Environmental Review Team Report

Pheasant Run Condominiums Ledyard, Connecticut



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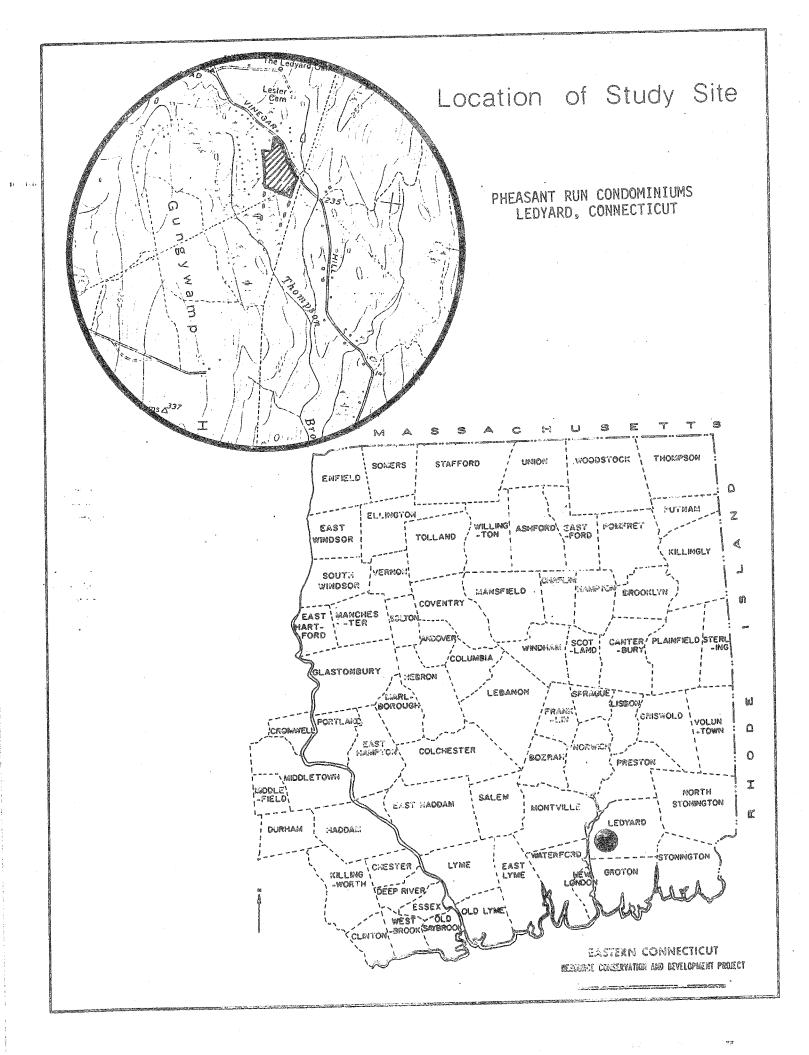
Ledyard, Connecticut

April 1983



Eastern Connecticut Resource Conservation & Development Area Environmental Review Team

PO Box 198 Brooklyn. Connecticut | 06234



ENVIRONMENTAL REVIEW TEAM REPORT ON PHEASANT RUN CONDOMINIUMS LEDYARD, CONNECTICUT

This report is an outgrowth of a request from the Ledyard Zoning 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: Barry Cavanna, District Conservationist, Soil Conservation Service (SCS); Bill Warzecha, Geologist, Department of Environmental Protection (DEP); Don Capellaro, Sanitarian, State Department of Health; Charles Storrow, Regional Planner, Southeastern Connecticut Regional Planning Agency; Stephan Lavigueur, Landscape Designer, University of Connecticut; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Tuesday, February 1, 1983. 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 Ledyard. 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.

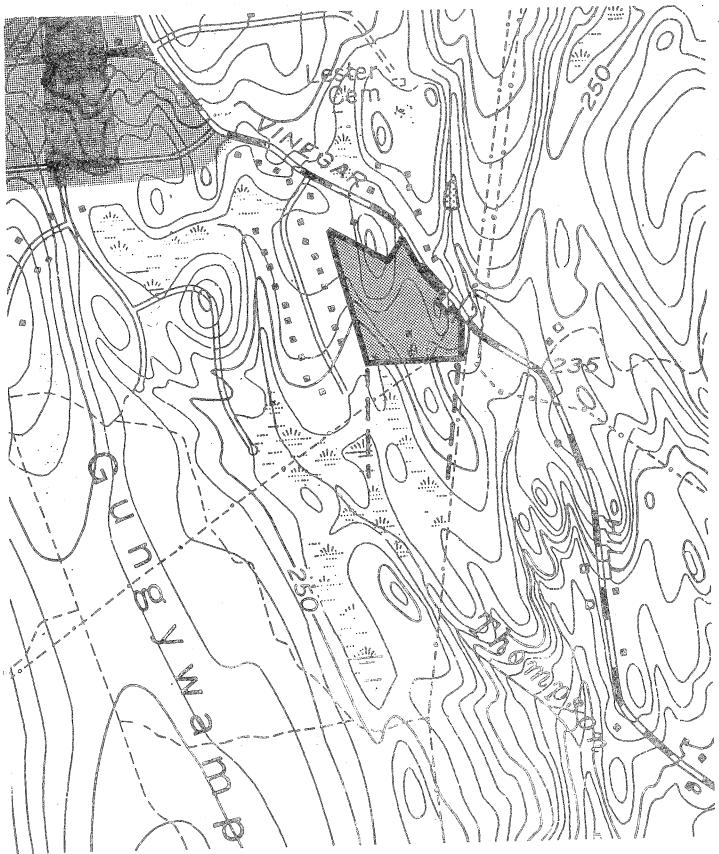
If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut, 06234, 774-1253.

Topography

Site Boundary

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INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed condominium development in the Town of Ledyard. The site is approximately 30 acres in size and is located at 791 Long Cove Road, the former site of the swim club for the Pheasant Run housing development. Tennis courts, a swimming pool and parking facilities are presently established on the property. Preliminary site plans have been prepared by Wayne Chiaperini.

These preliminary plans show approximately 48 units located in seven buildings of five or more units each. Two on-site "community" septic systems will service the entire development. Water will be provided by the Southeastern Connecticut Regional Water Authority. A loop road system is planned for each cluster of condominium units, some garage space and parking area will be provided along these roads. A large parking area is established in the northern section of the property and will be redesigned to accommodate septic leaching fields and a smaller number of cars.

The site is sparsely vegetated at present, primarily due to heavy gypsy moth infestation during the past years. Soils on the site are moderately well drained and stony. One steeply sloping area occurs on the western side of the property. A Connecticut Light and Power right-of-way borders the eastern side of the property.

The Team is basically concerned with the effect of the proposed development on the natural resource base of this site. The following sections of this report discuss these issues in detail.

ENVIRONMENTAL ASSESSMENT

TOPOGRAPHY

The proposed condominum site consists of approximately 29 acres and is located southeast of Vinegar Hill in the Town of Ledyard. This property is the site of the former Pheasant Run Swim Club.

Land surface elevations on the site range from 300' above mean sea level to 250' above mean sea level, as shown on the Uncasville Topographic Quadrangle Map, published by the United States Geological Survey (USGS).

The northern portion of the property consists primarily of relatively flat areas; however, there are steep slopes along the western section of the property. These steep slopes occur in the vicinity of bedrock outcroppings. The rear (southern) portion of the property slopes gently from east to west. It should be noted, however, that the steepest sloped areas are along the western portion of the property.

The property is located within the watershed area of the Ledyard Reservoir. There is a wetland area, ± 30 acres, in the southern portion of the property from which Thompson Brook flows.

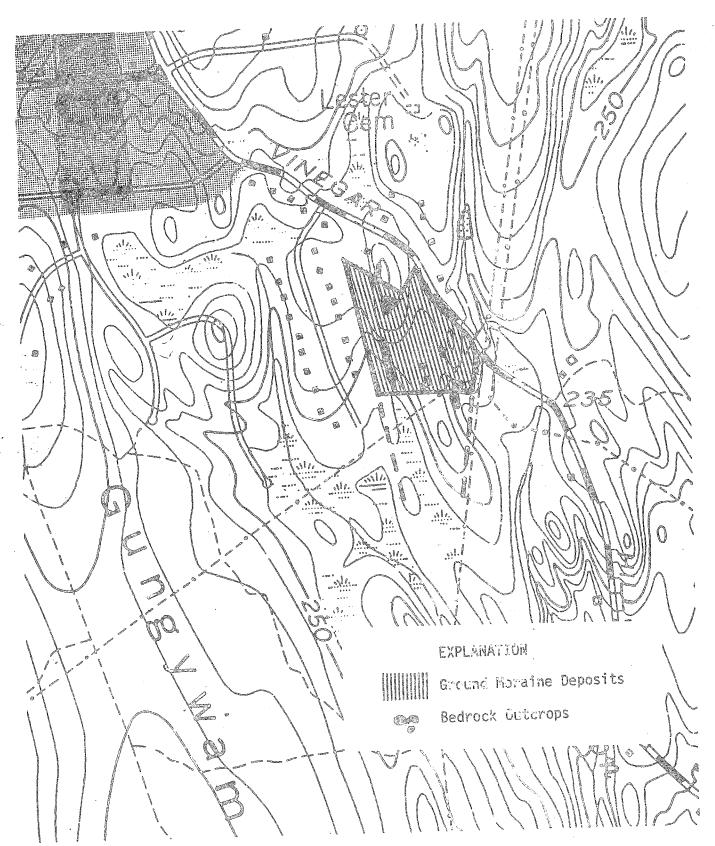
GEOLOGY

The bedrock unit which underlies and outcrops at various points on the property is entirely comprised of granite gneiss. The granite gneiss is described as an orange-pink to light gray, medium grained, gneissic biotite granite. The main

Surficial Geology







minerals included in granite gneiss consist of quartz, feldspar and biotites (See Bedrock-Geology Map.).

The term "gneiss" refers to metamorphic rocks (rocks that have been geologically altered by high temperatures) characterized by thin bands of elongate or flaky minerals alternating with bands or layers of more rounded grains. Also, the banding is created in part due to the alteration of dark and light layers of minerals. The color of gneisses depend upon the colors of the major mineral components.

Based on visual observations and review of the bedrock geologic map, it appears that a shallow depth of soil to bedrock condition (less than 10') may be prevalent in the areas of proposed development. This appears more so in the front portion of the property. It is recommended that the prospective developer direct his attention to this condition, especially with respect to the proposed on-site sewage disposal systems.

The surficial geology of the site refers to all the unconsolidated materials that over lie the bedrock (See Surficial Geology Map.). The surficial materials which overlie the bedrock throughout the entire site are defined as ground moraine deposits. "Ground moraine deposits" are a glacial sediment deposited as a thin layer of till which varies from a light gray, friable, sandy gravelly till to a more compact gray till containing more fines.

Till is a non-sorted, non-stratified mixture of sand, silt, gravel, and boulders. Typically, the upper few feet of a till will be coarser grained and loose, whereas the deeper deposits will be finer grained and more compact.

Based on deep test hole data and visual observation, till deposits in the northern half of the property average less than 10' in thickness. Till deposits in the southern section probably average 10' thick.

The proposed site is located within an area included in the Uncasville Quadrangle. A bedrock geologic map (GQ-576) and a surficial geologic Map (GQ-138) of this quadrangle were prepared by Richard Goldsmith and published by the U.S.G.S. in 1960 and 1967 respectively. Both are available for purchase or review at the Natural Resource Center, Department of Environmental Protection in Hartford.

HYDROLOGY

The proposed site lies within the watershed of Thompson Brook. There is a small man-made watercourse that flows in a southerly direction, parallel to the property line to the west (Refer to drainage/watershed map.). This watercourse, which eventually discharges into the wetland area to the south, will drain most of the area around cluster 'B'. At the present time, runoff from the existing parking lot is carried through a 15" concrete pipe to a discharge point southeast of the swimming pool. From this discharge point a small watercourse develops which flows in a southeasterly direction into an unnamed stream (Refer to drainage/watershed maps.). This watercourse drains surface runoff from most of the northern and middle sections of the site.

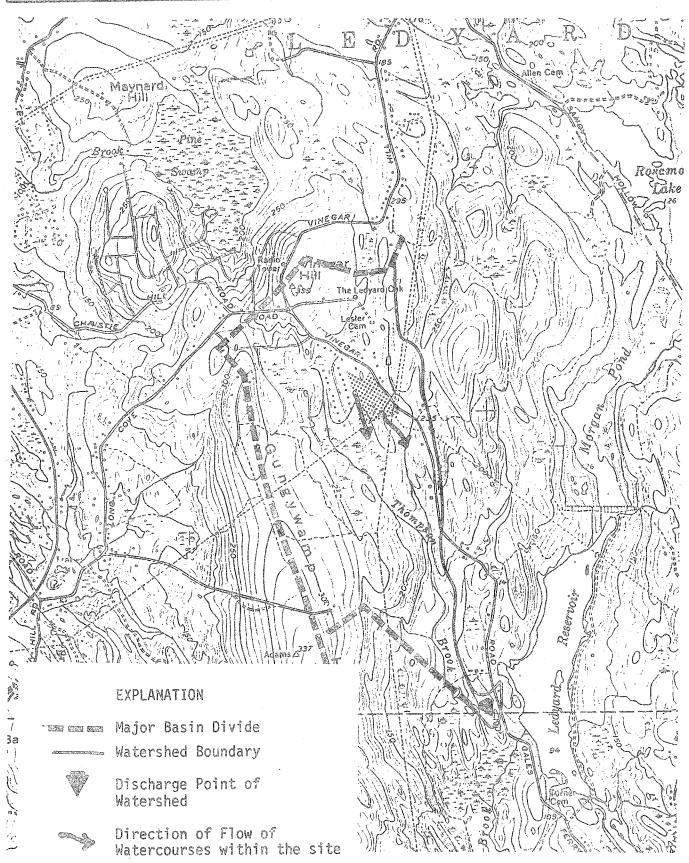
Development of the site as planned, will lead to increases in the amount of surface runoff produced during rainfalls. These increases will result from the creation of impervious barriers such as paved surfaces and roofs. Also, there will be an increase in runoff in disturbed areas, particularly where heavy machinery compacts soils once vegetation has been removed. The additional runoff in these

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Drainage Areas



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areas can cause overland erosion and increase the peak flood flow of the water-courses on the site.

Based on the potential for added runoff, it is recommended that the consulting engineer prepare a detailed plan depicting how runoff will be controlled within the site. At the same time, he should address erosion and sediment control in the disturbed areas.

At the time of the review, the consulting engineer stated that runoff generated as a result of the development will be handled by two detention/retention ponds proposed for the site. One of the ponds will be located in the area of the existing parking lot and the other south of the proposed sewage disposal system serving Cluster 'B'. An important consideration in the design of the ponds will be to adequately size them so that they accommodate runoff created during heavy rainfalls. Also, it is important that the runoff retention capacity of the ponds is not diminished as a result of accumulated sediments. If sedimentation does occur, steps must be taken to remove the material periodically.

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.

Two major soil types are found on this property, the Charlton Hollis series and the Udorthents series. The Charlton-Hollis series is defined in detail below. The Udorthents series is a type of "urban land" in which natural soil horizons have been disturbed.

Charlton-Hollis fine sandy loams, very rocky, 3 to 15 percent slopes (17LC). This unit consists of gently sloping to sloping, somewhat excessively drained and well drained soils on hills and ridges of glacial till uplands. Stones cover 1 to 8 percent of the surface, which is marked by a few narrow, intermittent drainageways and small, wet depressions. This unit is about 55 percent Charlton soils, 20 percent Hollis soils, 15 percent other soils, and 10 percent exposed bedrock. The Charlton and Hollis soils are in such a complex pattern that it was not practical to map them separately.

Typically, the Charlton soils have a surface layer of dark yellowish brown fine sandy loam 5 inches thick. The subsoil is yellowish brown fine sandy loam and sandy loam 20 inches thick. The substratum is light yellowish brown and light brownish gray sandy loam to a depth of 60 inches or more.

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Typically, the Hollis soils have a surface layer of dark grayish brown fine sandy loam 2 inches thick. The subsoil is yellowish brown gravelly fine sandy loam 12 inches thick. Hard, unweathered schist bedrock is at a depth of 14 inches.

Included with this unit in mapping are small areas of somewhat excessively drained Brimfield soils; well drained Brookfield, Canton, and Paxton soils; moderately well drained Sutton and Woodbridge soils; and poorly drained Leicester soils. Also included are small areas with bedrock at a depth of 20 to 40 inches and a few large areas that have been cleared of stones.

The water table in this unit is commonly at a depth of more than 6 feet. The available water capacity is moderate in the Charlton soils and very low or low in the Hollis soils. Both soils have moderate or moderately rapid permeability and medium to rapid runoff. Both are very strongly acid to medium acid.

The stones on the surface and areas of exposed rock hinder the use of farm equipment and make the soils generally unsuitable for cultivation. Some cleared areas are suitable for pasture and some for hay.

This unit is suited to woodland production. However, the Hollis soils are droughty, and seedling mortality is high. Uprooting during windy periods is common on the Hollis soils because of the shallow rooting depth.

The areas of exposed rock and the depth to bedrock in the Hollis soils limit this unit for community development, especially as a building site or as a site for onsite septic systems. The stones on the surface restrict landscaping.

As stated earlier in this report, the developer should prepare a sediment and erosion control plan to be implemented prior to construction activities on this site. The Connecticut Sediment and Erosion Control Handboook, prepared by the Soil Conservation Service, can help in preparation of such a plan. The New London Soil and Water Conservation District would be pleased to provide technical assistance if necessary.

WATER SUPPLY

Both clusters of the development are planned to be served by water supplied by the South Eastern Connecticut Regional Water Authority. As indicated to the Team at the time of the review, the water supply line will be installed to the development from Pheasant Run Road, which is west of the site. The prospective developer in conjunction with the S.C.R.W.A. and the State Department of Health Services (Public Water Supply Section) must determine the projected needs of the development versus the capability of the water authority in providing suitable quantities of water. Once this is determined, the size of piping should be examined to ascertain whether or not it will meet the projected needs of the development.

If an on-site well was installed on the property for the purpose of supplementing the proposed public water supply, the source would most likely be from a bedrock well. A survey of bedrock wells in the Lower Thames River Basin indicates that 90% of the domestic wells drilled into bedrock supply at least three gallons per minute. Judicious care must be taken in locating of on-site well(s), especially from various sources of pollution, i.e., sewage disposal systems, underground fuel storage tanks, road salt, etc.

WASTE DISPOSAL

For the purpose of identifying each cluster of condominiums, the Team Sanitarian refers to the four buildings in the front portion of the property as 'A' and the cluster of condominiums to the rear as 'B'.

Both 'A' and 'B' will be served by on-site sewage disposal systems. Each cluster will be served by a community type sewage disposal system. The sewage system location for cluster 'A' is proposed in the flat area west of the existing parking lot. The sewage system location for cluster 'B' is proposed in the area south of the buildings on a gently sloped area.

Based on expected sewage effluent flows from the buildings, the engineered plans will be reviewed by the State Department of Health Services and Department of Environmental Protection. Of special concern will be the "hydraulic capacity" of the property and its ability to accept the projected sewage flow. Other concerns which must be addressed by the consulting engineer are the shallow depth of soil to bedrock conditions, particularly in the vicinity of cluster 'A' and possibly marginal soils throughout the site. It is recommended that further site testing be conducted in the area of proposed leaching systems, to determine the actual depth to bedrock. As stated by the Public Health Code, disposal of sewage where bedrock is less than five feet shall be determined as an area of special concern which merits a particular investigation and special design.

Since the entire parcel lies within the watershed at Ledyard Reservoir, all sections of Sec. 19-13-B32., <u>Sanitation of watersheds</u> of the Public Health Code, State of Connecticut must be complied with as it pertains to the installation of sewage disposal systems.

Once all soil testing has been completed on site and the size of the sewage disposal systems determined, one will be able to ascertain whether or not the proposed 48-50 units can be accommodated satisfactority as planned in the designated area.

PLANNING CONCERNS

The proposal that is the subject of this review is a 48-unit condominium complex located at the former Pheasant Run Swim Club property on Long Cove Road in Ledyard. The site contains a group of disused recreational facilities which are to become part of the condominium development. These include a swimming pool, a clubhouse containing locker rooms and a meeting room, and four tennis courts. It is proposed to add additional land to the south to the original Swim Club property in an area sufficient to permit the construction of 48 units at a density of two units per acre, as required under the Zoning Regulations. A single access drive is proposed, which will connect with Long Cove Road.

This type of housing is much needed in the region. SCRPA's 1979 study of housing in Ledyard identified the construction of multi-family housing as one of three major housing needs in the Town.* It does not seem likely that those needs have changed in the past four years.

^{*} Housing, Ledyard, Connecticut. SCRPA, 1979.

Surrounding Land Uses: In the general area of the Pheasant Run Swim Club site, land uses are predominantly residential and open space. To the west of the site is the large complex of single-family houses known as Pheasant Run. This area contains approximately 250 houses, most on lots of less than one acre in size. Along Long Cove Road to the southeast towards Route 117 are scattered single-family houses and large areas of undeveloped land, some of which belong in the open space category, since it is part of the holdings of the City of Groton water supply system. Slightly to the north of the Swim Club site is the 106-acre water supply system. Slightly to the north of the north and west lie more residential subdivisions. In summary, this is a suburban residential area of varying dential subdivisions. In summary, this is a suburban residential area of several acres.

Zoning: The property of this proposed development is in the R-40 District. This district permits single-family houses on lots of 40,000 square feet or more. This minimum lot size is slightly less than one acre. Also allowed by special exception are apartment or condominium projects at a maximum net density of two dwelling units to the acre, unless they are served by public sewers. Where sewers are available, a maximum density of four units per acre may be permitted. However, are available at the area of this development, and none are likely to be available in the near future. Therefore, the maximum permitted density for this project will be the two units per acre.

Open space for recreation and conservation is required on the basis of one acre for each eight dwelling units. It would seem that this project has a good start on this requirement in the facilities of the former Pheasant Run Swim Club.

The Zoning Regulations require a public water system. Service by the Southeastern Connecticut Water Authority is available at the project site. Thus, this requirement can be met. The Zoning Regulations also have requirements concerning on-site sewage disposal, but these are discussed elsewhere in this report.

Other requirements pertinent to this review are parking (400 square feet or two spaces per unit are required), and a buffer strip of fifty feet around the entire complex, which is to be left in its natural state.

Traffic: The entrance to the proposed development is located on the southeast branch of Long Cove Road that connects Washington Drive with Route 117. The southwest branch of this road connects Washington Drive with Connecticut Route 12. Without counts of existing traffic on both of these branches, it is difficult to estimate the traffic impact of the proposed condominium complex. However, inspection of the 1980 aerial photographs indicate that there are about 250 houses in the Pheasant Run area, which is located between both branches of Long Cove Road. It is reasonable to assume that traffic generation is proportional to the number of housing units. The 48-unit condominium complex would therefore increase traffic generated in the overall Pheasant Run area by about 20%. However, Pheasant Run does not generate all of the traffic on either leg of Long Cove Raod, since that road connects with other arteries serving other parts of the Town. Therefore, the proposed development would increase the traffic by some factor less than 20%. Since the southwest leg of Long Cove Road provides the most direct route from Pheasant Run to the Submarine Base and Route 12, which, in turn, provides a good connection to the industrial area of Groton, it seems likely that the southwest branch would see a heavier impact than the southeast branch.

Another traffic-related impact of this proposed project will be caused by the fact that there will be but one access drive to serve the proposed 48 condominium units. This is made necessary by the relatively short frontage of the property on Long Cove Road. It would seem that this number of units could have the potential to cause some congestion. It should be noted here that the Town of Ledyard Subdivision Regulations require that any part of a subdivision containing more than 35 lots shall have at least two direct connections to one or more town roads. The Subdivision Regulations do not apply to a development such as this condominium project, and the Zoning Regulations do permit such projects to contain a maximum of 48 units, presumably because most such projects can have two access points.

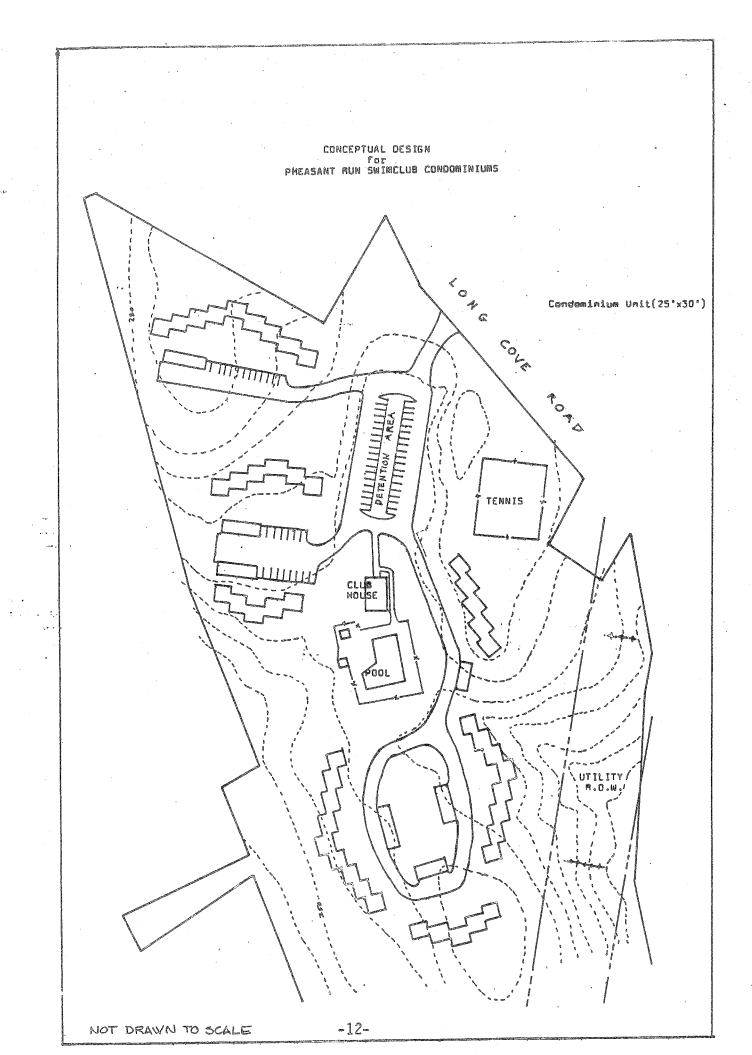
DESIGN CONSIDERATIONS

It is important that this project be compatible with its neighbors. As previously described, those neighbors are almost entirely single-family detached houses. The majority of these houses are located on relatively small lots; that is, lots less than one acre in size. In order to be compatible with these, the condominium complex must not present the appearance of a large institution. It is still a residential project, and it should have a residential scale.

The buffer strips required by the Zoning Regulations have been mentioned above. These are important, but they should not be expected to solve the problem of neighborhood compatibility by themselves. They could have the effect of isolating the large project from the neighborhood. This would be especially true if the buildings containing the condominiums were large in scale and institutional in appearance. Then the "image" of the project for the neighbors would be as an enclave in which people lived who were insulated from the community. However, if the buildings containing the condominiums are designed to be small in scale and have a residential character, the differences between the project and the neighborhood will be minimized. One way to achieve a residential character would be to have the buildings emphasize the individual units through changes in rooflines and breaks in the walls. A barracks-like aspect could thereby be avoided. Also, there should not be too many units in a building. The Zoning Regulations permit a maximum of eight units. However, a building containing eight units each twenty-four feet wide will be 192 feet long, hardly residential in character.

On the preliminary site plan, garages are shown located adjacent to the apartment buildings. We were told that these will contain space for one car per unit. However, no other parking is shown with the exception of the entrance lot near the swimming pool and recreation area. The Zoning Regulations require two spaces per unit. It is important that the extra parking, which need not have a roof over it, be located as near as possible to the units it serves. Not only will this provide maximum convenience for the residents, but if the parking area is broken up into small lots, its appearance will be improved.

The sight distances along Long Cove Road are comparatively short. The developer plans to move the entrance to the property southward along the road to increase the sight distance from the entrance to the north. At the south end of the property frontage, the developer plans to remove some trees and lower a bank in order to increase the sight distance in that direction. This solution to the sight distance problem appears to be the best that can be done given the winding nature of Long Cove Road and the property's short frontage along that road.



LANDSCAPE CONSIDERATIONS

Passive solar heating could be an asset to future owners when considering landscape design for this proposal. It is desirable to obstruct the sun's rays in summer months to avoid excess heating and to receive the sun's full strength in winter months to allow maximum warming. Shade trees which are not weak wooded, have no rampant root system, are not evergreen and do not have a dense canopy are suitable for this purpose. The trees should not be planted within twenty-five feet of the buildings, septic systems or any other utilities. A short list of trees which have these characteristics are: Red Maple (Acer rubrum), Sugar Maple (Acer saccharum), Sweet Birch (Betula lenta), Red Oak (Quercus rubra), Scarlet Oak (Quercus coccinea), Sweet Gum (Liquidambar styraciflua), Katsura tree (Cercidiphyllum japonicum). These trees have the advantage of blending into the environment.

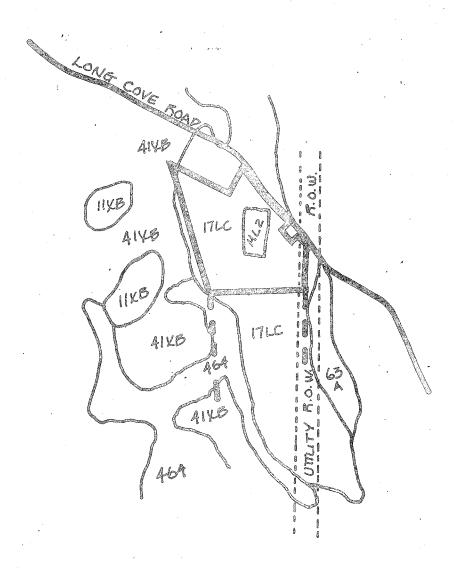
In order to reduce maintenance such as lawn mowing and fertilizing, a portion of the grounds may be turned into mulched plantings of shrubs and groundcovers. Such treatment of open areas will also aid in receiving and slowing runoff water.

Appendix

Soils



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LONG COVE ROAD CONDOMINIUMS LEDYARD, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Symbol
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1=slight, 2=moderate, 3=severe.

Linitations:

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 consistant 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 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 activitis. 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 (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.