Environmental Review Team Report

UCEPI Site

Mansfield, Connecticut

RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

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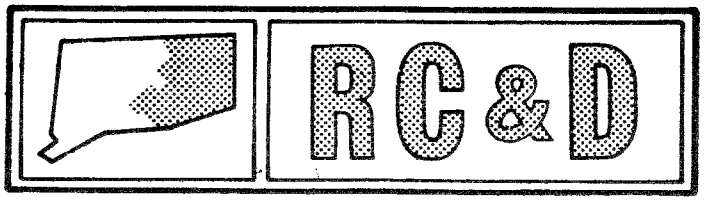
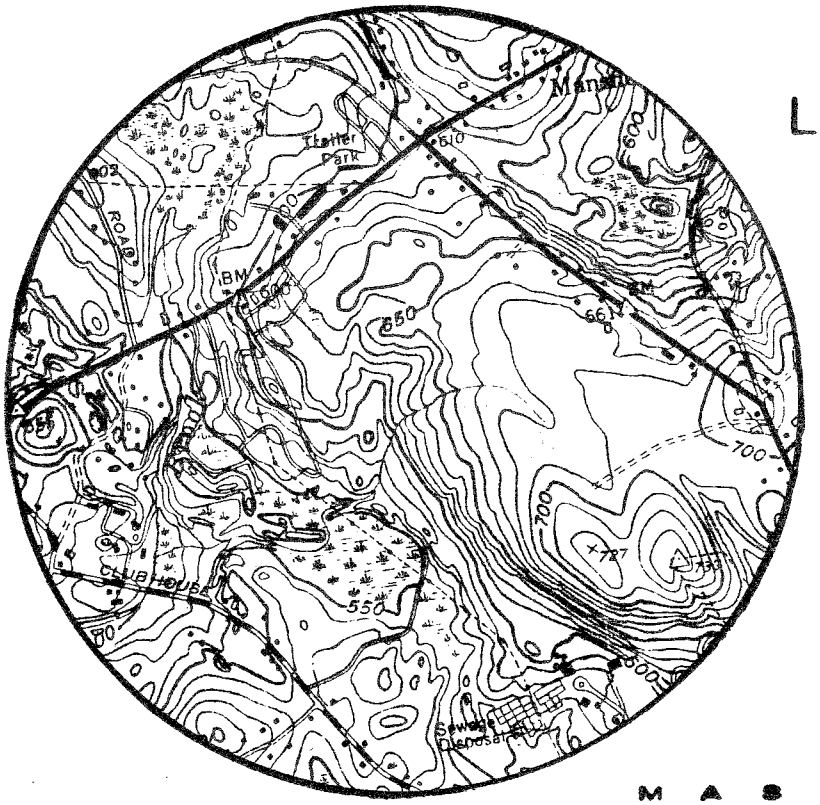
May 1985



Eastern Connecticut Resource Conservation & Development Area

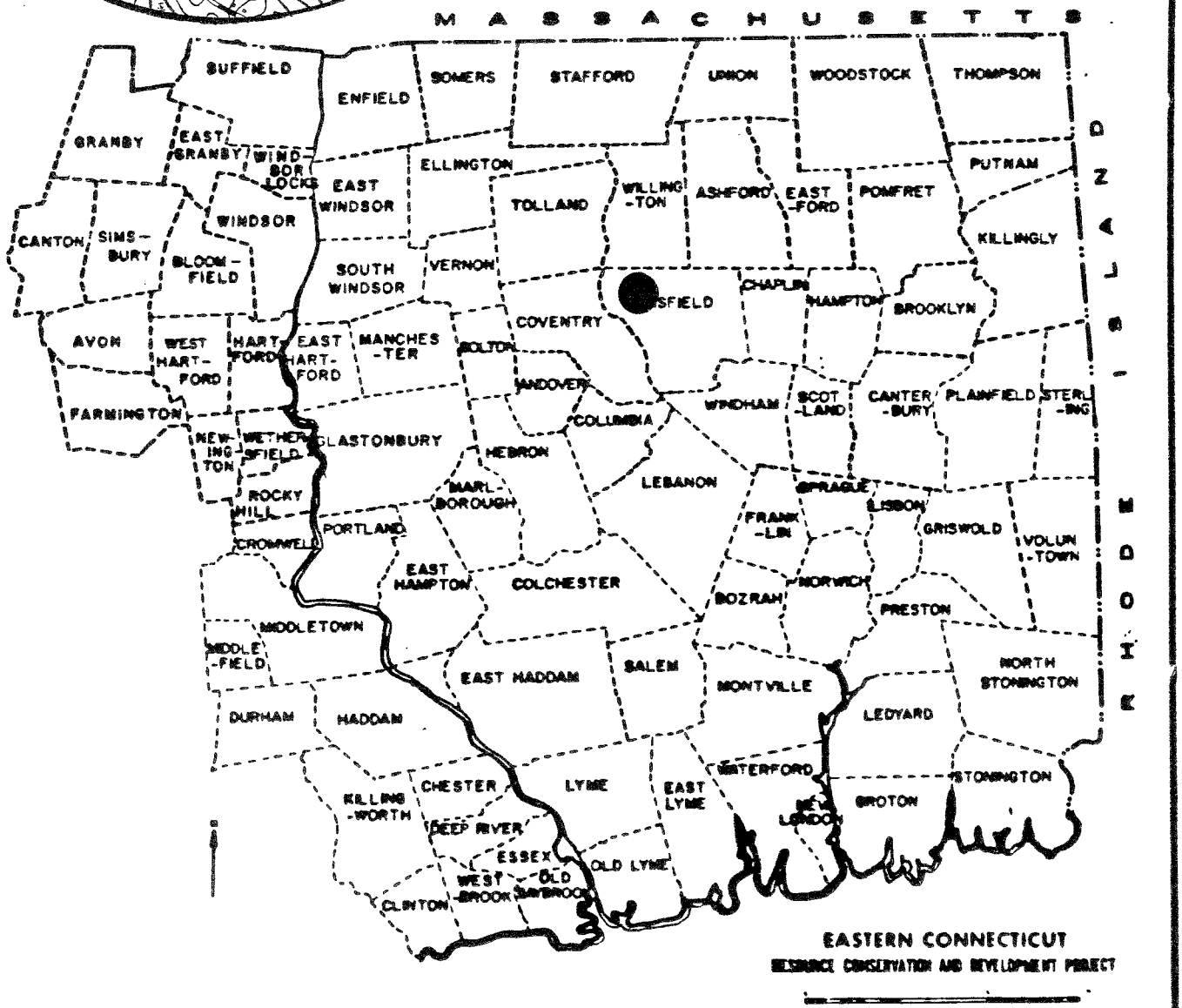
Environmental Review Team
PO Box 198
Brooklyn, Connecticut 06234



Location of Study Site

UCEPI

MANSFIELD, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
UCEPI SITE
MANSFIELD, CONNECTICUT

This report is an outgrowth of a request from the Mansfield Planning and Zoning Commission to the Tolland County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. The request was approved and the measure was reviewed by the Eastern Connecticut Environmental Review Team (ERT).

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

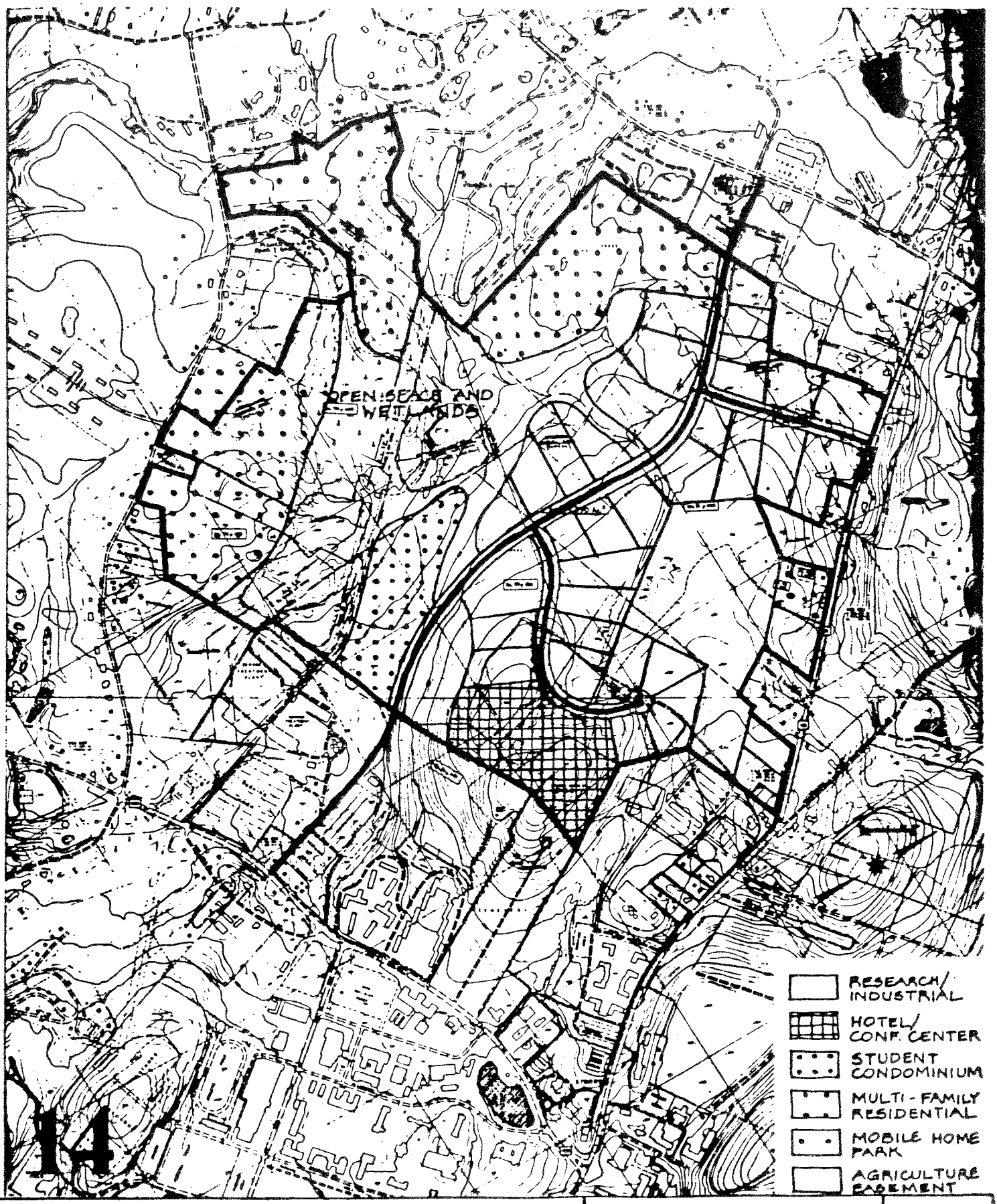
The ERT that field-checked the site consisted of the following personnel: Joe Neafsey, District Conservationist, Soil Conservation Service (SCS); Al Roberts, Soil Specialist (SCS); Bill Warzecha, Geologist, Connecticut Department of Environmental Protection (DEP); Jim Parda, Forester, DEP; Meg Reich, Regional Planner, Windham Regional Planning Agency; Harry Seibert, Transportation Planner, CONNDOT; Marla Butts, Wetlands Ecologist, DEP; John Rook, Wildlife Biologist, DEP; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, July 26, 1984. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants 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 Mansfield. 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 Area Committee hopes that this report will be of value and assistance in making any decisions regarding this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, Rte. 205, Box 198, Brooklyn, Connecticut 06234, 774-1253.



Master Plan

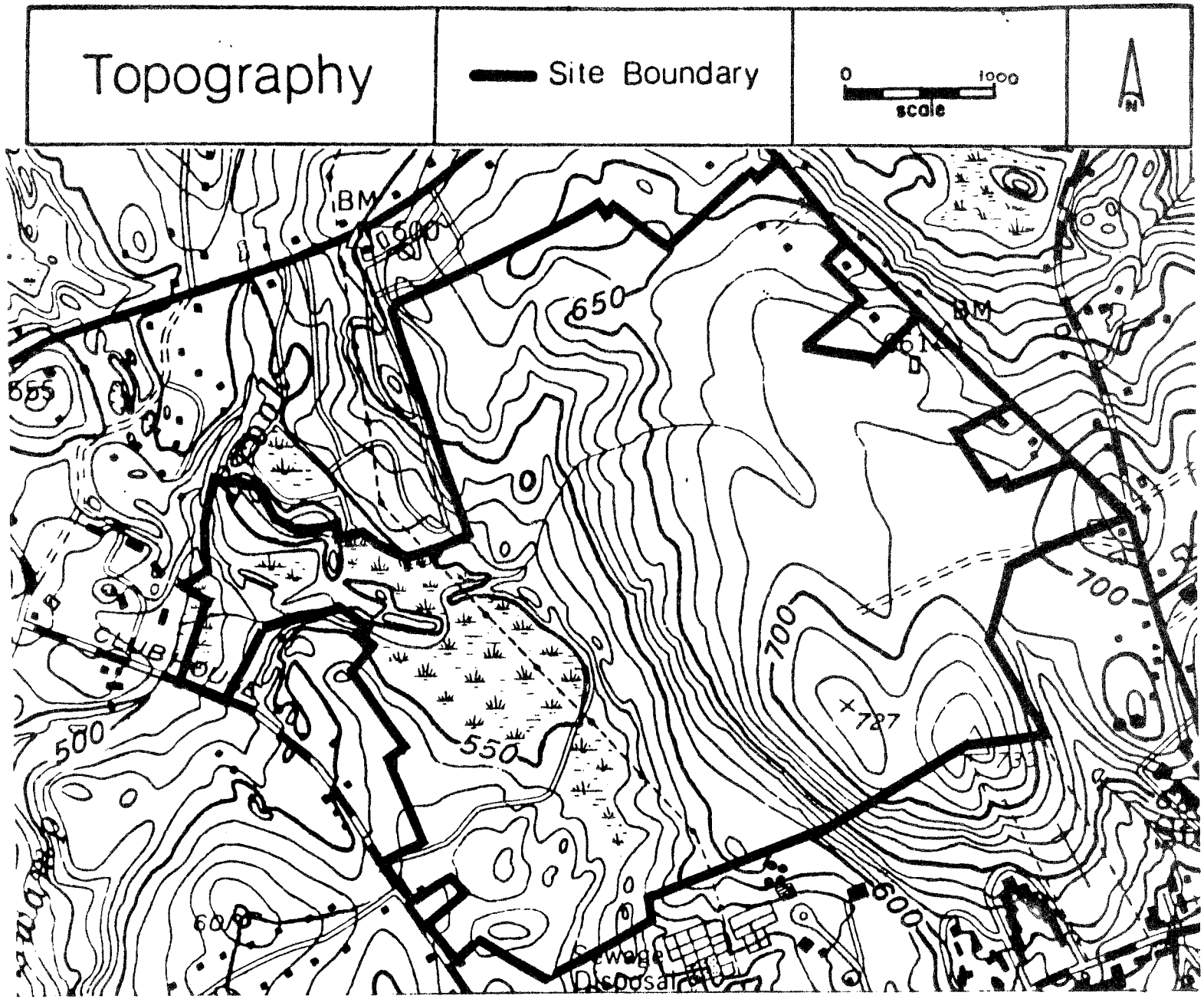
0 1000'
scale

INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed industrial/research park in the Town of Mansfield. The project site is approximately 400 acres in size and is located north of the University of Connecticut campus. The property is bounded by Route 44a on the north, Route 195 on the east, North Eagleville Road on the south and Hunting Lodge Road on the west. The property is presently owned by a private holding company known as UCEPI (University of Connecticut Educational Properties, Inc.). The Sunrise Development Company has prepared the concept Master Plan for the proposal.

The proposed plan calls for 113 acres of the site to be used for the research/industrial complex, 7 acres for office space, 20 acres for the hotel/conference center, 18 acres for student housing, 69 acres for multi-family residential use, 30 acres for mobile homes, 33 acres for agricultural lands and 87 acres to remain as open sapce. All facilities would be served by on-site water supply (UCONN System) and the UCONN sewage treatment plant.

The Team is concerned with the impact of this development on the natural resource base of this site. Although many severe limitations to development can be overcome with appropriate engineering techniques, these measures can become costly, making a project financially unfeasible. This 400 acre site has a number of physical constraints which may restrict development; these concerns as well as planning issues impacting on the Town, are discussed in detail in the following sections of this report. One of the major concerns related to development of this site is the loss of Prime Agriculture Soil (as classified by the USDA Soil Conservation Service) currently in use here. It would appear that more creative planning techniques could have been used during the design/layout stage of this project to help preserve a larger amount of the farmland on this project Techniques such as "clustering" or shared parking facilities, etc., do not appear to have been considered by the developer. A letter from the Tolland County Soil and Water Conservation District to the Commissioner of Agriculture (see Appendix) also indicates that this proposal is a direct contradiction of the Connecticut Plan of Conservation and Development. The Team feels that these issues should be investigated more fully by both the Town and developer. In a time of dwindling farmland in this state, needless obliteration of 60± acres of prime agricultural soils already in State ownership, should not be considered a viable development alternative.


Topography
Site Boundary
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Sewage
Disposal

ENVIRONMENTAL ASSESSMENT

TOPOGRAPHY

The University of Connecticut Educational Properties, Inc. site is approximately 400 acres in size and is located in the northwest corner of the Town of Mansfield. The University of Connecticut's campus is located south of the parcel. The site is bounded by Route 44a on the north, Route 195 on the east, North Eagleville Road on the south and Hunting Lodge Road on the west. As shown by the accompanying topographic map, slopes on the site range from gentle to steep. Steep slopes flank the west side of an upland rock and till drumlin in the southern portions. The term 'drumlin' refers to a glacial feature which commonly consists of a streamlined, oval-shaped hill. These hills, especially in southern New England have bedrock cores and are covered with a glacial sediment called till (see Geology section). They formed with the long axes paralleling the direction of past ice movements. Steeper sloped areas are also associated with rock outcrop areas within the parcel.

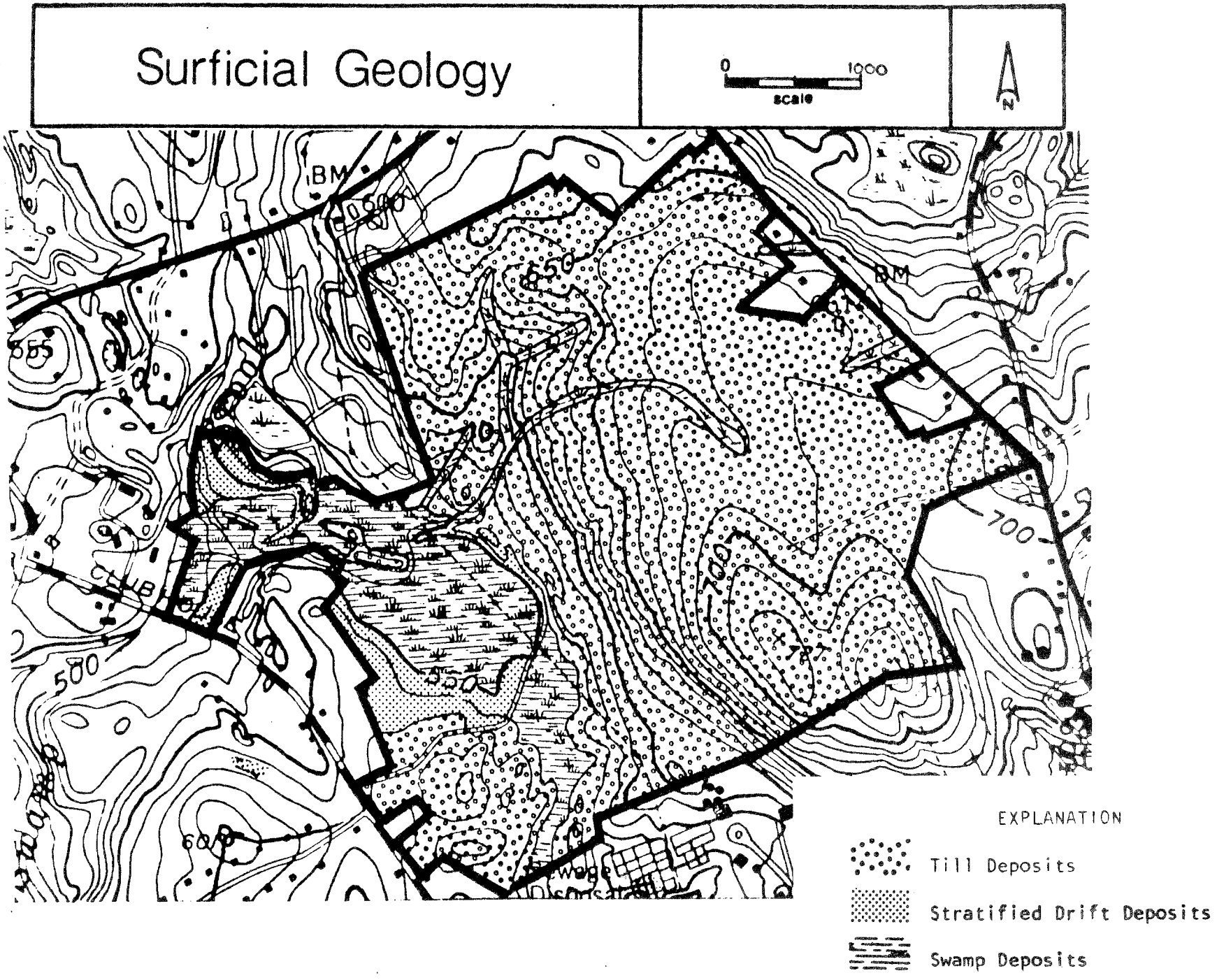
Elevations on the site range from a high of ±739 feet above mean sea level at the proposed hotel conference center site in the southern limits to a low of ±510 feet above mean sea level at the point where Swamp Brook passes under Clubhouse Road.

Swamp Brook traverses the western section of the property. An unnamed tributary of Swamp Brook flows westerly through the central part of the site. Several intermittent drainage channels are scattered throughout the site. Major wetland areas are found in the western half of the parcel.

GEOLOGY

The bedrock and surficial geologic mapping for the south Coventry topographic quadrangle, which encompasses the project site has not been completed to date. There is preliminary information on file at the Department of Environmental Protection's Natural Resources Center which is available for review purposes only. The Team's geologist also referenced the Preliminary Bedrock Geologic Map of Connecticut by John Rodgers and a soils map compiled for the parcel by the Team's soil scientist, for the purpose of this report.

According to preliminary bedrock geologic information available for the South Coventry quadrangle, two major rock types underlie or crop out on the parcel; the Bigelow Brook Formation which are interlayered schist and gneiss and diorite rocks. The most extensive rock grouping is the Bigelow Brook formation. These rocks are described as a gray weathering fine-to-medium grained quartz-feldspar-biotite-garnet-sillimanite gneisses and schists. It also includes


Surficial Geology
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EXPLANATION
Till Deposits
Stratified Drift Deposits
Swamp Deposits

layers of amphibolite and calcsilicate bearing granular schist. A 'schist' is a metamorphic rock (a rock altered by high temperatures and pressures in the earth's crust) in which elongate or flaky minerals have been strongly aligned, giving the rock a slabby or thinly layered structure. A 'gneiss' is a metamorphic rock, also. It commonly has a banded appearance which results from the alignment of elongated or flaky minerals alternating with layers of more rounded mineral grains. The term 'amphibolite' refers to rocks which are composed primarily of minerals of the amphibole group especially hornblende. The hyphenated terms preceding the word gneiss above are the most abundant mineral components of the rock. This rock unit outcrops predominantly in the northern and southern sections of the property (see Surficial Geologic map).

The second rock type underlying the property in the eastern section is a weakly layered, medium-to-coarse grained, grayish-brown to dark gray weathered diorite composed of the minerals, plagioclase, quartz, biotite, and hornblende. In addition, it may locally contain the mineral pyroxene. The term "diorite" refers to an igneous rock (formed directly from magma) which is composed chiefly of fedspar minerals (plagioclase) with lesser amounts of the mineral quartz and mafic (dark-colored) minerals, hornblende and biotite. The diorite intruded the surrounding metamorphic rocks, schist and gneiss as molten magma and subsequently solidified. As a result, these rocks are younger in age than the gneisses and schists surrounding it. According to the preliminary bedrock geologic map for the quadrangle, both rock units have been subjected to much deformation and have been affected by several faults since they were formed, approximately 365 to 465 million years ago.

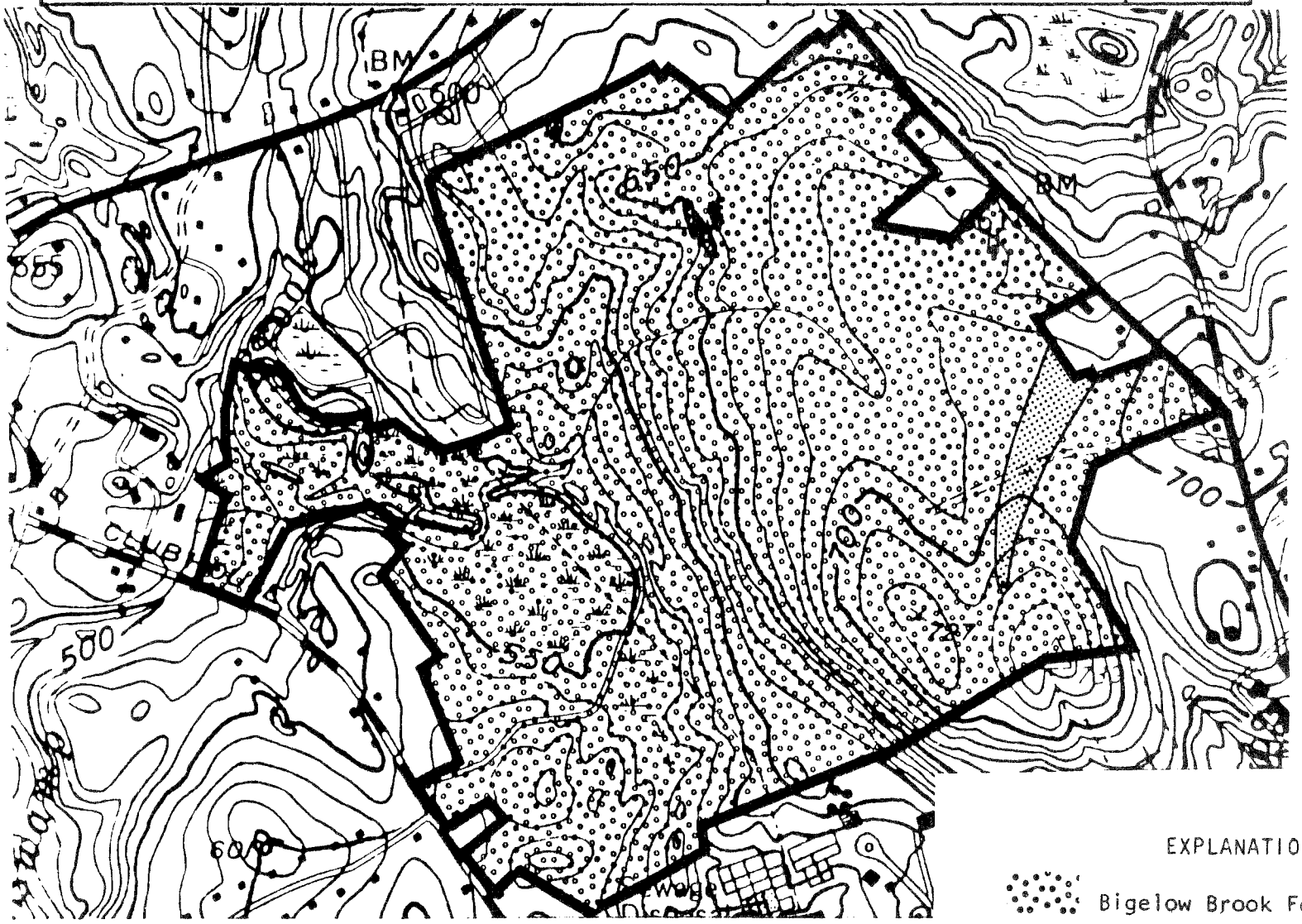
The differences between the two major rock types have been described above primarily for the purpose of thoroughness in the natural resource inventory for this site. The differences should have little, if any, influence on the potential of the property for various uses. It does not appear that these rocks have any significant economic value.

According to the Concept Master Plan by Gibbons and Gibbons, four on-site test pit investigations were undertaken. All four encountered bedrock within 10 feet of ground surface. Depth to bedrock on the property ranges from zero in rock outcrop areas, to probably not much more than 10 feet at various points in between outcrops (Source: Connecticut Water Resources Bulletin, No. 11, Shetucket River Basin).

Surficial geologic materials consists of those unconsolidated rock particles or other debris that overlie bedrock. The predominant surficial geologic material covering the site is till. Till consists of a non-sorted mixture of rock particles and fragments which range in size from clay to boulders. These materials were collected, transported, and later redeposited directly by an ice sheet as it moved through the region more than 12,000 years ago. In the upper few feet, the till is commonly sandy, very stony and loose, while at depth, it has a tendency to be siltier, less stony and more compact. It should be pointed out that there is no test pit data to confirm this belief.

Another type of glacial sediment covering bedrock and/or till within the parcel is stratified drift. Stratified drift, which is found throughout the western portion of the property, consists of sorted sediments deposited by glacial meltwater. Sand and gravel are the major components of stratified drift.

Bedrock Geology



Thicknesses of the stratified drift deposits range from a few inches at the till-stratified drift contact to probably not much more than 10 feet.

An area in the western limits of the parcel is swampy. Sediments here consist primarily of silt, sand, clay, and a high percentage of decayed organic materials. Standing water is at or near ground surface for much of the year in this area. Scattered throughout the northern, central, and western portions of the site, primarily along drainage channels are seasonally wet areas. Wetland areas are inappropriate for any type of development (see section on Geologic Development Concerns).

Geologic Development Concerns

From a geologic perspective, there appear to be several limiting factors on the site which may pose problems developing the property under present plans. These limiting factors include (1) areas where bedrock is at, or is relatively close to the ground surface; (2) the presence of moderate to steep slopes, mainly in the southern portions; and (3) the presence of wetlands scattered throughout western and southern portions. In addition, wetness and frost action may be encountered with some of the till-based soils. This will weigh heaviest in the construction of roads, driveways and building foundations. It should be pointed out that these limitations would probably weigh heaviest on the ability to provide adequate subsurface sewage disposal. However, since developments within the parcel are proposed to be served by the University of Connecticut sewage treatment plant, the need for on-site sewage disposal systems will be eliminated. The availability of the public sewer line to the property should significantly reduce the risk of groundwater contamination.

In areas where bedrock is at or near ground surface, there may be a chance that blasting will be necessary, whether for the construction of roads, building foundations or for the creation of trenches for public water and sewer lines.

Usually in areas where slopes exceed 15 percent, conditions become hazardous for heavy equipment to operate and also require considerable grading. Because the potential for serious erosion problems is high in these areas, particularly if blasting is required, it is recommended that a comprehensive erosion and sediment control plan be formulated and followed closely during implementation of the project. According to the Concept Master Plan by Gibbons and Gibbons, the site contains approximately 25 acres where slopes exceed 15 percent.

Wetland areas serve many important hydrological functions. Some of these functions include: (1) serving as important flood and stormwater retention areas, reducing downstream flood flows during winter/spring thaws and during heavy precipitation; (2) they change surface water quality through biochemical processes, often resulting in cleaner water; and (3) trapping sediments from upstream areas. In addition to other hydrological functions, wetlands also benefit wildlife by providing valuable habitat. Based on present plans there certainly appears to be a chance that development of the property would infringe upon wetland areas. Wetland fillings and/or modifications may be required for building construction, driveways and road crossings. Wetland filling and modifications

should be avoided where possible. However, in some instances, a small amount of wetland filling may be necessary and justifiable (e.g., wetland filling for a road crossing). From a hydrological standpoint, it is often difficult to assess the risks involved in permitting a portion of a wetland area to be filled. For example, an isolated act of filling may not significantly impact the hydrological functions of a wetland. However, a series of fills or the filling in of a significant portion of a wetland on the site, could lead to substantial detriment such as flooding and potential erosion in the immediate and downstream drainage areas. It is, therefore, recommended that if any wetland filling or modification is proposed under this project, that the developer first submit a detailed analysis of the potential effects of the modification together with a detailed plan of the proposed project for review by appropriate town officials. It should be noted that it is particularly important to properly size and place culverts where roads or driveways cross wetlands areas. Interior roads should be located in areas which cause least disturbance to wetland areas. If wetland fillings and/or modifications are avoided, these areas will continue to provide valuable hydrologic functions as mentioned above.

It is likely that most of the geologic limitations mentioned above could be surmounted with proper engineering and planning or simply by avoiding the problem areas altogether.

On the day of the field review, the Town expressed concern in regard to the capacity of UCONN's existing sewage treatment plant to handle projected wastes from the proposed UCEPI project. According to DEP's Water Compliance Unit, UCONN's sewage treatment plant is permitted to handle a maximum of 1.98 million gallons of effluent per day. Monitoring reports submitted to DEP from the sewage treatment facility indicate that the plant handles an average of ±1.4 million gallons per day when the University is in session. As would be expected, flows are less during summer months when school is not in session. Based on their permit, the plant could therefore handle an additional ±.5 million gallons per day (gpm). It should be noted the sewage treatment plant does experience overloading problems during periods of heavy rain. This results mainly from infiltration, groundwater leaking into broken pipes and manholes, and inflow, stormwater entering the system through roof leaders and sump pumps.

Prior to approval of the project, a thorough and detailed engineering study should be conducted in order to analyze the sewage treatment plant's ability to handle the projected wastes from the UCEPI site. Also, consideration should be given to evaluating potential users of the research/industrial park, as to the type of industrial wastes generated and methods for handling and disposing of such wastes. There is a chance that some industries, due to the type of chemicals, manufacturing processes and disposal practice involved, may pose too great a risk to the sewage treatment facility and/or may not be compatible with existing site conditions. As a result, industries that could be a potential source of serious contaminants should be avoided. It is important that Cedar Swamp Brook, as well as other watercourses within the site, be protected from contamination.

The extension of the UCONN's sewer line will require the approval of DEP's Water Compliance Unit. Also, the discharge of industrial wastes into the sewer line by a potential user of the park will require a permit from the same Unit.

Prior to approving the extention of the sewer line to the UCEPI parcel, consideration should be given to who will own and maintain the sewer line. It should be pointed out that a potential industry or industries may generate "non-contact" cooling water. "Non-contact" cooling water, which is for the most part uncontaminated water, would not be allowed to discharge into the sewage treatment facility. It would have to discharge into a nearby watercourse. These types of discharges would also have to be viewed and permitted by DEP's Water Compliance Unit.

HYDROLOGY

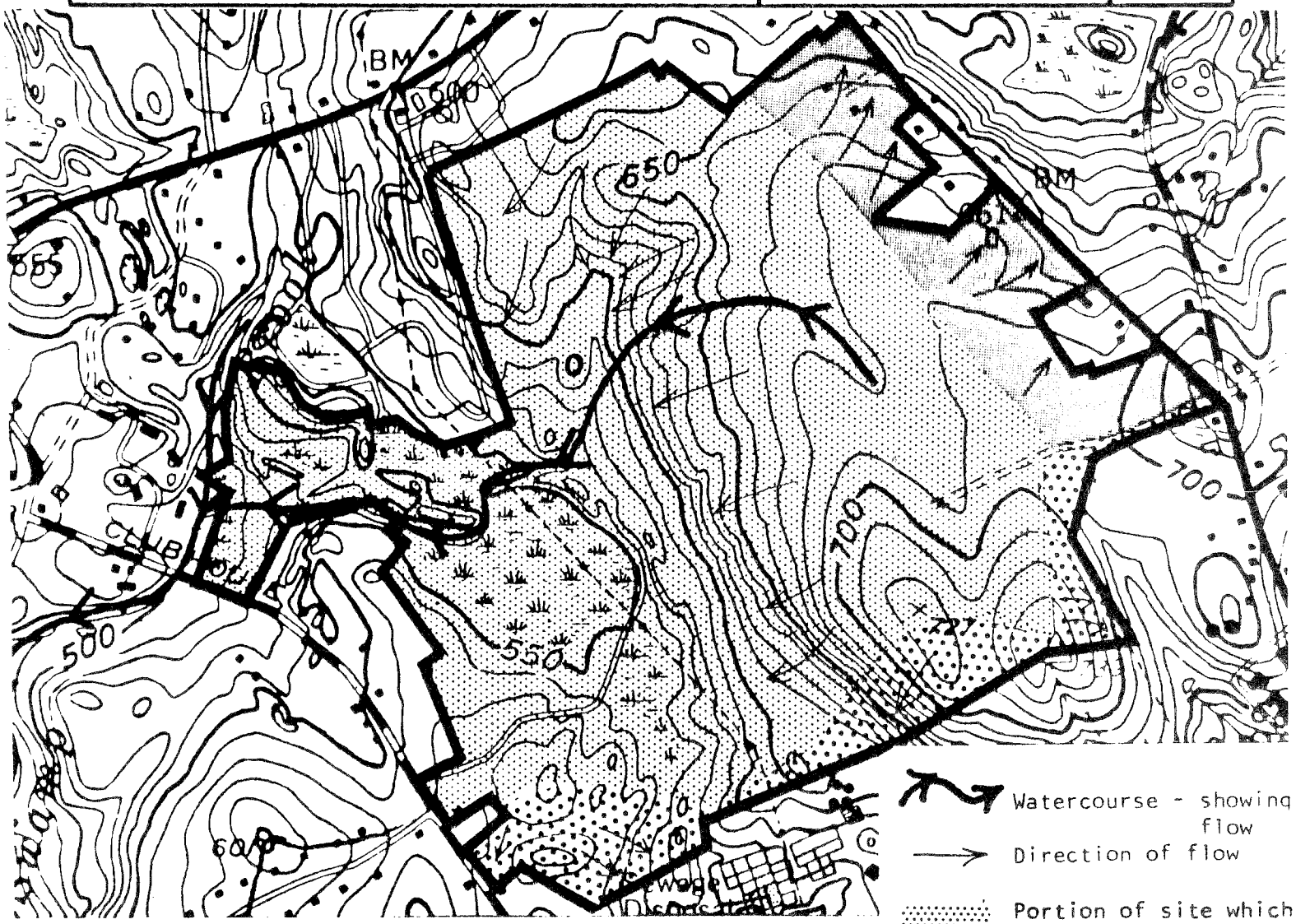
The greatest portion of the parcel which consists of approximately 318 acres, lies within the Cedar Swamp Brook watershed. A watershed may be defined as the area that includes all land from which runoff ultimately drains into a brook, surface water body, river, etc. Cedar Swamp Brook traverses the western section of the property, ultimately emptying into Eagleville Lake, south of the site.

Approximately 38 acres in the southern section of the parcel lie within the Eagleville Brook watershed. Eagleville Brook ultimately empties into Eagleville Lake.

The eastern section of the parcel, which comprises 45 acres, drains northeastward towards Route 195. The portion of the property is drained by Mason Brook.

Both industrial-commercial and residential development of the site would be expected to increase the amount of runoff during periods of rainfall. This increase would result from soil compaction, removal of vegetation, and placement of impervious surfaces (roofs, parking lots, driveways, roads), over the soil. Since the commercial and industrial uses would tend to require more impervious surface area, for parking lots and larger buildings, the runoff increases for that type of development would tend to be higher than for residential development. In this regard, it is important that a storm water management plan be prepared for this site prior to any development. In addition, it is recommended the applicant submit detailed hydrological information on pre and post-development runoff volumes and peak flows from the property. Estimates should be provided for a 10, 25, 50, and 100 year design storm. The best way to handle increased runoff volumes following development of the site would be through the use of on-site detention basin or basins. In addition, a stormwater detention basin might also serve a sediment retention function. If sediment does accumulate in a basin(s), it will have to be removed periodically in order to assure that the runoff storage capacity of the pond is not seriously diminished. In this regard, consideration should be given to maintenance of the basin(s) once they are constructed. Efforts should be made to locate detention basins on upland type soils rather than in wetland areas, which have some natural stormwater detention capabilities. Detailed design specifications for all stormwater control facilities, i.e., detention basins should also be submitted.

Drainage Areas



Watercourse - showing direction of flow

Direction of flow

Portion of site which drains to Cedar Swamp Brook

Portion of site which drains to Mason Brook

Portion of site which drains to Eagleville Brook

As mentioned earlier, UCONN's public water facility is accessible to this site. If, for some reason, an on-site well is desired, bedrock appears to be the principal aquifer for the site. Bedrock is commonly capable for providing small but reliable yields of groundwater to individual wells. A survey of bedrock wells in the Shetucket River Basin, in which the site lies, indicates that at least 90 percent of those wells tapping a rock type similar to that found on the site yielded 3 gallons per minute (gpm) (Source: Connecticut Water Resources Bulletin No. 11). This yield is equivalent to 4,320 gpm.

The quality of the groundwater would be expected to be generally good except in the vicinity of the landfill. The bedrock underlying the site may contain moderate to excess concentrations of iron and/or manganese. As a result, some undesirably high concentrations of iron or manganese may occur in well water drawn from the site, but there are several types of filters available to alleviate this problem.

SOILS

Detailed soils descriptions for the soil series typical of this parcel are included in the Appendix to this report. The soils as mapped should be used for planning facilities. Wetlands on the site should be flagged in the field and then surveyed onto the site plan. Efforts should be made to protect all on-site wetlands, waterbodies and the integrity of watercourses. This can be accomplished by arranging lot lines to avoid wetland encroachment, minimizing crossings and retaining natural ponding areas or mitigating their loss and utilizing or improving these areas for stormwater detention sites.

Prime Farmland Soils

The UCEPI site includes 98.6 acres of prime farmland soil; 64.2 acres are currently being used for crop production. The developer has agreed to preserve 33 acres plus grant 6 acres of rear yard easements to retain approximately 39 acres of prime farmland on the site. This will mean a net loss of 59.6 acres of prime farmland soils. The agreement calls for improving 27 acres of non-farmland so that it can be classified as prime farmland. To date, the Soil Conservation Service has looked at several hundred acres east of the parcel and identified only about 10 acres with this potential. It is unlikely that sufficient acres near the University farm will be found.

Erosion and Sediment Control

The large scale development proposed has the potential for creating serious environmental damage due to soil erosion and subsequent sedimentation of on-site and off-site wetlands and watercourses.

A general soil erosion and sediment control plan which covers major site development phases should be prepared and implemented. This plan would cover access roads, storm drains, sewers, water lines and general site preparation of individual lots.

Specific plans for each lot or parcel should also be developed. These plans must include all needed measures (structural and non-structural) to control erosion and sediment.

The revised Connecticut Handbook for Erosion and Sediment Control should be used as a guide. On request, the Tolland County Soil and Water Conservation District can review and comment on these plans.

Stormwater Management

On-site stormwater management on the upper portions of the watershed appears to be preferable. The large wetland areas on the western portion of the site should also be evaluated for suitability for stormwater detention although altering these areas may not be feasible.

A detailed hydrologic analysis of the entire drainage system to the Willimantic River should be prepared using pre and post-development land uses. This analysis can be used to evaluate alternative methods of control and select the most appropriate. On request, the Tolland County Soil and Water Conservation District can evaluate and comment on these plans.

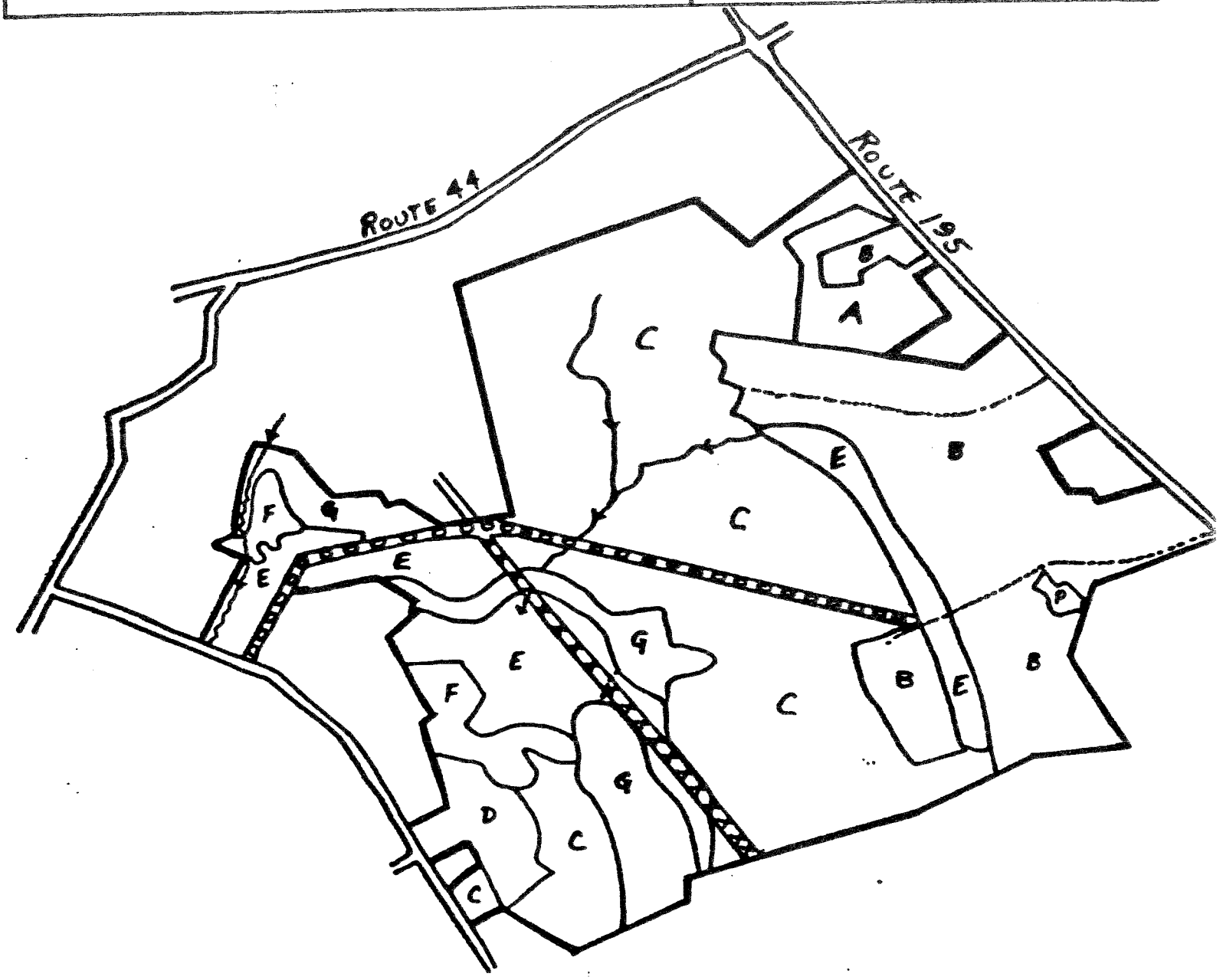
Off-site Impacts

A project of this size will have environmental impacts which reach far beyond the project boundaries. Although beyond the scope of this report, it should be noted that the need for responsible development will be more intense as the project proceeds from planning to construction to operational.

VEGETATION

The 400 acre UCEPI property is composed of several vegetation types which are described below in detail. Presently, 25 percent of the property is open agricultural land, 45 percent is mixed hardwood forest which would respond well to management practices, 13 percent is hardwood swamp, and the remaining 17 percent is a combination of disturbed land, open fields and planted softwood trees. There are seven different vegetation types that will be discussed in this section of the report.

Vegetation



PROPERTY BOUNDARY

TYPE BOUNDARY

STREAM

WATERLINE

UTILITY LINE

ASPHALT ROAD

DIRT ROAD

A - 13 ACRES, SOFTWOOD PLANTATION

B - 100 ACRES, AGRICULTURE

C - 180 ACRES, MIXED HARDWOOD

D - 27 ACRES, OLD FIELD (BRUSH)

E - 50 ACRES, HARDWOOD SWAMP

F - 15 ACRES, OPEN FIELD

G - 25 ACRES, DISTURBED/LANDFILL

Vegetation Descriptions

Mixed Hardwoods: 180 acres of this property is covered by mixed hardwoods. Predominant species include black oak, red oak, white oak, sugar maple, red maple, hickory, black birch, yellow birch, white pine, white ash, hemlock. Understory vegetation includes fern, barberry, viburnums and abundant hardwood reproduction in some areas. This forest type would respond well to management practices.

Agricultural Land: There are 100 acres of land currently in the production of corn and hay.

Hardwood Swamp: Another 50 acres of the property is hardwood swamp composed of red maple trees. The understory varies from open to dense with spicebush, skunk cabbage, highbush blueberry and speckled alder.

Disturbed Land/Landfill: This type is 25 acres of land being used as a landfill or recently abandoned gravel pit. Vegetation is non-existent to sparse, composed mostly of pioneer grasses, sweet fern, club moss with scattered brushy oaks and maples.

Open Field/Old Field: There are about 32 acres which are composed of early succession vegetaion like grasses, meadowsweet, juniper, sweet fern, barberry, poison ivy, scattered sapling oaks, black cherry, apple, white pine. Some of these acres are more open with grasses and juniper, while other areas are grown over with trees and have begun to revert to hardwood-softwood forest. This type includes the watermain and powerline right-of-ways.

Softwood Plantation: This type is 13 acres in size composed of a red pine overstory, with poison ivy, black raspberry, fern and white ash and sugar maple reproduction in the understory.

Limiting Conditions and Potential Hazards

Any development which alters water table levels or increases the chance of contamination by pollutants should be avoided to the maximum extent possible.

The vegetation present in the hardwood swamp area is sensitive to changes in the environment. Permanent changes in the water table usually result in a change in plant communities. A rise in the water table, for example, may be fatal to some species of plants while others may thrive; the result is a net change in species composition.

Contamination of these areas by water-carried pollutants and chemicals such as road deicing salts, will also lead to mortality in certain species of plants, causing changes in the plant communities. Red maple and speckled alder are especially intolerant of higher-than-natural salt concentrations caused by runoff of road deicing salts.

Changes in vegetation types may affect the ability of the wetland to store and regulate the discharge of water. This function of wetlands is critical in preventing flooding downstream during times of peak flows.

The windthrow hazard is also severe in the hardwood swamp areas of this watershed. The trees in these areas are shallow-rooted and unable to become securely anchored in the saturated soils. Linear clearings in and along these areas will allow wind to pass through rather than over these stands increasing the already high windthrow hazard. Non-developed buffer zones of 50 to 150 feet wide, left vegetated around the hardwood swamp areas and streams will help to protect these areas from increased windthrow hazards. This buffer zone will also filter out and trap sediment, silt, and some pollutants before they reach, and lower the quality of, the wetlands.

Crowding in softwood plantations limits the health and vigor of the trees. Under unhealthy conditions, trees are susceptible to windthrow, insect attack and disease.

Management Considerations

The Forestry Unit of the Department of Environmental Protection encourages all woodland owners to manage their forest lands. When properly prescribed and executed, forest management practices will increase the production of forest products, improve wildlife habitat and enhance the overall condition of the woodland with minimum negative environmental impact.

To reach a healthy and productive state, individual forest stands should be periodically evaluated to determine present and future management needs. A public service forester from the Department of Environmental Protection may be contacted at 295-9523 to provide basic advice and technical assistance in woodland management. These services are provided free of charge. Services of a more intensive nature are available from private foresters.

The mixed hardwood forest is predominantly sawtimber sized trees in need of a harvest. Harvesting should be carried out with the recommendations of a professional forester to insure that the best management practices are followed.

Healthy woodlands provide a protective influence on water quality: they stabilize soils, reduce the impact of precipitation and runoff, and moderate the effects of adverse weather conditions. By so doing, woodland help to reduce erosion, sedimentation, siltation and flooding. Research has shown that soil protected by the cover of litter and humus associated with woodland areas contributes little or no sediment to streams.

Improper harvesting of timber for commercial purposes may, however, lower water quality in several ways: (1) Erosion, siltation and sedimentation caused by improperly located and improperly constructed access roads, skid trails, yarding areas and stream crossings; (2) Siltation and sedimentation caused by logging debris left in streams, interferring with natural flows; (3) Thermal pollution resulting from complete or partial harvesting of streambank vegetation, eliminating shade; (4) Chemical pollution caused by improper application of herbicides and insecticides (it should be noted, however, that in Connecticut the widespread use of chemicals in forest management is not prevalent and, therefore, does not constitute a great threat to water quality at this time);

(5) Influx of nutrients caused by the application of fertilizer, soil conditions and wetting agents (used in forest fire control). Research has determined that nutrient loss from normal silvicultural practices (i.e., practices involving the cultivation and harvesting of timber) does not, for the most part, result in significant deterioration of water quality.

Despite the potential adverse impacts to water quality by improper harvesting, the harvesting of trees is a major and necessary tool used in watershed management. Adverse impacts to water quality can be minimized through good planning and responsible implementation.

The softwood plantation is presently in poor health. The stand is of commercial size and value to warrant harvesting.

WILDLIFE CONCERNS

Obviously, much of the wildlife habitat will be lost due to development. However, there are ways to make even developed land more tolerable to some wildlife and birds species. Landscaping, planting trees and wildlife shrubs, can provide food and cover for wildlife as well as creating a buffer zone. A buffer zone of untouched land should be left between wetlands and any developed land to keep disturbance to a minimum.

Additional advise and assistance on landscaping areas for wildlife (such as what tree and shrub species to use) can be obtained through the Department of Environmental Protection's Wildlife Bureau and Forestry Unit and from the Soil Conservation Service.

WETLAND CONCERNS

It is known that wetlands can provide valuable functions. They can store flood waters and decrease the storm water velocity, thereby minimizing damage to downstream property owners and helping to maintain streambank stability. They can also serve to maintain water quality (if not overtaxed) by filtering or taking up pollutants from runoff before it enters the waterway. This includes sediments, oils, grease and heavy metals that typically are introduced into the system from urban uses.

By discharging cleaner water than they receive, they assist in supporting fishlife and the food chain that is necessary to support them. They also provide terrestrial wildlife habitat by growing vegetation that gives food and shelter for many birds, small mammals, reptiles and amphibians. Additionally, wetlands that are associated with streams and watercourse channels can act as travel corridors for wildlife between tracts of non-urban land. Finally, wetlands and watercourses serve as recreation (bird watching, hunting, fishing, botonizing) and education areas.

When the watershed experiences urban development, wetlands can become stressed where they cannot adequately perform these functions. They are stressed not just by being filled but also by the development of upland areas, which generate new sources of water contamination and increases in runoff during storm incidents.

UCEPI Wetland and Watercourse Functions

The wetland/watercourse complexes on site provide these functions in varying degrees. The pond located in the eastern corner of the project is used for education and research, provides for wildlife habitat to a lesser degree and has the potential for offering valuable stormwater detention and stormwater renovation should its watershed areas be developed. The stream that develops from wetlands down gradient from the pond (including the tributaries that come from the north), flows with cool water discharged from these wetlands. That water is kept cool by shade from streambank trees and bushes. It is this water that helps to maintain fish habitat downstream as Cedar Swamp Brook empties into the Willimantic River. The large wetland located northwest of the land-fill appears to be purifying leachate waters from the land fill and is of value to attenuate storm flows and provide for diverse wildlife habitat.

Project Impact

While much of the wetland soils are proposed to remain as open space, it is not clear that the wetland/watercourse complexes have the ability to continue to perform the functions adequately. Should the watershed be developed, concerns are as follows:

1. Under the current proposal, the research pond would be destroyed. Replacement of such a research facility is not proposed.

2. While the need for on-site detention is correctly identified, its position within the park is not. A single detention structure placed on downstream reaches of the watershed may be able to protect Hunting Lodge Road and other downstream drainage structures from flood damage, it would do nothing to prevent destabilization of existing stream banks within the project that would get new stormwater runoff from roadways and parking areas.

3. Similarly, no provisions have been made to mitigate potential water quality degradation and the reduced groundwater recharge capacities.

4. While proposed lot lines are generally parallel to, or follow the stream channels, it is not clear that those reaches within industrial lots will not be rechannelized. Adjusting lot lines to better fit the stream alignment would seem appropriate. Additionally, maintaining an open space corridor along the streams within these lots and on proposed residential lands would be desirable.

All concerns mentioned appear to have engineering or design solutions. With proper design, detention basins that are located outside of the stream channel can also act as sedimentation basins not only during construction but after. They can be used to create stormwater filtration areas. Some wetland/watercourse areas can be manipulated to perch the water table and provide for groundwater recharge following storm flows.

Because feasible locations are limited, they should be considered early on in the design phase once land use densities and design needs are estimated. If the design need cannot be met by the feasible locations, then land use densities should be re-evaluated.

PLANNING CONCERNS

I. Relation to State Plan

The Locational Guide Map of the State's Conservation and Development Policies Plan 1982-1985 indicates the CONNTECH parcel to be largely in an Urban Growth Area, with some portions of the parcel in Long Term Urban Potential Area and some small areas of the parcel recommended for Preservation and Conservation Areas.

The Urban Growth and Urban Potential areas would seem from the plan's policies to be suitable for the types of uses proposed in the CONNTECH plan. The agricultural and wetland preservation techniques proposed in the CONNTECH Master Plan also seem to coincide with the area's recommended for conservation and preservation in the State's plan. Compliance with the plan is determined by the Comprehensive Planning Division of the Connecticut Office of Policy and Management.

II. Relation to Regional Plan

The Land Use Element of the Regional Growth and Preservation Guide Plan is a policy document meant to "suggest the general thrust that development and preservation should take in towns which comprise the Planning Region. The Plan is not intended to intimidate any individual, group, or town from suggesting something that conflicts with the Plan or which is not provided for in the Plan." Rather, it is intended to "provide a framework for discussing major preservation and development proposals and for assuring that the regional perspective is given a hearing during the discussion."[1]

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[1]Land Use Element--Regional Growth & Preservation Guide Plan. Windham Regional Planning Agency, 1981, p. 2.

The regional plan's major goals are as follows:

BROAD REGIONAL GOALS OR CHALLENGES AND A STRUCTURE FOR ACTION

Goals

The Regional Growth and Preservation Guide Plan is based on ten basic goals. They are:

(1) Future development should be concentrated in areas where capital (infrastructure) investments (e.g., sewers, high capacity highways, sidewalks, schools, etc.) have already been made and new capital facilities should be carefully planned extensions on existing facilities. New sewer, water or transportation facilities should be added only when the additional capacity is needed to handle near term development. Development densities should be high in areas served by public sewer, water and transportation facilities. Implementing this objective will tend to:

a. Encourage the efficient use of existing urban and adjacent land and reduce the pressure to prematurely develop rural land to urban densities.

b. Concentrate urban activity to improve the potential for public transportation.

c. Protect and expand the use of the existing public investment in utilities and other major capital facilities and permit limited and efficient extension of those facilities, thereby reducing the development cost for new urban uses dependent on them.

d. Improve the quality and variety of urban services available to people living in the region.

(2) The number of commercial and industrial jobs in the region should be expanded to provide more of a balance between private and public employment and to provide options for the large number of people who commute outside the region. Careful attention should be given to the type of industry sought for the region. Jobs are needed to provide employment options for people living within the region and new job opportunities within the region should be available to people entering the labor force. The interests of the region would best be served by the accommodation of additional industries of modest size that would not stimulate massive related development or cause disruptive social change and that would be compatible with the region's present clean, basically rural environment. We have a healthy economy which needs to be protected and carefully expanded.[2]

(3) Towns should join together to promote industrial and commercial development within the region. While competition for tax resources will probably

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[2] In 1976, 86.8% of the people employed within the Willimantic Labor Market Area were employed in non-manufacturing jobs. We are the least industrialized Labor Market Area in the State.

continue to be a fact of life for the foreseeable future, all of the towns pursuing commercial and industrial development will benefit from working on a single-cooperative promotional effort.

(4) A safe, sanitary and uncrowded home in a safe, sanitary, and uncongested environment should be available to all residents of the region at a cost they can afford. The different housing needs of the elderly, families, single person households, students, and other residents should be reflected in the location, size, cost, and general variety of the region's housing stock.

(5) A major new effort needs to be undertaken to preserve the rural-historic nature of the region. One of the primary qualities which makes the Windham Region different from thousands of other areas of similar size are its rural-historic places, village centers, agricultural lands and parks and forests. If we lose the rural historic character of the region, we have lost much of what makes the region a highly desirable place in which to live, work and invest in the future.

(6) Agriculture should be strongly encouraged within the region for the strength and diversity which it adds to the regional economy, and to preserve the rural landscape currently committed to agriculture and to encourage the expansion of such areas. The region's scenic beauty and general physical attractiveness is heavily dependent on agricultural activity. A variety of devices should be considered to encourage agriculture including continuation of preferential tax programs, public acquisition of development rights to agricultural lands and other development right transfer programs as well as the promotion of new agricultural uses.

(7) "Cottage industries" or businesses carried on in private homes should be encouraged so long as they do not detract from the rural-residential character in which the businesses are located. Cottage industries help rural town tax bases, provide in-town employment, and provide needed services without altering the rural character of an area.

(8) Energy efficient development should be encouraged within the region as part of an effort to conserve our national energy resources and to lower home maintenance and industrial production costs. Energy efficient residential development is development of high-density housing which is designed and located to provide a variety of energy efficient transportation options to get to and from major work and shopping sites.[3] Proper siting of new development, along with proper building design, will result in a significant long-term reduction in energy consumption. The use of non-conventional methods (e.g., solar, wind, energy from waste, etc.) for producing energy, especially for heating space and water and for industrial production, should be encouraged.

(9) Land within lake watersheds, inland wetlands, and river and stream corridors should be used in a manner which minimizes hazards to life and

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[3]The Willimantic Labor Market Area has had the lowest unemployment rate in Connecticut for the last three years. Incomes in the Labor Market Area are well within the median for the State.

property from flooding, provides public access for recreational purposes (visual and/or physical access), protects water quality, and retains to the maximum extent possible shorelines in an undeveloped state such that their beauty can be enjoyed by future generations. Further development in the Windham Region should not appreciably degrade the water quality in the Region.

(10) The region's air quality is at times poor due largely to hydrocarbon emissions (a major ingredient of ozone or "smog") produced by trucks and cars to the west of the region. Trucks and cars within the Windham Region, in turn, contribute to the degradation of air quality to the east of the region. As part of a statewide and national effort to improve air quality and protect our health, public (bus) transportation and the concentration of future development should be strongly encouraged. All policies which encourage the use of automobiles and trucks, especially for short trips, work against improved air quality. Further development in the Windham Region should not appreciably degrade the air quality in the Region.

The plan then divides land use in the Windham Region into eight categories:

1. Urban-Office-Education District
2. Industrial District
3. Retail-Service District
4. High-Density Suburban District
5. Low-Density Rural District
6. Historic-Land Preservation District
7. River Corridor Preservation District
8. Lake Watershed Preservation District

and presents basic policies for land use in those districts.

The CONNTECH parcel is located in what is shown on the plan's land use map as existing preserved land in the Historic-Land Preservation District.

All town, state, and federally owned land in the region which is largely undeveloped is so categorized, as is land owned by conservation organizations.

Ownership of land by such institutions, however, cannot always be assumed to infer that such parcels are protected or preserved in their natural or historic states by ownership alone. The plan is scheduled to be revised in 1985. Land use classification will be addressed in that revision.

The CONNTECH parcel is surrounded by land recommended for Urban-Office-Education District uses, High-Density Suburban District uses, and Regional Retail-Service uses, all of which call for high density development. These areas are recommended for such uses due in large part to the existence of or potential to expand sewer and water service to those areas, and existing high density development around the University of Connecticut.

The plan specifically recommends as a policy that industrial activity be concentrated in fully serviced industrial parks;[4] it also recommends the

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[4] Ibid., p. 7.

University of Connecticut and Town of Mansfield work together to develop proposals for commercial and industrial activity adjacent to the University and to assure that the best interests of the Region are served by any development which takes place.[5]

Considering these regional plan recommendations and the CONNTECH Master Plan proposed to utilize 257 of the parcel's 390 acres for development, 33 acres for agricultural use and 87 acres in open space including wetland protection, the land uses proposed in the CONNTECH Master Plan are capable of being in compliance with the region's land use plans.

The region's housing plan--A Housing Strategy for the Windham Region--advocates construction of market rate dwellings, provision of housing for students and construction or rehabilitation of housing units for low and moderate income persons and the elderly in accordance with demand or need to meet circumstances. The CONNTECH proposal seems to address most of these housing needs through the wide variety of types of dwelling units provided for in its concept plan. Sixty-nine acres are set aside for multi-family residential uses, including a range of housing types for varying markets such as University related, research park employees and the elderly, and may include a life care facility; eighteen acres are set aside for student housing; and thirty acres are slated for expansion of the adjacent mobile home park.

This development will not provide all the housing opportunities on site that will be needed to fill the demand created by development in CONNTECH but will go a long way towards providing housing appropriate for the area and appropriate to be included in a large mixed-use development.

The Regional Transportation Plan for the Windham Region is the third component of three regional plan elements. This element, updated in 1984, makes specific recommendations in regard to the CONNTECH development. The plan recommends that impacts of the development be assessed and highway improvements indicated from such assessment be programmed.[6] Also under local transportation improvement needs for Mansfield the following is recommended:[7]

- State and regional policies should reflect a proposal to extend Hillside Road on the UCONN campus northward through the UCEPI project to Route 44, which will parallel and affect traffic on Route 195 as well as other related state and local roadways.

- An upgrading of Hunting Lodge Road to meet the demands which the UCEPI project will put or it has been recommended by the State for interstate trade-in funding.

The developer chosen for the University of Connecticut North Campus project has proposed a bicycle path from Route 44 to campus. A bicycle facility in this location was identified as the State's highest priority in Connecticut

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[5]Ibid., p. 16.

[6]Regional Transportation Plan for the Windham Region. Windham Regional Planning Agency, May 1984, p. 5.

[7]Ibid., p. 20.

Bikeways, a 1975 study. The UCONN project presents an unusual opportunity for creative design in the context of a unified planned development.

Transportation Systems Management recommendation in the region's plan specific to CONNTECH include:

. The intersection of Routes 195 and 44 at Mansfield Four Corners is controlled by 4-way traffic signal with a left-turn phase for northbound vehicles. Turning movement data from this should be collected and analyzed to assess the need for additional protected turning movements; it is recommended that this assessment be made in connection with the University of Connecticut North Campus Development.

The CONNTECH Concept Master Plan, in general, seems to be in compliance with the transportation, housing, and land use elements of the Regional Plan. Compliance is determined by the Windham Regional Planning Agency through its representatives from the ten member towns.

III. Relation to Town Plan

The CONNTECH development is directly addressed in the Mansfield Plan[8] of Development as follows:

Section V--Commercial Land Use

p. 17 Mixed Use Commercial/Industrial/Residential Project

A mixed use project consisting of a convention center complex, research and development park and University oriented residences is being investigated by the University of Connecticut for state-owned land west of Storrs Road (Route 195) and north of the Storrs Campus. The subject site is to be serviced by University sewer and water supply facilities. As currently proposed, sanitary system and road maintenance, as well as fire and public services, will be provided by the University. A convention center and research park with a clustering of professional offices, research and development operations and related light industrial uses, is expected to create local jobs and aid the economic base of the Town while promoting UCONN's academic and professional prestige. The research park concept was endorsed in the Town's 1971 Plan of Development and, provided traffic and environmental impacts are properly addressed, the subject area is considered appropriate for the aforementioned mixed uses. Due to the variety of uses associated with this proposal, a mixed use zone classification and specially designed zoning regulations with appropriate site plan standards would be necessary to properly address potential impacts.

Please see page 27 of the Industrial Section for more information on this project.

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[8] Plan of Development, Mansfield, Connecticut, July 1, 1982.

Section VI--Industrial Land Use

p. 27 UCONN RESEARCH AND DEVELOPMENT PARK

The 1971 Plan of Development recognized the potential for a "think-tank" research park adjacent to the University of Connecticut Campus. University officials presently are planning such a development on state-owned land between Storrs Campus, Storrs Road (Route 195) and Middle Turnpike (Route 44). The subject site, which can be served by sewer and water facilities, is well suited for the proposal, provided traffic and environmental impacts are properly addressed. It is immediately adjacent to the University Campus, where scientific research laboratories and computer facilities exist and where an existing supply of professionals and students are available for consultation and employment. With over 400 state owned acres available and with access potential on Route 44 as well as Route 195, the site provides ample flexibility to site new buildings and roadways with minimal effects on environmental features or existing residential uses.

A new zoning district classification for the subject land and new regulatory provisions to delineate permitted uses and site plan review standards should be adopted in conjunction with this proposal. As legally appropriate, Mansfield officials should work with the University in helping to encourage this project. To protect the Town's interests, all aspects of the project should be monitored carefully. If successful, a Storrs research and development park will enhance the academic reputation of the University of Connecticut, while providing direct and indirect economic benefits to the Town of Mansfield.

See page 17 of the commercial section for more information on this project.

Section VII--Governmental Land Use

p. 31 STATE AND FEDERALLY OWNED LAND

The location and activities of the University of Connecticut significantly influence the quality of life in Mansfield. The University is the Town's major employer and it provides extensive educational, cultural and recreational benefits to Mansfield residents. The Town's housing market, transportation patterns and local retail sales are associated directly with the University's operations. The University's provision of fire, police and public works services, including water and sewer facilities to the Storrs Campus area and its assistance with the municipal recreation program affect the delivery of Town services. Although the University's operations are largely autonomous, there are many existing and potential interrelations with the Town of Mansfield that warrant extensive communication and mutual action. If the Town and University are to jointly prosper, it is essential that officials from both organizations work closely together to address common needs and concerns and non-educational or quasi-educational developments having townwide implications. Current housing and sanitary waste disposal issues in the vicinity of the Storrs Campus can be resolved best with cooperative solutions. Any major UCONN developments, such as the proposed Research and Development Park/Convention Center, a field house expansion, and new housing projects will impact Mansfield residents and must be reviewed mutually to protect the best interests of the Town and the University.

Section IX--Transportation and Circulation

p. 47 TRANSPORTATION: Goals and Recommendations

(5) Width, shoulder and sightline improvements are recommended on many of the roadways in Town for the safe movement of pedestrians, bicycle riders, and existing vehicular traffic. Particular attention should be given to areas adjacent to the University of Connecticut and other public facilities, to commercial and medium to high density areas designated in this Plan, and along roads designated as Bicycle Route priorities in this Plan. A bicycle/pedestrian pathway between the UCONN Campus and the Four Corners commercial area should be incorporated into any plans to develop property immediately north of the University.

p. 50 ROAD IMPROVEMENT RECOMMENDATIONS

Many of the recommended improvements involve state owned arterial streets. Improvements on these roadways depend on financial commitments from the state and, therefore, the Town's primary responsibility is to alert and remind state officials of all identified problem areas. The need for state financed improvements will be particularly important in conjunction with UCONN's plan for a convention center, research and industrial park and multi-family housing project. Improvements to Routes 195 and 44a as well as Hunting Lodge Road and Birch Road may be necessary elements of these proposals. This Plan recommends that Hunting Lodge Road be incorporated into the state roadway system because of existing and anticipated traffic related to University of Connecticut developments.

p. 54 NON-MOTORIZED TRANSPORTATION

At a minimum, the State and Town must consider all modes of traffic when designing the implementing road improvement programs. Wider pavement and shoulder areas and sightline improvements, especially adjacent to higher density areas, will greatly promote traffic safety for all roadway users. In some cases, particularly on arterial roadways, separate pathways are needed or would be highly desirable for safe bicycle and pedestrian use. As an example, provisions for bicycle and pedestrian access between the Four Corners area and the UCONN Campus should be included in any University plans to develop this property.

Local efforts to improve safety for non-motorized traffic should focus on areas adjacent to the University of Connecticut and those routes providing access to UCONN. It should be noted that the state has identified a 2.4 mile stretch of Route 195 from Four Corners to the UCONN Campus as its highest bikeway priority. This Plan encourages the implementation of this project in the near future. Other priority routes in Town involve access to the Mansfield Middle School and School House Brook Park and the Library and Southeast School area.

Suggested bikeway routes are depicted on the Transporation and Circulation Map in this Plan of Development and include the following sections of raods:

Route 195 (Four Corners to South Eagleville Road)* and from (Clover Mill Road to North Frontage Road); Huntington Lodge Road (from Birch Road to North Eagleville Road); North Eagleville Road (from Northwood Road to Route 195); Gurleyville Road (from Route 195 to Chaffeeville Road); South Eagleville Road*; Hillside Road; Hillside Circle (between Hillside Road and Westwood Road); Westwood Road; Maple Road (from South Eagleville Road to Davis Road)*; Davis Road*; Spring Hill Road (from Davis Road to Mansfield City Road)*; Clover Mill Road*; Mansfield City Road (from Spring Hill Road to Windham Town Line); Crane Hill Road (from Browns Road to Mansfield City Road); Browns Road from Crane Hill Road to Route 195; North Frontage Road; Bassetts Bridge Road; Route 89 (Warrenville Road); Route 32 (Stafford Road) from Route 195 to Route 275.

The CONNTECH Concept Master Plan, in general, seems to be in compliance with the Town's Plan of Development.

Compliance is determined by the Mansfield Planning & Zoning Commission.

IV. Planning Concerns by Issue

Transportation Issues

1. New Roads

The project is designed around a new north/south road Connecticut Route 44 and North Eagleville Road through the CONNTECH parcel. Construction of the road is currently planned to be phased in three sections:

- N. Eagleville Road to proposed cul-de-sac.
- Continue road to Route 44.
- Connect n/s road to Route 195.

A number of concerns should be addressed in planning for and designing the final raod alignment.

A. Since this new road, when completed from Route 44 to North Eagleville Road, can be expected to channel some traffic to and from the University and reduce traffic on Route 195, the new road should provide for efficient traffic flow. Turning movements on to and off of the new road should be minimized.

1. Curb cuts to the research/industrial uses along the new road should also be limited. Shared accessways and shared parking for new development should be encouraged.

2. Provisions should be made to insure adequate access to University parking lots, F and R lots, which are located on either side of the proposed new road. Access to the sewage treatment plant, landfill, and other facilities should also be provided.

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*Roads or portions of roads included in a north/south route recommended by the Mansfield Bicycle Path Committee.

The number of curb cuts to these facilities from the new road should be limited; where feasible, accessways should be combined or access provided from N. Eagleville Road.

B. The existing bus maintenance facility at the Motor Pool, which is located at the rear of R lot adjacent to the new road, is expected to be expanded in the near future. This expanded facility should be considered in planning for the alignment of the new road and planning access for the facility.

C. The proposed intersection alighment of the new road with Route 44 raises concerns regarding turning movements for vehicles entering and exiting the commercial uses at this intersection as well as for vehicles utilizing the new road. The Mansfield Professional Park, A & P plaza, two banks, and one gas station currently exist adjacent to the proposed intersection.

The new road would intersect Route 44 less than 100 feet from the entrance to the Mansfield Professional Park and 250 feet from the entrance to the A & P plaza. The two banks' driveways would intersect the new road less than 100 feet from the Route 44/new road intersection.

Centerlines of alternate intersections are commonly aligned with one another or offset by a minimum separating distance to allow for vehicle queing between intersections and to minimize hazardous turning movements.

Mansfield Subdivision Regulations contain such design criteria for street intersections. Mansfield's Engineering Standards and Specifications contain driveway construction specifications for driveways on Town roads.

The proposed road alignment may produce hazardous turning movements with the commercial driveway cuts currently in place.

Alternate alignments for the new road's intersection with Route 44 should be considered. Among the alternatives to consider are alignment of the new road with the Mansfield Professional Park Road, or creation of a T intersection with adequate space to accommodate turning vehicles.

In any new road alignment which interfaces with the bank parking lots, the current driveways from the banks onto the new road should be relocated further south of the intersection. An increase in the distance between the intersection and the driveways will provide for safer turning movements into these commercial uses and more efficient traffic flow.

D. The proposed road to the hotel conference center and adjacent industrial uses is a cul-de-sac approximately 2000 feet in length. An access road for emergency vehicles is proposed to connect the cul-desac with W-lot behind the Security Building. Mansfield's Subdivision Regulations permit permanent dead end streets of up to 2400 feet.

A similar arrangement exists in Farmington, Connecticut where the Marriot Hotel and Conference Facility is located at the end of a long cul-de-sac through the adjacent industrial/office park. There emergency access to the hotel is provided via a graveled emergency access road with breakway barrier to Route 6, the nearest point of access other than through the industrial/office park.

Such proposed limited access should be adequate as long as the emergency access is maintained in good condition. The fire, police, and emergency services which will service the development should review the emergency access road to ensure safe access.

The emergency access road, however, is proposed to cross an existing pond. The pond seems to be man-made, and is not particularly deep. It collects runoff from the adjacent agricultural fields and thus serves a natural drainage function. It also provides a habitat for a limited amount of wildlife and has been utilized for education purposes by various classes at the University.

Alternate alignments should be considered for the emergency access road which do not cross the pond.

2. Transit

Transit access and interface should be considered in developing CONNTECH. The University's campus shuttle bus system and the Windham Region Transit District's fixed route bus service between Storrs and Willimantic along Route 195 both currently provide service to areas adjacent to the CONNTECH parcel. Service directly to the parcel may be warranted to facilitate campus access via the shuttle bus and to accommodate taking the bus to work by future employees in the development via the WRTD bus.

Pedestrian and bicycle paths should be designed to facilitate access to these mass transit services. Bus turn outs and shelters should also be planned where warranted. The University's Transportation Department and Windham Region Transit District should be consulted in these matters.

3. Bike/Pedestrian Paths

The bicycle and pedestrian paths proposed for CONNTECH will provide an important link between the campus and the research/industrial park and the Four Corners commercial area. Access through the CONNTECH parcel will provide an alternative to the hazards of walking and biking along narrow Route 195.

Efforts to coordinate the CONNTECH bike paths with existing signed bike routes in Mansfield would afford bicycle commuters and recreational cyclists the opportunity to have from one end of town to the other on a system of paths which minimize exposure to motor vehicles and maximize aesthetic experience.

4. Access to Properties on Route 195

Three parcels are proposed for office use along Route 195. The Ash Farm parcel is proposed for multi-family residential use with preservation of the Ash Farm structures. These four parcels, fronting on Route 195 are isolated from the interior of CONNTECH parcel by the 41 acres of agricultural land proposed for preservation. This agricultural land abuts the four parcels to the rear. No roads in the interior of the CONNTECH parcel are proposed across the agricultural land, thus access to the four parcels is limited to access from Route 195.

Both the regional transportation plan and the town's plan of development recommend improvements to Route 195 in the vicinity of those parcels. Widening is needed to address traffic congestion and unsafe conditions. The Connecticut Master Transportation Plan 1984 has scheduled a major widening of Route 195 from N. EAgleville Road to Route 44 utilizing I-84 trade-in funds, however, those improvements are not scheduled until 1987-94.

Development of these parcels will, therefore, necessitate driveways onto Route 195. Efforts should be made to minimize the number of driveway cuts onto Route 195. One drive into the Ash Farm development could be also used by the adjacent office uses and for the farm equipment access.

The two office parcels adjacent to W-lot could also share one access to Route 195. Access through W-lot might also be considered as an alternative.

Appendix

Soils

KEY ON FOLLOWING PAGES

SOIL IDENTIFICATION LEGEND
UCEPI PROJECT
Storrs, Connecticut

2	Adrian and Palms mucks
6B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes
6C	Canton and Charlton fine sandy loams, 8 percent slopes
8B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes, very stony
8C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony
8D	Canton and Charlton fine sandy loams, 15 to 25 percent slopes, very stony
9B	Gloucester sandy loam, 3 to 8 percent slopes, very stony
9C	Charlton-Hollis fine sandy loam, 3 to 15 percent slopes, very stony
9D	Charlton-Hollis fine sandy loam, 22 percent slopes, very stony
10C	Canton and Charlton fine sandy loams, 3 to 10 percent slopes, extremely stony
12B	Paxton fine sandy loam, 3 to 8 percent slopes
12C	Paxton fine sandy loam, 8 to 15 percent slopes
14B	Paxton fine sandy loam, 3 to 8 percent slopes, very stony
14C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony
14D	Paxton fine sandy loam, 15 to 25 percent slopes, very stony
16E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony
18	Ridgebury fine sandy loam, drained
20	Ridgebury, Leicester and Whitman fine sandy loams, extremely stony
21A	Sutton fine sandy loam, 2 percent slopes
22B	Sutton fine sandy loam, 3 to 8 percent slopes, very stony
24A	Woodbridge fine sandy loam, 0 to 3 percent slopes
24B	Woodbridge fine sandy loam, 3 to 8 percent slopes
26B	Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony

28	Udorthents - Urban land
30	Urban land
32	Pits, Gravel
34	Dumps
W	Water

OTHER MAP SYMBOLS

 Bedrock outcrop

 Wet spot

SOIL RATINGS AND INTERPRETATIONS

UCEPI PROJECT

Soils are rated in their "natural state," that is, no unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Only the most restrictive features are listed. There may be other features that need to be treated to overcome soil limitations for a specific purpose. Therefore, a soil rated severe gives those soil features that cause the soil to be rated severe. Because a soil is rated severe does not mean it cannot be used. This rating only means major reclamation or special design is required. The definitions of the ratings are as follows:

Slight - The degree of limitation is minor and can be overcome easily.

Moderate - This degree of limitation can be overcome or modified by special planning, design, or maintenance.

Severe - This degree of limitation generally requires major soil reclamation, special design, or intensive maintenance.

* Indicates designated inland wetland soil by Public Act 155.

\# Indicates prime farmland soil.

INTERPRETATIONS FOR INDUSTRIAL DEVELOPMENT
UCEPI PROJECT
Storrs, Connecticut

SOIL MAP SYMBOL AND NAME		DWELLINGS WITHOUT BASEMENTS	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS
*2	Adrian	Severe-ponding, low strength	Severe-ponding	Severe-excess humus, ponding	Severe-ponding, low strength	Severe-ponding, low strength, frost action
	Palms	Severe-ponding, low strength	Severe-ponding, low strength	Severe-ponding, excess humus	Severe-ponding, low strength	Severe-ponding, low strength
#6B	Canton	Slight	Slight	Slight	Moderate-slope	Slight
	Charlton	Slight	Slight	Slight	Slight	Slight
6C	Canton	Moderate-slope	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope
	Charlton	Moderate-slope	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope
8B	Canton	Slight	Slight	Moderate-large stones	Moderate-slope	Slight
	Charlton	Slight	Slight	Moderate-large stones	Moderate-slope	Slight
10C, 8C	Canton	Moderate-slope	Moderate-slope	Moderate-large stones, slope	Severe-slope	Moderate-slope
	Charlton	Moderate-slope	Moderate-slope	Moderate-large stones, slope	Severe-slope	Moderate-slope
8D	Canton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
	Charlton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope

SOIL MAP SYMBOL AND NAME	DWELLINGS WITHOUT BASEMENTS	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS
9B Gloucester	Moderate-large stones	Moderate-large stones	Moderate-small stone, droughty	Moderate-large stones, slope	Moderate-large stones
9C Charlton	Moderate-slope	Moderate-slope	Moderate-large stones, slope	Severe-slope	Moderate-slope
Hollis	Severe-depth to rock	Severe-depth to rock	Severe-thin layer	Severe-slope, depth to rock	Severe-depth to rock
9D Charlton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
Hollis	Severe-slope, depth to rock	Severe-depth to rock, slope	Severe-slope, thin layer	Severe-slope depth to rock	Severe-depth to rock, slope
#12B Paxton	Moderate-wetness	Moderate-wetness	Slight	Moderate-wetness, slope	Moderate-wetness, frost action
12C Paxton	Moderate-wetness, slope	Moderate-wetness, slope	Moderate-slope	Severe-slope	Moderate-wetness, slope, frost action
14D, 16E, Paxton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
14B Paxton	Moderate-wetness	Moderate-wetness	Moderate-large stones	Moderate-wetness, slope	Moderate-wetness, frost action
14C Paxton	Moderate-wetness, slope	Moderate-wetness, slope	Moderate-large stones, slope	Severe-slope	Moderate-wetness, slope, frost action
#18 Ridgebury	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness	Severe-frost action

SOIL MAP SYMBOL AND NAME	DWELLINGS WITHOUT BASEMENTS	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS
*20 Ridgebury	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action
Leicester	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action
Whitman	Severe-ponding	Severe-ponding	Severe-ponding	Severe-ponding	Severe-ponding, frost action
#21A Sutton	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness	Severe-frost action
22B Sutton	Moderate-wetness	Severe-wetness	Moderate-large stones, wetness	Moderate-wetness, slope	Severe-frost action
#24A Woodbridge	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness	Severe-frost action
#24B Woodbridge	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness, slope	Severe-frost action
26B Woodbridge	Moderate-wetness	Severe-wetness	Moderate-large stones, wetness	Moderate-wetness, slope	Severe-frost action
28 Udorthents - Urban land - Individual sites require specific on-site investigation.					
30 Urban land - Individual sites require specific on-site investigation.					
32 Pits, Gravel - Individual sites require specific on-site investigation.					
34 Dumps - Individual sites require specific on-site investigation.					

MAP UNIT DESCRIPTIONS
UCEPI PROJECT

2 Adrian and Palms mucks - This unit consists of very poorly drained soils with an organic layer at least 16 inches thick but not more than 51 inches thick over sandy and loamy mineral soil materials. These soils are on the landscape commonly in low depressions and along drainageways of outwash plains and glacial till uplands. Slopes are commonly less than one percent.

Adrian and Palms soils have a high water table at, or near, the surface for most of the year. Permeability is moderately rapid in the organic layers and moderately slow to rapid in the underlying mineral materials. Included in these soils in mapping are small areas of soils with organic material less than 16 inches thick and small areas with organic materials greater than 51 inches thick. These soils are generally not suited to agricultural use or building site development without major reclamation. This unit makes up about 3 percent of the project area or 18 acres.

6B Canton and Charlton fine sandy loams, 3 to 8 percent slopes - This unit consists of deep, well drained soils that are commonly on tops of hills, broad ridges and side slopes of the glacial till uplands. The slopes are gentle and are mostly at six percent. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and subsoil and moderate to rapid in the substratum.

The soils of this unit meets all criteria and quality as prime farmland soils. They are well suited to both agricultural use and building site development. Surface stones have been removed and some areas of this unit are used to produce crops for livestock.

Included with these soils in mapping are small areas of moderately well drained and well drained soils with a dense basal till substratum. This unit makes up about 2 percent of the project area or approximately 13 acres.

6C Canton and Charlton fine sandy loams, 8 percent slope - This unit consists of deep, well drained soils that are commonly on broad ridges and side slopes of the glacial till uplands. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and moderate to rapid in the substratum.

There is only one area of this soil on the parcel with a slope of eight (8) percent. This soil qualifies as additional farmland of statewide importance and is suited to both agricultural uses and building site development. Surface stones have been removed from this area and it is currently being used to grow crops for livestock. This unit makes up about 0.4 percent of the project area or approximately 2 acres.

8B Canton and Charlton fine sandy loams, 3 to 8 percent slopes, very stony - This unit consists of deep, well drained soils that are commonly on tops of hills, broad ridges and side slopes of the glacial till uplands. The slopes are gentle and are mostly between three and five percent. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and subsoil and moderate to rapid in the substratum.

Stones cover about three (3) percent of the surface area of this unit. Stones on the surface interfere with cultivation and harvest, thus making tillage with conventional farm equipment impractical. These soils, however, are well suited for building site development and are the most extensive soils on the parcel.

Included with these soils in mapping are small areas of moderately well drained and well drained soils with a dense basal till substratum. This unit makes up about 14 percent of the project area or approximately 73 acres.

8C Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony - This unit consists of deep, well drained soils that are commonly on broad ridges and side slopes of the glacial till uplands. The soils are sloping with slopes mostly at ten percent. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and subsoil and moderate to rapid in the substratum.

Stones cover about three (3) percent of the soil surface. Stones on the surface interfere with cultivation and the use of conventional tillage equipment. Therefore, the potential for using these soils for agriculture is low compared to a relatively high potential for these soils to be used for building site development.

Included with these soils in mapping are small areas of well drained soils with a dense basal till substratum. This unit makes up about 4 percent of the project area or approximately 20 acres.

8D Canton and Charlton fine sandy loams, 15 to 25 percent slopes, very stony - This unit consists of deep, well drained soils that are commonly on ridges and side slopes of the glacial till uplands. This area of the parcel is sloping to steep with slopes up to 25 percent. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and subsoil moderate to rapid in the substratum.

Slope is the major limiting factor in this area. Stones cover about two (2) percent of the surface. This area would be poorly suited to both agricultural uses and building site development but with proper engineering, limitations can be overcome for the latter use.

Some well drained soils with dense basal till substratums may be included in this mapped area. This unit makes up about 0.4 percent of the project area or approximately 2 acres.

9B Gloucester sandy loam, 3 to 8 percent slopes, very stony - This unit consists of deep, somewhat excessively drained soils that are commonly on tops of hills and broad ridges of the glacial till uplands. The slopes of this area are gentle to sloping but are mostly at six percent. Gloucester soils are droughty and do not have a water table or bedrock within six feet of the surface. Permeability is rapid in the surface, subsoil and substratum.

These soils have stony surfaces and are gravelly. They are well suited to building site developments but poorly suited to agricultural uses because of the droughty soil conditions and surface stones.

Included with these soils in mapping are small areas of well drained soils with loamy surface and subsoil horizons. This unit makes up about 1 percent of the project area or approximately 5 acres.

9C Charlton-Hollis fine sandy loam, 3 to 15 percent slopes, very stony - This unit consists of well drained and somewhat excessively drained soils that are commonly on tops of hills and broad ridges of the glacial till uplands. The slopes are complex with areas of flat plateaus and areas of sloping to steep side slopes. Charlton soils do not have a water table or bedrock within six feet of the surface. Hollis soils do not have a water table but have bedrock within 20 inches of the surface. Both soils have moderate or moderately rapid permeability.

Surface stones and exposed bedrock hinders the use of farm machinery. Exposed bedrock and shallow depths to bedrock also limits this unit for building site development. However, areas of deep Charlton soils can be located throughout this unit for adequate construction of single units. Bedrock outcrops and shallow areas are commonly where the slope breaks off abruptly.

Included with these soils in mapping are small areas of moderately well drained soils that are too small to show on a soil map. This unit makes up about 6 percent of the project area or approximately 32 acres.

9D Charlton-Hollis fine sandy loam, 22 percent slopes, very stony - This unit consists of well drained and somewhat excessively drained soils that are commonly on tops of hills and broad ridges of the glacial till uplands. The slope of this single map unit is twenty-two percent. Charlton soils do not have a water table or bedrock within six feet of the surface. Hollis soils do not have a water table but have bedrock within 20 inches of the surface. Both soils have moderate or moderately rapid permeability.

Surface stones slope and exposed bedrock hinders the use of farm machinery. Exposed bedrock and shallow depths to bedrock also limits this unit for building site development.

This unit makes up about 0.2 percent of the project area or approximately 1 acre.

10C Canton and Charlton fine sandy loams, 3 to 10 percent slopes, extremely stony - This unit consists of deep, well drained soils that are commonly on tops of hills, broad ridges and side slopes of the glacial till uplands. The slopes are complex with areas of flat plateaus and areas of sloping to steep side slopes. Canton and Charlton soils do not have a water table or bedrock within six feet of the surface. Permeability is moderate or moderately rapid in the surface and subsoil and moderate to rapid in the substratum.

Surface stones and boulders are more numerous on the surface in these areas. Surface stones interfere with cultivation and the use of conventional tillage equipment. Therefore, the potential for using these soils for agriculture is low compared to a high potential for these soils to be used for building site development.

Included with these soils in mapping are small areas of moderately well drained and well drained soils with a dense basal till substratum. This unit makes up about 3 percent of the project area or approximately 18 acres.

12B Paxton fine sandy loam, 3 to 8 percent slopes - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from the loose glacial till soils such as Charlton and Canton by having a dense layer starting from 15 to 36 inches and extending throughout the depths of the soil profile. The slopes of this unit are gentle and are mostly 5 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer. These soils meet the criteria and qualify as prime farmland soils. They are well suited to agricultural use and building site development. Surface stones have been removed and areas of this soil are used to produce crops for livestock.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 4 percent of the project area or approximately 23 acres.

12C Paxton fine sandy loam, 8 to 15 percent slopes - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal upland landforms and differ from the loose glacial till soils such as Charlton and Canton by having a

dense layer starting from 15 to 36 inches and extending throughout the depths of the soil profile. The slopes of this unit are sloping and are mostly 10 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

The two areas of this map unit are in the fields near the cemetery and qualify as additional farmland of statewide importance. These soils are suited to both agricultural uses and building site development.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 0.4 percent of the project area or approximately 2 acres.

14B Paxton fine sandy loam, 3 to 8 percent slopes, very stony - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from the loose glacial till soils such as Charlton and Canton by having a dense layer starting from 15 to 36 inches and extending throughout the depths of the soil profile. The slopes of this unit are gentle and are mostly 5 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

Stones cover about three (3) percent of the surface area in this unit. Stones on the surface interfere with cultivation and harvest thus making tillage with conventional farm equipment impractical. These areas, however, are well suited for building site development.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 3 percent of the project area or approximately 16 acres.

14C Paxton fine sandy loam, 8 to 15 percent slopes, very stony - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from the loose glacial till soils such as Charlton and Canton by having a dense layer from 15 to 36 inches and extending throughout the depth of the soil profile. The slopes of this unit are sloping and are mostly 10 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the

Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

Stones cover the surface of this soil and limits the use of conventional farm machinery but the soils are suited to building site development.

Included with these soils in mapping are small areas of well drained soils with loose basal till. This unit makes up about 4 percent of the project area or approximately 20 acres.

14D Paxton fine sandy loam, 15 to 25 percent slopes, very stony - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from the loose glacial till soils such as Charlton and Canton by having a dense layer from 15 to 36 inches and extending throughout the depth of the soil profile. The slopes of this unit are sloping to steep and are mostly 22 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

Surface stones and slope are the major limiting factors in this area. This area would be poorly suited to both agricultural uses and building site development but with adequate engineering, limitations can be overcome for development.

Included with these soils in mapping are small areas of well drained soils with loose basal till. This unit makes up about 2 percent of the project area or approximately 12 acres.

16E Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony - This unit consists of deep, well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from the loose glacial till soils such as Charlton and Canton by having a dense layer from 15 to 36 inches and extending throughout the depth of the soil profile. The slopes of this unit are steep and are mostly 30 to 35 percent.

Paxton soils does not have a permanent water table within six feet but may have a perched water table above the dense layer in the Spring months. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

Slope and surface stones are the major limiting factors in this single map unit area. This area would be poorly suited to both agricultural uses and building site development.

Included with these soils in mapping are small areas of well drained soils with loose basal till. This unit makes up about 0.5 percent of the project area or approximately 3 acres.

18 Ridgebury fine sandy loam, drained - This unit consists of very deep, poorly and somewhat poorly drained soils formed in glacial till and are commonly in small drainageways of the uplands. These soils have a dense till layer starting from 14 to 30 inches and extending the depth of the soil profile. These soils are on nearly level to gentle slopes of less than 5 percent.

Ridgebury soils normally have a seasonal high water table at a depth of about 10 inches from Fall to Spring. At this site, the area mapped as Ridgebury has been drained and thus meets the criteria established for prime farmland. Bedrock is deeper than six feet. Permeability is moderate or moderately rapid in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer. The soils of this area are well suited to agricultural use and fairly suited to building site development.

Included with these soils in mapping are small areas of moderately well drained soils of loose and dense till. This unit makes up about 0.2 percent of the project area or approximately 1 acre.

20 Ridgebury, Leicester and Whitman fine sandy loams, extremely stony - This unit consists of very deep, somewhat poorly to very poorly drained soils formed in glacial till and are commonly in depressions and small drainageways of the uplands. These soils are a mixture of loose and compact glacial tills and are mapped together because they have no significant difference in use and management. They are nearly level to gently sloping with slopes of less than 5 percent.

These soils have a seasonal high water table at or near the surface from Fall through Spring. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum. Surface stones cover most of the soil surface. These soils are poorly suited to both agricultural uses and building site development.

Included with these soils in mapping are small areas of Adrian and Palms mucks. This unit makes up about 4 percent of the project area or approximately 23 acres.

21A Sutton, fine sandy loam, 2 percent slopes - This unit consists of very deep, moderately well drained loamy soils formed in friable or firm glacial till. These soils are commonly on low slopes at the base of hills and in depressions. The slopes of this one unit are at two (2) percent.

Sutton soils have a seasonal high water table at a depth of about 20 inches from Fall to Spring. Bedrock is deeper than six feet. Permeability is moderate or moderately rapid throughout these soils.

These soils qualify as prime farmland soils. They are fairly suited to building site development because of wetness.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 0.4 percent of the project area or approximately 2 acres.

22B Sutton, fine sandy loam, 3 to 8 percent slopes, very stony - This unit consists of very deep, moderately well drained loamy soils formed in friable or firm glacial till. These soils are commonly on low slopes at the base of hills and in depressions. The slopes of these areas are gentle and concave.

Sutton soils have a seasonal high water table at a depth of about 20 inches from Fall to Spring. Bedrock is deeper than six feet. Permeability is moderate or moderately rapid throughout the soil profile.

Stones cover about 3 percent of the surface of these soils. They are poorly suited to agricultural uses and fairly suited to building site development.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 4 percent of the project area or approximately 20 acres.

24A Woodbridge fine sandy loam, 0 to 3 percent slopes - This unit consists of deep, moderately well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and differ from loose glacial till soils such as Sutton by having a dense layer at depths from 18 to 38 inches and extending throughout the depth of the soil profile. These soils are on nearly level slopes that are smooth and convex.

Woodbridge soils have a seasonal high water table at depths of about 20 inches from Fall to Spring. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

These soils are well suited to agricultural uses. The water table and very slow permeability in the substratum are the main limitations of this soil for building site development. These soils meet the defined criteria for prime farmland soils.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 9 percent of the project area or approximately 49 acres.

24B Woodbridge fine sandy loam, 3 to 8 percent slopes - This unit consists of deep, moderately well drained loamy soils formed in compact glacial till. They are commonly on drumloidal landforms and

differ from loose glacial till soils such as Sutton by having a dense layer at depths from 18 to 38 inches and extending throughout the depth of the soil profile. The slopes of this unit are gentle and are mostly 6 to 8 percent.

Woodbridge soils have a seasonal high water table at depths of about 20 inches from Fall to Spring. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

These soils are well suited to agricultural uses. The water table and very slow permeability in the substratum are the main limitations of this soil for building site development. These soils meet the defined criteria for prime farmland soils.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 2 percent of the project area or approximately 9 acres.

26B Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony - This unit consists of deep, moderately well drained loamy soils formed in compact glacial till. There commonly on drumloidal landforms and differ from loose glacial till soils such as Sutton by having a dense layer from 18 to 38 inches and extending throughout the depth of the soil profile. The slopes of this unit are gentle and are mostly 6 to 8 percent.

Woodbridge soils have a seasonal high water table at depth of about 20 inches from Fall to Spring. Bedrock is deeper than six feet. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the substratum or dense basal till layer.

The seasonal high water table and very slow permeability of the substratum are the main limitations of this soil for building site development. Surface stones limits the use of the soil for agricultural purposes because of the inability to use conventional farm equipment to till the soil.

Included with these soils in mapping are small areas of well drained loose basal till soils and small areas of moderately well drained soils of loose and dense till. This unit makes up about 5 percent of the project area or approximately 24 acres.

28 Udorthents - Urban land - This unit is a complex of areas altered by cutting or filling and areas covered by streets, parking lots, buildings and other structures. The areas are mostly nearly level to sloping but are steep in some places. From 55 to 85 percent of this unit is covered by streets, parking lots and other structures. Determination of the suitability of this unit for any use requires on-site investigation and evaluation. This unit makes up about 5 percent of the project area or approximately 27 acres.

30 Urban land - This map unit consists of areas where at least 85 to 100 percent of the surface is covered with streets, parking lots, buildings and other structures. Most of the original soils underlying these areas have been altered by excavating or have been covered with fill materials. Determination of the suitability of the parts of this unit that are not covered by structures will require on-site investigation and evaluation for any use. This unit makes up about 15 percent of the project area or approximately 81 acres.

32 Pits, Gravel - This unit consists of open excavations from which soil and underlying sandy and gravelly material have been removed. The remaining materials in these pits consist of exposed rock and soil material that is incapable of supporting plants. Some areas in the existing pits are excavated to the depth of the water table and are currently ponded. This unit makes up about 5 percent of the project area or approximately 28 acres.

34 Dumps - This unit consists of one area that is currently used as the university landfill. These areas, commonly called landfills or sanitary landfills, are smoothed or uneven piles of waste or general refuse that, without major reclamation, are incapable of supporting plants. Determination of the suitability of this unit for any use requires on-site investigation and evaluation. This unit makes up about 3 percent of the project area or approximately 18 acres.

Tolland County Soil and Water Conservation District

AGRICULTURAL CENTER
24 HYDE AVENUE VERNON, CONN. 06066 TELEPHONE 875-3881

September 23, 1983

Mr. H. Earl Waterman
Commissioner
Conn. Dept. of Agriculture
State Office Bldg.
165 Capitol Ave.
Hartford, CT. 06115

Dear Commissioner Waterman,

At a recent meeting of the Tolland County Soil and Water District, it was brought to our attention that the UConn Board of Trustees would soon be making a decision on a proposal by the UCEPI group to construct a research and development and conference center on a parcel of land adjacent to the UConn campus. The District is concerned about the curent proposal because acceptance of it would mean the loss of about 60 acres of prime farmland soils to other uses. It would also violate the intent of the State of Connecticut's Conservation and Development Policy which advocates retention of prime farmland and provides no state support to projects which propose to convert these soils to other uses.

The District's consensus is that the developer should explore every feasible alternative to avoid conversion of this land. We feel that if this parcel were developed as proposed it would set a poor example to all who look to the state government and the University for leadership in programs to protect our prime agricultural land. It would seem appropriate to provide the developer with incentives that would allow a more intensive use of the non-prime farmland soils within the parcel for development of the center. This would allow development of an important facility at the University that is consistent with state policy and also serve as an excellent model for others.

It seems contradictory that the state would spend millions on the purchase of development rights and then support a proposal which would destroy a large working parcel of prime agricultural land on state property.

We feel that you, as Commisioner of Agriculture, have the leadership role to preserve prime agricultural soils in Connecticut and particularly this parcel at the University of Connecticut.

We would like to arrange a meeting with you at your earliest convenience to dicuss this matter and to offer our assistance in resolving what we feel is a critical issue for agriculture in the State of Connecticut.

Sincerely,

Donald Holmes

Donald Holmes, Chairman

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.