

Environmental Review Team Report

# Coogan Boulevard

Stonington, Connecticut

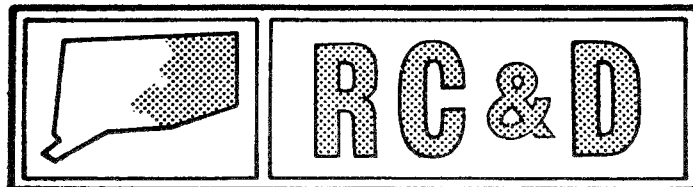


EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team  
Report

Coogan Boulevard  
Stonington, Connecticut

December 1983

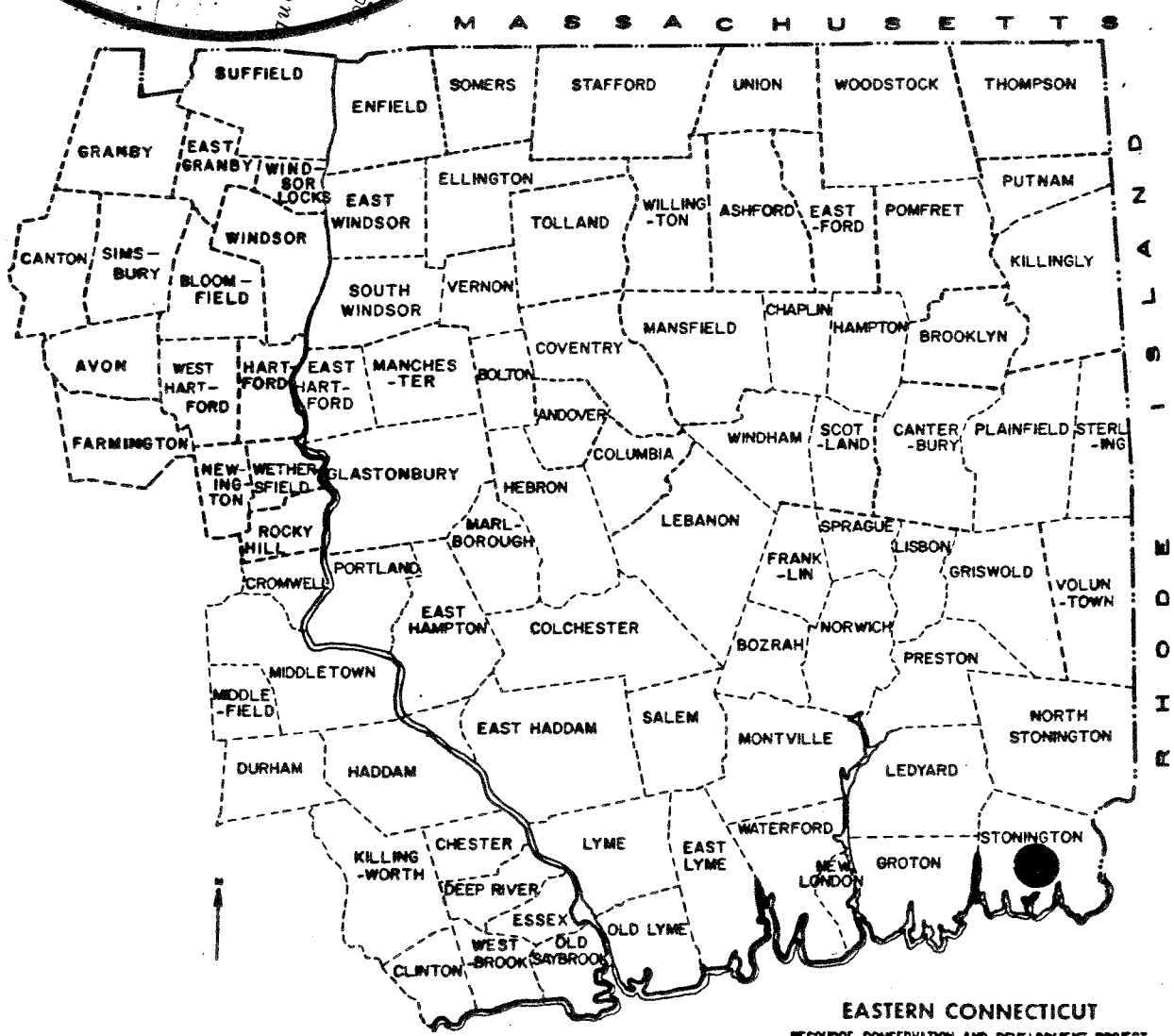
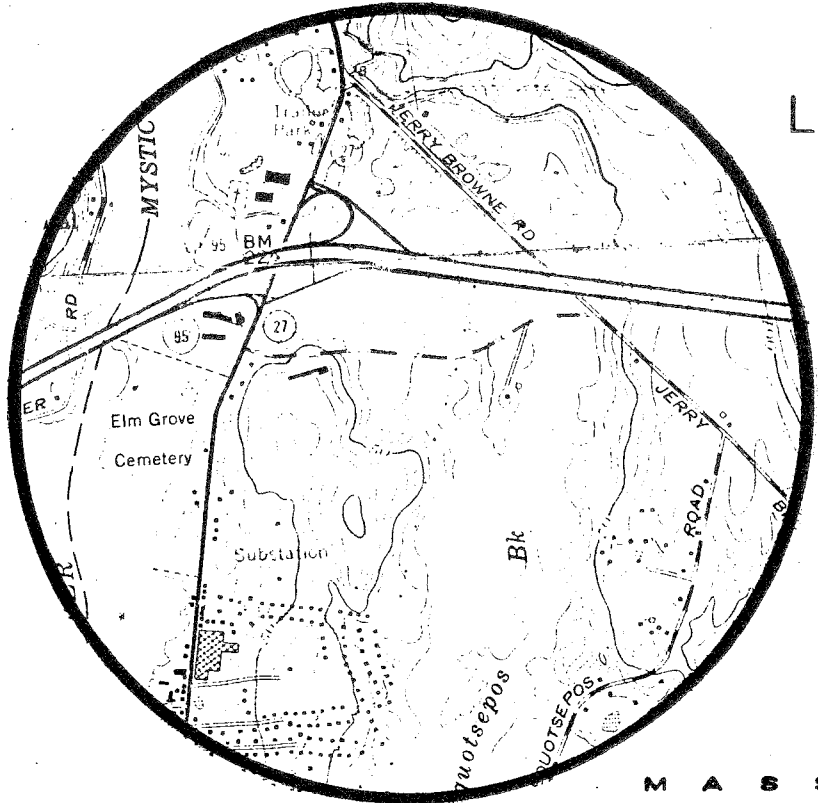


Eastern Connecticut Resource Conservation & Development Area

Environmental Review Team  
PO Box 198  
Brooklyn, Connecticut 06234

# Location of Study Site

COOGAN BOULEVARD  
STONINGTON, CONNECTICUT



EASTERN CONNECTICUT  
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT  
ON  
COOGAN BOULEVARD AREA  
STONINGTON, CONNECTICUT

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

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

The ERT that field checked the site consisted of the following personnel: Barry Cavanna, District Conservationist, Soil Conservation Service (SCS); Bill Warzecha, Geologist, Department of Environmental Protection (DEP); Don Capellaro, Sanitarian, State Department of Health; Ron Rosza, Ecologist, Coastal Area Management (DEP); Gerhard Amt, Regional Planner, Southeastern Connecticut Regional Planning Agency; Al Roberts, Soil Specialist, SCS; Peter Merrill, Forester, DEP; David Poirier, Historical Commission; Harry Seibert, Transportation Planner, DOT; 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, September 29, 1983. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

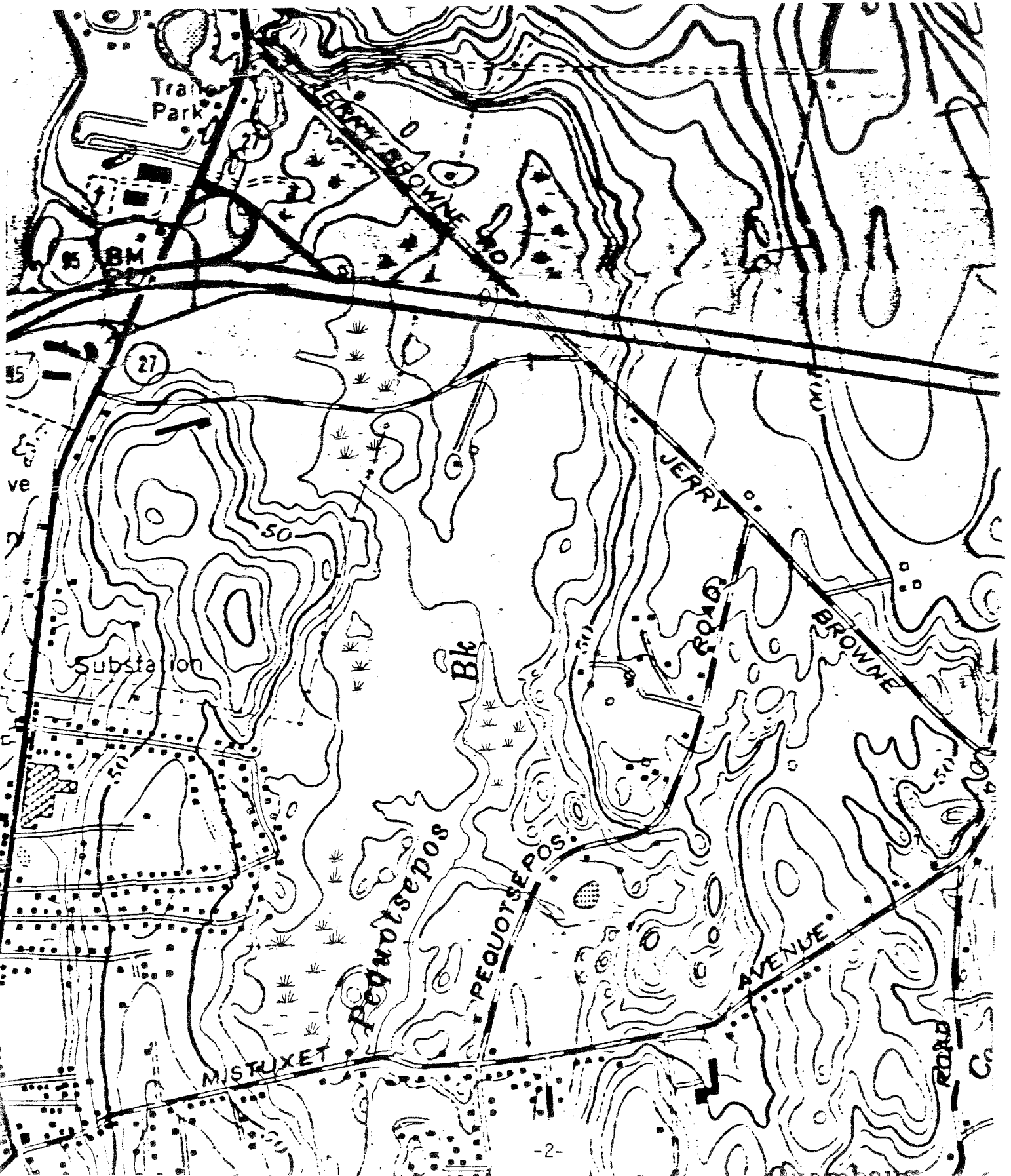
This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Stonington. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

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

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

# Topography

— Site Boundary



## INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare a "critical area" study for a large site in the town of Stonington which is experiencing development pressure at this time. The study area is bounded by I-95 on the north, Jerry Browne Road and Pequotsepos Road on the east, Mistuxet Avenue on the south, and Route 27 on the west. The area is presently zoned Tourist Commercial, Manufacturing and Residential-Green Belt (3 acre residential).

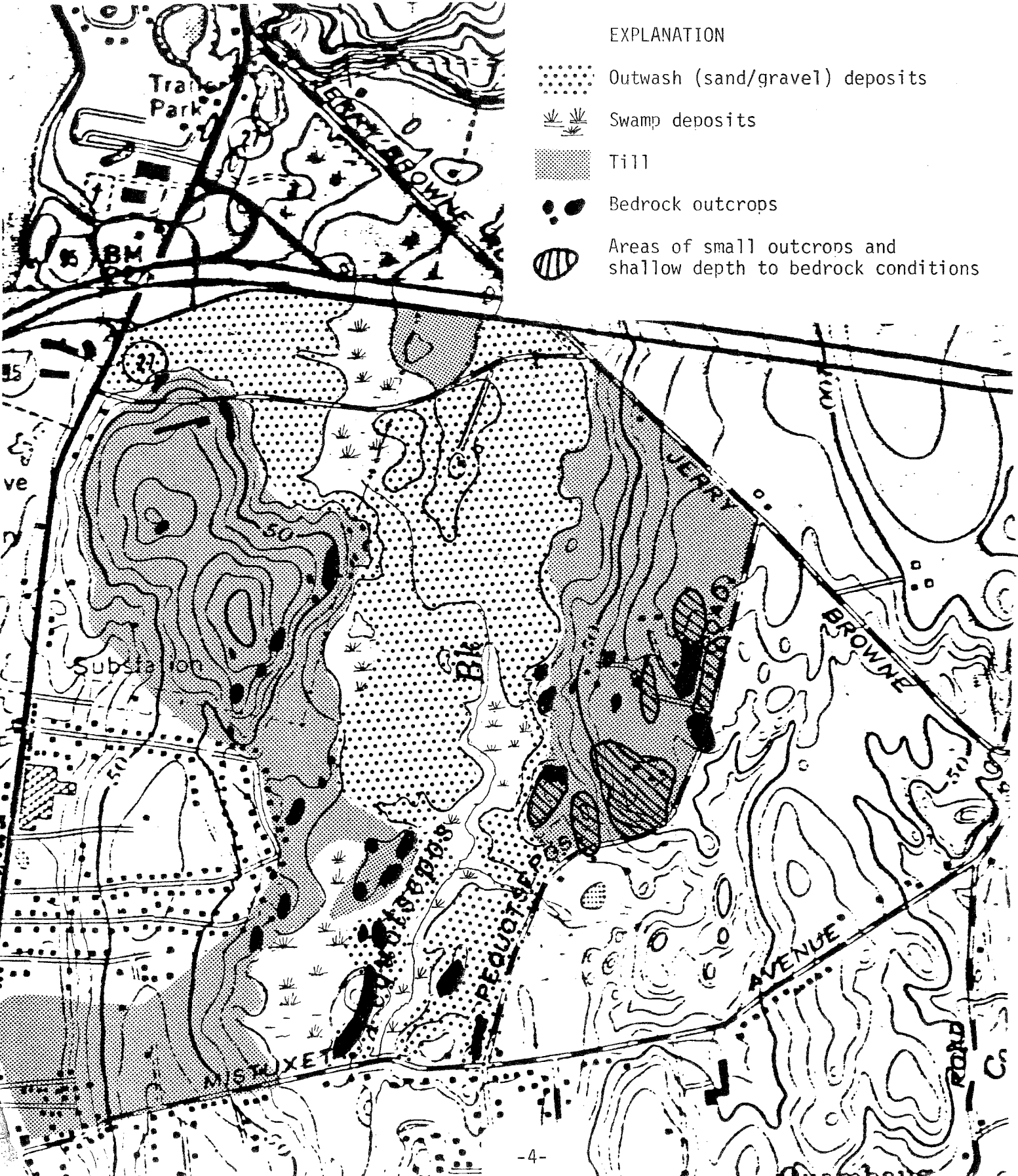
Established development within the study site consists of the Olde Mystic Village Shopping Center, the Mystic Marinelife Aquarium and a number of motels and restaurants. Municipal sewer lines extend from Route 27 down Coogan Boulevard to the Aquarium. Municipal water supply extends down the length of Coogan Boulevard to the water tower on Jerry Browne Road. The remaining undeveloped land is rocky and steeply sloping. A large wetland is also within the study area.

Various commercial and industrial developments have been proposed for the study site in the recent past, the most notable being a large convention center. Although Route 27 has recently been improved to handle higher volumes of traffic, the Town is still experiencing traffic congestion in the area of the Route 27/I-95/Coogan Boulevard intersections. A proposed solution to this problem is an additional exit ramp from I-95 onto Coogan Boulevard and Jerry Browne Road.






The Team is concerned with the impact of proposed development on the natural resource base of this area. Although many severe limitations to development can be overcome with proper engineering techniques, these measures can become costly, making a project financially unfeasible for a developer. This is especially true in an area which has numerous development limitations.

Team members' concerns and recommendations for this study site are discussed in detail in the following sections of this report.

# Surficial Geology



## EXPLANATION

-  Outwash (sand/gravel) deposits
-  Swamp deposits
-  Till
-  Bedrock outcrops
-  Areas of small outcrops and shallow depth to bedrock conditions

## ENVIRONMENTAL ASSESSMENT

### TOPOGRAPHY

The site reviewed consists of approximately 317 acres of undeveloped land which is in several separate ownerships. It is located in the west central section of town and bordered by I-95 to the north, Jerry Browne Road and Pequotsepos Road to the east, Mistuxet Avenue to the south and Route 27 to the west.

The topography of the subject site is characterized by two, bedrock controlled upland areas in the east and west. A low lying, relatively flat valley, which consists mainly of open fields divides the two upland areas. Pequotsepos Brook flows in a southward direction through the valley. Drainage in this area appears to be controlled by the presence of an old, north to south trending fault (displacement of the earth's crust) that crosses the properties.

Slopes within the review site range from gentle to moderate. Steepest slopes (20%) occur along the eastern flank of the upland area in the western portion of the site.

Elevations on the properties range from a low of about 10 feet above mean sea level throughout the central portions of the review site to approximately 100 feet above mean sea level at the top of the hill in the western portion of the site.

### GEOLOGY

The entire site lies within the Mystic topographic quadrangle. A surficial geologic map (GQ-940) by Joseph E. Upson has been published for the quadrangle by the United States Geological Survey. The bedrock geologic map for the quadrangle, which is being prepared by Richard Goldsmith, is available for review purposes only at the Natural Resources Center of the Department of Environmental Protection in Hartford.

Bedrock, which dips generally in a west to northwest direction, outcrops extensively throughout the upland areas. It outcrops very sparsely in the valley; however, numerous outcrops were observed in the vicinity of the Coogan Farm.

Most of the bedrock underlying or cropping out within the study site has been identified by Goldsmith as the Mamacoke Formation. The Mamacoke Formation consists largely of a medium grained, light to dark gray banded gneiss. It is composed mainly of the minerals biotite, quartz and feldspars (microcline and oligoclase). Minor minerals in the rock unit include hornblende, muscovite and andesine.

Gneisses are metamorphic rocks (rocks which have been altered by great pressure and temperatures) in which bands of dark platy, flaky or elongate minerals alternate with layers of more rounded lighter minerals. This mineral arrangement gives the rock a banded or streaked appearance.

The unconsolidated or surficial materials which overlies bedrock throughout the study site were deposited by glacier ice some 12,000-13,000 years ago.



The hilly, western and eastern portions of the site is covered with till. Till is a glacial sediment which was deposited directly from glacier ice. It is generally unsorted and non-stratified and contains a mixture of rock particles ranging in size from clay to boulders. The texture of till is usually sandy, stony and loose in the upper few feet and silty and compact at depth. Thickness of the till deposits in the upland areas are generally thin, ranging from zero where outcrops occur to probably not more than 10 feet.

As the glacier ice began to waste, meltwater streams emanating from the ice carried large volumes of sediment which had been incorporated into the ice mass and deposited it into the valley area. This material is collectively called outwash deposits. Due to the reworking of the materials by high velocity meltwater streams, the outwash deposits are generally stratified and sorted to some degree. It is composed mainly of sand and gravel, however, may also contain silty layers. The thickness of outwash deposits range from zero, where outcrops occur, to approximately 40 feet in the central portions of the study sites. (Source: Water Resource Bulletin #15--Lower Thames and Southeastern Coastal River Basin.)

Another surficial deposit found within the study site, which formed after melting of the glacier ice, are swamp deposits. Swamp deposits overlie the outwash deposits at various locations throughout the central sections. They consist of partly decomposed organic material, mixed or interbedded with silt and sand. The soils delineated on the accompanying soils map as Adrian and Palms (Aa), Carlisle (Ce), Rippowam (Ro), Walpole (Wd) are wetland areas. Also, portions of areas identified as Udorthents (Ud) in the northern sections contain wetlands. Udorthents are defined as disturbed areas, where at least two feet of soil has either been removed from the existing land or placed over it.

Wetlands are very valuable from a hydrological viewpoint, in that they act as natural retention areas which reduce downstream flood flows during periods of heavy precipitation, trap sediments from upstream areas and help to maintain water quality through biochemical processes. Due to the important hydrologic functions of wetlands, as well as ecological functions, modification and/or alteration of wetlands should be strongly discouraged.

It appears that generally shallow to bedrock conditions throughout the eastern and western sections of the subject site may be a potential problem with respect to development. There may be a chance that blasting will be required either for the construction of buildings and/or when the public water and sewer lines are placed. Also, steep slopes in the western portion of the site may be a limiting factor. While these geologic conditions do represent difficulties for development of the site, they are not viewed as significant enough to preclude some level of development, especially since public sewers and water are available for the area. With good planning and engineering, it appears that portions of the site could support development, i.e., tourist-commercial, industrial, residential.

Activities such as blasting, filling/grading and other site preparations prior to development may influence surface and groundwater quality. For this reason, it is strongly recommended that an erosion and sediment control plan be formulated and implemented during the construction phase, particularly near watercourses and wetlands. The New London County Soil and Water Conservation District is available to assist and instruct town officials on erosion and sediment

control practices. Also, techniques for effective erosion and sediment control are prescribed in the "Erosion and Sediment Control Handbook-Connecticut" (U.S.D.A. Soil Conservation Service, 1976) which would be available from the New London County Soil and Water Conservation District Office in Norwich, Connecticut.

## HYDROLOGY

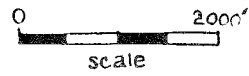
The subject site lies entirely within the watershed of Pequotsepos Brook, which drains an area of approximately 2.29 square miles or 1,465 acres. Surface drainage flows generally towards Pequotsepos Brook, which flows through the central portions, and which emanates from wetland areas in the northern section of the site. Pequotsepos Brook flows in a southward course until it finally discharges into Mystic Harbor. (See Watershed/Drainage Map.) At least three small farm ponds can be seen within the parcel.

Development can be expected to lead to increases in stormwater runoff. The amount of increased runoff will depend largely on the density and extent of development in this area, amount of vegetation removed, the amount of impervious surfaces created and the timing of development. Since industrial and commercial development would tend to require more impervious surface area, i.e., larger paving areas and bigger buildings, the runoff increase for that type of development would tend to be higher than, for example, single family residential development. Increased amounts of runoff resulting from development will create and/or compound existing flooding problems in the area as well as creating streambank erosion to Pequotsepos Brook. According to a town official, a flooding problem already exists at the intersection of Coogan Boulevard and Jerry Browne Road. Apparently, runoff from Jerry Browne Road and the highway (I-95) accumulates in the area mentioned above, which is in a topographically low depression, inundating it during periods of heavy rain.





For these reasons as well as others, it is strongly recommended that a detailed engineering study, which includes pre- and post-development data as well as a careful stormwater management plan, be developed and implemented prior to any construction or site preparation. It was indicated to Team members an existing stormwater system, which already serves a tourist and commercial development to the west, does not have the capacity to handle increased runoff resulting from future development on the subject properties. In this regard, consideration should be given to constructing stormwater retention basin(s) for future development.

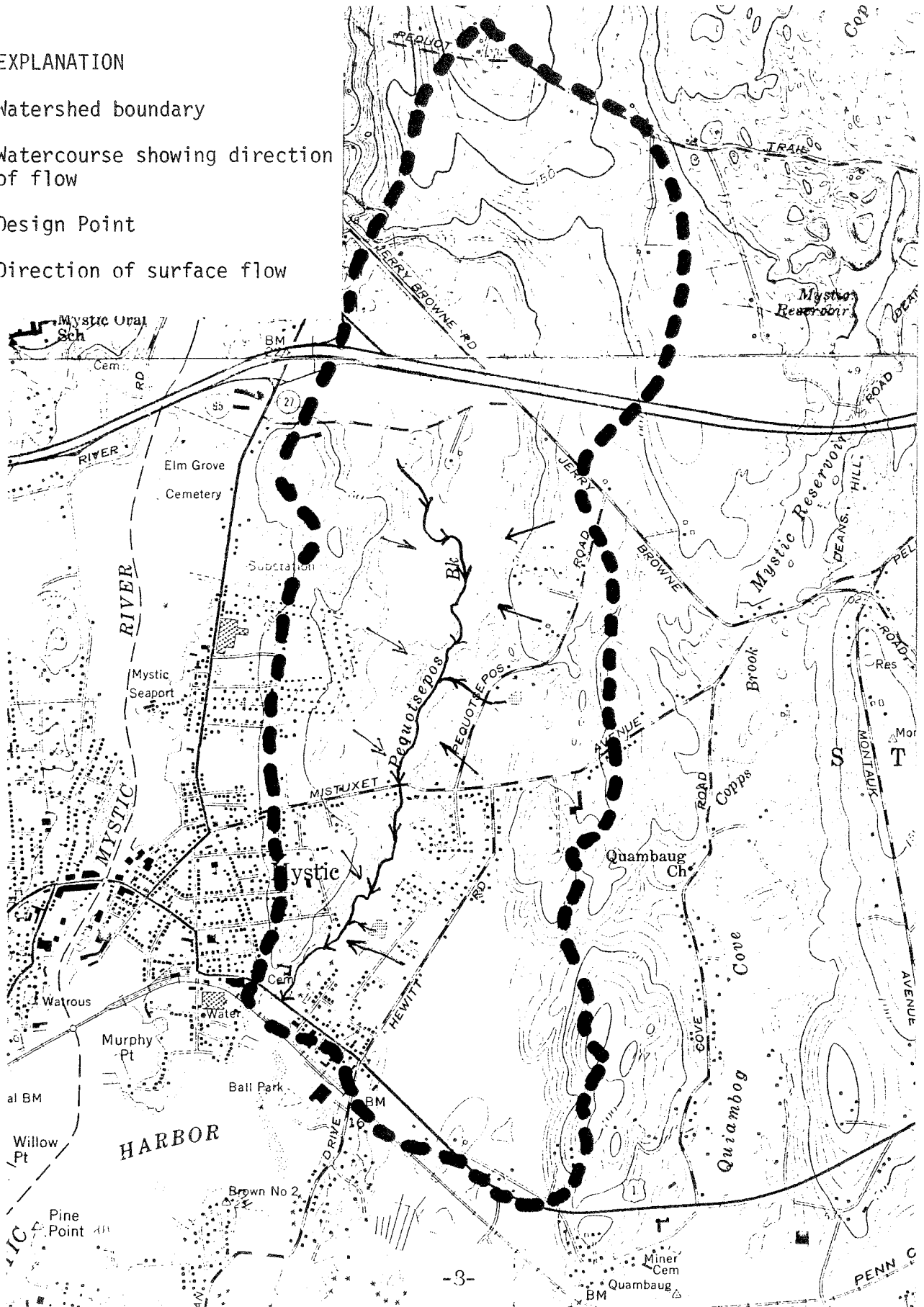
Based on the Groundwater Availability In Connecticut map by Daniel B. Meade, the central portions of the site, which is underlain by outwash deposits (sand and gravel), may have a potential for a moderate to high yielding groundwater supply well. Sand and gravel sediments, by nature, tend to transmit water very rapidly, particularly coarse sediments. Depending upon the town's public water supply needs, it may be worthwhile to drill a few exploratory wells in this section to assess the aquifer potential of the sand and gravel deposits. The exploratory study, should also include analyzing water samples for quality. If a highly productive zone is found in the deposit, the town may want to reconsider the ultimate use of this portion of the property or at least to decide to limit usage of the site to businesses or industries that would be less likely to contaminate any potential aquifer. However, since public sewer lines are available to the

# Drainage Areas

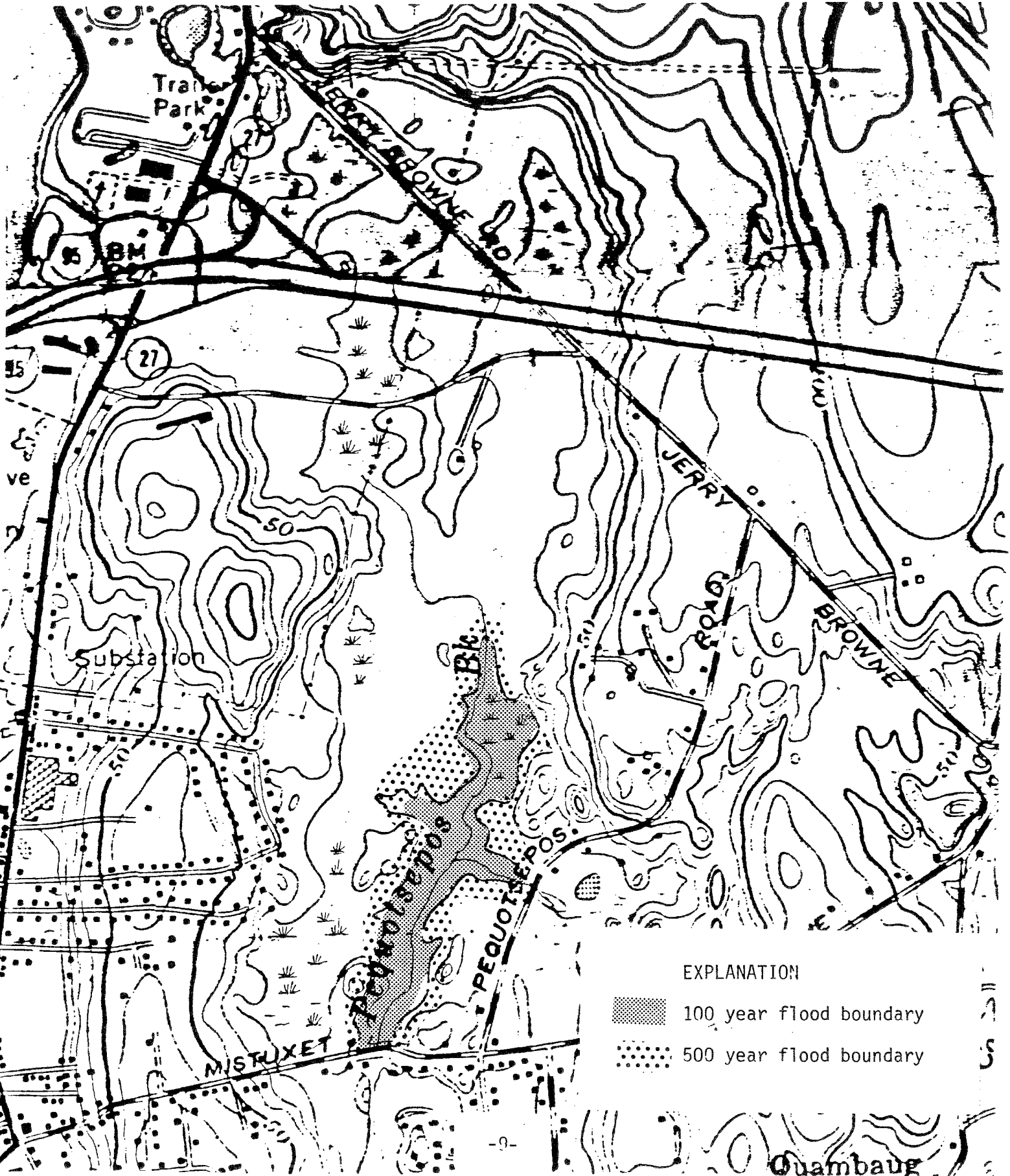


## EXPLANATION



-  Watershed boundary
-  Watercourse showing direction of flow
-  Design Point
-  Direction of surface flow



# Floodprone Areas



## EXPLANATION

-  100 year flood boundary
-  500 year flood boundary

Quambaug

area, the risk of substantial groundwater pollution, from subsurface discharge emanating from on-site sewage disposal system should be significantly reduced. Nevertheless, there is always a possibility that sewer transmission lines may leak resulting in the contamination of groundwater.

The groundwater resources of the till and bedrock areas in the western and eastern portion of the site are not likely to have a significant potential for public water as the sand and gravel deposits mentioned above. If for some reason, an on-site well was desired in these areas to serve a particular type of development, bedrock would probably have to be tapped. Water Resource Bulletin #15 of the Lower Thames and Southeastern Coastal River Basins, indicates that 9 out of 10 wells tapping bedrock in the area yield at least 3 gallons per minute. Such a yield should adequately serve the needs of a residential home.

### Floodprone Areas

The Department of Housing and Urban Development has prepared a Flood Boundary Map for the Town of Stonington. The map shows areas throughout the town which would be subject to flooding during a 100 and 500 year flood. Accompanying this report is a map, adapted from the Floodway Map, which identifies areas in the review site that lie within the 100 and 500 years flood boundary. A '100 year' flood is a flood with one chance in 100 or 1% chance that it will occur in any year. A '500 year' flood would have a one chance in 500 or 2% chance of occurring in any year. This does not mean that a flood of the sizes mentioned above will occur only once in 100 or 500 years, but the chance of occurrence remains the same each year, regardless of what happened the year before. These areas include the western limits of the site along Pequotsepos Brook and along an unnamed tributary to Pequotsepos Brook in the southern half of the site.

### SOILS

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

The site has a narrow strip of glacial outwash soils, approximately 1/4 mile wide, extending from its north boundary to its southern most boundary along Pequotsepos Brook. These soils are mostly stream terrace soils but a few flood-plain soils are near Coogan Boulevard and Jerry Browne Road intersection. The soils have silt loam and very fine sandy loam surface and subsoil layers about two feet thick over coarse sand and gravel to a depth of 60 inches or more.

The soils are well drained to very poorly drained with slopes from two percent to six percent. These soils are either prime agricultural soils or additional farmlands of statewide importance. Any activity involving Federal funds on these soils will require compliance with the Farmland Protection Act. The soils along the south part of the brook are herbaceous organic deposits 16 to 51 inches thick over loamy sand, sand and gravel. They are identified on the soil map as the Adrian and Palms mucks.

This outwash valley is bounded on both its east and west sides by soils of glacial till origin. These are primarily bedrock controlled soils that have loamy surfaces and subsoils and sandy substratums. They are well drained to very poorly drained with slopes ranging from a gentle five percent to steep 20 or 30 percent slopes where the till joins abruptly with the outwash. There is a considerable amount of rock outcrop and bedrock exposure in this area also. The shallow to bedrock soils and rock outcrops are mapped in complex units of Charlton-Hollis very rocky (CrC, CrD) and Narragansett-Hollis very rocky (NiC). The soils of these complexes are so intermingled on the landscape that it was not practical to separate them in mapping at the scale maps used. However, the map unit description in the soil survey report of New London County reflects the relative proportion of each soil and rock outcrop in the mapping unit.

Most other soil areas are stony, well drained and moderately well drained soils with slopes of varying degrees. These areas are mostly bouldery pasture land used to graze cattle. The wetland soil areas are mostly along the Pequotsepos Brook, but other wetland areas located throughout the property are well defined and easily recognized. These wetland soils are the poorly drained, very poorly drained and alluvial soils.

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. A definition of the soils limitations ratings can be found in the Appendix to this report.

## WILDLIFE

The review area contains mixed hardwood forest consisting of oak, maple, hickory, and aspen; the wetlands are made up of red maple, birch, and alder. Understory shrub species include: bittersweet, autumn olive, dogwood, sumac, and grape. Farm and pastureland exist in this area. Mystic Marinelife Aquarium, shops, and restaurants are found in the developed sections.

Much of the woodlands have undergone a selective cut, allowing understory and shrub development and providing excellent wildlife food and cover. A wide variety of animal species are found in the woodlands. Deer tracks and browse were evident. Grouse, quail, red tailed hawk, and songbirds were sighted. Undoubtedly other species of wildlife such as squirrel, fox, raccoon, skunk, and opossum exist in the area.

The wetlands provide food and thick cover for a variety of wildlife including waterfowl and reptiles and amphibians. The pond at Mystic Marinelife Aquarium releases waterfowl every year, and these birds may use the surrounding wetlands.

Farmland provides habitat variation and is beneficial to many wildlife species. The farmlands consist of cornfields, hay fields, and pastureland. Hedgerows border many of the fields. Grape, a good wildlife food, is found in many of the hedgerows.

Extensive development of the area will be detrimental to wildlife and wildlife habitat. Building the proposed road, restaurant, and convention center will destroy much of the wildlife habitat in the woodlands and will have an adverse effect upon surrounding areas. Development of roads through the wetlands would be detrimental and may have a negative impact on nearby wetland habitat.

The Mystic Marinelife Aquarium has a marine mammal breeding program; northern fur seal and elephant seal are the principle animals in the program. Various species of waterfowl also breed on the aquarium's waterfowl pond. The effect of proposed development on the breeding programs at the Marinelife Aquarium was discussed with Stephen Spotte, Director of the Aquarium. Although the animals are already exposed to I-95, if the proposed ramps are constructed, added stress would be put on the animals because of the increase in traffic: noise, the sight of cars, and increased fumes which would be directed towards the animals due to a prevailing westerly wind. The wetland area where the ramps would be constructed may also provide a slight buffer between the highway and the aquarium. The marine mammal research program is inspected periodically by a representative from the federal government. It may be determined by this representative that the additional ramps and roads cause stressful conditions. Such a report would have a negative impact on the success and continuation of the research programs.

## PLANNING CONCERNS

The area of Stonington located generally to the east of the Mystic River between I-95 and Mistuxet Avenue contains a variety of land uses. These include high-intensity tourist attractions and related accommodations, established residential neighborhoods, a major cemetery, and considerable vacant land. It is understandable that a diversity of opinions are expressed following every proposed change or expansion of land use or transportation facilities in the study area. Sound arguments can be made for reserving the remaining vacant land for any one of the existing uses presently in the area.

Of the vacant land lying to the south of Coogan Boulevard, almost forty acres are zoned for tourist commercial uses, while about sixty acres are reserved for manufacturing, offices, and storage facilities. Development proposals for parcels within the commercial area have included a major restaurant and a convention center. The remainder of the vacant land is zoned for residential purposes, with low-density, single, family units allowed to the east and to the south of the manufacturing zone, and with higher-density, multi-family uses allowed in the area between the commercial zone and Seaport Heights to the south.

Viewed strictly from the standpoint of compatibility, the present zoning appears suitable. The zones allowing the more intensive non-residential uses are separated from low-density residential areas by areas zoned for multi-family

★ Convention Center

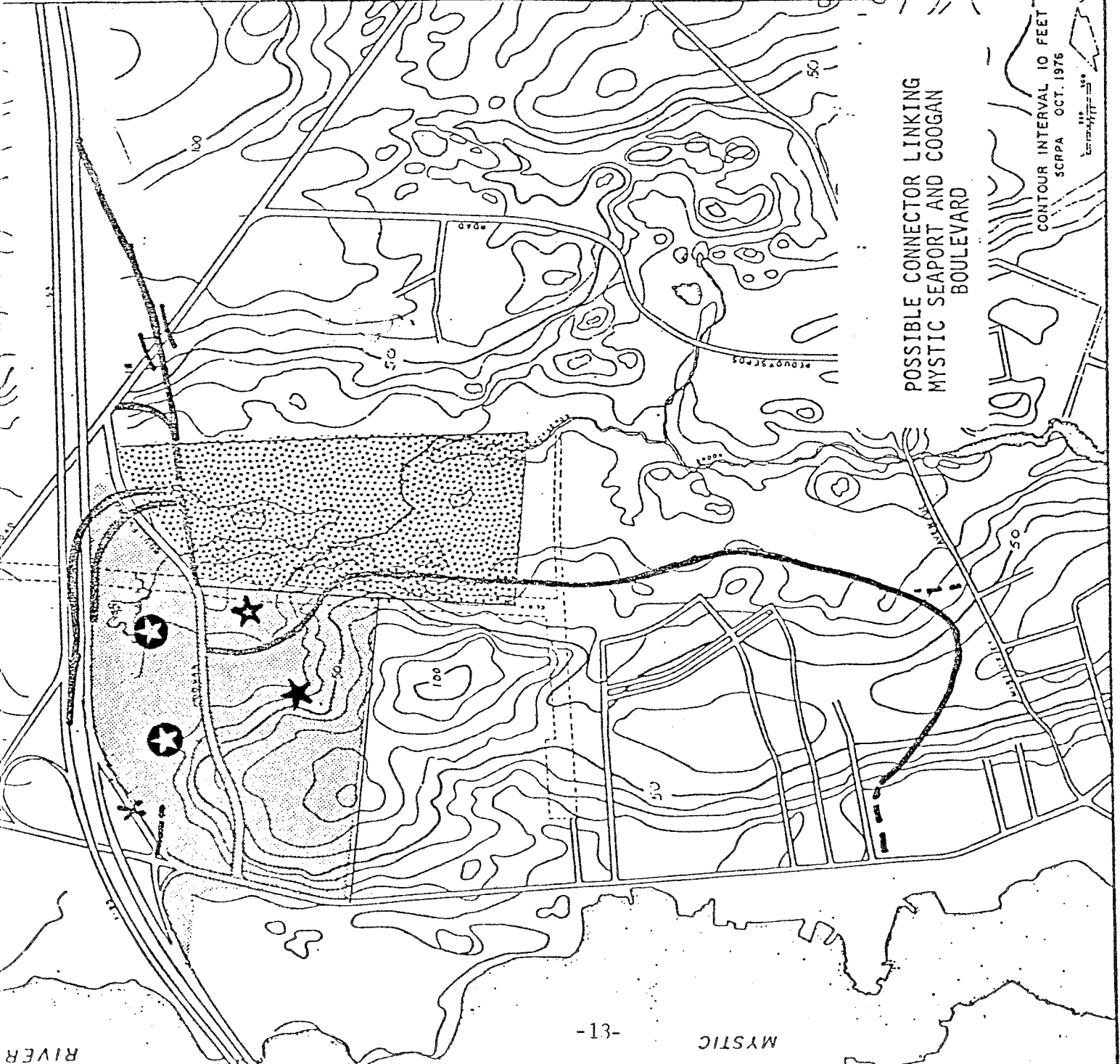
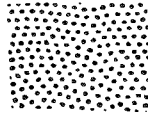
☆ Restaurant

⊙ Olde Mistick Village & Aquarium

Tourist Commercial

Manufacturing

Proposed Road & Ramp Changes



POSSIBLE CONNECTOR LINKING  
MYSTIC SEAPORT AND COOGAN  
BOULEVARD

CONTOUR INTERVAL 10 FEET  
SCRPA OCT. 1976



residences, a kind of transitional use between the more incompatible uses. The manufacturing zone, although out of character with the other non-residential uses permitted in nearby tourist-commercial zones, is effectively separated from the low-density residences along Pequotsepos Road by a wetland and water-course that represents the primary drainage feature in the eastern part of the study area and is likely to be preserved as such.

The adequacy of public facilities and services needed to support more intensive development of the study area varies. Public sewers have been installed up Route 27 from Mystic to Old Mystic and a main extension provides service along Coogan Boulevard as far as the Aquarium. Capacity remains to serve additional future needs in the area. Water service, capable of meeting demands of additional development, is available from the Connecticut American Water Company, which maintains a twelve-inch main in Coogan Boulevard as part of its distribution system in the western part of Stonington. Existing storm drains have little or no excess capacity, but as each new development occurs, on-site storm water retention features can be constructed to collect storm water and allow it to drain off slowly after the storm period.

The most obvious inadequacy of the area is the transportation system. The interchange of I-95 with Route 27 was designed at a time when there was little development in this part of Stonington, and it has proven to be no match for the heavy volumes of traffic now experienced in the area, particularly during the summer time. This has resulted from the large amount of intensive development, generating high traffic volumes, in a very limited area along Route 27 and Coogan Boulevard, very close to the interchange ramps. In addition, Mystic Seaport is located about a mile south of the interchange, and the sole route of travel between the Seaport and I-95 is the two-lane Route 27.

A recent analysis by SCRPA of land use and traffic in the study area indicated that traffic could increase by almost 25% if all the existing development proposals in the area were implemented.\* The same study concluded that present traffic appears to approach the capacity of the road network. Obviously, if more development is allowed to occur and additional traffic congestion is to be avoided, transportation systems will have to be modified.

The SCRPA report discussed a number of alternative schemes that would modify access to and exit from Interstate Route 95 in the study area, with a view toward achieving a more efficient flow of traffic as additional development takes place. The scheme most preferred by the Stonington Planning and Zoning Commission is shown in the accompanying illustration.

The exact location of the interchange elements in this illustration is not as important at this point as the recognition that additional facilities will be needed if more heavy traffic-generating uses are to be allowed in the study area. The interchange was not designed for the area as it has developed. Major (and costly) modifications are needed to make it work properly. The recommendations contained in the Route 27 Traffic Study, concerning additional analysis of peak traffic volumes and road capacities, should be implemented before any new improvement concept is pursued. In addition, theoretical traffic loads under alternative improvement scenarios should be measured and evaluated to ensure that selected improvements actually reduce congestion rather than simply moving it from one location to another.

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\*Route 27 Traffic Study, SCRPA, 1983.

The proposed north-south road between Coogan Boulevard and Mistuxet Avenue could relieve traffic congestion on Route 27, but only if its northerly terminus is aligned with a connection to I-95 that avoids the Route 27/Coogan Boulevard intersection, which is the present focus of the congestion problem. Such a road would provide a needed additional north/south travel alternative in the study area, and it would provide the necessary access to the large area of undeveloped land south of Coogan Boulevard. To minimize its impact on residences in the area, it should be located at least three hundred feet east of the Seaport Heights development, a thick vegetative buffer should be maintained, and trucks and buses should be prohibited from using it.

## TRAFFIC CONCERNS

The study area has had improvements made to the interchange of I-95 and Route 27. The Department of Transportation is aware of studies made by SCRPA in regard to overall traffic operations.

CONNDOT does not have any near term proposals to implement SCRPA recommendations due to budgetary constraints.

Land-use development must consider traffic impacts. Obviously, low density land use with minimal trip generation is preferred. This could be inconsistent with town goals, but significant traffic generation by intense land use impacts both local and state roadways.

Conceptually, a new north-south road between Coogan Boulevard and Mistuxet Avenue could reduce conflicts at the intersections of I-95 ramp terminals and Coogan Boulevard with Route 27. As related to overall traffic operations, a shift in conflicts may be transferred to other locations on the roadway network.

The Team Transportation Planner favors improvements that enhance flow without substantial financial expenditures. A developed roadway network exists with capacity problems during peak travel conditions. Flow on arterial and collector roads may be improved, but the overall result may shift points of traffic conflict (intersections) to other locations.

### Relocated Coogan Boulevard over Jerry Browne Road and eastbound on-ramp

The extreme difference in elevation including the 16' 3" clearance will require a trailing fill with a touchdown in the area of the proposed connector. The proposed slip ramp would also be impacted at Jerry Browne Road and relocated Coogan Boulevard due to the fill for the crossing. The profile for the relocation would not be inexpensive.

### Proposed Connector Road

As proposed, with the termination in a parking lot, it would not relieve traffic to a significant degree. Alternate termini on Route 27 or Mistuxet Avenue will provide two new points of congestion either at the parking lot entrance with Route 27 or the Mistuxet Avenue intersection with Route 27.

Direct connection through "Olde Mistick Village" and the Aquarium would benefit certain traffic operations at this location. Obviously, traffic operations

within the parking lot must be reviewed along with the legal authority to provide this service.

The area subject to additional development relative to existing zoning will generate additional trips. The SCRPA report estimated that development could generate 8430 additional weekday trips. These trips are not associated with recreational peak trip-making in total. The existing roadway system capacity may be adequate to absorb these without overburdening the systems weekday capacity.

The proposed eastbound on-ramp would require further review with respect to developing the appropriate grade in order to develop a geometrically sound design.

DOT does not approve or disapprove of the town's plan. It is considered a conceptual approach to improve traffic operations developed by the town. The suggested improvements would be made at the town's or private expense subject to approval by both state and federal agencies.

#### HISTORIC DISTRICT CONCERNS

The Groton and Stonington sides of Mystic Village have been identified as National Register Historic Districts. In addition, the Whitehall Mansion, located immediately north of the I-95 West Boulevard off-ramp, is listed on the National Register. Also, the Denison Homestead, located on Pequotsepos Road, is listed on the National Register. The 19th century Greek Revival residence, located on the east side of Route 27 near the intersection with Jerry Browne Road, appears to meet the eligibility criteria for the National Register.

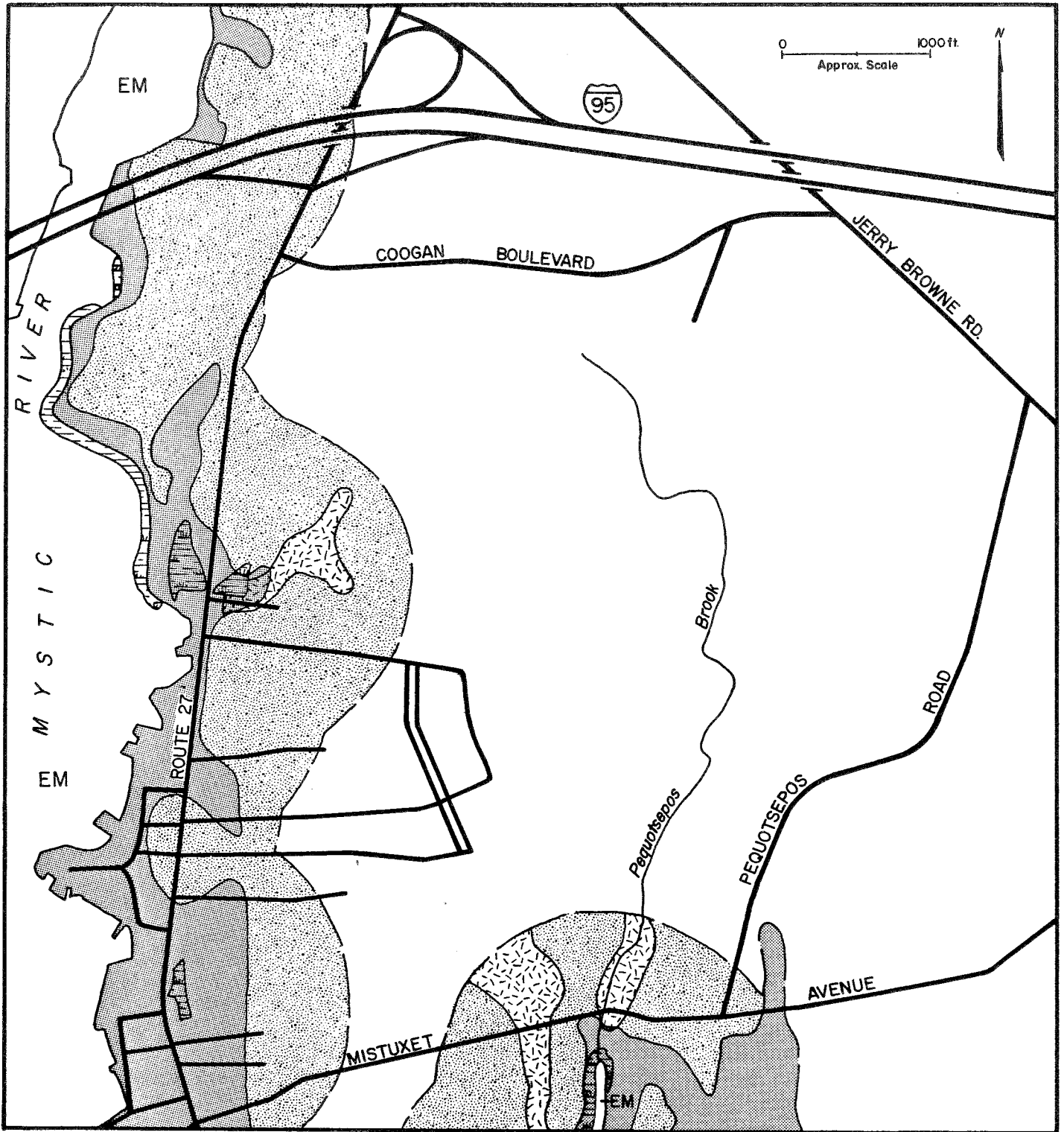
The State Historic Preservation Office does not believe that the state's cultural heritage would be directly effected by development of the proposed Tourist Commercial and Manufacturing zones located along Coogan Boulevard. However, this office believes that the modification of the extant transportation system within any of the historically significant areas might have adverse historic and aesthetic impacts. Presumably, such road modification concepts would require the involvement of CONNDOT. In such a case, CONNDOT (or any Federal Highway Administration assistance) would require consultation with the State Historic Preservation Office in order to satisfy historic preservation responsibilities in accordance with the National Historic Preservation Act of 1966 and the Connecticut Environmental Policy Act.





In both cases, the Connecticut Historical Commission would be a mandatory review agency for such projects and would formally express its concern vis-a-vis the area's outstanding historic, architectural, and archaeological resources.

#### COASTAL MANAGEMENT

Within the bounds of the study site, the coastal area is restricted to a fringe of mostly upland located east of Route 27 and a small area of upland and freshwater wetland located north of Mistuxet Avenue. The accompanying illustration shows the location of the coastal boundary and the types of coastal resources associated with the review area. The coastal resources located between the

# COASTAL RESOURCES



- |   |                     |   |                     |
|---|---------------------|---|---------------------|
|  | TIDAL WETLANDS      |  | SHORELANDS          |
|  | FRESHWATER WETLANDS |  | COASTAL BOUNDARY    |
|  | FLOOD HAZARD AREA   | EM  | ESTUARINE EMBAYMENT |

coastal boundary and Route 27 or Mistuxet Avenue are shorelands, coastal hazards (flood) area, freshwater wetlands and tidal wetlands. Coastal resources adjacent to the area, in addition to those listed above, include coastal waters (estuarine embayment), developed shorefront and shellfish concentration areas.

Shorelands is evidently the prominent coastal resource representing upland located at an elevation exceeding that of the 100 year still water flood level. In addition, there is also an extensive amount of coastal hazard area which represents land or wetland at an elevation less than the 100 year still water flood level. This is an area that probably would be inundated by flood waters during a major coastal storm.

The Connecticut Coastal Management Act requires projects (as specified in Section 22a-105b of the C.G.S.) that are located fully or partially within the coastal boundary to undergo a coastal site plan review as a part of the municipal planning and zoning review process. A project located partially within the boundary will actually contain two resource areas namely the area inside the coastal boundary which contains coastal resources and the region outside the boundary composed of non-coastal or upland resources. The review of the elements of a project located outside the boundary is restricted to indirect impacts that may result and affect coastal resources inside the boundary.

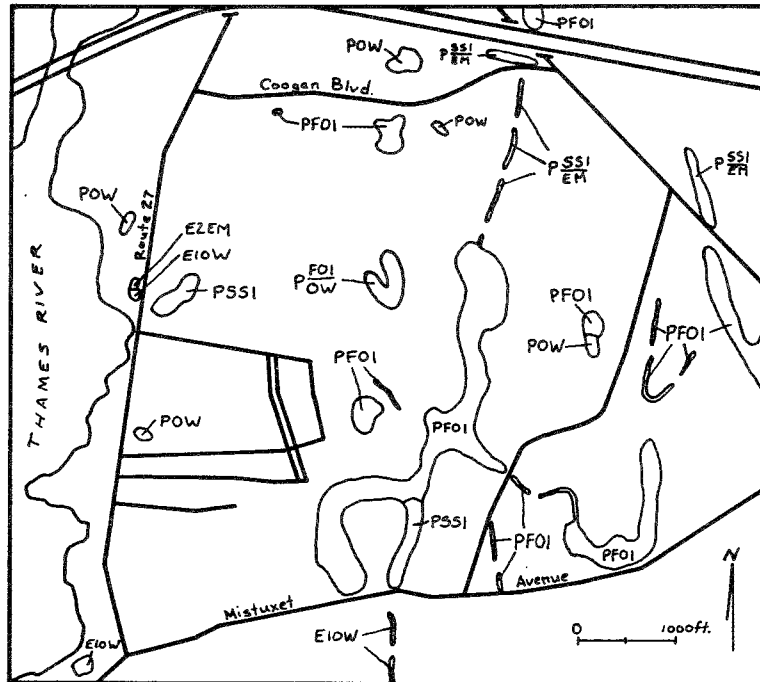
The primary focus of this Environmental Review Team evaluation, as described earlier, is the commercial and manufacturing area located south of Coogan Boulevard and a series of alternatives traffic corridors which might abate or lessen existing or future traffic congestion problems. Not only are most of these outside the boundary but, with few exceptions, development inside the coastal boundary is not anticipated to adversely affect sensitive coastal resources. In light of this and the absence of a specific proposal, a series of use guidelines are included as a means of guiding future development within the coastal boundary of the study site.

The one feature that ties future development on the south side of Coogan Boulevard to the coastal area, is the existing storm water discharge pipe. This pipe intercepts stormwater runoff from the existing commercial development along Coogan Boulevard and discharges into the Mystic River. It may be the case that the existing storm water system is too small to accommodate additional runoff generated by development along this road. Upgrading or connecting additional lines into this system may require certification from the Water Compliance Unit of DEP. Prior to expanding the existing system, techniques for stormwater retention should be actively pursued.

#### Route 27A Area

This region is comprised principally of upland resources although certain low lying sections may be affected by coastal flooding during a major coastal storm. There are virtually no sensitive resources in this area except for a few pocket wetlands, both tidal and fresh. Despite the occurrence of locally steep slopes, sediments emanating from upland development are not expected to adversely affect sensitive coastal resources due to the nature of existing development. Also, the few small wetlands in this area could be readily protected with simple sedimentation and erosion controls.

## NATIONAL WETLAND INVENTORY



### LEGEND

POW - palustrine, open water

PFOI - palustrine, forested(deciduous)wetland

PFOI

POW - mixed palustrine, forested(deciduous) wetland and open water

PSSI - palustrine, scrub/shrub(deciduous) wetland

PSSI

EM - mixed palustrine, scrub/shrub(deciduous) wetland and emergent wetland

E1OW - estuarine, open water

~~E2EM~~ - estuarine, intertidal, emergent wetland

General use and development guidelines for this area are as follows

- avoid development on steep slopes
- design development to be compatible with the limitations and capacity of the soils in the area
- avoid structural development in or filling, grading or excavation of wetlands
- keep site clearing to a minimum; preserve as much of the original vegetation as possible; phase large projects to keep site-clearing to a minimum; replant areas as soon as possible after construction
- use proper sedimentation and erosion controls; siltation screens are generally more effective than haybales; routinely inspect and maintain these controls
- use an erosion dissipator such as a splash pad or riprap channel at the stormwater outfall to prevent erosion
- use stormwater retention basins as necessary; these should be constructed in upland soil prior to locating buildings or activities on the site, this will prevent unnecessary destruction of wetland and will supplement the wetlands stormwater storage capacity.

#### Mixtuxet Road - Pequotsepos Brook Area

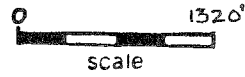
This area is either shorelands or freshwater wetlands. However, the Pequotsepos Brook discharges into a tidal cove located to the south of Mistuxet Road. A prime concern in this area is the control of sediment associated with projects inside and outside the boundary. Uncontrolled sedimentation could adversely affect the quality of the cove and its associated wetlands.

All of the use and development guidelines listed above are applicable here also.

# Appendix



# Soils



<u>SYMBOL</u>	<u>NAME</u>
Aa *	Adrian and Palms mucks
** Afa	Agawam fine sandy loam, 0 to 3 percent slopes
CbC	Canton and Charlton fine sandy loams, 8 to 15 percent slopes
CcB	Canton and Charlton very stony fine sandy loams, 3 to 8 percent slopes
CcC	Canton and Charlton very stony fine sandy loams, 8 to 15 percent slopes
CdC	Canton and Charlton extremely stony fine sandy loam, 8 to 15 percent slopes
CdD	Canton and Charlton extremely stony fine sandy loam, 15 to 35 percent slopes
CrC	Charlton-Hollis fine sandy loams, very rocky, 3 to 15 percent slopes
CrD	Charlton-Hollis fine sandy loams, very rocky, 15 to 45 percent slopes
** HcA	Haven silt loam, 0 to 3 percent slopes
** HcB	Haven silt loam, 3 to 8 percent slopes
NIC	Narragansett-Hollis Complex, very rocky, 3 to 15 percent slopes
PbC	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes
PdB	Paxton and Montauk very stony fine sandy loams, 3 to 8 percent slopes
PdC	Paxton and Montauk very stony fine sandy loams, 8 to 15 percent slopes
PeD	Paxton and Montauk extremely stony fine sandy loams, 15 to 35 percent slopes
** Ps	Pootatuck variant fine sandy loam
** RaB	Rainbow silt loam, 3 to 8 percent slopes
Rc *	Raypol silt loam
Rn *	Ridgebury, Leicester, and Whitman extremely stony fine sandy loams
Ro *	Rippowam fine sandy loam
** SvB	Sutton fine sandy loam, 3 to 8 percent slopes
SwB	Sutton very stony fine sandy loam, 0 to 8 percent slopes
SxB	Sutton extremely stony fine sandy loam, 0 to 8 percent slopes
Ts	Tisbury silt loam
Ud	Udorthents-Urban land complex
Wd *	Walpole fine sandy loam
** WxA	Woodbridge fine sandy loam, 0 to 3 percent slopes
** WxB	Woodbridge fine sandy loam, 3 to 8 percent slopes
WyB	Woodbridge very stony fine sandy loam, 0 to 8 percent slopes

\*\* PRIME FARMLAND SOILS

\* P.A. 155 REGULATED SOILS

INTERPRETATIONS FOR INDUSTRIAL DEVELOPMENT  
STONINGTON

SOIL MAP SYMBOL AND SOIL NAME	DWELLINGS WITHOUT BASEMENT	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS
*Aa - Adrian and Palms	Severe-ponding, low strength	Severe-ponding	Severe-excess humus, ponding	Severe-ponding, low strength	Severe-ponding, low strength, frost action
#Afa - Agawam	Slight	Slight	Slight	Slight	Slight
Cbc - Canton	Moderate-slope	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope
Charlton	Moderate-slope	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope
Ccb - Canton	Slight	Slight	Moderate-large stones	Moderate-slope	Slight
Charlton	Slight	Slight	Moderate-large stones	Moderate-slope	Slight
Ccc - 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
Cdc - 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
Cdd - Canton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
Charlton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope

INTERPRETATIONS FOR INDUSTRIAL DEVELOPMENT  
STONINGTON

SOIL MAP SYMBOL AND SOIL NAME	DWELLINGS WITHOUT BASEMENT	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS
CrC - Charlton	Moderate-slope	Moderate-slope	Moderate-large stone, slope	Severe-slope	Moderate-slope
Hollis	Severe-depth to rock	Severe-depth to rock	Severe-thin layer	Severe-depth to rock	Severe-depth to rock
CrD - Charlton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
Hollis	Severe-slope, depth to rock	Severe-slope, depth to rock	Severe-slope, thin layer	Severe-slope, depth to rock	Severe-depth to rock slope
NIC - Naragansett	Moderate slope	Moderate-slope	Moderate-large stones, slope	Severe-slope	Moderate slope, frost action
Hollis	Severe-depth to rock	Severe-depth to rock	Severe-thin layer	Severe-depth to rock	Severe-depth to rock
#HcA - Haven	Slight	Slight	Slight	Slight	Slight
#HcB - Haven	Slight	Slight	Slight	Moderate-slope	Slight
PbC - Paxton and Montauk	Moderate-wetness slope	Moderate-wetness, slope	Moderate-slope	Severe-slope	Moderate-wetness, slope, frost action
PdB - Paxton and Montauk	Moderate-wetness	Moderate-wetness	Moderate-large stones	Moderate-wetness, slope	Moderate-wetness, frost action
PdC - Paxton and Montauk	Moderate-wetness, slope	Moderate-wetness, slope	Moderate-large stones, slope	Severe-slope	Moderate-wetness slope, frost action
PdD - Paxton and Montauk	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
*Ps - Pootatuck	Severe-flooding	Severe-flooding, wetness	Severe-flooding	Severe-flooding	Severe-flooding

\*Designated inland wetland soil by Public Act 155  
#Prime farmland soil

INTERPRETATIONS FOR INDUSTRIAL DEVELOPMENT  
STONINGTON

SOIL MAP SYMBOL AND SOIL NAME	DWELLINGS WITHOUT BASEMENT	DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS- AND STREETS
#RaB - Rainbow	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness, slope	Severe-frost action
*Rc - Raypol	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action
*Rn - 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-frost action, ponding
*Ro - Rippowam	Severe-flooding, wetness	Severe-flooding, wetness	Severe-wetness, flooding	Severe-flooding, wetness	Severe-flooding wetness, frost action
#SvB - Sutton	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness, slope	Severe-frost action
SwB, SxB - Sutton	Moderate-wetness	Severe-wetness	Moderate-large stones, wetness	Moderate-wetness, slope	Severe-frost action
#Ts - Tisbury	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness	Severe-frost action
*Wd - Walpole	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action
#WxA, WxB - Woodbridge	Moderate-wetness	Severe-wetness	Moderate-wetness	Moderate-wetness, slope	Severe-frost action
WyB - Woodbridge	Moderate-wetness	Severe-wetness	Moderate-large stones, wetness	Moderate-wetness, slope	Severe-frost action

Ud - Udorthents - Urban land complex: Requires on-site investigation

\*Designated inland wetland soil by Public Act 155

#Prime farmland soil

## SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations": slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

### Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that time or cost would be needed to overcome relatively minor soil limitations.

### Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

### Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

# About the Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is available as a public service at no cost to Connecticut towns.

## PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

## REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.