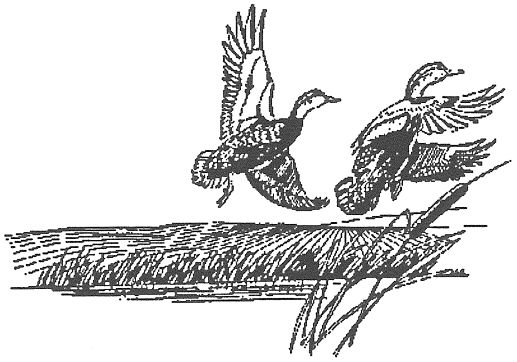
Beach Farms

Old Lyme, Connecticut



Eastern Connecticut Environmental Review Team Report

Eastern Connecticut Resource Conservation & Development Area, Inc.

Beach Farms

Old Lyme, Connecticut

Environmental Review Team Report

Prepared by the
Eastern Connecticut Environmental Review Team
of the
Eastern Connecticut
Resource Conservation and Development Area, Inc.

for the
Planning Commission
Old Lyme, Connecticut

June 1998

CT Environmental Review Teams
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Acknowledgments

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

The Eastern Connecticut Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Tuesday, May 19, 1998.

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Joe Wetteman	Senior Sanitary Engineer Bureau of Water Management DEP - Subsurface Sewage Section (860) 424-3803

I would also like to thank Marilyn Ozols, Old Lyme Zoning Enforcement Officer, Constance Kastclowitz, Old Lyme Planning Commission member, Angus McDonald and Matthew White, project engineers, and Priscilla Baillie, environmental consultant for the applicant, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given additional plans and information. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and landowner. 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 Town and applicant. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in reviewing this proposed residential development.

If you require additional information please contact:

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Introduction

Introduction

The Old Lyme Planning Commission has requested assistance from the Eastern Connecticut Environmental Review Team in reviewing a proposed planned residential cluster development.

The 39.25 acre site is located on Route 156 (Shore Road), Finnegan Farm Road (private road) and abuts approximately 1700 feet of Mile Creek. The development is a planned residential cluster project with 26 single family detached homes. The homes will be owned individually with the remaining land and roadways to be owned and maintained by a homeowner's association. The project will have an on-site community sewage disposal system and public water. Open space will total about 33 acres with a public access trail to a viewpoint of Mile Creek and the tidal marsh.

Objectives of the ERT Study

The Town has asked for assistance with the review of this project because of its environmentally sensitive location abutting Mile Creek and the salt marsh. A previous application had been denied without prejudice. Major concerns include: impacts to coastal resources, wildlife resources, impacts and management, stormwater management, on-site sewage disposal suitability, soil suitability to support development, and traffic and access issues.

The ERT Process

Through the efforts of the planning Commission this environmental review and report was prepared for the Town of Old Lyme.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the Town. Team members were able to review maps, plans and supporting documentation provided by the applicant.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on Tuesday, May 19, 1998 and some Team members made additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Figure 1

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Location Map

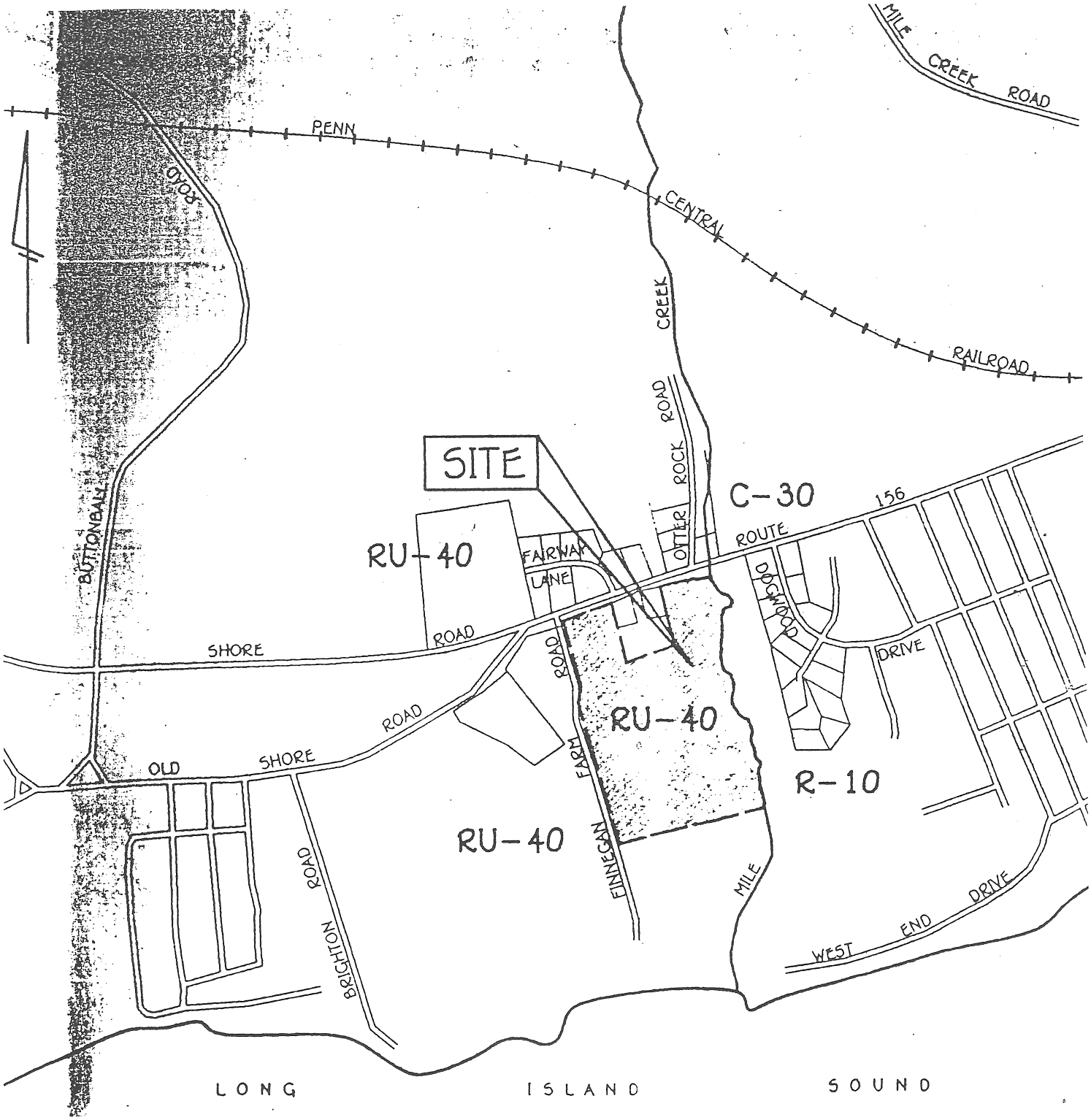

Figure 2

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Topographic Map

Scale 1″ = 2000′

Soils and Erosion and Sediment Control

Soils

The soils on the site were identified from the *Soil Survey of New London County, Connecticut*. Due to the small scale of the soil survey, it should be noted that the survey is a guide to be used for general planning purposes, and it is not a substitute for on-site field investigations.

Five soil types, as shown in the *Survey*, are contained on the proposed development site. The upland (non-wetland) soil map units identified include HcB - Haven silt loam, 3 to 8 percent slopes; HcA - Haven silt loams 0 to 3 percent slopes; and Ts - Tisbury silt loam. Two hydric (wetland) soil map units were identified: Ip - Ipswich mucky peat, We - Westbrook mucky peat. In addition, each soil was evaluated for its potential for building site development, suitability for sanitary facilities, and recreational development. Also included in the appendix are reports detailing the potential for wildlife habitat, engineering properties, chemical properties, physical properties, and water features associated with each of the soils.

The Haven soils are described in the *Survey* as ranging from nearly level (HcA) to gently sloping (HcB). Formed in silty mantled outwash, the Haven soils have a depth to bedrock typically greater than sixty (60) inches, and the depth to the water table is generally greater than six (6) feet. Overall the Haven soils are well suited to community development. Potential difficulties that might be encountered with development on this soil type include the instability of excavated steep slopes and easy erosion during construction and landscaping phases; the potential for frost action on roads and streets; the rapid permeability of the subsoil which may result in groundwater pollution in those areas used for onsite septic or other waste disposal systems.

The Ts - Tisbury soil type is nearly level to gently sloping and formed in loamy and silty mantled over sandy and gravelly glacial outwash. Depth to bedrock is commonly below sixty (60) inches and a seasonal high water table at a depth of approximately twenty (20) inches exists from fall to spring. Fairly suited to community development, the Ts-Tisbury soil is limited by its wetness. The seasonal high water table presents problems for the installation and operation of onsite septic and other waste disposal systems; moreover, the tendency for wetness creates severe limitations for development of dwellings with basements, and moderate problems for dwellings without basements. Other unfavorable conditions for development include the potential for cave-ins of shallow excavations, and frost action affecting development and maintenance of roads and streets.

According to the *Survey*, both hydric soils contained on the site are located on the edge of the property along Mile Creek The site plan also indicates the presence of a small wetland area near the southwestern corner of the parcel. Approximately 7.2 acres of the 39.25 acre site are classified as wetlands. Both the Ipswich and Westbrook hydric soils identified on the property are classified as very poorly drained mucky peats. Each of these soil types is found on tidal marshes, typically has a depth to bedrock greater than sixty (60) inches, and a water table that is at or near the surface for the majority of the year. Permeability is moderate to rapid in both soil types, and surface runoff is slow to very slow in each. Both hydric soil types have severe limitations for development and are not favorably suited for community development. No development, as shown on the site plan, is intended in the areas designated with hydric soils.

For additional information. please refer to the soils reports contained in the appendix of this report.

Figure 3

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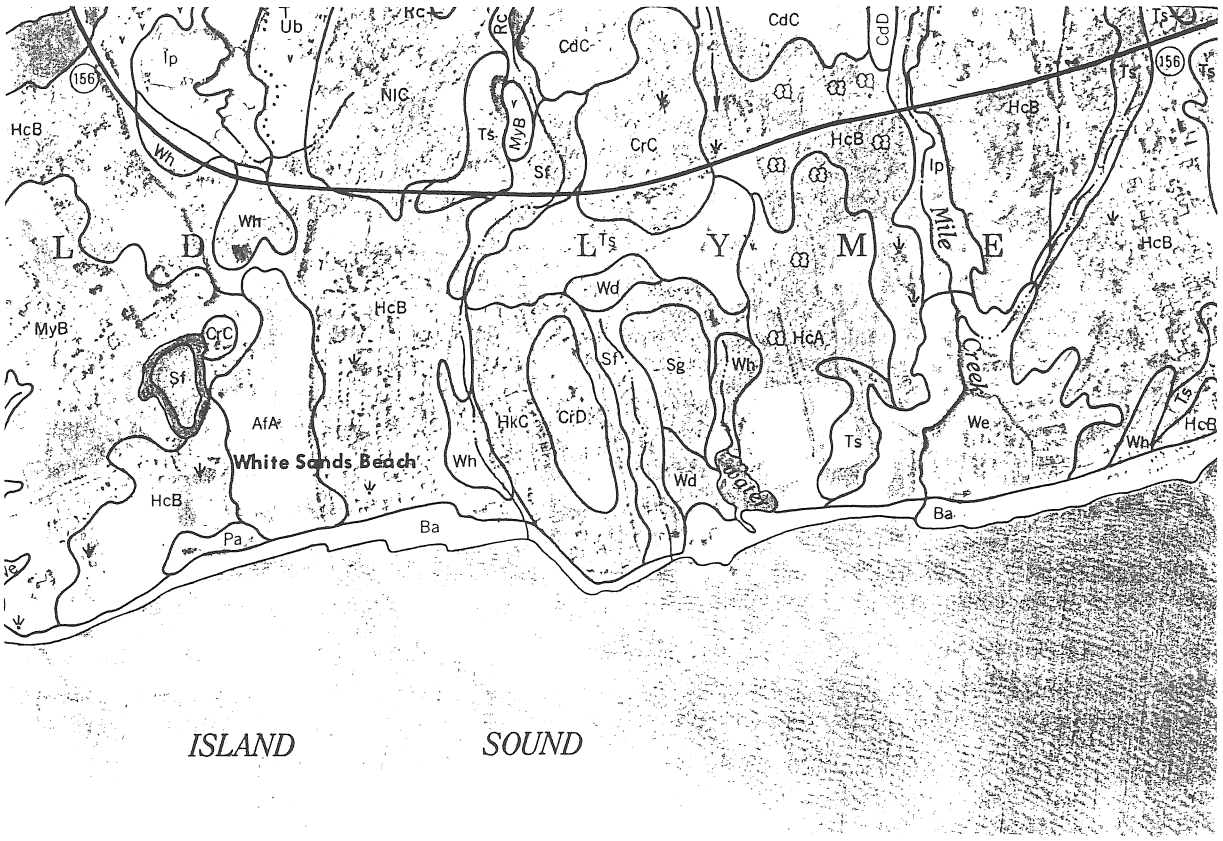
Soils Map

Scale 1″ = 1320′



Erosion and Sediment Control Measures

The erosion and sediment control plan for the development provides several adequate measures. As shown on the plan, silt fence will be installed along the eastern and southern perimeters of the site. In addition, an infiltration trench will be constructed along the eastern portion of the property, following the same line as the silt fence, and will act as the primary line of defense for the tidal wetlands located along Mile Creek. (The symbol for the silt fence is not included in the plan legend. It should be.)

In conjunction with the "structural" measures being implemented at the site, the vegetative measures present a positive effort to minimize potential erosion and sediment problems. Along with the standard seeding mixture and rate information, the plans provide, on sheet 8 of 8, a detailed description and illustrate the possible layout of the typical plantings to be used for each lot on the property. Sheet seven of eight contains the plans for typical plantings to be installed at the three traffic circles included in the designs. Also, the plan states the open field areas will be reseeded with a wildflower mix and will be mowed twice a year. This will enable the site to remain in a more natural condition and offer long term vegetative protective cover for the area. (Please see the Wildlife section for further comments and review of plantings.)

If adhered to, the phased approach for development described in the construction sequence narrative (sheet 5 of 8), will further help to minimize the potential for erosion and sediment problems. Each of the three proposed clusters will be constructed separately and the road will be built as necessary to service the developing portions of the site. Although only roughly six (6) acres of the parcel will be occupied by houses, the phased approach will limit the amount of exposed area on the property and allow permanent vegetation to be reestablished on a disturbed site as soon as construction is complete.

Despite the adequacy of the plan, some comments and concerns about the erosion and sediment control plan should be considered by the Commission. The silt fence along the eastern portion is shown to be in two pieces (sheet 2 of 8). Connecting the fence to create a continuous barrier would improve protection measures. Furthermore, the silt fence is being used only as a perimeter measure according to the current plan. The installation of control barriers around the perimeter of each cluster development at the time of its construction would further help to contain any potential erosion and sedimentation and enhance the measures already being undertaken by the developer.

All of the proposed homes in the development are located on the Haven soil units which are considered to be subject to erosion during construction and landscaping phases. While the level natural and proposed topography of the site will likely limit the movement of soil from disturbed areas, it is still important to take additional protective measures. The installation of internal control barriers around each cluster, described above, will improve control. Although the plan illustrates a construction entrance, it does not show where, or if, such an entrance will be used during development of the site. This should be clarified. Given the silt loam composition of the Haven soils, a construction entrance would be useful to prevent transport of soil off site by construction equipment. Also, the *Survey* indicates steep slopes of excavations in Haven soils are unstable, consequently, excavating lots using a slope of 3:1 (horizontal to vertical) would be beneficial.

The location of topsoil stock piles is not indicated on the site plan and should be. The stockpile areas should also be surrounded by control barriers (i.e. silt fence or hay bales). Temporary seeding should be used for the stockpile areas and should occur within 15 days of the formation of the stockpile, according to the current edition of the Connecticut *Guidelines for Soil Erosion and Sediment Control*. It should also be noted the recommended seeding dates, as presented in the *Guidelines,* for permanent vegetative cover occur between April 15 through June 15 and August 15 through September 15. This is not contained in the erosion and sediment control plan and should be. Additional measures such as temporary mulching or seeding to protect

disturbed areas needs to be clarified. The person or persons responsible for maintenance and operation of the control measures needs to be stated as well.

A brief narrative describing the soil map units contained on the property should be added to the plan. The site plan also needs to identify the soil type of the freshwater wetland area located near the southwestern corner of the property. During a site visit on June 11, 1998, some vegetative indicator species of wetland areas (i.e. sensitive fern, skunk cabbage, red maple) were noted on the western portion of the property in the area of the northern Beach Farms Drive cluster. It would be beneficial to have either Richard Snarski, the certified soil scientist who originally mapped the property in 1975, or another certified soil scientist verify the wetland boundaries on the property, making sure all wetland flags are still present, and confirm that no other wetland areas are present on the site.

Plans for construction and long-term maintenance of the paths and trails should be included. The HcB soil map unit in particular is moderately limited for trail development because it is subject to erosion.

Stormwater Management

Construction Activities

Since the site construction involves the disturbance of over five acres, Connecticut's General Permit for the Discharge of Stormwater and Dewatering Wastewaters (the "Permit") will cover the project. The permit requires that the site register with the Department of Environmental Protection (CTDEP) at least 30 days before the start of construction. The registrant must then prepare and keep on site during the construction project a Stormwater Pollution Control Plan (the "Plan"). If the disturbance exceeds 10 acres, a copy of the Plan must be submitted with the registration. Please note that while this review is based primarily on the state Permit, many of the erosion and sedimentation issues are included in the Connecticut Guidelines for Soil Erosion and Sediment Control (the "guidelines"), and are issues that must be dealt with on a local level before being included in the Plan.

The Plan must include a site map as described in Section 6(b)(6)(A) of the General Permit and a copy of the erosion and sedimentation (E&S) control plan for the site. The E&S plan that has been approved by the Town in conjunction with the CTDEP Inland Water Resources Division (IWRD) and the local Soil and Water Conservation District may be included in the Plan. This plan and site map must include specifics on controls that will be used during each phase of construction. Specific site maps and controls must be described in the Plan, as well as construction details for each control used. The permit requires that "the plan shall ensure and demonstrate compliance with" the guidelines.

Due to the amount of soil disturbance, one of the best ways to minimize erosion potential would be to phase construction in order to minimize unstable areas. Section 6(b)(6)(B) requires a more detailed identification of construction sequencing and the accompanying changes in controls than are currently shown on the E&S Plan, and the

Plan must be flexible to account for adjustment of controls as necessary to meet field conditions. At a minimum, the plan must include interior controls appropriate to different phases of construction.

The permit (Section 6(b)(6)(D)) requires inspections at least once every seven calendar days and after every storm of 0.1 inches or greater. The plan must also allow for the inspector to require additional control measures if the inspection finds them necessary, and should note the qualifications of personnel doing the inspections. In addition, the plan must include monthly inspections of stabilized areas for at least three months ***following*** stabilization. In particular, there must be someone available to design and adjust E&S controls for changing site conditions, who has the authority and resources to ensure that such necessary changes are implemented.

Section 6(b)(6)(C)(ii) of the permit requires the plan to address dewatering wastewaters, which this site may generate. The plan does not currently address treatment of dewatering wastewaters.

The permit (Section 6(b)(6)(C)(i)(2)) requires that for areas where between two and five acres will be disturbed, a sedimentation basin or sedimentation trap will be available that will store a minimum of 134 cubic yards of water per acre disturbed; and for an area where greater than five acres are disturbed at one time, the Plan must show that a sedimentation basin will be available that will store a minimum of 134 cubic yards of water per acre disturbed. The Plan must demonstrate that it meets this requirement.

The Permit Section 6(a)(2) requires that all post-construction stormwater discharges located within 500 feet of a tidal wetland must retain the first inch of runoff on site. The existing Plan does not appear to meet this requirement.

Silt fence is designed to filter runoff from one square acre of construction per the Guidelines. Areas larger than this discharging to a single row of silt fence need additional controls.

On-Site Sewage Treatment and Disposal

The proposed planned residential community of twenty-six (26) three bedroom houses has a design flow of 11,700 gallons per day of domestic sewage, that will be discharged to a community subsurface treatment and disposal system. Because the proposed design flow is greater than 5,000 gallons per day and a community sewage system is proposed this project is under Department of Environmental Protection (DEP) jurisdiction for the treatment and disposal of domestic sewage. A discharge permit from the DEP is required pursuant to section 22a-430 of the Connecticut General Statutes and regulations adopted thereunder, as amended.

In accordance with the aforementioned statute and regulations, the engineer representing Beach Farms, LLC, must demonstrate that the septic system will function hydraulically and that the subject discharge will meet the pertinent Water Quality Standards prior to reaching any wetlands, surface water bodies, wells or property lines. These goals must be reached using reasonable analysis and appropriate safety factors. This would include a system and site hydraulic analysis of nitrogen, phosphorous, virus and bacterial pathogens.

The Water Quality Standards, published by the Department of Environmental Protection, updated in April of 1996, provides a clear statement for existing and future water quality. The groundwater classification for this property is GA. The designated use of a GA area is for existing private and potential public water supply. Domestic sewage discharges can be considered consistent with this standard.

According to Beach Farms Site Development Plan, the proposed subsurface treatment and disposal system will be located in a Haven silt loam. The Soil Survey of New London County describes this soil as nearly level and well drained. Included with this soil in mapping are small areas of excessively drained Hinckley soils, well drained Agawam soils, and moderately well drained Ninigret and Tisbury soils. The Haven

soils have moderate permeability in the surface layer and subsoil and very rapid permeability in the substratum. Test Holes 200-208 were witnessed and logged by Department of Environmental Protection. Over forty test holes logged by the applicant's engineer and witnessed by Ronald Rose of the Old Lyme Health Department are catalogued on sheet 1 of 8 on the site plans. This information along with groundwater monitoring well data that was collected on May 19, 1998, the day of the ERT field walk, are the basis for the following general statements. The site is most likely capable of supporting a large community subsurface treatment and disposal system for domestic sewage. The system design must incorporate components to address low permeable soils in the loam layer, high permeable soils in the substratum and relatively shallow depth to groundwater.

Beach Farms LLC has submitted an application and a conceptual design report to the Department of Environmental Protection. This application is currently being reviewed. When Department staff are satisfied with the design, a tentative determination will be made on the application and the public notice is given. After public comments are received through the notice period or through a public hearing a final determination will be made.

Construction of any sewage treatment and disposal system approved by the DEP must be overseen by a professional engineer licensed to practice in Connecticut. Record drawings must be completed and submitted for review to verify that the system constructed is in accordance with the approved contract plans and specifications.

When all conditions of the approval for construction have been met a permit to discharge domestic sewage to the treatment and disposal system would be issued. The permit will contain monitoring and maintenance requirements. Quarterly reports will be required with results and verifications submitted to DEP.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding the project area have been reviewed and according to our information, there is a population of bayonet grass *(Scirpus paludosus* var. *atlanticus),* a Connecticut Special Concern species growing in the marshes associated with Mile Creek and two notable bird species nest in the vicinity of this project. One species, the piping plover *(Charadrius melodus),* is federally and state threatened. Within the northeastern United States less than 1000 nesting pairs of plovers are known to occur, only 25 - 30 pairs of which nest along dunes and beaches of the Connecticut coast. Because of the plover's long term decline we are particularly concerned about protecting the bird's remaining nesting areas. The second species is the osprey (*Pandion haliaetus),* which was just recently de-listed from state species of special concern.

DEP wildlife biologist Julie Victoria reviewed the detailed plans with Team member Peter Picone but she did not see a timetable of what is to take place at this site nor has she made a field inspection. The time of year when this work will take place may affect the ospreys if they are present when construction is scheduled. Her concerns, which were expressed to Peter, were from potentially adverse impacts that could be disturbances from construction during the nesting season, increased illumination on the nesting site, and increased human disturbance at the nesting sites. If you have questions regarding plovers or ospreys, please contact her at 860-642-7239.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental

assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Wildlife Resources

Introduction

This section will focus on potential wildlife habitat impacts for the proposed development and recommendations for reducing wildlife resource impacts for the Beach Farms Development.

Current Conditions

The 39,25 acres of field, shrubland, forest and wetland areas currently provide a variety of wildlife with their habitat requirements.

Wildlife Observations/Site Inspection

Wildlife observed utilizing the forested areas and along the forest edge during the site visit on June 2, 1998 were: *cedar waxwing (*Bombycilla cedrorum*), *house finch (*Carpodacus mexicanus*), *gray catbird (*Dumetell carolinensis*), *yellow warbler (*Dendroica petechia*), *song sparrow (*Melospiza melodia*), *American robin (*Turdus migratorius*), *northern cardinal (*Cardinalis cardinalis*), and *red-winged blackbird (*Agelaius phoeniceus*), house wren (*Troglodytes aedon*), prairie warbler (*Dendroica discolor*), blue jay (*Cyanocitta cristata*), ruffed grouse (*Bonasa umbellus*), wild turkey (*Meleagris gallopavo*), [*= observed nesting behavior], gray squirrel (*Sciurus caroliniana*). Jumped two bedded white-tailed deer (*Odocoilius virginiana*) in the forested area. Observed meadow vole (*Microtus pennsylvanicus*) activity in the field habitat. Osprey (*Pandion haliatus*) observed flying overhead and then into Mile Creek marsh. Eastern coyote (*Canis latrans*) scat observed along edge of the field with cottontail fur and bones in it. A more detailed review of the property during the four seasons of the year would, undoubtedly, reveal additional wildlife use of the property.

Inspection of Forest Habitat Condition

The following list of trees, shrubs and vines were inventoried on the site: red maple (*Acer rubrum*), pin oak (*Quercus palustris*), black gum (*Nyssa sylvatica*), red cedar (*Juniperus virginiana*), white oak (*Quercus alba*), Hickory (*Carya spp.*), black oak (*Quercus velutina*), sassafras (*Sassafras albidum*), black cherry (*Prunus serotina*), gray birch (*Betula populifolia*), serviceberry (*Amelanchier canadensis*), Alder (*Alnus spp.*), wild apple (*Malus spp.*), staghorn sumac (*Rhus typhina*), spicebush (*Lindera benzoin*), highbush blueberry (*Vaccinium angustifolium*), winterberry (*Ilex verticillata*), sweet pepperbush (*Clethra alnifolia*), arrowwood viburnum (*Viburnum recognitum*), bayberry (*Myrica penslvanica*), blackberry (*Rubus allegheniensis*), red raspberry (*Rubus idaeus*), greenbriar (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), wild grape (*Vitis* spp.), and Virginia creeper (*Parthenocissis quinquefolia*). These plants include a variety of seasonally available soft and hard mast (berries and nuts) eaten by many of the resident wildlife as well as migratory songbirds.

Deer browsing effects are apparent throughout the forest understory. Vegetation inspection showed heavy browsing of many of the understory plants. Heavy deer browsing can be deleterious to forest regeneration and composition which may effect the habitats of other forest-dependent wildlife.

The forested area is experiencing an invasion of non-native woody plants which are displacing more valuable native plants. Tree of Heaven (*Ailanthus altissima*), Norway maple (*Acer platanoides*), catalpa (*Catalpa spp.*), autumn olive (*Eleagnus umbellata*), tartarian honeysuckle (*Lonicera tartarica*), oriental bittersweet (*Celastrus orbiculatus*), and multiflora rose (*Rosa multiflora*) are degrading the habitat quality of the forested area. This can be combated utilizing various vegetation management techniques such as mechanical removal and limited herbicides (more information is available upon request).

Grassland/Hayfield

Agricultural lands such as hayfields provide all or a portion of the habitat requirements for a variety of wildlife such as meadow vole, short-tailed shrew, cottontail rabbit, red fox, owls and hawks. It provides nesting habitat for wildlife such as cottontail rabbit, meadow vole, and wild turkey. Although the critical size of grasslands for some of Connecticut's grassland birds requires larger acreage (15-35 acres), seasonal use during migration may occur. Further censusing during the migratory period may reveal additional wildlife use. If this field was allowed to go unmowed it would revert to forestland.

Mile Creek and Salt Marsh Area

Mile Creek and its associated habitats are of high quality. The area supports a wide variety of wildlife including great blue heron (*Ardea herodias*), green heron (*Butorius striatus*), black-crowned heron (*Nyctricorax nytricorax*), yellow-crowned heron (*Nyctricorax violaceus*), belted kingfisher (*Ceryle alcyon*) and other wildlife.

Potential Impacts to Wildlife from the Proposed Development

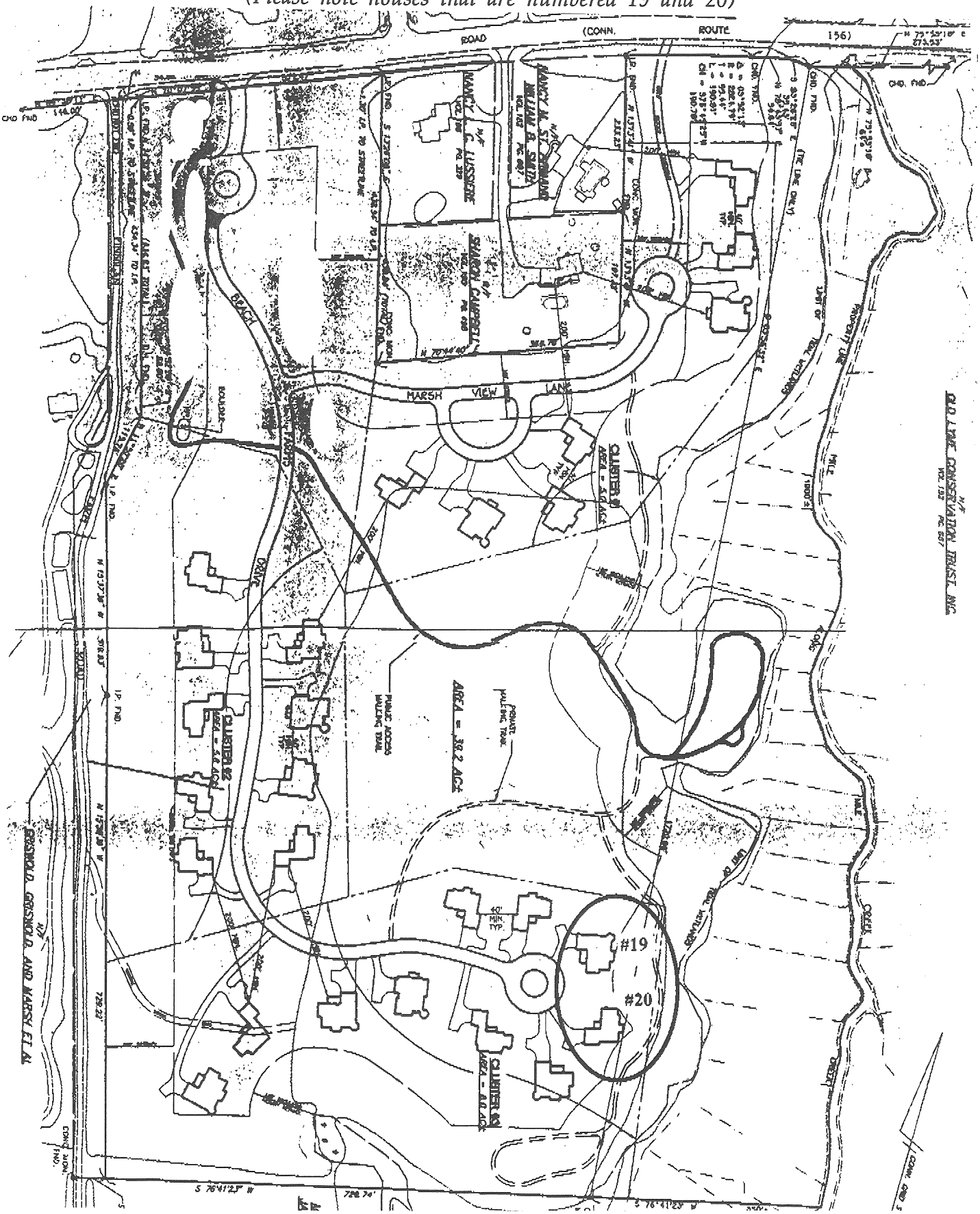
Impact #1

Alteration of the forested western portion of the property along Finnigan Farm Road contains vegetation indicative of wet or very moist conditions. Vegetation found in this area includes: black gum, red maple, pin oak, winterberry, highbush blueberry, skunk cabbage (*Symplocarpus foetidus*),and sensitive fern (*Onoclea sensibilis*). Sensitive fern (a wetland indicator) can be found along forest and field edge interface. Upland wet pockets provide important habitat for wildlife especially reptiles and amphibians.

Figure 4

Copy of Map of Beach Farms Development, Old Lyme, CT

(Please note houses that are numbered 19 and 20)



Recommendation #1

This area deserves further investigation. If it is determined that it contains pockets of wetlands they should be protected from major alteration.

Impact #2

Alteration of the eastern portion of the property along Mile Creek. It was pointed out in the report by ecologist Priscilla Baille (Beach Farms Report dated February 10, 1998) that there are 100 foot upland buffers in place to reduce impacts to wetland resources. Although 100 foot buffers are valuable, they need to be site specific and may require adjustment to local conditions. The buffers have been measured from the dwellings and do not take into account the footprint of the lawn space of the dwellings.

Recommendation #2

From a wildlife impact viewpoint, buffer calculations should take into account the footprint of the backyards of the house lots. Larger buffers can reduce the impact to wildlife and habitat along the tidal wetland area. In housing cluster #3, houses #19 and #20 (See Figure 4) should be reconfigured or eliminated to increase distance from the Mile Creek marsh edge. The added buffer will benefit wildlife and habitat along Mile Creek tidal wetland. It will also put the dwellings further away from the Shorelands Coastal Hazard line.

Impact #3

Although the hayfield is an artificially induced habitat which is maintained through mowing, the loss of this area will affect locally dependent wildlife. Following construction of the septic field, the type of vegetation replanted and how it is managed in the future can be beneficial or detrimental to wildlife, depending on how and when mowing occurs. Traditional expansive lawns and mowing techniques which do not allow the grass to grow above 12 inches is not valuable to most grassland wildlife.

Recommendation #3

Original soil should be stockpiled and the area restored to grassland following the placement of the project's large septic system. Plant the area with native grasses and wildflowers (recommendation of plant species available upon request). The development plan indicated the future establishment of a meadow over the septic field. The following warm season grasses are recommended: little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), indiangrass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*). These native grasses are bunch grasses and allow the growth of broadleaf forbs including wildflowers between bunches which makes them more valuable than traditional lawn grasses. Mow the site once a year in late winter (March) or twice a year (once in the 2nd week of July and once in March).

Landscaping Plan and Plantings

In reviewing the planting list included in the plans by Carol Skelly, dated March 31,1998, many have good wildlife habitat/food potential. One species listed, burning bush (*Euonymus alata*), is considered an invasive nonnative. It can spread into surrounding forests and displace native plants. An alternative plant to consider is highbush blueberry (*Vaccinium corymbosum*). Highbush blueberry leaves turn orange to bright red in the fall and provides a good summer food source for local wildlife.

Habitat Maintenance of Property

Habitat management requires a long term viewpoint and long range planning. A property such as this one with land in common ownership should have a habitat management plan.

Bluebird-sized nestboxes can be placed along field edges to provide habitat for bluebirds, tree swallows or house wrens. Proper building and placement specifications are available upon request.

Invasive nonnative woody plants should be controlled through cutting and selective herbicide application. Species needing control currently are Oriental bittersweet, Norway maple, tartarian honeysuckle, autumn olive, multiflora rose, and tree of heaven. Managing invasive nonnatives along the trail and on adjacent open space land should be planned and strategies should be implemented to reduce their impacts to the natural habitats. Limited herbicide use should not be ruled out as an option to control some of the particularly aggressive invasive plants. It is advised to consult with the Connecticut Agricultural Experiment Station (Todd Mervosh) at 860-683-4984 for advice on herbicides. The following nonnatives invasive plants should not be planted:

Trees

Norway maple (*Acer platanoides*)
Tree of Heaven (*Ailanthus altissima*)
Catalpa (*Catalpa spp.*)

Shrubs

Autumn olive (*Elaeagnus umbellata*)
Russian Olive (*Elaeagnus angustifolia*)
Winged Euonymus (*Euonymus alatus*)
Burning Bush (*Euonymus atropurpureus*)
Privet (*Lignustrum spp.*)
Tartarian honeysuckle (*Lonicera tatarica*)
Common buckthorn (*Rhamnus cathartica*)
Glossy buckthorn (*Rhamnus frangula*)
Multiflora rose (*Rosa multiflora*)

Vines

Asiatic bittersweet (*Celastrus orbicultus*)
Japanese honeysuckle (*Lonicera japonica*)

Suggested Plants for Landscaping or Habitat Enhancement

Red maple (*Acer rubrum*),
Black gum (*Nyssa sylvatica*),
White oak (*Quercus alba*),
Black oak (*Quercus velutina*),
Black cherry (*Prunus serotina*)
Serviceberry (*Amelanchior canadensis*),
Staghorn sumac (*Rhus typhina*),
Spicebush (*Lindera benzoin*),
Winterberry (*Ilex verticillata*),
Arrowwood viburnum (*Viburnum recognitum*),
Red raspberry (*Rubus idaeus*)
Pin Oak (*Quercus palustris*),
Red cedar (*Juniperus virginiana*),
Hickory (*Carya spp.*),
Sassafras (*Sassafras albidum*),
Gray birch (*Betula populifolia*),
Alder (*Alnus spp.*),
Bayberry (*Myrica penslvanica*),
Highbush blueberry (*Vaccinium angustifolium*),
Sweet pepperbush (*Clethra alnifolia*),
Blackberry (*Rubus allegheniensis*).

Other Recommendations

As mentioned in the Priscilla Baille report (February 10, 1998), a variety of birds and other wildlife use edge habitat along salt marshes. Heron especially utilize the wooded edges. An opportunity exists to increase the wooded buffer on the east side along Mile Creek. It would be valuable to add an additional 25-50 foot buffer along this edge to

increase the amount of roosting area for birds and also shelter the marsh from the housing development.

In managing the forested habitat, snags (dead or dying trees) should be maintained at a minimum of at least three (3) snags and one den tree per acre to provide habitat for snag-dependent wildlife such as woodpeckers, chickadees, owls, and flying squirrels. Snags should not be left near buildings or high human traffic areas for safety reasons.

Further Information

The Team wildlife biologist is available for further consultation regarding habitat and other wildlife issues for this development.

Coastal Site Plan Review Comments

These comments are offered on the revised coastal site plan review (CSPR) appliation received on May 4, 1998. The DEP Office of Long Island Sound Programs (OLIS) provided comments on the original CSPR application submitted in the fall of 1997. The current project is a planned residential cluster development which consists of 26 single family detached homes on 39.25 acres. The subject site is surrounded by viable coastal resources, namely tidal wetlands ehich abut 1700 feet of Mile Creek to the east. The following comments adress the consistency of the proposed CSPR application with the relevant standards and policies of the Connecticut Coastal Managment Act (CCMA) and are based on site plans revised to May1, 1998 and the ERT site visit conducted on May 19, 1998.

Tidal Wetlands and Water Quality

The relevant CCMA tidal wetland policy is:

> to preserve tidal wetlands and to prevent the despoilation and destruction thereof in order to maintain their vital natural functions (Connecticut General Statutes (CGS) Sec. 22a-92 (b)(2)(E)).

The applicable CCMA adverse impact definitions for water quality and wildlife include:

> degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity (CGS Sec. 22a-93(15)(A)); and
>
> degrading or destroying essential wildlife, finfish or shellfish habitat through significnat alteration of the composition, migration patterns, distribution,

breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat (CGS Sec. 22a-93(15)(G)).

Apparently in response to previous recommendations that the 100 foot regulated wetland setback area be left in a relatively undisturbed state and restricted to clearing, grading, and construction of any kind to the maximum extent practicable, the applicant now proposed two zones along the creek and wetlands: the "restricted disturbance area" and the "managed disturbance area." The restricted area would disallow construction and the removal of any trees or brush and is generally located along the northern eastern half of the property from the knoll of land which protudes out into the marsh up to Route 156. The managed disturbance area is designated from along the southeastern half of the property along the wetlands and would allow trees less than 2 inches in caliper to be removed for nature trail construction and the preservation of views. DEP-OLIS believes that these revised provisions are an important step towards protecting the nearby tidal wetlands and are consistent with the above noted policies.

However, with regard to the managed distrubance area, it is recommended that ***trees and brush less than 2 inches in caliper (with the exception of invasive or diseased species) not be allowed to be removed within approximately 20 feet of tidal wetlands in this area.*** While DEP-OLIS does not oppose selective pruning of branches for view enhancement, this added level of protection will provide essential riparian protection functions to remove and trap sediment and pollutants prior to reaching the marsh.

Furthermore, with regard to the areas to the west outside of the managed areas which still fall within the 100 foot wetland setback area, ***DEP-OLIS reiterates their previous recommendation that the total 100 foot buffer along tidal wetlands be restricted from clearing, grading and construction (other than the minimum grading for the homes shown) to the maximum extent practicable.*** This will help ensure the intregrity of the tidal wetlands, water quality and wildlife habitat values, consistent with CCMA policies and standards. To the knowledge of DEP-OLIS, the revised coastal site plan review

application materials submitted do not address any specific restrictions to the entire 100 foot setback area.

With regard to the proposed walking trail, the portion of the trail previously proposed to cross over tidal wetlands has been revised to eliminate the wetland crossing, consistent with the above referenced CCMA tidal wetland policies.

Also, as detailed in the Stormwater Management section of this report, a stormwater general permit and stormwater management plan both during construction and long term will be required from the DEP. The applicant should be aware that as a condition of that permit, any stormwater discharge within 500 feet of tidal wetlands shall be required to discharge through a system designed to retain the volume of runoff generated by 1 inch of rrainfall on the site.

Water Dependent Uses

Portions of the subject site are located adjacent to Mile Creek's tidal wetlands to the east and south of the subject property. The parcel is therefore considered a waterfront site and as such, is subject to the water-dependent use standards of the CCMA. The relevant statuatory standard is:

> to manage existing uses in the coastal boundary ***through existing municipal planning, zoning and other regulatory authorities... giving highest priority and preferences to water-dependent uses*** and facilities in shorefront areas (CGS Sec. 22a-92(b)(1)(A), emphasis added).

The CCMA defines water-dependent uses as:

> those uses and facilities which require direct access to, or location in, marine or tidal waters and which therfore, cannot be located inland including but not limited to: marinas, recreational and commercial fishing and boating facilities...

> and uses which ***provide general public access*** to marine or tidal waters (CGS Sec. 22a-93(16) , emphasis added).

The proposed residential subdivision is not water-dependent because it does not require access to marine or tidal waters as defined above. Further, the CCMA defined adverse impacts to future water-dependent development opportunties to include:

> ...(A) locating a non-water-dependent use at a site that is (I)physically suited for a water-dependent use for which there is a reasonable demand... (CGS Sec. 22a-93(17)).

Based on DEP-OLIS review of the CSPR application and the site conditions, it appears that the proposed subdivision and subsequent location of non-water dependent residential units represents an adverse impact to water-dependent uses as defined above. The site does not appear suitable for larger, more traditional water-dependent uses such as a marina given the large and healthy tidal wetland system adjacent to the site, and physical confines of Mile Creek. *However, the site does appear appropriate for other water-dependenet uses as defined by the CCMA which would satisfy the above criteria. Specifically, the site appears physically suited for certain types of smaller-scale water-dependent uses such as a public access pathway and/or bird watching area along the marsh which which would afford views of nearby wetlands and wildlife.*

In accordance with the above CCMA water-dependent use policies, a pulic access walking trail has now been proposed as outlined in the current site plans. The trail begins off of Shore Road and continues through the open space area out to a knoll of upland which protudes into the tidal wetlands. DEP-OLIS commends the applicant for providing a public access walkway, and ***recommend that the Commission require the access as a condition of CSPR approval to ensure its availability in perpetuity.*** In order to render this proposed public access a meaningful and accessible component of the project, DEP-OLIS recommends ***that parking for two or three cars be required on or near the subject property along Shore Road.*** Also, DEP-OLIS recommends ***public access signs***

be placed at the entrance to the development along Shore Road as as to be visible from both directions along the road. In addition to the "private walkway"signs noted on the revised plans, DEP-OLIS ***recommends internal public access signs directing the public to the appropriate areas*** to be included as well. This will help direct and reassure the public when they encounter the "private" signs on-site. ***Also, all public access ways should be deed restricted in perpetuity for such uses.***

Planning Review

The revised application has been presented to the Old Lyme Planning Commission, consistent with the regulations of the Town of Old Lyme. This review followed a presentation and site walk conducted by Mr. Angus McDonald, agent for the applicant, on Tuesday, May 19, 1998.

Summary

As an overall comment, the plan presented to the Old Lyme Planning Commission has been designed in a manner consistent with the Planned Residential Cluster Development regulations. The project has been carefully thought out and appears to succeed in conserving natural resources, specifically, seven (7) acres of tidal marsh, thirty three (33) acres of open space. Approximately six (6) acres of the site will be occupied by 26 single family detached homes, yards and private roads. The layout has been designed to be sensitive to the surrounding natural resources.

Suggestion

Based on the site walk and subsequent discussion held at the site, one suggestion that the Connecticut River Estuary Regional Planning Agency would like the applicant to consider is modifying the southern tidal wetland "managed" buffer area adjacent to Mile Creek so as to prohibit vegetation removal or disturbance within a 25 foot (or mutually agreeable) buffer adjacent to the wetland. Currently, it is our understanding that current plans will allow residents to clear any undergrowth and trees within the managed area that are smaller than 2" caliper in diameter from the top of the bank down to the edge of the tidal wetland. Further protection of the embankment area through a buffer restriction in this manner will allow the top of the bank to be managed for the promotion of views while still maintaining resource protection immediately adjacent to the wetland. The result will be a "no disturb" buffer of at least

25 feet along the entire length of the Mile Creek tidal wetland. Access to the wetland will be limited (and promoted) via the planned walkway paths shown on the plans.

Traffic Review and Comments

The Team traffic planner's major concern with the Beach Farms project was the number of vehicles entering and exiting the access road to the complex. After meeting with the DOT Traffic Division, they indicated that 260 trips per day, which is an average of 10 trips per household, spread out ovr a 12 hour period, does not warrant a signal. Additionally, Route 156 appears wide enough in the westbound direction for a vehicle to pass a standing vehicle waiting to tuen left into the complex.

Walking Path/Nature Trail

The nature trail, which will be open to the public, as indicated by the developer, should provide parking for these users. If the state rest area on Route 156 is used for this purpose, access must be provided in the form of a pathway, separate from the road, to the trail. The path must be handicap accessible.

Appendix

Soils Information

ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a varety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area — an 86 town region.

The services of the Team are 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, landfills, commercial and industrial developments, sand and gravel excavations, 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 official 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 and the ERT Coordinator. A request form should be completely filled out and should include the required materials. 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 and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.