Multiplex Movie Theater at Flat Rock Place

Westbrook, Connecticut

Eastern Connecticut Environmental Review Team Report

Eastern Connecticut Resource Conservation and Development Area, Inc.

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Environmental Review Team Report

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

for the
Westbrook
Conservation Commission
and
Zoning Commission

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Acknowledgments

This report is an outgrowth of a request from the Westbrook Conservation Commission and the Zoning Commission to the Middlesex 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 Thursday, January 23, 1997.

Warren Herzig	Supervising Sanitary Engineer DEP - Bureau of Water Management Permitting, Enforcement and Remediation (860) 424-3801
Doug Hoskins	Wetland Specialist/Environmental Analyst III DEP - Bureau of Water Management Inland Water Resources Division (860) 424-3903
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I would also like to thank Beth Jennings, Westbrook town planner, Tom Odell, conservation commission chairman, Bob Peterson, conservation commission member, Thomas Elliott, planning commission chairman, Fred Radcliffe, project

engineer, Don Fortunato, soils consultant, Jim Elliman, manager of the Westbrook Outlet Mall, and Carol Donzella, project coordinator from the USDA-NRCS 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 a location and soils map. During the field review Team members were given site plans and additional reports on stormwater drainage, sewage disposal and wetlands. 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. 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. 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 making your decision concerning this multiplex movie theater.

If you require additional information please contact:

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Introduction

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The Westbrook Conservation and Zoning Commissions have requested an environmental review of a proposed multiplex movie theater.

The 7.6 acre site is located at Flat Rock Place, a commercial subdivision which includes the Westbrook Outlet Mall and four other undeveloped lots. The site (Lots #3 and #4) is located on the north side of entrance road and is bordered to the east and west by wetlands and to the north by the I-95 right-of-way.

The proposal includes twelve (12) movie theaters with 1440 seats in one building with parking for 480 cars. This will create approximately 6.6 acres of impervious surface. A *Zenon* wastewater treatment and disposal system is being proposed for sewage disposal.

Objectives of the ERT Study

The ERT has been requested to assist the town with a review of this proposal because Flat Rock Place has several connecting wetlands that are, or will be, used to attenuate impacts from stormwater and sewage disposal systems. There is a concern about the possible impacts to on and off-site wetland resources from this development and the cummulative effects of all the developments (the Outlet Mall and the other lots to be developed commercially). Specific concerns of the town include stormwater manangement, erosion and sediment control, water quality, wetlands impacts and sewage disposal.

The ERT Process

Through the efforts of the town this environmental review and report was prepared for the Westbrook Conservation and Zoning Commissions.

This report provides an information base, recommendations and guidelines which cover the topics requested by the commissions. Team members were able to review plans and supporting documentation provided by the applicant. After reviewing available reports and documentation the USDA-NRCS Project Coordinator believes that the soils on site have been evaluated, studied and reported on by a number of credible sources using NRCS information and she reports that "to submit a "general" report on the soils, when an in-depth study has recently been done, would not be beneficial to this site or to the town of Westbrook."

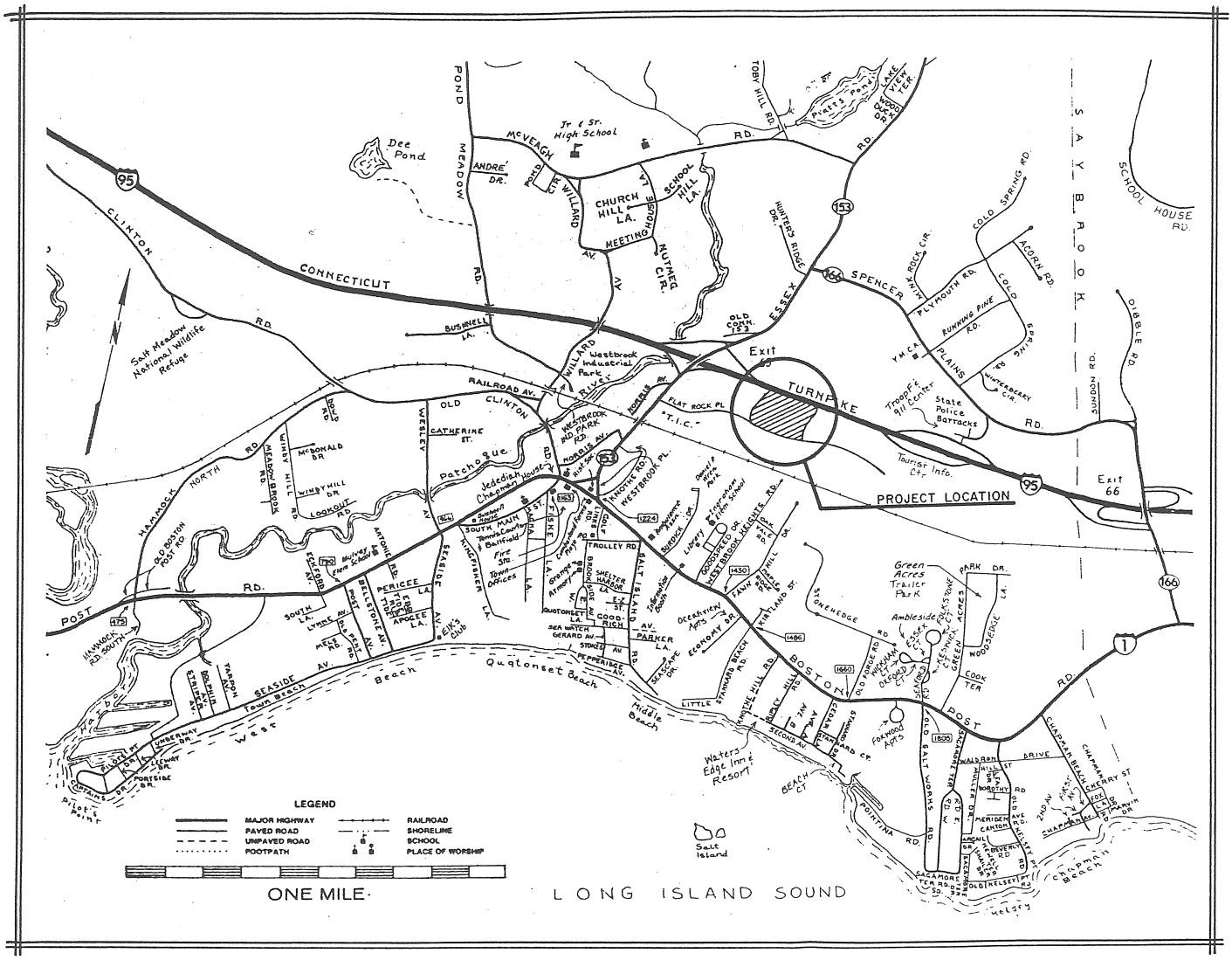
The review process consisted of four phases:

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

The data collection phase involved both literature and field research. The field review was conducted on January 23, 1997. 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.

Location Map



Topographic Map

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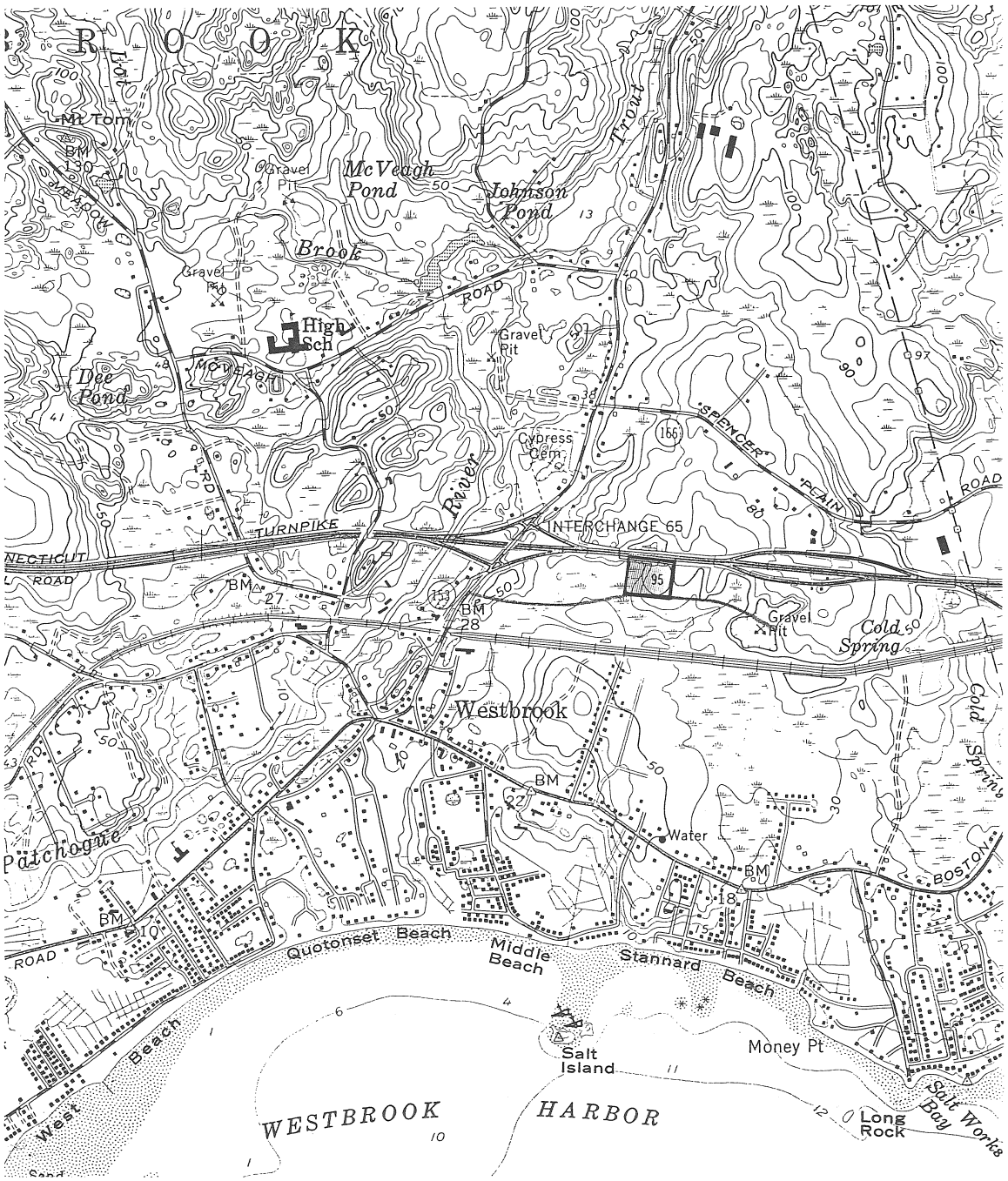
Scale 1″ = 2000′

Approximate Site



Wetland Resources

This section includes observations of the wetland resources, the impacts that the proposed activities may have on those resources and recommendations for future development of this parcel given these possible impacts.

According to the site plan there are no regulated inland wetland soils on the subject parcel, however, inland wetlands on both the eastern and western abutting properties throw a small portion of the proposed activities into Westbrook's 50 foot administrative setback, namely earth grading, driveway construction on the eastern side and stormwater outlet pad construction on the western portion. Approximately 84 percent of the property will be impervious surfaces comprised of a 12-plex movie theater, parking areas, access roads, loading zone and sidewalks. A total of five stormwater outlets discharging toward wetland areas are proposed, with separating distances from wetlands ranging from approximately 40 to 60 feet. In addition, a septic leaching field in the form of infiltration galleys is proposed to be located under the parking lot approximately 150 feet from the western wetland area.

Possible impacts from proposed activities such as these may include:

1. reduction of water quality resulting from stormwater contributions containing common urban stormwater pollutants such as excessive sediments, heavy metals, hydrocarbons, and salts;
2. reduction of water quality resulting from septic system effluent flowing toward wetlands;
3. temporary reduction of water quality resulting from excessive sediments discharged to wetland areas during the construction period; and
4. a re-direction of surface and/or groundwater flows supplying wetland areas resulting from construction of stormwater management systems.

The first two possible impacts, stormwater and sewage effluent are addressed in separate sections of this report.

Additional recommendations relating to mitigating temporary reduction of water quality resulting from excessive sediments discharged to wetland areas during the construction period include:

1. providing the maintenance requirements of temporary measures (silt fence/construction pad, etc.) during the construction period;
2. elaborating on the need to use temporary vegetative cover on areas that are to remain disturbed for thirty days or more;
3. temporary erosion protection when time of year or weather prohibit the establishment of permanent vegetative cover; and
4. maintenance requirements for permanent measures after the construction period (such as outlet protection pads).

The issue of the re-direction of surface and/or groundwater flows supplying wetland areas resulting from the construction of stormwater management systems appears to have been mitigated by the applicant by basically maintaining pre- and post-construction watershed configurations. However, when the proposed stormwater management system goes "on-line" stormwater will enter the wetlands in a more concentrated manner via the stormwater outlet pads, where currently it is entering the wetland through surface sheet flow and as infiltrated groundwater. The use of stormwater infiltration systems which would more closely mimic the current surface and groundwater flows should be investigated by the applicant. The relatively good permeability of the Agawam soils mapped at this location may allow for the design of adequate infiltration systems at several locations throughout the site. This design would also provide for further mitigation of stormwater quality.

Stormwater Management

The site plans indicate twelve (12) movie theaters in one building with 1440 seats and 480 parking spaces creating approximately 6.6 acres of impervious surface. Most of the paved area drainage discharges to three outfalls to the wetlands on the west side of the site. The drainage system collecting runoff to these outfalls utilizes catch basins with sumps for collection and *Vortechnics* chambers prior to final discharge for the control of particulate and floatable pollutants. These discharges utilize large riprap pads which act as energy dissipators and, to some extent, level spreaders. Runoff then flows overland for approximately 50 feet into the wetlands. Roof drainage from the proposed building is collected and discharged to the wetlands on the east side of the site. These discharges are protected by small riprap pads. No sedimentation structures are utilized here, nor are any probably necessary. The short section of driveway behind (east of) the theater is designed without curbs to allow runoff to discharge by sheet to the east.

This site is part of a larger commercial subdivision which includes the Westbrook Outlet Mall and several other undeveloped sites. The overall drainage pattern from these sites runs from east to west through an interconnected series of wetlands which function as long-term detention and treatment for stormwater runoff. All sites discharging to this wetland system are required to adhere to a high pollutant removal standard for their runoff. This typically includes the use of *Vortechnics* (or similar) devices for sediment and floatables removal. The General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities also requires the use of energy dissipators at all outfalls and the removal of 80% of sediments from runoff. The plans for this site appear to meet these criteria but ongoing monitoring during the construction process will be required (as outlined in the Construction General Stormwater Permit) to verify that all measures are adequate for their purposes and are installed and maintained properly.

At the time of the site visit, the site had already been cleared and grubbed without benefit of Town approvals and in violation of the DEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Also, weekly inspections have not been conducted and inactive areas remaining undisturbed for over 30 days have not been stabilized as required by the general permit. Erosion and sedimentation controls were in place and a registration form for the Construction General Permit has since been submitted. A Stormwater Pollution Control Plan must be prepared and kept on site prior to the continuation of construction activities.

The Site Plan for the complex, dated 6/22/96 by Frederick A. Radcliffe P. C., appears to adequately address the issues of stormwater system design and long-term stormwater management as mentioned previously. The Erosion Control Plan, dated 10/1/96, only shows perimeter silt fence, catch basin haybales and anti-tracking pads for the site. No soil stockpile areas, with associated erosion control measures are shown. The construction entrance anti-tracking pads should be enlarged to a minimum of 20 by 50 feet and a regular inspection and maintenance program outlined for them. Most significantly, no construction sedimentation basins are shown on the plans as required in the Construction Stormwater General Permit. These may be constructed in such a way as to utilize the *Vortechnics* chambers (if installed early enough) to provide sediment control during construction. However, a rigorous inspection and maintenance program must be employed for the chambers to be used in this manner.

The theater complex must also register for the General Permit for the Discharge of Stormwater Associated with Commercial Activity once the site is operational. This permit requires the development of a Stormwater Management Plan to address proper maintenance, source controls, best management practices, employee training and periodic inspection. Regular sweeping of the paved areas is required as is inspection of stormwater structures and prohibition of washing or other non-stormwater discharges to the stormwater system.

When the site properly complies with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, potential construction impacts to the adjacent wetlands should be minimized. Subsequent compliance with the General Permit for the Discharge of Stormwater Associated with Commercial Activity should then significantly reduce the future potential for pollutants to be discharged from the site.

On-Site Sewage Treatment and Disposal

The proposed multiplex movie theater sewage treatment and disposal system is being designed for 1,900 seats. The design flow for this development will be 6,650 gallons per day.

The consultant has performed preliminary site testing and has prepared a preliminary draft conceptual design report for the on-site sewage treatment and disposal system.

Upon analysis of the soil profile, depth to ground water and soil permeabilities, the consultant has determined that the site has sufficient hydraulic capacity to treat and dispose of the projected sewage flow. However, the site characteristics and site development will impact renovation of the sewage for nitrogen. Therefore, the consultant has proposed that the *Zenon* wastewater treatment and disposal system be utilized. This treatment technology will treat and recycle up to 85% of the wastewater flow. The remaining 15% of the treated effluent will be disposed of through a pressurized leaching system into the on-site soils.

The treatment plant will consist of primary treatment, equalization, biological treatment including nitrification and denitrification, membrane filtration, carbon adsorption, ultraviolet disinfection, storage of treated effluent and distribution of treated effluent back to the cinema for flush water. Because of the design flow and the use of alternative treatment technologies, a discharge permit from the Department of Environmental Protection is required pursuant to Section 22a-430 of the Connecticut General Statutes and regulations adopted thereunder, as amended.

In accordance with the aforementioned regulations and statutes, the engineer must demonstrate that the system will function hydraulically and that the subject discharge will meet the pertinent Water Quality Standards prior to reaching a point of

environmental concern such as a wetland, waterbody or property line. Pollutants of concern include nitrogen, phosphorus, virus and pathogenic bacteria.

It will be necessary for Department staff to field verify soil conditions and site hydrogeology. It is recommended that ground water elevations be monitored through the seasonal high conditions.

A completed permit application will require submission of an application and a conceptual design report with supporting documentation. When Department staff are satisfied with the design, a tentative determination will be made on the application and the public given notice.

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 Department of Environmental Protection must be overseen by a professional engineer licensed to practice in Connecticut and as-built drawings must be prepared.

Once construction of the system is completed in accordance with the approved plans and specifications, a permit to discharge would be issued. The permit will contain terms and conditions, monitoring requirements, maintenance requirements and effluent limitations.

The treatment plant will be operated by a licensed operator. Discharge monitoring reports will be submitted monthly to the Department and the Town of Westbrook Health Department.

Although this ERT was requested for Lots #3 and #4 of Flat Rock Place, the developer and town may wish to look at a more comprehensive wastewater treatment and disposal planning approach for the additional lots in the subdivision because of the

types of development considered, on-site resource conditions and the continued consideration of alternative technologies.

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.