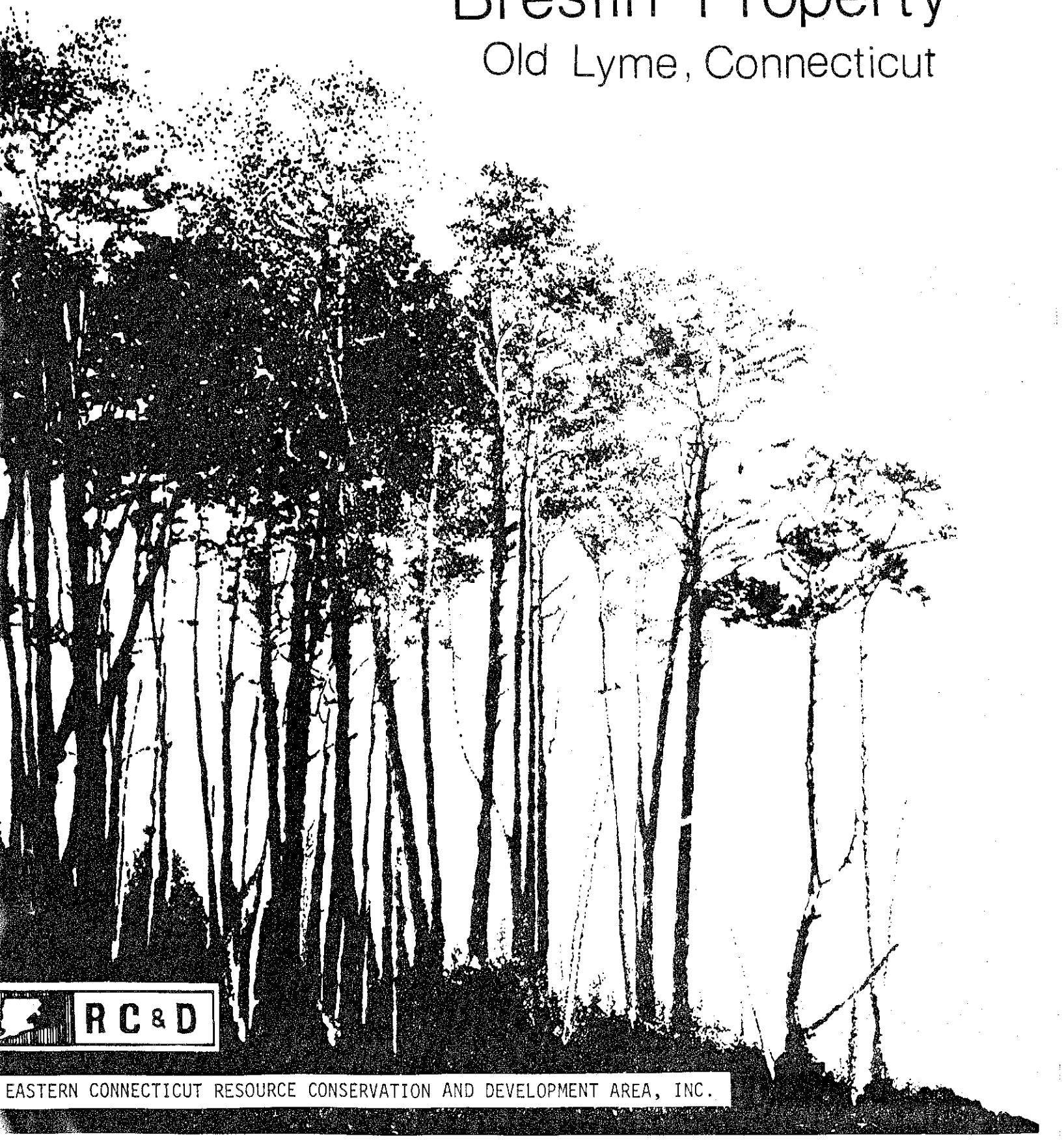
# Environmental Review Team Report

# Breslin Property

## Old Lyme, Connecticut



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EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

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on

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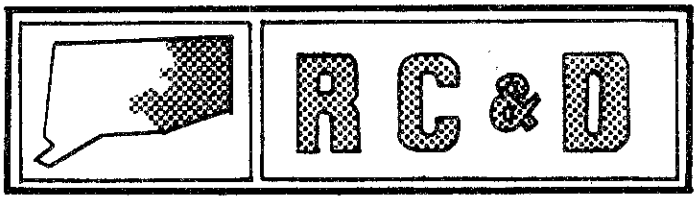
December 1979

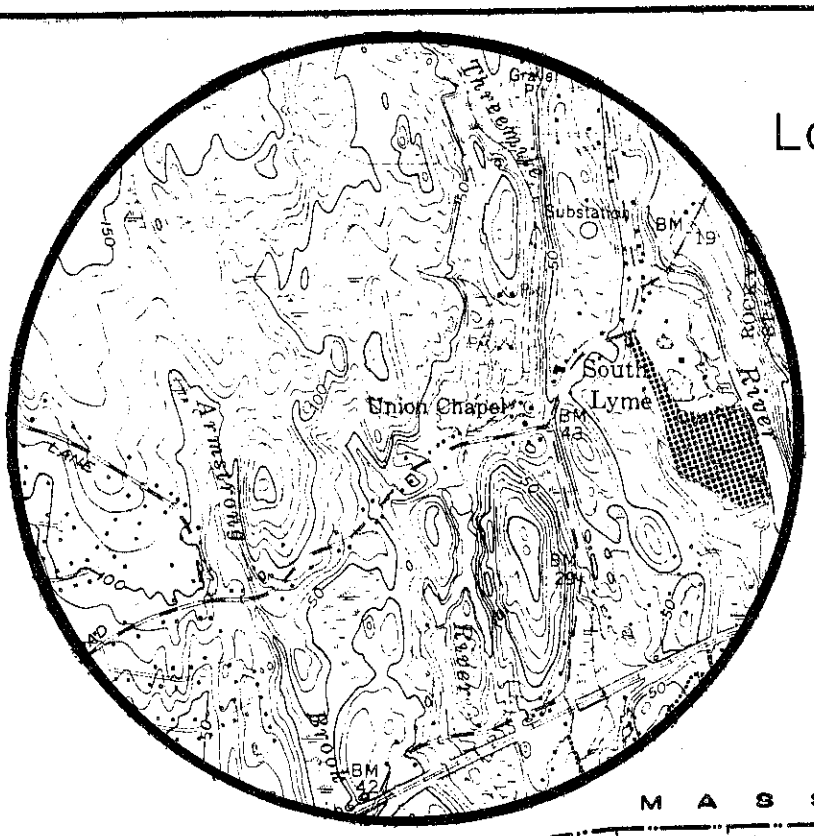


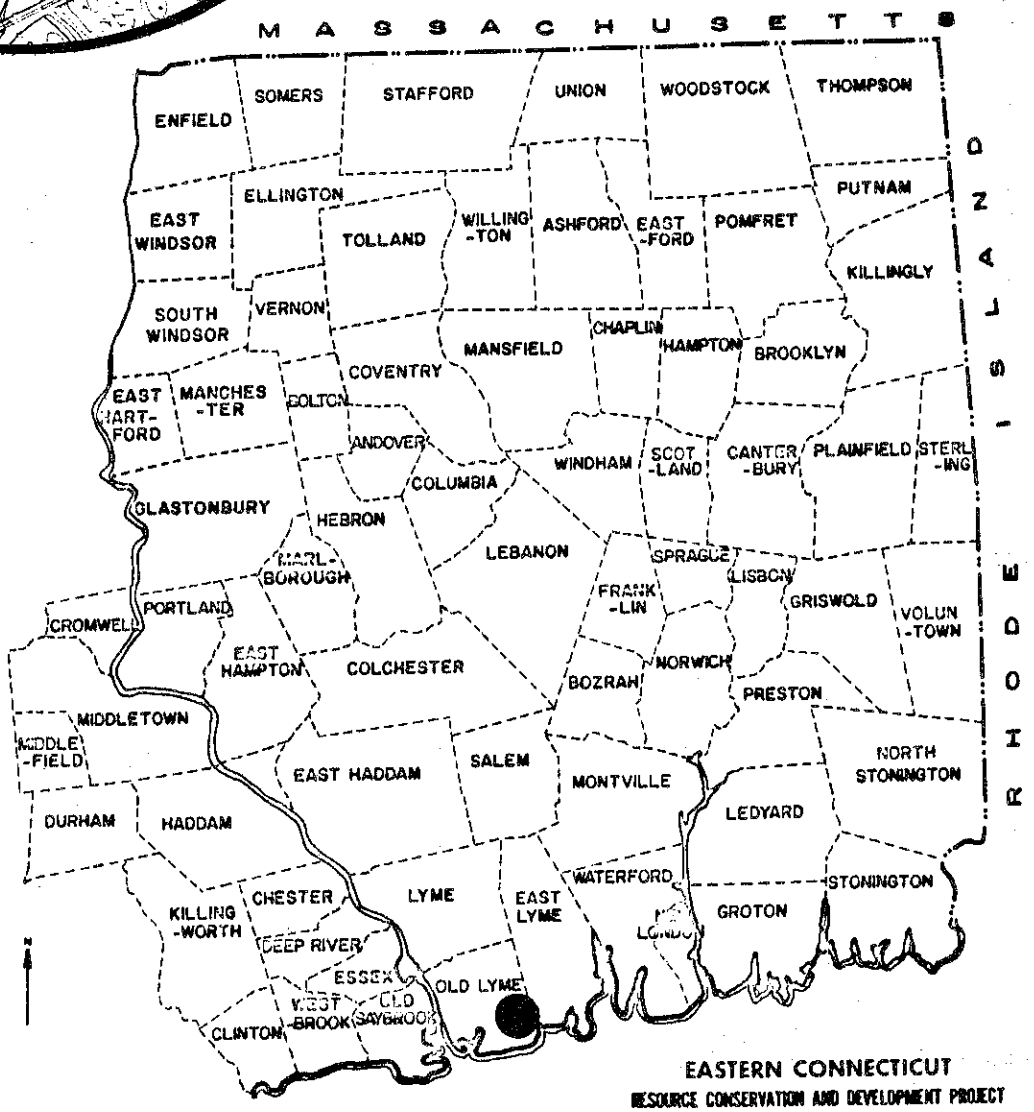

eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

# Location of Study Site

BRESLIN PROPERTY
OLD LYME, CONNECTICUT



# ENVIRONMENTAL REVIEW TEAM REPORT
# ON
# BRESLIN PROPERTY
# OLD LYME, CONNECTICUT

This report is an outgrowth of a request from the Old Lyme 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.

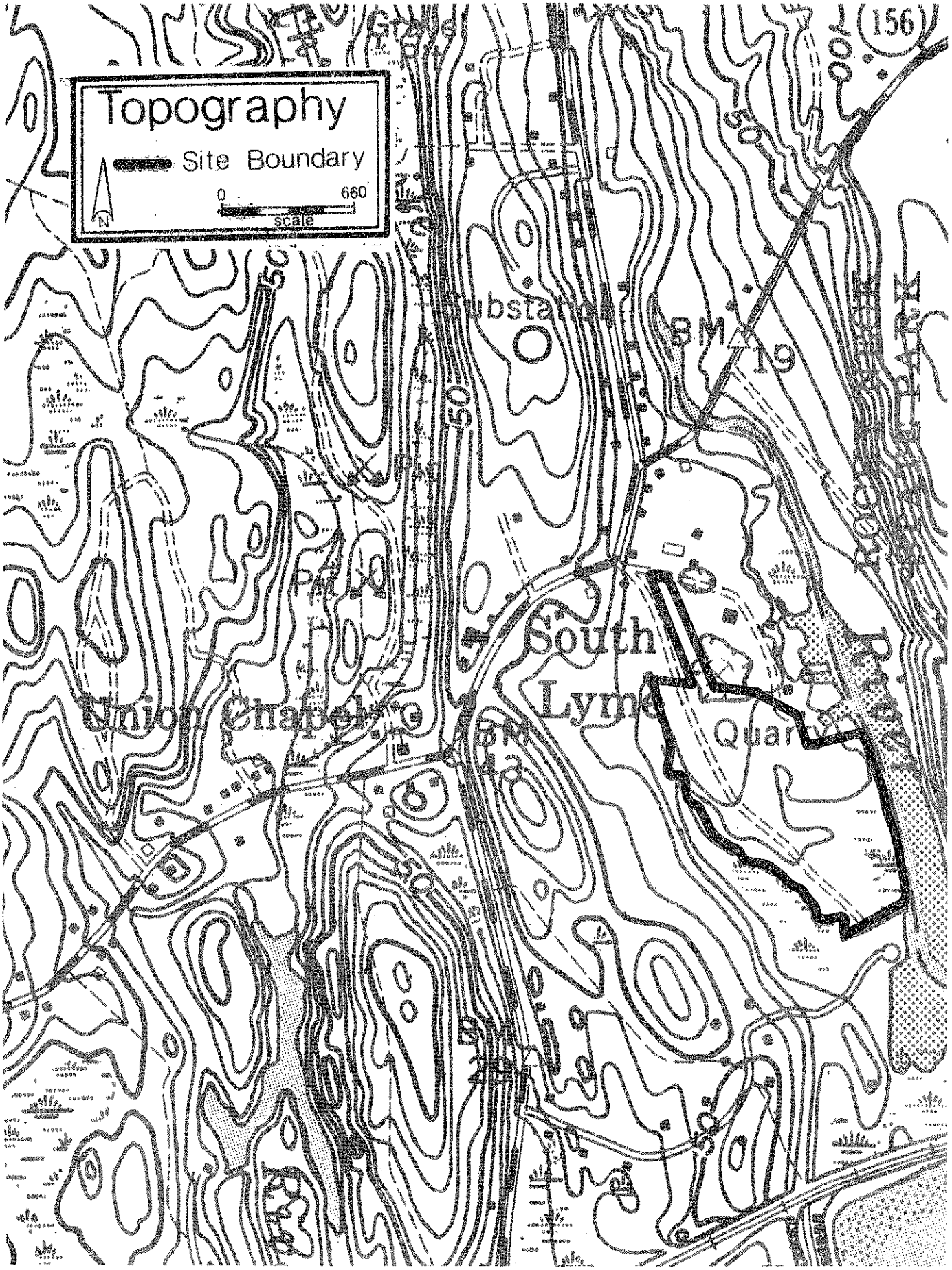
The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, SCS: Richard Hyde, Geologist, Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Don Capellaro, Sanitarian, State Department of Health; Ed Meehan, Regional Planner, Connecticut River Estuary Regional Planning Agency; Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, October 18, 1979. 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 considerations that should be of concern to the developer and the Town of Old Lyme. 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.


Topography
Site Boundary
0
660'
scale
N
156
BM
19
South
Lyme
Union Chapel
Quar

## INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a 19± acre parcel in Old Lyme. The property is currently in the private ownership of Thomas Breslin. Radcliffe Engineering has been retained to prepare a preliminary subdivision plan for the property. Preliminary plans were not available at the time of the field review as the engineers were waiting for site limitation information before beginning the design process. The developer's engineers indicated that the site would be used for residential purposes only, so the site was viewed by the Team for its 1/2 acre single family residence zoning restriction, thus limiting the density of development to no more than approximately 36 lots in total for the site. House lots established on the site would be served by on-site wells and on-site septic disposal systems.

The site is located on Lower Fourmile River Road. The property consists of approximately 19 acres of which 8 acres are regulated wetlands. For a distance of 400 feet back from the river, the site is zoned marine commercial, with the remainder of the property requiring a minimum of 20,000 square feet per residential lot. The parcel is bounded on the south by the Fourmile River and lies to the north of a state boat launch area. The Fourmile River is the boundary line between the Towns of Old Lyme and East Lyme with state-owned property of Rocky Neck State Park extending east from the river in the latter Town. West of the property and extending to Route 156 is a residential development. North of the property along the Fourmile River are several marinas.

The major feature of the semi-wooded property include: the tidal and inland wetlands which extend off the lower eastern, southern, and southwestern sides; the upper, relatively flat terrain of well-drained soil (just north of the site along a proposed 50 foot right of way into the property is an area once utilized as a sand and gravel pit); a dirt roadway, as shown on the topography map, which runs across the property starting at a point on Route 156 and terminating near the state boat launching area, and a culvert which provides for some tidal flushing under this gravel roadway near the boat launch area.

The restriction of the marsh to the west of the property by the culvert under the so-called emergency road may create a situation where the degree of tidal flushing is reduced. This situation results in a biological adjustment or conversion of salt tolerant grasses and other vegetation to species more tolerant of a brackish environment. If it is desired to return to this area the biological communities that normally inhabit the marsh, the problem may be solved by clearing the restricting culvert and replacing it with an expanded system to increase tidal flushing. It must be pointed out, however, the railroad bridge crossing the Fourmile River probably also acts to restrict a certain amount of flushing and therefore the nature of the marsh system probably can never be as it was before that bridge was constructed.

The Team is concerned with the effect of this development on the natural resource base of this site. Although difficult limitations on some sites can be overcome with proper engineering techniques, these measures are often costly, making a project economically unfeasible for a developer. The most critical problems evident from field review of this site are related to the provision of an adequate potable water supply for homes established on the site and potential for groundwater contamination from poorly renovated septic effluent. Both of these problems

can be controlled by development density. In the Team's opinion, lots of one to one and one half acres in size should be the minimum lot size in this area. This size estimate was based on soils information available for the site and those limitations typical of the soils types. A community well located in the most favorable area for water on site may also answer problems of brackish water infiltration in separate wells.

Adequate road access to the site will also be a concern which should be addressed by the developer and the Town Planning Commission (see planner's section of this report). The present right-of-way (R.O.W.) owned by the developer appears to have been excavated for gravel and is 20 to 25 feet below existing grade for the remainder of the parcel. Adequate line-of-sight at the intersection of Route 156 is also a concern. Potential for providing alternate access into the tract should be explored.

## ENVIRONMENTAL ASSESSMENT

### BEDROCK GEOLOGY

Bedrock in this area has been mapped and published in "Geologic Map of the Old Lyme Quadrangle" by Lawrence Lundgren (1961). Based on surface exposures of bedrock to the east and west of the property it is anticipated that the rock underlying the area (at a depth of about 50 to 100 feet) would be the Plainfield Formation, specifically the middle unit or biotite-sillimanite schist and gneiss, which commonly contains nodules of quartz-sillimanite aggregate. Bedrock will not play a role in the use of this property because it is found at such a greath depth.

### SURFICIAL GEOLOGY

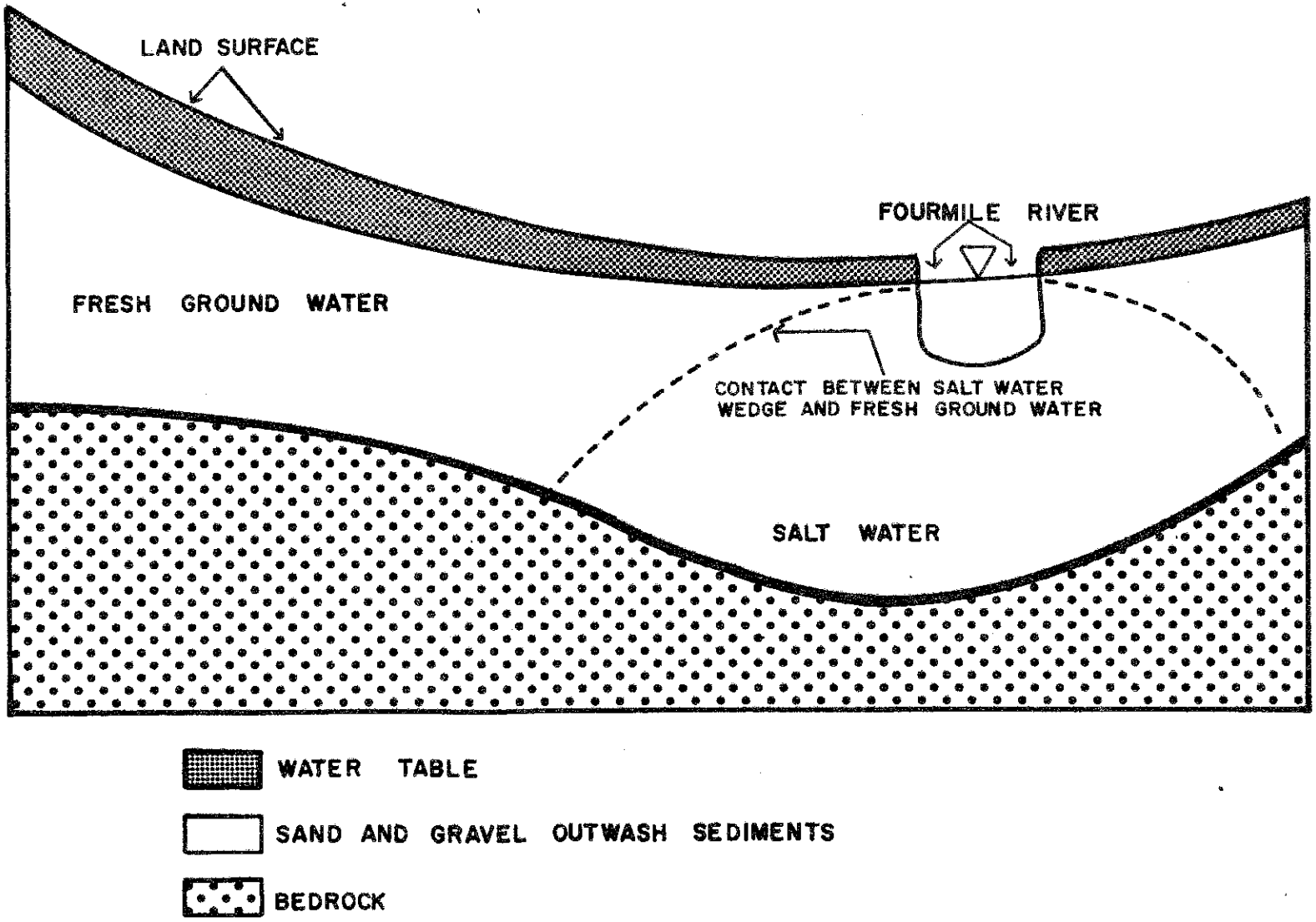
The earth materials found on the site have been mapped as outwash sediments. These sediments consist of sand and pebble size particles which were deposited by streams beyond a glacier ice front and without influence of buried ice. The deposits are typically stratified (layered). (Information in part taken from the publication "The Surficial Geology of the Essex and Old Lyme Quadrangles" by Richard Foster Flint, 1975, Quadrangle Report No. 31.)

The thickness of the overburden on the site is between 50 feet and 100 feet based on information compiled and shown on the "Depth to Bedrock Map" by Daniel B. Meade (1974). The property is located in an area that was deepened by glacial and erosional forces and subsequently filled in by stratified outwash materials.

### HYDROLOGY

The saline Fourmile River and the unnamed marsh to the west are the major influences on surface and ground water quality. The ground water table generally follows the configuration of the land surface. Seasonally, the water table fluctuates up and down but still maintains a slope toward the marsh and Fourmile River, where ground water moving down slope discharges at the land surface. At the same time the salt water tidal movement in and out of the Fourmile River and the marsh also infiltrates into the sand and gravel deposits forming a wedge of more dense

FIGURE 1: SALT WATER INFILTRATION WEDGE



salt water which is overriden by the less dense fresh ground water (see Figure 1).

Under these conditions the areas of concern should be on-site water supply, in terms of water quality, and proper operation of on-site septic systems. Because the sand and gravel deposits are able to quickly allow for the movement of fluids through them, the site should contain a more than adequate source of potable water for the operation of on-site water supply wells for single family housing. The task will be to develop a water supply system that avoids two potential problem areas: 1) intersection of the salt water wedge, thereby drawing unpotable salt water into the drinking water system, and 2) movement of septic system effluent into the drinking water well. To avoid both of these potential problems the developer should consider some combination of low density development and the location of multi-family gravel-packed or shallow water supply wells positioned as far as possible and upgradient from sources of salt water and any septic systems. Another alternative, although not foolproof, is to use bedrock wells as water supply sources for individual homes; however, water yield will be much lower than wells placed in the sand and gravel and the wells probably will be much more expensive to install.

## VEGETATION

The 19± acre parcel proposed for subdivision may be divided into four vegetation types including the tidal marsh (see vegetation type map and vegetation type description). Consideration should be given to preservation of the largest trees, flowering trees, and shrubs on this property. Salt spray and excessively drained soils limit vegetative growth, causing the stunted appearance of most trees on this tract. Widespread poison ivy is a potential hazard to future lot owners and should be eradicated. Only trees that are tolerant of the sea coast environment should be planted to improve the aesthetic quality of the landscape.

### Vegetation Type Descriptions

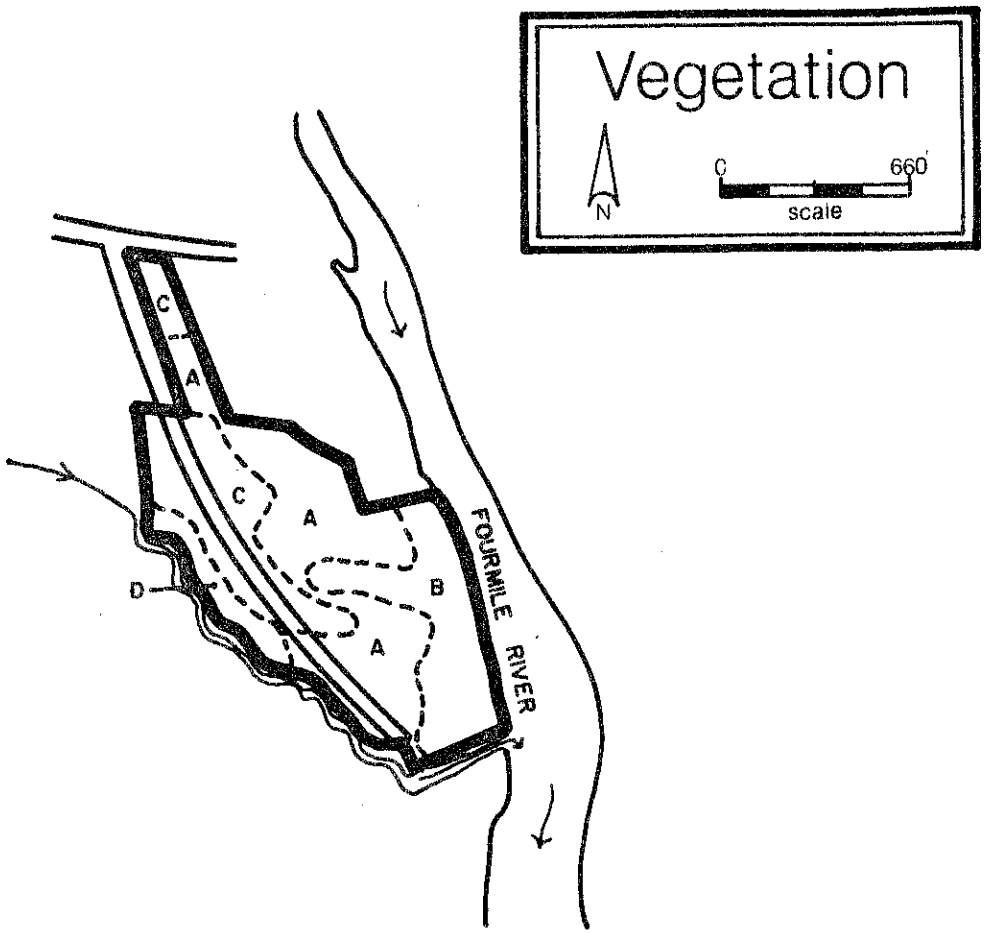
Type A (Old field/brush). This 8-acre understocked stand consists of widely spaced seedling to sapling size white oak, scarlet oak, black oak, mockernut hickory, quaking aspen, big tooth aspen, black cherry, shadbush, red cedar, autumn olive, red maple, and apple trees. Shrub species present in this stand include highbush blueberry, winged sumac, multiflora rose, bayberry, sweet fern, and arrowwood. Cat-brier, oriental bittersweet, and poison ivy have become widely established on this portion of the tract. Ground cover is dominated by grasses, golden rod, deertongue, steeplebush, and dewberry.

Type B (Tidal marsh). Cord-grasses, five acres.

Type C (Open field). The vegetation in this 4-acre area differs from Type A in that tree species have not yet become established. Grasses, goldenrod, bayberry, sweet fern, steeplebush, and poison ivy dominate this area.

Type D (Mixed hardwoods). Pole-size mockernut hickory and black oak are present in this 2-acre fully-stocked stand. The understory is dominated by shadbush, chestnut sprouts, and sassafras. Cat-brier, poison ivy, bayberry, and grasses are also present in this steeply sloped stand.

There are two major factors which limit vegetation growth on this tract. One




LEGEND

- Road
- Property Boundary
- Vegetation Type Boundary
- River

VEGETATION TYPES*

TYPE A Old field/brush. Understocked seedling to sapling-size, 8 acres.

TYPE B Tidal marsh, 5-acres.

TYPE C Open field, 4-acres.

TYPE D Mixed hardwoods, fully-stocked, pole-size, 2-acres.

* Seedling-size = trees less than 1 inch in diameter at breast height (dbh).
Sapling-size = trees 1 to 5 inches in dbh.
Pole-size = trees 5 to 11 inches in dbh.

factor is this tract's close proximity to Long Island Sound, which allows salt spray to eliminate non-salt-tolerant species and prune or cause the stunted appearance of those species which are moderately salt tolerant. The other limiting factor is the excessively drained and extremely droughty soils found on this tract (Hinckley and Windsor). These soils have a low moisture holding capacity and tend to dry out early in the spring. A moisture deficiency is present, which reduces the period of rapid growth for vegetation. As a result of the combined effects of both of these conditions, trees are stunted in appearance and will never reach their full height potentials.

The poison ivy, which is present throughout much of this tract, represents a potential hazard to future lot owners. Ideally it should be eradicated prior to construction. Development actions may be enough to substantially reduce the abundance of the poison ivy on this tract; however, if complete eradication is desired the controlled use of an herbicide will be necessary.

The site has a limited number of trees that are sapling size and larger. Any of these larger trees if preserved will enhance the value of this property. To the greatest extent possible, the design and development of this property should avoid removing or damaging any of these larger trees.

Several species of flowering trees and shrubs are present on this property. Of special interest are the apple trees and autumn olive found in Stand A. These species have fragrant flowers and colorful fruit. In addition to being aesthetically pleasing, these species provide food for wildlife and should be preserved.

These flowering trees may be transplanted to more ideal positions. For best results transplanting should take place during the spring. Root systems should be kept moist at all times during transplanting operations.

Three species which are tolerant of the sea coast environment, exposure to salt spray, and droughty soil conditions should be selected if the planting of trees on individual lots is desired. Under these circumstances the following list of trees is recommended for planting:

Small trees less than 30 feet at maturity:

Sarvis tree; Amelanchier arborea
Allegheny Serviceberry; Amelanchier laevis
Russian Olive; Elaeagnus angustifolia
Columnar Chinese Juniper; Juniperus Chinensis Columnaris
Columnar Chinese Juniper; Juniperus Chinensis Keteleeri

Medium trees 30-50 feet tall at maturity:

Sycamore Maple; Acer pseudoplantanus
Red Cedar; Juniperus Virginiana
Littleleaf Linden; Tilia cordata
Redmond Linden; Tilia x euchlora 'Redmond'
Mongolian Linden; Tilia Mongolica
Columnar Bayleaf Linden; Tilia platyphyllos 'Fastigiata'
Silver Linden; Tilia tomentosa

Large trees 50-feet or more tall at maturity:

Thornless Honey locust; Gleditsia triacanthos var. inermis
Black gum; Nyssa sylvatica
Japanese Black Pine; Pinus thunbergii
London Plane tree; Platanus x acerifolia

Sizes given will probably never be realized, due to site conditions and are therefore only given for comparisons.

These trees will grow best in full sunlight and on well-drained soils. Soil conditions on this site and salt spray will cause reduced height growth. The larger these trees are when planted, the better their survival rates will be.

In order to grow properly, trees should be planted far enough away from structures so that tree growth will not be restricted, even when the tree is approaching maturity.

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.

The soils on this site occupy an outwash terrace. The landform is oriented north to northwest and is bordered on the east and south by tidal marsh. The tidal marsh blends into a poorly drained soil on the west side of the property that is not tidal marsh, but is classified as an inland wetland soil.

The low-lying, nearly level areas along drainage ways on stream terraces and outwash plains are occupied by Raypol silt loam. The soils are designated by the soil symbol 464. Raypol soils formed in silty deposits, less than 40 inches thick, over sand and gravel. The soils are poorly drained and have moderate permeability in the surface layer and subsoil, and rapid or very rapid permeability in the substratum. The high water table is at or near the surface 7 to 9 months of the year. Water runoff in these areas is slow.

The nearly level tidal marshes adjacent to Long Island Sound are occupied by Ipswich mucky peat. The soils are designated by the soil symbol TM 2. Ipswich soils formed in partially decomposed organic material from salt tolerant herbaceous plants. The soils are very poorly drained and have moderate to rapid permeability.

Water runoff is very slow in these soils and in some cases water remains ponded in these areas.

The gently sloping to sloping terraces or outwash plains are occupied by Hinckley gravelly sandy loam. The soils are indicated by the soil symbol 60C. Hinckley soils formed in water-sorted outwash. The soils are excessively drained and have rapid permeability in the surface layer and subsoil and very rapid permeability in the substratum. Storm water runoff is slow.

Windsor loamy sand occupies gently sloping stream terraces and outwash plains. The soils are designated by the soil symbol 67B. Windsor soils are formed in loamy sand and sand from glacial outwash. The soils are excessively drained and have rapid or very rapid permeability. Runoff is slow to medium.

Areas of soils that have been disturbed from their natural state to the extent that the natural soil layers are no longer recognizable are designated by soil symbol ML 2. The soils are called "Udorthents-Urban land complex, smoothed." Soil characteristics such as drainage, permeability and runoff are too variable to rate because the soil is not in its natural state. Extensive on-site inspection is needed to evaluate the soil characteristics.

The tidal marsh soils border the east side of the property and extend inland about 1,400 feet along the south and west margins of the property. At about 1,400 feet the tidal marsh meets what is classified as an inland wetland soil. Both soils have severe limitations to most uses because of tidal flooding or prolonged wetness.

The mineral soils on the high part of the property have few limitations for development. The Windsor soil series has few limitations, but establishing lawns and landscaping will be difficult due to sandiness and droughtiness of the soil. Also, if underground utilities are installed or if shallow excavations of any kind are necessary, caution should be exercised due to the instability of cut slopes. Hinckley soils share similar limitations; however, slopes are a moderate limitation on this site.

Septic tank absorption fields have a slight limitation in Windsor soils, but because of excessive permeability, groundwater pollution may occur. This is critical if shallow wells are planned for the site. Hinckley soils have moderate limitations for septic tank absorption fields due primarily to slope, but because of excessive permeability, ground water pollution may occur.

Erosion and sedimentation should not be a problem if precautions are taken prior to and during construction. Steep slopes should not be disturbed during construction because they may become unstable and subject to erosion and sedimentation. The steep slope found along the Windsor soil on the west side of the property should not be disturbed during construction. The short steep terrace breaks between the Hinckley soils and the tidal marsh should not be disturbed during development in order to prevent silt and sand from washing into the marsh. Staking hay bales across drainage ways below construction sites is another way of preventing sediment from getting into the marsh area. A sedimentation and erosion control plan should be developed and implemented during construction of this project.

## WATER SUPPLY

No municipal water supply service is available to this site. An East Lyme 16-inch water-transmission line is in place along the Shore Road (Route 156) in the vicinity of Rocky Neck State Park. However, Old Lyme's Town Plan of Development does not propose extension of a water main along the Shore Road until the year 2000.

Potable water for the development, as there is no municipal water system available, is to be provided by the installation of on-site wells. In this respect, it would appear that either each house site would have an individual well or a community public water system could possibly be provided. In respect to the former, it has generally been acknowledged that a minimum land area of one acre is needed where both on-site wells and subsurface sewage disposal systems are utilized. In this case, where the soils tend to be composed of unconsolidated materials which are very porous and would have a rapid seepage rate, protection of ground water will, to a large extent, rely on the natural filtration capabilities of the area. Also, pollutants can travel further distances under such conditions. Therefore, the overall density of subsurface sewage disposal systems and the separating distances between wells and pollution sources are important factors to be considered.

In general, drilled wells, properly located and constructed, will provide the most protection for the water source. However, in a tidal environment, experience has shown that deep wells are sometimes subject to brackish water infiltration, resulting in unsatisfactory water quality.

Approval for a community public well and water system would be a matter for the Public Water Supply Section of the State Department of Health Services. In general, greater separating distances have to be maintained from potential sources of pollution, and an adequate quantity of suitable quality water has to be available for the intended size (demand) of the development. It appears that the most feasible area to consider for such a well would be toward the upper west side of the property. The availability of a public water supply should allow for more flexibility in the development.

The local health department requires a water supply to be installed on a building site prior to the issuance of a building permit. This procedure gives greater assurance that an adequate, safe, potable water supply is available before house construction is initiated.

If the water obtained is highly mineralized with iron and/or manganese or has other objectionable components, suitable corrective treatment will be needed on the supply system.

## WASTE DISPOSAL

Sewage disposal for the development will be by means of on-site subsurface sewage disposal systems. Indications are that the higher terrain should contain soils having good percolation and permeability, along with having a favorable topography. There should be adequate on-site testing to determine ground water elevations and the possible presence of any bedrock, and to obtain minimum seepage rates. One possible factor with soil percolation on this site is that it may be very fast, thus giving rise to some concern that the sewage effluent will move

rapidly through the ground without receiving the benefits of natural filtration and other actions resulting in a renovated effluent. The possible effects or impact on ground or surface water can be minimized by not overdeveloping the site, which would require having a high density of sewage systems in a given area, and by providing more separating distance between leaching systems and wells, streams, and bodies of water. Also, where property is adjacent to tidal waters, systems should be sufficiently elevated to be above maximum ground water level to avoid flooded systems. This is likely to happen under excessive high tide conditions which can be expected to occur at least once per year.

## PLANNING CONCERNS

The planner's review of the Breslin Property is based on the statement by the developer's engineer and notation on the area map that this tract would be used for residential purposes only. Should circumstances change and development plans include both residential and commercial waterfront activities several of the comments made by the planner would have to be restated to account for this proposed land use change. The Fourmile River site is nineteen acres in size. It is zoned RU-20 (20,000 s.f. residential lots) and WF-20 (20,000 s.f. marine commercial lots). Approximately 9.5 acres of this site are zoned for WF-20 use. Portions of the site have been mapped as either tidal or inland wetlands. The 100-year base flood elevation established for this section of the Fourmile River is 10.7 feet National Geodetic Vertical Datum of 1929. The site is adjacent to a gravel/sand borrow pit and a small commercial marina. From a planning perspective, the issues which the developer and the Old Lyme Planning Commission should address are density and road design. These two issues are interrelated. The site's residential density will affect the developer's option as far as private vs. public roads. Higher residential densities will necessitate wider R.O.W. and paving standards. Related to road design is the question of adequate access from Route 156 and the safe design of the Fourmile River Road/Route 156 intersection. The opportunity to provide this tract with two choices of access/egress does not appear to be feasible. The development of this site will result in a permanent dead-end street. The use of Bank Road in conjunction with Lower Fourmile River Road might possibly "split" traffic flow. It is the planner's opinion that this site, if developed for residential use, should be planned as a low-density area. Old Lyme's Town Plan of Development (9/15/75) recommends low-density residential use of this area. Lower density development, possibly lot sizes of one to one and one half acres, rather than the maximum density permitted under the zoning regulations would lessen traffic, road, and on-site water/waste disposal design problems associated with this site.

## HISTORICAL RESOURCES

No known historical or archeological features exist on this site. The site's uniqueness is its location and accessibility to Long Island Sound. Adjacent land in East Lyme is within the Rocky Neck State Park system. Surrounding tidal and inland wetlands (some of which are owned by the Old Lyme Land Trust) enhance the site vistas, tranquility, and ecological habitats.

ROADS/TRAFFIC

The existing access road into the review site (Lower Fourmile River Road) is not a town road and currently does not meet Town of Old Lyme road-design standards. The preliminary area map (Class D) available for Team review shows a 50-foot ROW owned by the developer adjacent to Lower Fourmile River Road. Field inspection revealed that this 50-foot ROW runs through an old gravel pit. In fact, the ROW appears to be 20-feet to 25-feet lower than the existing dirt covered Fourmile River Road.

In order to bring the accessway up to Town road standards, the developer should anticipate improvement to the Lower Fourmile River Road both within the 50-foot ROW and at its intersection with Route 156. A 170±-foot strip of the Lower Fourmile River Road ROW is only 40-feet wide. This section may have to be widened to meet the Town's 50-foot ROW Standard. In addition, the developer's engineer should contact the Connecticut Department of Transportation concerning the safe design for sight lines at the Lower Fourmile River Road/Route 156 intersection.

The design of new roads to serve this subdivision will depend on the number of lots planned. Under Old Lyme Subdivision Regulations (9/7/79) the developer has the option of proposing a standard road system serving the maximum number of lots permitted by zoning (RU-20), assuming all residential use would equal about 30± lots, or using the special local street option (private roads) and reducing the density to about 10± lots. The potential for increased traffic is a factor of site density. Assuming residential use of this 19-acre tract, traffic exiting onto Route 156 could range from an additional 106 to 318 cars per day.* Another consideration which should be taken into account is lack of a suitable secondary access into this site. The presence of tidal and inland wetlands appear to preclude the extension of proposed streets to the adjacent Oakridge Subdivision. The possibility of improving Bank Road and River Road to provide alternate access into the tract should be considered.

SERVICES TO SUPPORT DEVELOPMENT

Residential development of this site will create a demand for additional municipal services: education, solid waste disposal, fire, etc. Old Lyme' educational facilities are being expanded and should be adequate to accommodate the potential increase in school age children generated by this development. The Town's solid waste facilities are now nearing capacity. This development as well as others throughout the community will necessitate a new landfill area or transfer station by late 1980-81. Recent action to construct a new fire station in the "South Lyme" district will assure protection for this new development. The proposed station at Cross Road will be approximately 3 1/2-4 miles from this site.

* Trip Generation Study of Various Land Uses, Connecticut Department of Transportation, 1974. 10.6 Trips/day/single family home.

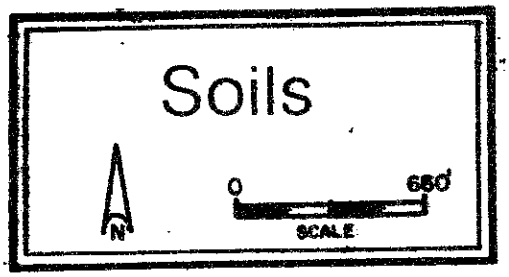
## COMPATIBILITY OF SURROUNDING LAND USES

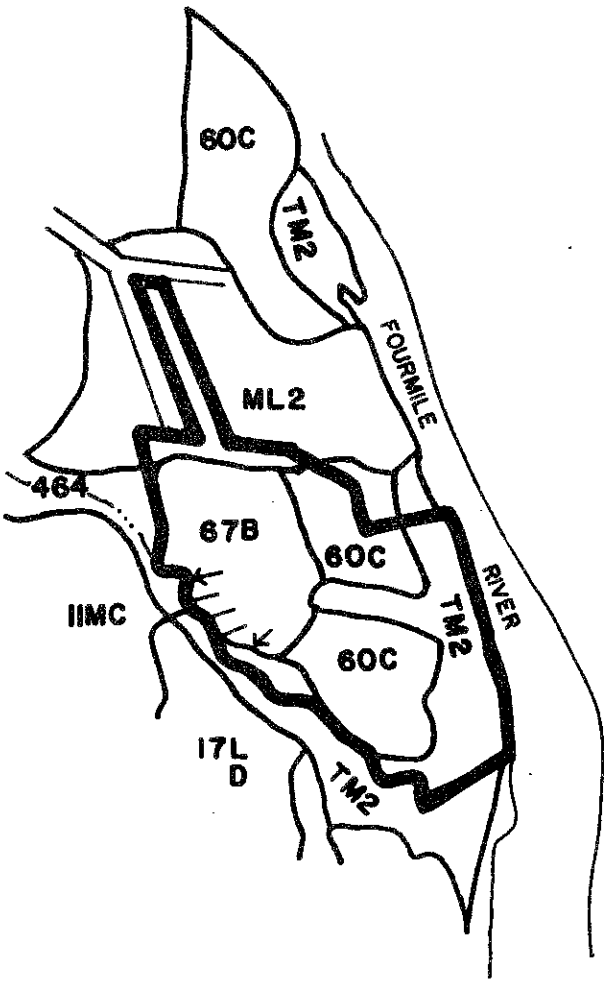
This site has been reviewed as a future residential development. As a residential land use the site is compatible with the adjacent Oakridge subdivision. The presence of the small private marina adjacent to this 19-acre tract is not a conflicting land use but one which utilizes the areas' recreational opportunities and adds vitality to the area.

## NATURAL HAZARDS

The lower portions (tidal/inland wetland areas) of this site are identified on Old Lyme's preliminary Flood Insurance Rate Map as within the 100-year flood level. The base flood elevation for this area has been established at 10.7 feet National Geodetic Vertical Datum. The Fourmile River has also been analyzed for its flood water carrying capacity. A Floodway Boundary Map and cross sections have also been developed for this site and should be used by the engineer and local regulatory commissions to determine if development will increase flood heights.

# Appendix




Information taken from: New London County Interim Soil Survey Report, 1978; soil survey sheet #621; prepared by the United States Department of Agriculture, Soil Conservation Service. Advance copy, subject to change.

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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 |
| Hinckley | 60C | 8 | 36 | Slope, droughtiness | 2** | 2 | 2 | 2 |
| Ipswich | TM2 | 5 | 22 | wetness tidal action | 3 | 3 | 3 | 3 |
| Raypol | 464 | 1 | 5 | wetness, frost action | 3 | 3 | 3 | 3 |
| Udorthents | ML2 | 2 | 10 | Limitations determined on-site. | | | | |
| Windsor | 67B | 6 | 27 | droughty | 1** | 1 | 1 | 3 |

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

** Excessive permeability may cause ground water pollution.

## 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.

# 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.