

Eastford, Connecticut

EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM REPORT

NOVEMBER 1993

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Whitehead Woodlands Estates Subdivision

Eastford, Connecticut

Review Date: October 13, 1993

Report Date: November 1993

Eastern Connecticut Environmental Review Team
Eastern Connecticut
Resource Conservation & Development Area, Inc.
P.O. Box 70
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Whitehead Woods Estates Eastford, Connecticut

This request is an outgrowth of a request from the Eastford Planning Commission to the Windham County Soil and Water Conservation District (SWCD). The SWCD referred the 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 ERT met and filed checked the site on Wednesday, October 13, 1993. Team members participating on this review included:

Nicholas Bellantoni State Archaeologist

CT Museum of Natural History

Linda Edmonds District Manager

Windham Soil and Water Conservation District

Nancy Ferlow Soil Conservationist

USDA Soil Conservation Service

Carla Guerra Environmental Analyst

DEP - Inland Water Resource Management

Richard Harris Operations Supervisor

DEP - Land Aquisition and Management

Joe Hickey State Park Planner

DEP - Bureau of Outdoor Recreation

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DEP - Natural Resources Center

Brian Murphy Fisheries Biologist

DEP - Eastern District Headquarters

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DEP - Wildlife Division, Sessions Woods W.M.A.

Mildred Powell Geologist

UCONN - Department of Geology and Geophysics

Elaine Sych ERT Coordinator

Eastern Connecticut Resource Conservation and Development Area, Inc.

Prior to the review day, each Team member received a summary of the proposed project, a list of the town's concerns, a location map, a soils map, the Health District

report, and correspondence from the town's attorney, engineer and fire chief. During the field review the Team members were given a topographic map and plans. The Team met with, and were accompanied by the Chairman of the Planning Commission, the First Selectman, and the project engineer for the applicant. 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 designs 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 developer and 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 decisions on this subdivision.

If you require additional information, please contact:

Elaine A. Sych ERT Coordinator Eastern CT RC&D Area, Inc. P.O. Box 70 Haddam, CT 06438 (203) 345-3977

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INTRODUCTION

An environmental review was requested by the Eastford Planning Commission for the proposed Whitehead Woodland Estates Subdivision.

The proposal is for a 12 lot residential subdivision on 44.4 acres, with a thirteenth parcel of 61.6 acres "not to be approved for building purposes" at this time. The site is located on the east side of Kennerson Reservoir Road across from Halls Pond. Halls Pond is state owned and the state has a two year renewable maintenance easement with the subdivision applicant for the spillway/dam.

The 12 lots have frontage on Kennerson Reservoir Road, and the layout allows for access to the remaining portion of land across a narrow wetland area. The remaining land contains two major wetland areas, the Slovik Brook streambelt and associated wetland areas.

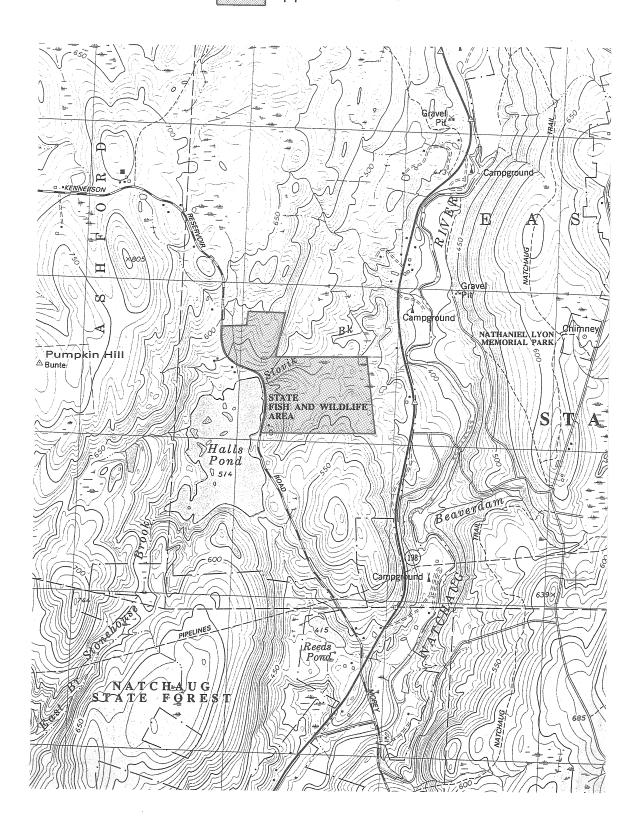
The property is within the Natchaug River Watershed. Halls Pond drains to Slovik Brook, which joins the Natchaug River and eventually enters the Willimantic River. A portion of the property currently drains to Halls Pond, while the majority drains to Slovik Brook. The vegetation consists of mature hardwood forests, with the wetlands being forested with some scrub/shrub wetlands and a wet meadow.

The environmental review was requested to assist the town in evaluating the open space potential of the subdivision, the subdivision's impact on adjacent properties, Halls Pond and wetlands on and off the property. The Planning Commission had four specific concerns that they had asked the Team to address. They are briefly listed below:

- 1) What are the town's options for open space?;
- 2) How to best resolve the problem of public parking and access to Halls Pond?;
- 3) Where should a dry hydrant for fire protection be placed?; and
- 4) Would the ERT act as a liaison between the town and the State to assist in the timely resolution of the above issues?

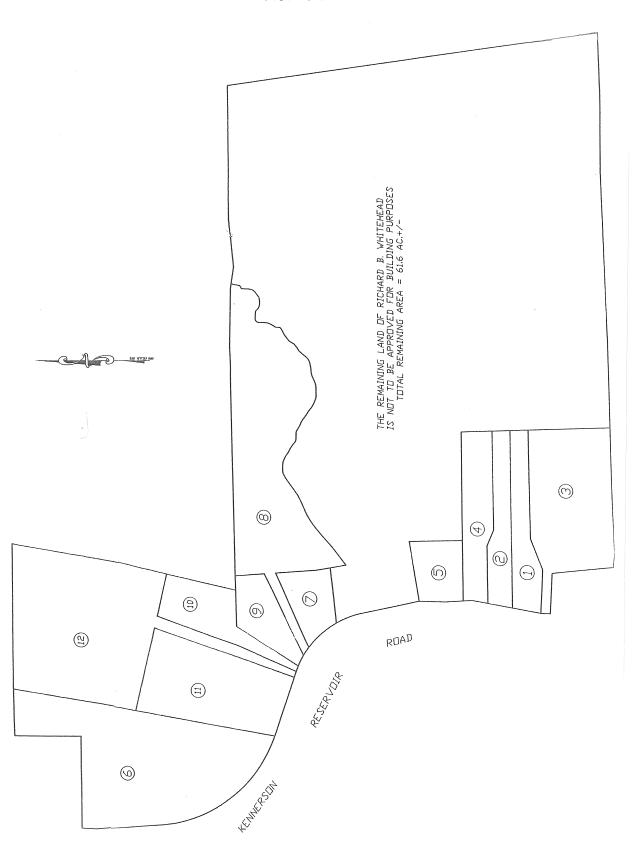
(**Note:** The field review took place on October 13, 1993, and the Team members submitted their individual reports within several weeks of that meeting. Changes in plans/options/knowledge of ownership may have changed since the Team members have written their reports, and these changes may not be reflected in this report.)

Approximate Site



LOT LAYOUT

Not To Scale



GEOLOGY AND HYDROLOGIC CONSIDERATIONS

The bedrock at this site is predominantly schist and gneiss, overlain by a thin layer of glacial till. The eastern portion of the study area consists of glacial stream deposits. Depth to bedrock has not been determined. The glacial stream deposits are in the area "not to be approved for building purposes".

The primary concerns of the Town are threefold:

- 1. How to best set aside open space;
- 2. Where best to locate parking for recreational users of Halls Pond; and
- 3. How best to allow for hydrants and adequate space for emergency vehicle parking.

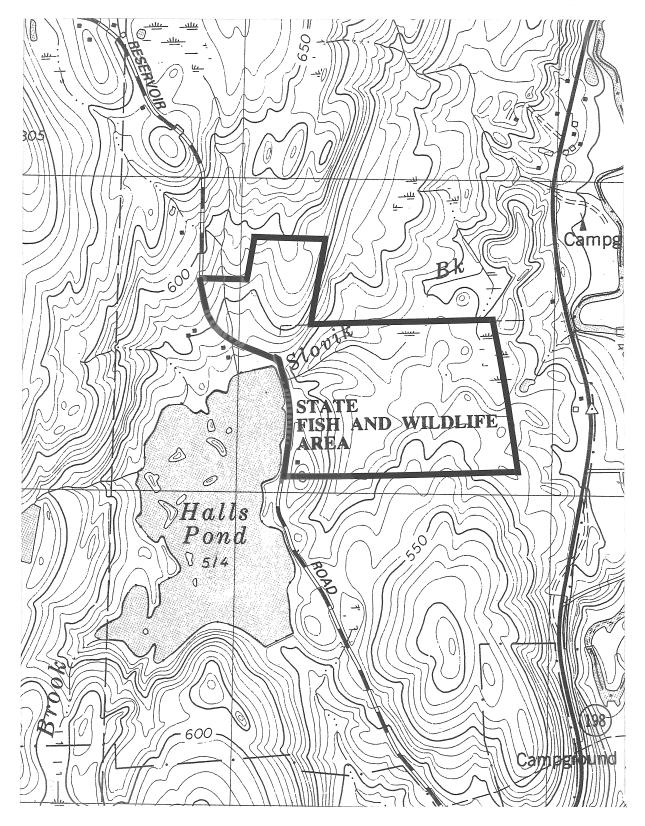
The geology of the study area has little or no impact on these concerns, so they will not be addresses in this section beyond the following comments:

- 1. Wetland areas are already protected by state, federal and local regulation to some extent, so the Town may want to make use of its open space allotment by setting aside non-wetland areas.
- 2. If the spillway area is owned by the State, then the road to the rear of the subdivision may have to be located on Lot 5. Redrawing lot lines may be necessary in the southern portion of the subdivision;
- 3. In Lots 1-4 the septic systems and wells are very close to each other and to pre-existing systems. Assuming the groundwater is flowing from Halls Pond to the wetlands area in the eastern portion of the subdivision, there should be no problem with well contamination. Heavy pumping of the domestic water supply, however, could induce groundwater flow from the septic system to the domestic well. To make sure that this does become a problem, the wells should be drilled into bedrock and sealed from the surface deposits. Since lot lines may have to be redrawn in any case (see point 2 above), it may be preferable to redraw lots 1-4 so that there is more distance available to separate wells and septic systems.

TOPOGRAPHIC MAP

Scale 1" = 1000'

Approximate Site Boundary



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SOIL RESOURCES

The wetlands on the site appear to be accurate as flagged in the field. The wetland and upland soil types are interpreted from the Soil Survey. According to the Soil Survey of Windham County, Connecticut, the soils within the proposed subdivision site include Adrian and Palms Mucks, Carlisle Muck, Canton, Charlton, Hollis, Gloucester, Hinckley, Ridgebury, Leicester, Whitman, Rippowam, Sudbury, Sutton and Woodbridge. These soils are described below:

Adrian and Palms mucks (Aa) are inland wetland soils. Wetness, ponding, slow percolation, subsidence and cut banks caving are the main limitations to development.

Canton and Charlton extremely stony fine sandy loams (Cd) are well drained soils located on side slopes of glacial till uplands. Limitations include large stones and slope.

Carlisle muck (Ce) is an inland wetland soil. Ponding, subsidence and slow percolation are the major limitations.

Charlton-Hollis fine sandy loams, very rocky (Cr) are well drained, upland soils that are deep in some places (Charlton) and shallow to bedrock in others (Hollis). The major limitations are slope and depth to bedrock in the shallow Hollis soils.

Gloucester extremely stony fine sandy loam (Ge) is a deep upland soil located on glacial till. The main limitations are poor filtration for septic systems, large stones and slopes.

Hinckley gravelly sandy loam (Hk) is an excessively drained soil located on sandy and gravelly water sorted materials. Permeability is rapid. The main limitations are poor filtration for septic systems and slope.

Ridgebury, Leicester and Whitman extremely stony fine sandy loams (Rn) are inland wetland soils. They have a high watertable during fall through spring. The major limitations are wetness, slow percolation and ponding.

Rippowam fine sandy loam (Ru) is an inland wetland soil. It is subject to frequent flooding. The major limitations are floods, wetness and poor filtration for septic systems.

Sudbury sandy loam (Sg) is a moderately well drained upland soil. The major limitations are wetness and poor filtration for septic systems.

Sutton extremely stony fine sandy loam (Sx) is a moderately well drained upland soil. Wetness is the major limitation.

Woodbridge extremely stone fine sandy loam (Wz) is a moderately well drained upland soil. The major limitations are wetness, slow percolation and slope.

Detailed limitation charts follow. Definitions of the limitations ratings are as follows:

Slight - The rating given to soils that have properties favorable for the intended use. The degree of limitation is minor and can be overcome easily. Good performance and low maintenance can be expected.

Moderate - The rating given to soils that have properties moderately favorable for the use. This degree of limitation can be overcome or modified by special planning, design, or maintenance. During some part of the year, the expected performance is less desirable than for soils rated Slight.

Severe - The rating given soils that have one or more properties unfavorable for the intended use, such as steep slopes, bedrock near the surface, flooding, high shrink/swell potential, a seasonally high watertable, of low strength. This degree of limitation generally requires major soil reclamation, special design, or intensive maintenance, which in most situations is difficult and costly.

Many of the limitations found on this site can be overcome with standard engineering practices. Septic systems and houses should be placed carefully. Curtain drains and footing drains may be needed to keep basements dry and improve septic system functions. Septic systems, particularly septic tank absorption fields, may require precise engineering to function properly in the proposed locations. The local health district should review the soils and the septic system plans carefully.

There is some concern with the septic system and well placement in Lots 1, 2, 3, 4, and 5. The septic and wells meet the separating distances required by the public health code, but they are closely spaced. The soils in this area have limitations such as slow percolation in the Woodbridge soils and stoniness in the Charlton-Canton soils. Another lot configuration might allow for greater separating distances.

Erosion and Sediment Control

The current plans are for the subdivision of the property only and do not contain either erosion and sediment (E&S) control plans or complete lot grading plans. Before each lot is developed, an erosion & sediment plan and grading plan should be made available to the Town. Of particular concern are the wetlands, the wetland crossing, the steep slopes and Halls Pond. The lots should be cleared as little as possible. Open areas should be stabilized as soon as possible. Each driveway should have

construction entrance protection to prevent sediment from getting on the road and being deposited in the pond during storm events. Haybales or silt fence should be used to prevent sediment from getting into the wetlands. The plan should be consistent with the information and details found in the Connecticut Guidelines for Soil Erosion and Sediment Control (1985, revised 1988).

Planning is important for the erosion & sediment control plan but implementation and maintenance are critical. On the plans, one person should be assigned responsibility for checking the erosion & sediment controls. The erosion & sediment controls should be checked after every rain storm. Maintenance should be preformed as needed.

Recreation

Portions of the site have great potential to be included in the recreational plan for Halls Pond. This will not only benefit the general public but will also benefit the future residents. Improved parking and access should solve some of the traffic problems along the road and the residences will decrease the sense of privacy that the late night party people feel in the area.

The best place for a parking area for recreational traffic is near the cart path entrance by Lot 5. This is the place currently most often used. The topography is fairly flat and care can be taken to avoid the small wetland pocket along the road. The parking should be on the side of the road away from the pond to allow cleanup time for oils, antifreeze and other spilled vehicle chemicals.

The area by Lot 5 has immediate access to the water which is good for recreational boaters and picnickers with small children. Layout and number of parking spaces needs to be designed based on the anticipated usage.

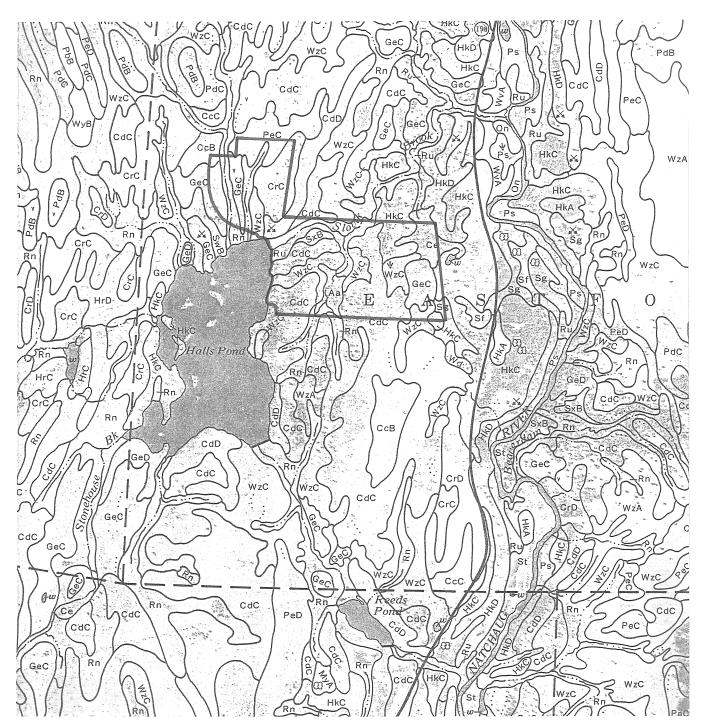
One option which may fit the current subdivision plans and any future plans is to plan the entrance road to the rear portion of the parcel and design the parking area as an adjunct to the road. This would leave a clear path for the future road and provide the parking needed. Also, a dry hydrant can be placed here and provide water for fire suppression for the entire subdivision. Some juggling of lot lines for the current subdivision may be needed.

Many of the recreational parking solutions depend on the land ownership. Lot lines, access points and dam repair access all need accurate boundaries. The ownership questions should be straightened out as soon as possible for all parties involved.

SOILS MAP

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Scale 1'' = 1320'



Dwellings with Basements

SOIL INTERPRETATION REPORT

	Symbol, Name	Septic Tank Absorption Fields	Shallow Excavations	Dwellings Without Basements	Dwellings With Basements
Aa	ADRIAN	SEVERE Subsides Ponding Percs Slowly	SEVERE Cutbanks Cave Excess Humus Ponding	SEVERE Subsides Ponding Low Strength	SEVERE Subsides Ponding
	PALMS	SEVERE Subsides Ponding Percs Slowly	SEVERE Excess Humus Ponding	SEVERE Subsides Ponding Low Strength	SEVERE Subsides Ponding
CdC	CANTON	SEVERE Large Stones	SEVERE Cutbanks Cave	MODERATE Slope	MODERATE Slope
	CHARLTON	MODERATE Slope	MODERATE Slope	MODERATE Slope	MODERATE Slope
Се	CARLISLE	SEVERE Subsides Ponding	SEVERE Excess Humus Ponding	SEVERE Subsides Ponding	SEVERE Subsides Ponding
CrC	CHARLTON	Percs Slowly MODERATE Slope	MODERATE Slope	Low Strength MODERATE Slope	Low Strength MODERATE Slope
	HOLLIS	SEVERE Depth To Rock	SEVERE Depth To Rock	SEVERE Depth To Rock	SEVERE Depth To Rock
CrD	CHARLTON	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
	HOLLIS	SEVERE Depth To Rock Slope	SEVERE Depth To Rock Slope	SEVERE Slope Depth To Rock	SEVERE Depth To Rock Slope

SOIL INTERPRETATION REPORT

-	Symbol, Name	Septic Tank Absorption Fields	Shallow Excavations	Dwellings Without Basements	Dwellings With Basements	Dwellings with Basements
GeC	GLOUCESTER	SEVERE Poor Filter	SEVERE Cutbanks Cave	MODERATE Large Stones Slope	MODERATE Large Stones Slope	
HkC	HINCKLEY	SEVERE Poor Filter	SEVERE Cutbanks Cave	MODERATE Slope	MODERATE Slope	
Rn	RIDGEBURY	SEVERE Percs Slowly Wetness	SEVERE Wetness	SEVERE Wetness	SEVERE Wetness	
	LEICESTER	SEVERE Wetness	SEVERE Wetness	SEVERE Wetness	SEVERE Wetness	
	WHITMAN	SEVERE Percs Slowly Ponding	SEVERE Ponding	SEVERE Ponding	SEVERE Ponding	
Ru	RIPPOWAM	SEVERE Floods Wetness Poor Filter	SEVERE Cutbanks Cave Wetness	SEVERE Floods Wetness	SEVERE Floods Wetness	
Sg	SUDBURY	SEVERE Wetness Poor Filter	SEVERE Wetness Cutbanks Cave	MODERATE Wetness	SEVERE Wetness	
SxB	SUTTON	SEVERE Wetness	SEVERE Wetness	MODERATE Wetness	SEVERE Wetness	
WzC	WOODBRIDGE	SEVERE Wetness Percs Slowly	SEVERE Wetness	MODERATE Wetness Slope	SEVERE Wetness	

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SOIL INTERPRETATION REPORT

Survey	Area-	WINDHAM	COUNTY,	CONNECTICUT

	Symbol, Name	Small Commercial Buildings	Local Streets and Roads	Lawns, Landscaping, and Golf Fairways
Aa	ADRIAN	SEVERE Subsides Ponding Low Strength	SEVERE Subsides Ponding Frost Action	SEVERE Ponding Excess Humus
	PALMS	SEVERE Subsides Ponding Low Strength	SEVERE Ponding Frost Action Subsides	SEVERE Ponding Excess Humus
CdC	CANTON	SEVERE Slope	MODERATE Slope	MODERATE Large Stones Slope
	CHARLTON	SEVERE Slope	MODERATE Slope	MODERATE Large Stones Slope
Ce	CARLISLE	SEVERE Subsides Ponding Low Strength	SEVERE Subsides Ponding Frost Action	SEVERE Ponding Excess Humus
CrC	CHARLTON	SEVERE Slope	MODERATE Slope	MODERATE Large Stones Slope
	HOLLIS	SEVERE Slope Depth To Rock	SEVERE Depth To Rock	SEVERE Depth To Rock
CrD	CHARLTON	SEVERE Slope	SEVERE Slope	SEVERE Slope
	HOLLIS	SEVERE Slope Depth To Rock	SEVERE Depth To Rock Slope	SEVERE Slope Depth To Rock

SOIL INTERPRETATION REPORT

	Symbol, Name	Small Commercial Buildings	Local Streets and Roads	Lawns, Landscaping, and Golf Fairways	
GeC	GLOUCESTER	SEVERE Slope	MODERATE Slope Large Stones	SEVERE Large Stones	
HkC	HINCKLEY	SEVERE Slope	MODERATE Slope	SEVERE Drouthy	
Rn	RIDGEBURY	SEVERE Wetness	SEVERE Wetness Frost Action	SEVERE Wetness	
	LEICESTER	SEVERE Wetness	SEVERE Wetness Frost Action	SEVERE Wetness .	
	WHITMAN	SEVERE Ponding	SEVERE Frost Action Ponding	SEVERE Large Stones Ponding	
Ru	RIPPOWAM	SEVERE Floods Wetness	SEVERE Wetness Floods Frost Action	SEVERE Wetness Floods	
Sg	SUDBURY	MODERATE Wetness	MODERATE Wetness Frost Action	SLIGHT	
SxB	SUTTON	MODERATE Wetness Slope	SEVERE Frost Action	MODERATE Large Stones Wetness	
WzC	WOODBRIDGE	SEVERE Slope	SEVERE Frost Action	MODERATE Large Stones Wetness Slope	

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SOIL INTERPRETATION REPORT

CLIDYOLA	A noo-	LITHID HAM	COLINITY	CONNECTICUT
Survev	Area-	WINDHAM	LUUNIY.	CONNECTICUT

	Symbol, Name	Camp Areas	Picnic Areas	Playgrounds	Paths and Trails
Aa	ADRIAN	SEVERE Ponding Excess Humus	SEVERE Ponding Excess Humus	SEVERE Excess Humus Ponding	SEVERE Ponding Excess Humus
	PALMS	SEVERE Ponding Excess Humus	SEVERE Ponding Excess Humus	SEVERE Ponding Excess Humus	SEVERE Ponding Excess Humus
CdC	CANTON	SEVERE Large Stones	SEVERE Large Stones	SEVERE Slope Large Stones	SLIGHT
,	CHÁRLTON	SEVERE Large Stones	SEVERE Large Stones	SEVERE Large Stones Slope	SLIGHT
Се	CARLISLE	SEVERE Ponding Excess Humus	SEVERE Ponding Excess Humus	SEVERE Excess Humus Ponding	SEVERE Ponding Excess Humus
CrC	CHARLTON	MODERATE Slope Large Stones	MODERATE Slope Large Stones	SEVERE Large Stones Slope	SLIGHT
	HOLLIS	SEVERE Depth To Rock	SEVERE Depth To Rock	SEVERE Large Stones Slope Depth To Rock	SLIGHT
CrD	CHARLTON	SEVERE Slope	SEVERE Slope	SEVERE Large Stones Slope	SEVERE Slope
	HOLLIS	SEVERE Slope Depth To Rock	SEVERE Slope Depth To Rock	SEVERE Large Stones Slope Depth To Rock	SEVERE Slope

SOIL INTERPRETATION REPORT

•	Symbol, Name	Camp Areas	Picnic Areas	Playgrounds	Paths and Trails
GeC	GLOUCESTER	SEVERE Large Stones	SEVERE Large Stones	SEVERE Slope Large Stones Small Stones	MODERATE Large Stones
HkC	HINCKLEY	MODERATE Slope Small Stones	MODERATE Slope Small Stones	SEVERE Slope Small Stones	SLIGHT
Rn	RIDGEBURY	SEVERE Large Stones Wetness Percs Slowly	SEVERE Large Stones Wetness Percs Slowly	SEVERE Wetness Large Stones Small Stones	SEVERE Wetness
	LEICESTER	SEVERE Large Stones Wetness	SEVERE Wetness Large Stones	SEVERE Large Stones Wetness	SEVERE Wetness
	WHITMAN	SEVERE Large Stones Ponding	SEVERE Large Stones Ponding	SEVERE Ponding Large Stones	SEVERE Ponding
Ru	RIPPOWAM	SEVERE Floods Wetness	SEVERE Wetness	SEVERE Wetness Floods	SEVERE Wetness
Sg	SUDBURY	MODERATE Wetness	MODERATE Wetness	MODERATE Wetness Small Stones	SLIGHT
SxB	SUTTON	SEVERE Large Stones	SEVERE Large Stones	SEVERE Large Stones	MODERATE Wetness
WzC	WOODBRIDGE	SEVERE Large Stones	SEVERE Large Stones	SEVERE Large Stones Slope	MODERATE Wetness

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PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

Мар				Moist Blk	Permeab-	Available	Soil	Salin-	Shrink	Eros	ion	Wind	Organi
symb	ol Soil Name	Depth	Clay	Density	ility	water cap	React	ity	Swell	Fact	or	Erod.	Matter
		(In)	(pct)	(g/cm3)	(In/hr)	(In/in)	(ph)	(mmhos/cm)	Pot.	K	T	Group	(pct)
Aa	ADRIAN	0-33	0-	0.30-0.55	0.2- 6.0	0.35-0.45	5.1-7.3	-			4 2	55	75.
		33-60	2-10	1.40-1.75	6.0- 20	0.03-0.08	5.6-8.4	-	LOW			-	
	PALMS	0-30	0-	0.30-0.55	0.2- 6.0	0.35-0.45	5.1-7.8	. -			5 2	75	99.
		30-60	7-35	1.45-1.75	0.2- 2.0	0.14-0.22	6.1-8.4	-	LOW		_	-	
CdC	CANTON	0- 2	1- 8	0.90-1.20	2.0- 6.0	0.13-0.17	3.6-6.0	-	LOW	.20	3	0	
		2-23	1- 8	1.20-1.50	2.0- 6.0	0.09-0.17	3.6-6.0	-	LOW	.28		-	•
		23-60	0- 5	1.30-1.60	6.0- 20	0.04-0.08	3.6-6.0	-	LOW	.17	_	-	•
	CHARLTON	0- 2	3- 8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.20	3	0	
		2-25	3- 8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24		-	•
		25-65	1- 8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	. 24			
Ce	CARLISLE	0-66	0-	0.13-0.23	0.2- 6.0	0.35-0.45	4.5-7.8	-			5 2		99.
CrC	CHARLTON	0- 2	3- 8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.20	3	0	
		2-25	3- 8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24		-	•
		25-65	1- 8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	.24	_		•
	HOLLIS	0- 2	3-10	1.10-1.40	0.6- 6.0	0.10-0.18	4.5-6.0	-	LOW	.20	1	0	•
		2-14	1- 8	1.30-1.55	0.6- 6.0	0.06-0.18	4.5-6.0	-	LOW	.32		-	•
		14-18	-	-	-	-	•	-			_	•	
CrD	CHARLTON	0- 2	3- 8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.20	3	0	
		2-25	3- 8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24		-	
		25-65	1- 8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	.24			
	HOLLIS	0- 2	3-10	1.10-1.40	0.6- 6.0	0.10-0.18	4.5-6.0		LOW	.20	1	0	
		2-14	1- 8	1.30-1.55	0.6- 6.0	0.06-0.18	4.5-6.0	-	LOW	.32		•	
		14-18	-	-	-	-	-	-					
GeC	GLOUCESTER	0- 4	1- 8	1.00-1.30	6.0- 20	0.07-0.16	3.6-6.0	-	LOW	.17	3	•	
		4-12	1- 8	1.20-1.50	6.0- 20	0.06-0.10	3.6-6.0	-	LOW	.17			
		12-60	0- 5	1.50-1.75	6.0- 20	0.03-0.08	3.6-6.0	-	LOW	.17			•
HkC	HINCKLEY	0- 8	4- 8	0.90-1.10	6.0- 20	0.08-0.14	3.6-6.0	-	LOW	.20	3	2	7.
		8-18	1- 5	1.20-1.40	6.0- 20	0.01-0.10	3.6-6.0	-	. LOW	.17			
		18-60	0- 3	1.30-1.50	20- 20.0	0.01-0.06	3.6-6.0	-	LOW	.10			
₹n	RIDGEBURY	0-8	3-10	1.00-1.30	0.6- 6.0	0.06-0.21	4.5-6.5	-	LOW	.20	3	0	
		8-16	2- 8	1.60-1.90	0.6- 6.0	0.04-0.20	4.5-6.5	-	LOW	.32		-	
		16-60	2- 8	1.80-2.00	0.0- 0.2	0.01-0.05	4.5-6.5	-	LOW	.24			•
	LEICESTER	0- 7	3-10	1.00-1.25	0.6- 6.0	0.12-0.18	4.5-5.5	-	LOW	.24	3	0	•
		7-30	2- 7	1.45-1.70	0.6- 20.0	0.08-0.16	4.5-5.5	-	LOW	.24			
		30-65	2- 7	1.45-1.70	0.6- 20.0	0.06-0.16	4.5-6.0	-	LOW	.24			

PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

Map				Moist Blk	Permeab-	Available	Soil	Salin-	Shrink	Eros	ion	Wind	Organi
С								_					
Symb	ol Soil Name	Depth	Clay	Density	ility	water cap	React	ity	Swell	Fact	or	Erod.	Matter
										.,	_		
		(In)	(pct)	(g/cm3)	(In/hr)	(In/in)	(ph)	(mmhos/cm)	Pot.	K	T	Group	(pct)
	WHITMAN	0- 9	5- 8	1.10-1.30	0.6- 6.0	0.12-0.26	4.5-6.5	-	LOW	.20	3	0	
		9-14	2- 4	1.60-1.85	0.6- 6.0	0.10-0.17	4.5-6.5	-	LOW	.32		-	
		14-60	1- 3	1.85-2.00	0.0- 0.2	0.03-0.04	4.5-6.5	-	LOW	.24		-	
Ru	RIPPOWAM	0- 7	2- 6	1.10-1.35	0.6- 6.0	0.11-0.21	4.5-7.3	-	LOW	.20	5	3	8.
		7-35	1- 6	1.20-1.45	0.6- 6.0	0.09-0.18	4.5-7.3	-	LOW	.20		-	
		35-65	0- 2	1.25-1.50	6.0- 20.0	0.01-0.10	4.5-7.3	-	LOW	.17		-	
Sg	SUDBURY	0-10	2- 6	1.10-1.40	2.0- 6.0	0.10-0.25	3.6-6.0		LOW	.24	3	2	6.
		10-22	2- 7	1.15-1.45	2.0- 6.0	0.07-0.18	3.6-6.0	-	LOW	.24		-	
		22-28	0-4	1.25-1.45	2.0- 20	0.01-0.15	3.6-6.0	_	LOW	.17		-	
		28-60	0- 3	1.30-1.45	6.0- 20	0.01-0.06	3.6-6.0	-	LOW	.10		-	
SxB	SUTTON	0- 3	3-10	1.00-1.25	0.6- 6.0	0.09-0.18	4.5-6.0	-	LOW	.20	3	7	15.
		3-35	3-10	1.35-1.60	0.6- 6.0	0.08-0.18	4.5-6.0	-	LOW	.28		-	
		35-65	2- 6	1.45-1.70	0.6- 6.0	0.06-0.16	4.5-6.0	-	LOW	.24		-	
WzC	WOODBRIDGE	0- 3	3-12	1.00-1.25	0.6- 2.0	0.08-0.18	4.5-6.0	-	LOW	.20	3	0	
		3-30	3-12	1.35-1.60	0.6- 2.0	0.08-0.18	4.5-6.0	-	LOW	.32		-	
		30-65	3-12	1.70-2.00	0.0- 0.2	0.05-0.10	4.5-6.0	-	LOW	.24		-	

Soil Conservation Service

88

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10/26/93

WATER FEATURES

,	Survey	Area-	WINDHAM	COUNTY,	CONNECTICUT
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Чар ѕуп	nbol and	Hydrologi	Hydrologic Flooding				High water table			
soil name		group	Freq Duration	Months	Depth	Kind	Months			
					(Ft)					
Aa	ADRIAN	A/D	NONE	-	-	APPAR	-			
	PALMS	A/D	NONE	-	-	APPAR	-			
CdC	CANTON	В	NONE	-	6.0- 6.0		-			
	CHARLTON	В	NONE	-	6.0- 6.0		-			
Се	CARLISLE	A/D	NONE	-	-	APPAR	-			
CrC	CHARLTON	В	NONE	-	6.0- 6.0		-			
	HOLLIS	C/D	NONE	-	6.0- 6.0					
CrD	CHARLTON	В	NONE	-	6.0- 6.0		-			
	HOLLIS	C/D	NONE	-	6.0- 6.0		-			
GeC	GLOUCESTER	Α	NONE ,	-	6.0- 6.0		-			
HkC	HINCKLEY	Α	NONE	-	6.0- 6.0		-			
Rn	RIDGEBURY	С	NONE		0- 1.5	PERCH	NOV-MAY			
	LEICESTER	С	NONE	-	0- 1.5	APPAR	NOV-MAY			
	WHITMAN	D	NONE	-	-	PERCH	-			
Ru	RIPPOWAM	С	FREQ	OCT-MAY	0- 1.5	APPAR	SEP-JUN			
Sg	SUDBURY	В	NONE	-	1.5- 3.0	APPAR	DEC-APR			
SxB	SUTTON	В	NONE	-	1.5- 2.5	APPAR	NOV-APR			
WzC	WOODBRIDGE	С	NONE	-	1.5- 2.5	PERCH	NOV-MAY			

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SOIL FEATURES

ap symbol and soil name		 B	 Bedrock		Cemented				Risk of corrosion Uncoated	
		Depth Hardness		Depth Hardness		Initial Total		action	steel	Concrete
		In		In		In	In			
la	ADRIAN	60- 60		-		-	29- 33	HIGH	HIGH	MODERATE
	PALMS	60- 60		- ,	•	2- 4	25- 32	HIGH	HIGH	MODERATE
CdC	CANTON	60- 60		-		-	-	LOW	LOW	HIGH
	CHARLTON	60- 60		-		-	-	LOW	LOW	HIGH
е	CARLISLE	60- 60		-		-	43- 54	HIGH	HIGH	LOW
rC	CHARLTON	60- 60		-		-	-	LOW	LOW	HIGH
	HOLLIS	10- 20	HARD	-		-	-	MODERATE	LOW	HIGH
CrD	CHARLTON	60- 60		-		-	-	LOW	LOW	HIGH
	HOLLIS	10- 20	HARD	-		-	-	MODERATE	LOW	HIGH
еC	GLOUCESTER	60- 60		-		-	-	LOW	LOW	HIGH
kC	HINCKLEY	60- 60		-		-	- ,	LOW	LOW	HIGH
Rn,	RIDGEBURY	60- 60	·	-		-	-	HIGH	HIGH	HIGH
	LEICESTER	60- 60		-		-	-	HIGH	LOW	HIGH
	WHITMAN	60- 60		-		-	-	HIGH	HIGH	HIGH
u	RIPPOWAM	60- 60		-		-	-	HIGH	HIGH	HIGH
g	SUDBURY	60- 60		-		-	-	MODERATE	LOW	HIGH
κВ	SUTTON	60- 60		-		-	-	HIGH	MODERATE	HIGH
zC	WOODBRIDGE	60- 60		-		-	-	HIGH	LOW	MODERATE

INLAND WETLAND REVIEW

The following is a summary of wetland observations of the wetland resources on the subject property, an evaluation of the project impacts to regulated areas and recommendations to alleviate those impacts.

The proposed 12-lot subdivision is located on the east side of Kennerson Reservoir Road in Eastford. Halls Pond is located directly across the street from the proposed development. The present plan depicts lots concentrated on the western side of the large wetland system that traverses the property. However, future development of the eastern portion of the property appears likely. This would require an additional crossing of a narrow section of wetlands to provide access.

The large forested wetland system on this property exists in conjunction with several watercourses, including Slovik Brook which originates at the outlet of Halls Pond and flows into the Natchaug River. Several small, isolated wetland pockets are scattered throughout the eastern section of the site.

Wetlands, in general, collect and store overland runoff prior to its entrance into watercourses. By the nature of their soils, vegetation and topography, wetlands have the potential to store significant volumes of water by permitting floodwater to spread out. The gradual release of water over time reduces downstream peak flows. Vegetation and meandering streams physically slow the passage of flood waters. This storage function becomes increasingly important upon the removal of vegetation and the construction of impervious and grassed surfaces which increase the rate of runoff.

In addition to their water storage capabilities, wetlands also provide pollution abatement functions. Sediment entering through runoff are filtered by the vegetation and allowed to settle out prior to entering watercourses.

Freshwater wetlands constitute the principal habitat for waterfowl such as ducks, geese and swans, and for fur bearing animals such as mink, muskrat, otter, beaver, and for fish. Other game species including deer, rabbits, grouse, quail, pheasant and turkeys also use wetlands, as do marsh birds and songbirds. The basic needs of water, food and cover are supplied to wildlife.

Given the following factors present in this particular wetland/watercourse system:

- 1. The diversity of habitat types (upland forest, forested swamp, shrub/scrub, and open water);
- 2. The presence of a stream corridor that connects on-site wetlands to neighboring wetlands and watercourses:
- 3. The isolation from intense development pressures;
- 4. the proportion of open water to forested areas;

it is a valuable ecological area that furnishes excellent habitat for the area's wildlife population.

The plans depict one direct intrusion into the wetlands for the purpose of constructing a driveway to access Lot 11. The obvious alternative to crossing the wetland in this location is to relocate the driveway to the south. However, four driveways located in close proximity to each other on the bend of a narrow road would likely present a traffic problem. A suggested alternative is to construct one shared driveway that would access Lots 9,10, 11 and 12. A creative reconfiguration of the lots, which may include reducing the number of lots, may be necessary to accomplish this, however, the applicant did express a willingness to alter the subdivision design to address resource concerns. Enclosed is a copy of the the "Comparing Alternatives" section of the DEP publication titled *An Inland Wetland Commissioner's Guide to Site Plan Review* which pictorially shows the shared driveway concept.

When evaluating project impacts to wetlands and watercourses, the wetlands commission should keep in mind that section 22a-41 (b) of the Connecticut General Statutes requires that in the case of an application which receives a public hearing, the agency must find that a feasible and prudent alternative to the proposed wetland alternation does not exist prior to issuing a wetlands permit.

There was considerable discussion regarding the current parking problems on Kennerson Reservoir Road. Presently, public parking for recreation access to Halls Pond is primarily limited to the sides of the road. The Inland Water Resources Division recommends that any improvements made to Kennerson Reservoir Road for public parking purposes be restricted to the east side of the road to eliminate construction related impacts that would otherwise directly affect the pond. One possibility could be to construct a small parking area in the location of Lot 5, pending the property ownership resolution.

Finally, in many site developments the most damaging impacts occur during the construction phase because of inadequate and improperly installed soil erosion and sediment controls. Inspections of the erosion control measures should occur weekly and after storm events to monitor their effectiveness. Failing silt fences and/or hay bales should be replaced immediately upon discovery of their failure.

Comparing Alternatives

An inland wetlands agency is charged with responding to each application by taking action that will avoid, minimize or mitigate wetland impacts. This requires the agency to examine and compare alternative management practices and alternative site designs; in some cases, it may require the agency to be mindful of possible alternative uses (see Chapter 2 — Wetlands Jurisdiction: Laws and Regulations).

While the analysis of alternatives will vary from project to project, it is expected that increasing rigor will be applied as the value of the subject wetlands or water-courses increases. In certain cases, the significance of the resource may dictate that impact avoidance is the only alternative acceptable to the agency. In other cases, alternative designs or specific best management practices can minimize or mitigate the impact to the wetland. On occasion, proposals for which no alternative exists may be denied a permit if the agency decides that significant unacceptable impact to wetlands will result.

AVOIDING, MINIMIZING and MITIGATING IMPACTS

Alternative Site Design

■ Reconfiguration

Could the proposed project, which is acceptable in concept, be reconfigured to allow more effective wetlands protection? e.g.,

- lot reconfiguration, reducing the number of utility and driveway crossings
- clustering units, providing open space and preserving wildlife habitat
- common driveways/private roads, minimizing impervious surfaces and wetland crossings

Scaling Down

Is the proposed project acceptable in concept but too large in scale to allow more effective wetlands protection? e.g.,

- reduction of number of residential lots, reducing wetland crossings
- reduction in the square footage in a commercial building, reducing the number of parking spaces required,
 thus reducing stormwater impacts

Alternative Management Practices

■ Best Management Practices

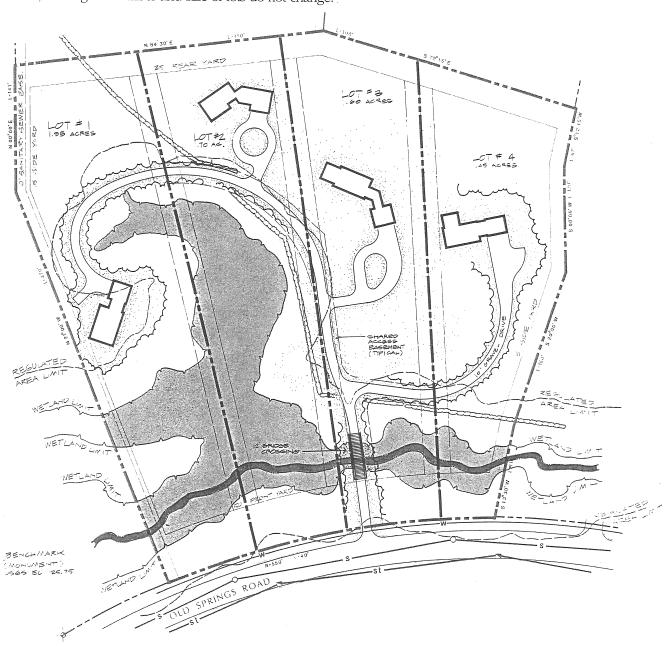
Is the proposed project acceptable in concept and scale but in need of some best management practices to allow more effective wetlands protection? e.g.,

- using a bridge crossing instead of fill and culverts, reducing erosion and sedimentation during construction and protecting riparian values
- using pervious surfaces, such as gravel, for parking areas, allowing natural drainage patterns to continue and reducing point stormwater discharges
- retain maximum amount of existing vegetation during construction, minimizing clearcutting and preserving wildlife habitat

Let's look again at our hypothetical four-lot subdivision and explore possible alternative solutions:

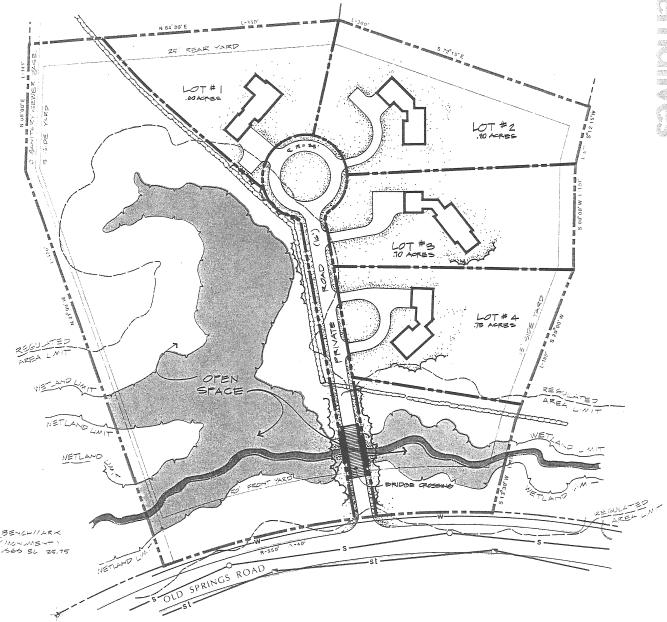
Alternative #1

In this alternative, a 12-foot bridge replaces the four initially proposed crossings, thereby minimizing filling and reconfiguration of the watercourse by eliminating culverts. The single crossing is less likely to contribute to flooding, and will also reduce siltation and turbidity during construction. This alternative also eliminates the wetland filling — and related loss of wetland plants and soils — that was proposed as part of the driveway construction on lot #1. This alternative requires a shared access easement; the original number and size of lots do not change.



Alternative #2

This alternative preserves the single crossing concept by proposing a private road (thus creating the benefits discussed in Alternative #1), but reduces the size of the lots and moves the buildings away from the wetland system. The wetlands and adjacent uplands can now be preserved as common open space, adding aesthetic and recreational value to the development. This open space will also provide valuable wildlife habitat.



THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files have been reviewed regarding the Whitehead Woods Estates Subdivision. According to the information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species occurring at the site in question.

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. Consultations 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 Date Base as it becomes available.

Please contact the Natural Diversity Data Base if you have any questions regarding this information (566-3540). Also 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 HABITAT

This report will focus on potential wildlife habitat impacts from the proposed development and recommendations for lessoning those impacts for the Whitehead Woodland Estates in Eastford, CT.

Habitat Types

The habitat types on this property include mixed hardwood forest, wooded swamp, and associated riparian habitats (vernal pools, streams/brooks, ponds, and inland wetlands). The varied and high quality habitats maintain diverse wildlife species.

Wetland/Riparian habitat: Wetlands support a high diversity of wildlife due to the complexity of the vegetative structure, high productivity and abundant food supply which allows for a high carrying capacity (Brown et al 1978). There are wildlife species (especially salamanders) that depend on high quality water resources to complete their life cycles. Undisturbed or unaltered wetlands have a high abundance and diversity of insect populations which are utilized by wildlife (Brown et al. 1978) Permanent alterations of wetlands can have severe impact on wildlife. Direct or indirect impacts should be minimized. A minimum of 100 feet of buffer habitat around wetland lines should be maintained throughout the subdivision to help maintain the integrity of the wetland ecosystem.

Impacts and Recommendations

Impact #1 - Lot number 7 has the proposed septic system close to the wetland boundary. Orser and Shure (1972) documented negative impacts of urbanization (ie. the presence of houses and paved roads in close proximity to to streams) on salamander communities inhabiting streams.

Recommendation #1 - Lot number 7 should be reconfigured to include more upland area or be eliminated. The distance of the septic system to wetlands should be increased.

Impact #2 - Lot number 11 shows the driveway crossing the wetland and buffer area. Alteration of a wetland and its associated buffer area can negatively impact the wetland and water quality which then affects wildlife.

Recommendation #2 - Lot number 11 should be altered so that the driveway stays out of the wetland and associated buffer zone.

Impact #3 - In general, the subdivision can have a negative effect by fragmenting the forest and reducing the quality of the associated water and wetland resources which ultimately affects many forms of wildlife. Permanent fragmentation of the forest has been shown to adversely affect bird communities (especially forest interior species) (Blake and Karr 1984).

Recommendation #3 - This subdivision has a sizeable portion of undeveloped (undesignated land) associated with it. It is advisable to see if a sizeable (25-40 acres) continuous block of of forest can be set aside as a conservation/open space area. A more thorough field investigation involving documenting seasonal wildlife use of the property is needed to assess major wildlife travel corridors, however it is recommended that the riparian resources (streams, brooks, ponds, wetlands) remain interconnected with protected undevelopable land. As additional surrounding land becomes developed and fragmentation continues, larger unbroken blocks of forest will become scarce.

Summary

This report has focused on the potential impacts of this subdivision to wildlife and its habitat and makes recommendations to minimize impact of the proposed 12 lot subdivision.

Lot configurations should be modified to lessen the impact to wetlands and their associated buffer zones. A 100 foot buffer area is recommended for all wetlands on the site.

Permanent fragmentation of the forest can affect many wildlife species, especially forest interior bird species. Recommendation to set aside a sizeable

conservation/open space area is advised and should be focused on the streams and wetland resources and related upland areas.

References Cited

- Blake. J.G., and J.R. Karr. 1984. Species composition of bird communities and the conservation benefit of large versus small forests. Biol. Conserv. 30:173-177.
- Brown, S., M. M. Brinson and A.E. Lugo. 1978. Structure and function of riparian wetlands. Pages 17-31 in (Strategies For Protection and Management of Floodplain and other Riparian Communities). Proc. symp. Dec. 11-13, 1978, Gallaway, GA. Gen. Tech. Rep. W0-12, Forest Serv., U.S. Dept. Agric., Wash. D.C. 410 pp.
- Orser, P.N., and D.J. Shure. 1972. Effects of urbanization on the salamander <u>Desmocrathus fuscus fuscus</u>. Ecology Vol. 53 no. 6, page 1148.

FISH RESOURCES

Site Description

Proposed Development Location: The proposed Whitehead Woodlands Estates subdivision will be located adjacent to Halls Pond and Slovik Brook, the primary surface hydrological feature of fisheries concern in the immediate area. At present, the shoreline of Halls Pond and abutting areas support only a few residential developments. A total of 12 building lots are being proposed. All residential lots will be served by on-site water and sewage disposal. A portion of the property drains into Halls Pond; consequently, development will have to be carefully planned to avert man-induced water pollution inputs to the pond and its surrounding streams.

Halls Pond: Halls Pond, owned by the State of Connecticut, covers an area of 82 acres. Maximum depth is 14 feet and the average depth is 6.7 feet (State Board of Fisheries and Game, 1959). The pond's watershed is characterized by a mixture of agricultural and forest lands. Surface waters of the pond are classified by the Department of Environmental Protection (DEP) as "Class A". Designated uses for this classification are: existing/potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other legitimate uses. The pond's littoral zone, that shallow interface between land and open water, appears to contain average levels of rooted aquatic vegetation. Bottom type is a sand, gravel, and rubble mixture. The pond is not thermally stratified (State Board of Fisheries and Game, 1959).

Halls Pond contains moderate amounts of nutrients and is considered to be in a "mesotrophic" state of eutrophication or lake aging (CT DEP 1991). During the process of eutrophication, a lake typically passes through three major states of succession; oligotrophy, mesotrophy, and eutrophy. The transition from one state to the next may take thousands of years; however, eutrophication can be rapidly accelerated by manmade inputs of nutrients such as excessive soil erosion, stormwater runoff, and septic tank leachate. A "mesotrophic" state of eutrophication essentially means that moderate levels of nutrient enrichment have occurred. Mesotrophic lakes are susceptible to the development of periodic "algae blooms" that will discolor the water and they support average amounts of aquatic weeds.

Stream Resources: The parcel proposed for development includes two main watercourses; Slovik Brook and an unnamed perennial stream. Slovik Brook outlets from

Halls Pond flowing easterly where it eventually enters the Natchaug River. The unnamed perennial stream flows north-south into the upper end of Halls Pond. Both of these watercourses function to provide clean, unpolluted waters to their recipient waterbodies.

Fish Population

Halls Pond is a very popular waterbody for regional anglers. It is most commonly accessed by cartop boats and canoes. Shoreline angling is also common. The pond supports a wide variety of warmwater fish species. DEP Fisheries Division surveys were recently conducted in the lake in 1988 and 1990. Largemouth bass and chain pickerel were found to be the major gamefish that inhabit the lake. Large panfish present include yellow perch, black crappie and brown bullhead. Sunfish are very common and include bluegill and pumpkinseed.

The unnamed watercourse which flows into the northern end of the pond is expected to be seasonally utilized by pond fish populations as it nears its confluence with Halls Pond. Slovik Brook would seasonally support fish that emigrated from the lake during spill events.

Impacts

The following impacts to Halls Pond and associated watercourses can be expected if proper mitigation measures are not implemented:

- 1. Construction site soil soil erosion and sedimentation through increased runoff from unvegetated areas. Devegetation of sloped land that drains into the pond presents a situation conducive to the development of serious soil erosion problems. In addition to overland flow, the unnamed watercourse provides a direct avenue for soil runoff to enter the pond. Erosion and sedimentation due to residential housing construction has long been regarded as a major stimulus in the pond eutrophication or aging process. Lake eutrophication can be accelerated by excessive sedimentation which may seriously impact resident fishes, water quality, and overall pond recreational value. In particular, excessive sedimentation of Halls Pond could:
 - Reduce the amount of usable fish habitat used for spawning purposes preferred substrate that becomes compacted with sediment is no longer available for spawning. Fish will be forced to disperse to other areas not affected by sedimentation.

- Reduce fish egg survival water free of sediment particles is required for egg respiration (biological process of extracting oxygen from water) and successful hatching. Sediment deposits will smother eggs.
- Reduce aquatic insect population sediment-free water is also required for successful aquatic insect egg respiration and hatching. Aquatic insects are the food source of young and adult fishes. Reduced insect levels will adversely affect fish growth during their early growth period. Ultimately, this will lead to reduced growth rates and negatively impact fish survival.
- Reduce water depth within the pond this occurrence will result in a further reduction of usable fish habitat.
- Contribute to the depletion of oxygen organic matter associated with soil particles is decomposed by micro organisms contributing to the depletion of oxygen in waters overlying sediments.
- Adversely affect "gill" function and impair feeding activities studies have documented that high sediment concentrations and turbidity will disturb fish respiration and gill function.
- Encourage the growth and survival of rooted aquatic plants along the shoreline and precipitate dense "algae blooms" eroded soils contain plant nutrients such as nitrates and phosphates. Although aquatic plants require nutrients for growth, most ponds and streams contain very limited amounts. Consequently, these nutrients act as fertilizers once they are introduced into aquatic habitats resulting in accelerated plant growth. At present, Halls Pond is not considered to have an excessive weed problem.
- 2. Percolation of septic effluent. A failure of individual septic systems to operate properly is potentially dangerous to aquatic habitats. Systems located on steep slopes adjacent to watercourses/wetlands are also dangerous due to the increased potential of leachate "breakout". In particular, the proposed septic system for Lot #7 is extremely close to Slovik Brook. Nutrients and assorted chemicals that may be placed in septic systems could enter the surface watercourse in the event of a failure or possibly infiltrate groundwater, especially when water tables are seasonally close to the surface. The introduction of septic effluent could result in a major threat to fish, public health, and overall water quality conditions. Effluent can stimulate the growth of rooted nuisance aquatic weeds

along a pond shoreline and stimulate nuisance unicellular algae blooms. Septic tank leachate that may enter Halls Pond could rapidly accelerate the pond eutrophication process.

- 3. Water quality and habitat degradation due to the influx of stormwater drainage from nearby residential housing. Overland flow from the subdivision will enter either directly or indirectly into Halls Pond and Slovik Brook. Stormwaters can contain a variety of pollutants that are detrimental to aquatic organisms and their habitat. Pollutants commonly found in stormwaters are: hydrocarbons (gasoline and oil), herbicides, heavy metals, road sand and salt, fine silts, and coarse sediment. Once introduced into the pond, stormwater runoff can accelerate the pond eutrophication process and lead to degraded water quality. Spilled petroleum based chemicals or other toxicants can precipitate or complete fishkills. At present, roadway sand from winter deicing activities can be found to enter the pond just north of the gatehouse station. The increase of impervious surfaces associated with the subdivision will only increase inputs of sands.
- **4. Degradation of wetland habitat.** Wetlands serve to protect pond and stream quality by: (1) controlling flood waters by acting as a water storage basin, (2) trapping sediments from natural and man-made sources of erosion, and (3) filtering out pollutants from runoff before they enter watercourses. Development which brings about polluted stormwaters, excessive stream sedimentation, lawn fertilizers, and lawn herbicides can negatively impact wetlands by hindering their ability to properly function.
- 5. Transport of lawn fertilizers and chemicals to the pond. Runoff and leaching of nutrients from fertilizers placed on subdivision lawns can stimulate nuisance aquatic weed growth and help precipitate algae blooms. The introduction of nutrients will accelerate the pond eutrophication process. Introduction of lawn chemicals may result in fish kills and water quality degradation.

Recommendations

Impacts to Halls Pond and associated watercourses may be somewhat reduced by implementing the following recommendations:

1. The Fisheries Division recommends that an easement to State owned land only be allowed if suitable compensation is provided. It has been suggested that possible compensation would be the construction of a small parking lot for recreational users of the pond, near proposed Lot #5. The DEP Fisheries Division is in agreement with such a

proposal and believes that discussions along these lines should be actively pursued. The developer and town should understand that any parking lot would be open to the entire public and not just subdivision and Eastford/Ashford residents.

- 2. Install and maintain proper erosion and sedimentation controls during site construction activities. This includes such mitigative measures as silt fences and staked hay bales. Only small areas of soil should be exposed at one time and these areas should be reseeded as soon as possible. A town official that would be responsible for inspecting this development on a periodic basis should be appointed to ensure that contractors have complied with all stipulated mitigation devices. Past pond and watercourse siltation disturbances in Connecticut associated with residential housing developments have occurred when individual contractors either improperly deployed mitigation devices or failed to maintain these devices on a regular basis.
- 3. Maintain at a minimum a 100 foot open space buffer zone along the edge of all wetlands. No construction or alteration of natural vegetative habitat should be allowed in this zone, otherwise the ability of the buffer zone to function properly will be reduced. Research has shown that 100 foot buffer zones help prevent damage to wetlands and stream ecosystems that support diverse fish and aquatic insect life (USFS 1984, USFS 1986, ODFW 1985). The one hundred foot buffer will help absorb surface runoff and other pollutants before they can enter the pond, wetland and stream ecosystems.
- **4. Avoid wetland crossing on Lot #11.** Impacts to the wetland and its buffer can be avoided by reconfiguration of the driveway crossing. One alternative is to use a common driveway for a portion of Lot #12 and design a new road to gain access to Lot #11.
- 5. Properly design and locate individual septic systems. Septic systems must be properly located and engineered to effectively renovate septic effluent. Septic effluent can be one of the greatest threats to aquatic ecology. When septic leach fields are proposed to be located within 100 feet of wetlands or watercourses, analyses of phosphate/nitrate transport should be considered to ensure that leachate does not interfere with aquatic resources. Doing this may go beyond the standards of the State or regional health codes but it is warranted to protect surface waters from avoidable sources of eutrophication. All residents should be encouraged to utilize non-phosphate detergents.
- 6. The developer should submit a detailed stormwater management plan for town review. No information was provided regarding stormwater mitigation. The effective management of stormwaters and roadway runoff can only be accomplished through

proper, design, location, and maintenance of swales and catch basins. Stormwaters should only be outletted into non-wetland habitat; thus, avoiding initial and direct contact with wetlands. Maintenance of catch basins is very critical. Roadway catch basins should be regularly maintained to minimize adverse impacts to pond and wetland habitats. The use of road salt to deice roads should be prohibited.

7. Limit liming, fertilization, and the introduction of chemicals to subdivision lawns. This will help abate the amount of additional nutrients to the pond and stream environments. Non-phosphorus lawn fertilizers are currently available from various lawn care distribution centers.

Bibliography

Connecticut State Board of Fisheries and Game. 1959. A Fisheries Survey of the Lakes and Ponds of Connecticut. Project F-4-R. 395 pp.

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USFWS (United States Fish and Wildlife Service) 1984. Habitat Suitability Information: Rainbow Trout. United States Fish and Wildlife Service, Biological Report FWS/OBS-82 (10.124). 64 pp.

USFWS (United States Fish and Wildlife Service) 1986. Habitat Suitability Index Models and Instream Flow Suitability Curves: Brown Trout. United States Fish and Wildlife Service, Biological Report FWS/OBS-82 (10.60). 65 pp.

The Land Acquisition Team member is very familiar with the site as he was manager at Natchaug State Forest for over seven years. Halls Pond is within the Natchaug management area.

The maps, plans and other information have been reviewed and Land Acquisition and Property Management concerns have been discussed with appropriate DEP staff personnel.

The agency (DEP), as owner of Halls Pond and the dam has several concerns both as an abutting landowner and as the agency responsible for the care and management of the pond and dam. These concerns are as follows:

1. Public Safety: Certainly traffic will increase on Kennerson Reservoir Road due to the development. At the same time, recreational users of the pond have very limited parking. From past experience, the Land Acquisition Team member has seen between 12 to 24 cars parked along the narrow road during peak use periods. It is his feeling that recreationists will continue to park along the road no matter what is done to discourage it. Any proposed development will further restrict parking when new driveways are built. It will further increase traffic hazards in this area to both the new property owners in the development and to the public.

In the same area of concern is the lack of fire protection for existing and future residents, as well as forest resources. The installation of a dry fire hydrant, drawing water from Halls Pond, is desirable. The alternative is for fire trucks to park along the road and lay hose across the road to the residences and forest. Road restriction could also hinder ambulance and EMT access, slowing response time.

The safety of future development residents, local townspeople using Kennerson Reservoir Road and the general public can be addressed by construction of offroad parking and the installation of a dry hydrant.

2. <u>Dam Maintenance Assurance</u>: Presently, the State of Connecticut has an easement from the owner of the proposed development on the downstream side of the dam. The easement is for the purpose of maintaining the dam and comes up for renewal or cancellation every two years. Should the easement be cancelled, the owner/developer would be responsible for slope maintenance and liability. It is not a desirable situation for either the developer, the State or the Town of Eastford which owns the road.

Transfer of sufficient land to the State in fee would relieve the owner and assure that the State has both maintenance liability and legal ownership. On the north end of the dam, the downslope extends beyond the present easement area. Under the present circumstances, the future owner of proposed lot seven (or the developer if the lot is unsold) has maintenance and liability responsibilities as it is outside the easement area.

- 3. Legal Public Access to Halls Pond: There is a need to provide legal public access to Halls Pond. Presently, recreational access is across a small peninsula of land immediately south of the dam on the west side of Kennerson Reservoir Road. To assure continued access, DEP would like the developer to quitclaim the small strip to the State of Connecticut in fee. That simple, low cost step would enable the State to grant a dry fire hydrant easement to the Town of Eastford, allow the State to negotiate parking restrictions, improvements and signing with the Town and would provide a safe place to off-load a canoe or other car top boat safely. Once a vessel is off-loaded, vehicles would have to park across the street in the proposed off-road parking lot. Legal access to the pond for development dwellers should enhance the value of the subdivision lots.
- 4. Wetland Protection: It is desirable to protect Slovik Brook, a coldwater tributary to the Natchaug River and eventually the Willimantic Reservoir. A buffer strip of at least 50 feet on each side of the brook as shown on the proposed plan, should be set aside as an open space greenbelt corridor along Slovik Brook. The greenbelt could be deeded to a land trust or the Town of Eastford.

In summary, the DEP Land Acquisition and Property Management Division Staff recommends that its four major concerns be alleviated by:

- 1. Construction of an off-road parking lot for 12 to 24 cars, plus a restricted area for use of emergency vehicles south of the dam in order to help remedy parking and travel problems created by the development. The parking lot to be visible from the road and fenced off from any development road or driveway to discourage partying. Ownership would be transferred to the State of Connecticut.
- 2 Transfer by Warranty Deed of the 2.6 acre easement area plus sufficient land (120 feet along Kennerson Reservoir Road by 90 feet deep north of the easement area) and an area south of the easement area (measuring 90 feet along Kennerson Reservoir Road by 220 feet deep) to assure future dam maintenance, the above referenced off-road public parking and a dry fire hydrant accessible from the parking area.
- 3. Transfer by Quitclaim Deed to the State of Connecticut of any and all land and rights that the developer may have or ought to have, if any, to a small parcel fronting on Halls Pond immediately southwest of the dam.
- 4. Transfer by Warranty Deed of the wetlands and buffers to a land trust or the Town of Eastford for open space, watershed protection, wildlife habitat and public recreational purposes.

STATE PARK PLANNER COMMENTS

These comments are based on an office analysis.

- 1) The need to transform the two year renewable maintenance easement on the spillway into a permanent easement to ensure that necessary maintenance can be performed.
- 2) The need to provide legal parking area access to state-owned Halls Pond, one side of the road or the other. A lot of limited size, coupled with guardrails and/or "No Parking" signs would allow limited scale, legitimate access while discouraging large scale or partying activity, especially with adjacent neighbors to act as eyes and ears and to request policing, car ticketing, etc., as needed. This combination of management techniques has helped considerably in controlling usage at a similar situation, Millers Pond in Durham. Nevertheless, no strategy will solve all management problems, as attractive waterbodies such as Halls Pond will always be a magnet for prospective users.
- 3) The desirability of dedicating the wetland acreage within the property as permanent open space as the initial element of a local greenbelt along Slovik Brook. Ownership options could include a regional land trust such as Joshua's Trust, as well as the State or the town.

DISTRICT REVIEW OF OPEN SPACE AND AESTHETICS

The Windham County Soil and Water Conservation District (SWCD) is involved in a regional Greenway Development Project for the proposed Quinebaug-Shetucket National Heritage Corridor. In this section of the report the Windham County SWCD will be commenting on the recommendations for open space dedication and the aesthetic impact of the development.

The proposed Whitehead Woodlands Estates on the east side of Kennerson Reservoir Road is a significant site with a variety of natural resources that should be considered as the commission reviews the proposed subdivision. The 106 acre site consists of a diversity of habitat types, scenic views, four significant wetlands areas and Slovik Brook. Even the best, most attractive development will negatively impact the wildlife habitat values and the aesthetic open space values of this site.

The plan for development of the subdivision addresses the maximization of building space in lots with wetlands and steep terrain. In many instances the size of lots severely limits the placement of the proposed building and the related wells and septic systems. A reconfiguration of lot lines and the elimination of one lot (either 1,2 or 4, 5) will help to provide more usable space with each lot and significantly change the appearance of the development and create less of an undesirable aesthetic impact on the area.

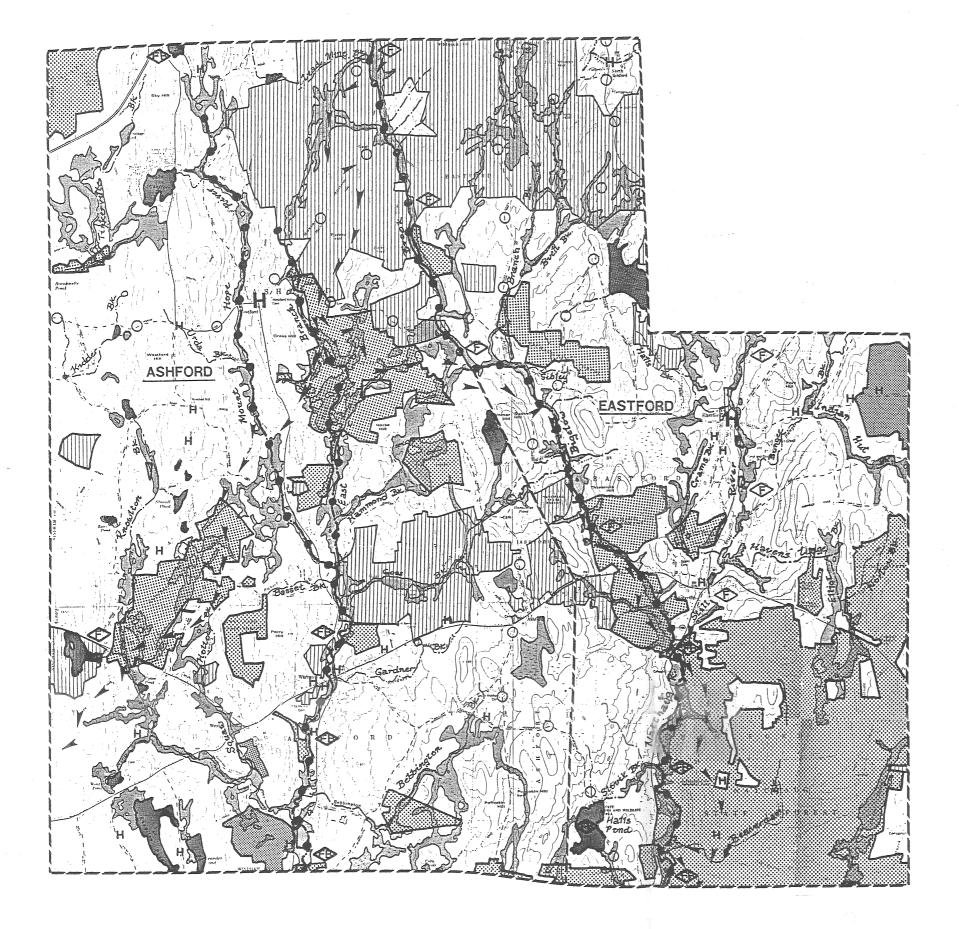
Unique opportunities exist on this site for creative, innovative, attractive and conservation oriented development. Clustering houses depending on the soils and topography may be a consideration that will help to maintain the integrity of the open space corridor that currently exists and that contributes to the uniqueness of this site.

Streambanks, different wetland types and forest provide a broad variety of basic wildlife needs including appropriate food plants, water and space for both wetland and upland species. Residential development will naturally disrupt the continuity of habitat and landscape as well as change the vegetation to a probably less productive, more uniform suburban house site type. The more secretive and sensitive species, unable to live in close proximity to habitation, will disappear. As it currently exists the 106 acre site provides a natural corridor for movement from wetland to upland habitats.

It is recommended that the Eastford Planning Commission amend the town's plan of development to include guidelines and recommendations for the long-range development of a greenway or open space corridor in town. The town has a wealth of natural resources and a natural link in the establishment of a regional greenway system with a large portion of the state's Natchaug Forest within the town's boundaries. A designation of open space through deed restriction, conservation easements or deeded to a land trust is recommended for the area between the Slovik Brook wetland and the wetland in the northeast corner of the large portion of the undeveloped parcel.

The establishment of a corridor configuration serves to "hook up" different habitats into one contiguous system that will allow wildlife species to move about and to have access to the various habitat components as required. A logical base for any open space system is the stream or wetland corridors that exist. Designated open space within this development can help to insure that wildlife can move in and through the residential development.

It is also recommended that the wetlands have restrictions placed on them for permanent protection in their natural state. Since they serve as the base of the corridor system their protection is critical. The wetland south of the cart path behind lots 1, 2, 3, and 4 should be looked at in terms of how it might best be incorporated into the wildlife corridor should there be future development on the site. The future development of a road providing access to the large undeveloped tract should take into consideration the designated open space and should protect the access wildlife will have from that wetland area to Slovik Brook.



QUINEBAUG SHETUCKET RIVERS CORRIDOR

Components of Greenways:

NATURAL COMPONENTS

OPEN SPACE:

COMMITTED OPEN SPACE: open to the public.

PROTECTED LAND: private or limited public access

──OTHER LANDS: no protection.

WETLAND, STREAM/RIVER CORRIDORS:

(does not contain all wetlands, streams, or open water.)

WETLANDS: - OPEN WATER:

~·~·~ STREAMS:

~~ RIVERS that serve as town boundaries.

● ■ - OUTSTANDING RIVER OR RIVER SECTION:

FISHERIES/ ANADROMOUS FISH RUNS:

FM - EXISTING FISH RUN:

F - PLANNED FISH RUN:

f - POTENTIAL FISH RUN:

RECREATION COMPONENTS: (Public access, open or on limited basis.)

◆ FISHING: stocked areas, and/or designated fishing area.

B − BOATING: (degee of difficulty should be explored.) (symbols

SWIMMING: are often combined.)

— HIKING TRAILS: (pass on both private and public land.)

POTENTIAL TRAILS: abandoned rail or trolley lines:

○ - BICYCLE ROUTES: (suggested).

OUTSTANDING WHITE WATER CANOE AREA (degree of difficulty should be explored.)

HISTORIC COMPONENTS:

HHH- SELECTED HISTORIC SITES: ONE,-SEVERAL,-CLUSTER OF SITES.



SCALE: 1: 50,000

The mapping of 25 towns within the Corridor was funded through the Windham County Soil and Water Conservation District by the National Parks Service, and in cooperation with the Committee For A Quinebaug - Shetucket Rivers Corridor, and the Greenways Study Subcommittee. The 25 town area has been divided into 7 maps for easier reproduction. The maps were completed in 1993 by Ruth Cutler, Conservation Land Planning, Willington, CT 06279. They are intended to be used by town commissions as a reference for greenway planning.

Map Sources:

Open Space:

N.P.S. (Draft Map), "Quinebaug - Shetucket Rivers Study, Recreation and Interpretation Opportunities:" 1990.

CT D.E.P. cartography, mylars, "State Property and Agr. Preservation Program," and record book.

record book.
Town Open Space Maps and Tax Maps.

Wetlands:
US Dept. of Agriculture, Soil Conservation Service, Maps: Soil Survey of Windham
County and Tolland County, 25 Town Soil Maps.
Stream / River, Open Water Location:
U.S.G.S. Topographic County maps.
Outstanding Rivers:
Map: N.P.S. River Inventory, 1982, Mylar, D.E.P. Cartography Room.

isheries; Map: "Fish Stocking," D.E.P. Fresh Water Fisheries, 1991. Map: "Anadromus Fish Runs of CT 1993, "D.E.P. Marine Fisheries.

Recreation:
Fishing, Boating, Swimming, "The Waters of the Quinebaug - Shetucket Rivers Heritage Corridor" (informational brochure), 3/93; Northeast CT Visitors District. Hiking Trails: Maps; CT D.E.P. Cartography, mylar, "Trails" 1992.
Maps, CT D.E.P. Cartography, mylar, "State Property and Agricultural Preservation Program" and the CT Walk Book, CT Forest and Park Association.
Bicycle Route, "Northeast Connecticut's Quiet Corner Bicycle Guide," (informational

Bicycle Route, Normeast Connecticut's Quiet Corner Bicycle Guide, "(informational brochure), 1993.

Historic Sites: Study for Quinebaug - Shetucket Rivers Corridor Committee, by Bo Co, Historical Consulting Services, Woodstock. 1992 + 93.

ARCHAEOLOGICAL SENSITIVITY

The Whitehead Woods Estates Subdivision was reviewed for its archaeological sensitivity. A review of the State of Connecticut Archaeological Site Files and Maps shows no known archaeological resources in the project area. However, this may be the result of the area being relatively unexplored by archaeologists, than there being no cultural resources of significance. Examination of topographic and environmental factors suggests that the project area has a high potential for prehistoric Native American campsites.

Models of prehistoric hunter-gatherer subsistence-settlement patterns demonstrate that areas of well-drained soils with little slope adjacent to wetlands, especially drainages similar to Slovik Brook, were utilized by small bands of people as campsites for over five thousand years. In addition, the lack of development and below ground disturbance within the project area suggests that these possible campsites should have maintained excellent integrity.

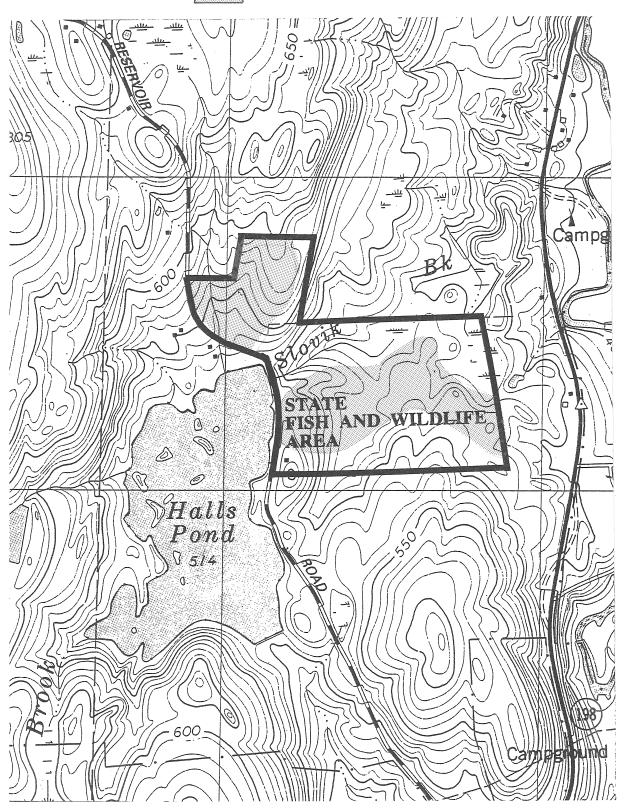
The Office of State Archaeology recommends an archaeological survey of the project area that exhibits well-drained knolls of relatively little slope adjacent to the brook system (See map). This survey can indicate the location and distribution of belowground cultural resources. Any archaeological sites can than be avoided or mitigated based on site development plans. Please be assured that the Office of State Archaeology is prepared to offer technical assistance in conducting this survey to ensure the preservation and conservation of the archaeological sites in the project area.

The Office of State Archaeology looks forward to working with the Eastford Planning Commission and the property owner in preserving any archaeological sites in the project area. Please feel free to contact the State Archaeologist at 486-5248 for any further assistance with this project.

ARCHAEOLOGICALLY SENSITIVE AREAS

Scale 1" = 1000'

Sensitive Areas



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SUMMARY OF MAJOR POINTS AND RECOMMENDATIONS

(This a very brief summary of the major points and recommendations from each section of the report. It is desirable that each report section be read in its entirety.)

GEOLOGY AND HYDROGEOLOGIC CONSIDERATIONS

The bedrock at this site consists mainly of schist and gneiss which is overlain by a thin layer of glacial till. Glacial stream deposits are located in the portion of the Site "not to be approved for building purposes".

Depending on land ownership in the vicinity of the spillway some lot lines may need to be redrawn. It is thought that the wells and septic systems in Lots #1-4 are very close to each other. There should be no problem with contamination, but all wells should be drilled into bedrock and sealed from surface deposits. Some consideration should be given to redrawing lot lines to allow for more separating distance between wells and septic systems.

SOIL RESOURCES

The wetlands on the site appear to be accurate as flagged in the field.

Septic systems and houses need to be placed carefully on the site due to soils limitations. Many of these limitations can be overcome with proper engineering practices. Although the wells and septic systems in Lots #1-5 meet the Public Health Code for separating distances they are closely spaced. The soils in these locations have limitations of slow percolation and stoniness. Perhaps another lot configuration would allow for greater separating distances for the wells and septic systems.

Erosion and sediment control plans should be made available to the town prior to each lot being developed. Of special concern is the protection of wetlands and Halls Pond. One person should be assigned the responsibility of checking on the erosion and sediment controls because implementation and maintenance is of critical importance in protecting wetlands and waterbodies.

The best area for a parking lot for recreational users of Halls Pond seems to be the cart

path entrance near Lot #5. Parking should be on the side of the road away from the pond to allow cleanup of oils, antifreeze and other spilled vehicle chemicals. One option may be to create the parking area at the entrance to the road that will serve the rear portion of the property, and a dry hydrant could also be located here.

INLAND WETLAND REVIEW

This site is a valuable ecological area due to the following factors:

- 1. Diversity of habitat types (upland forest, forested swamp, shrub/scrub swamp and open water);
- 2. A stream corridor that connects on-site wetlands to neighboring wetlands and watercourses;
- 3. The isolation from intense development pressures; and
- 4. The proportion of open water to forested areas.

An alternative to the driveway crossing for Lot #11 should be addressed. Some alternatives include locating the driveway to the south of the wetland, which may create traffic problems or constructing a shared driveway for Lots #9-12. A creative reconfiguration of the lots can be accomplished given the applicant's willingness to address resource concerns. The wetlands commission should keep in mind that the Connecticut General Statutes require that the agency must find that a prudent and feasible alternative does not exist prior to issuing a wetlands permit.

The Inland Water Resources Division recommends that any improvements made to Kennerson Reservoir Road for public parking purposes be restricted to the east side of the road to eliminate any construction related impacts that could affect the pond. A parking lot near Lot #5 seems a likely area that was discussed.

Proper installation and maintenance of erosion and sediment controls is essential to avoid any damaging impacts to the area. Inspections should occur weekly and after storm events.

NATURAL DIVERSITY DATA BASE

According to their present information there no known extant populations of Federal or State Endangered, Threatened or Special Concern species occurring at this site.

WILDLIFE HABITAT

The site contains high quality and varied habitats to maintain diverse wildlife species. The wetlands support a great diversity of wildlife and permanent alterations can have a severe impact on wildlife. Direct and indirect impacts should be minimized. It is recommended that a minimum 100 foot buffer habitat around the wetland lines be maintained throughout the subdivision to help maintain the integrity of the wetland system.

Lot #7 has the proposed septic system close to the wetland boundary. It is recommended that the lot be reconfigured to include more upland area or be eliminated and the distance of the septic system to the wetland should be increased.

Lot #11 should be altered to remove the wetland crossing for the driveway.

Permanent fragmentation of the forest can affect many wildlife species, especially forest interior bird species. It is advisable that a sizable (25-40 acres) continuous block of forest be set aside as conservation/open space land. A more thorough field investigation is necessary to access major wildlife travel corridors, but it is recommended that an open space area should focus on the streams and wetland resources and related upland areas.

FISH RESOURCES

Halls Pond is an 82 acre waterbody owned by the State of Connecticut. The surface waters are classified as "A". It is in a mesotrophic state of eutrophication or lake aging, which means that moderate amounts of nutrient enrichment have occurred. Halls Pond is popular with fishermen and is commonly accessed by cartop boats and canoes. The pond supports a variety of warmwater fish species such as largemouth bass, chain pickerel, yellow perch, black crappie and brown bullhead.

The project site includes two main watercourses, Slovik Brook and an unnamed perennial stream. Slovik Brook outlets from Halls Pond and eventually enter the Natchaug River. The unnamed stream flows into the upper end of Halls Pond. The unnamed stream is expected to be used seasonally by pond fish populations as it nears its confluence with Halls Pond. Slovik Brook would support fish that emigrated from the lake during spill events.

The Fisheries Division recommends that an easement to State owned land (for the

purposes of a permit for a dry fire hydrant) only be allowed if suitable compensation is provided. Possible compensation would be the construction of a small parking lot that would be available to the general public.

The installation and proper maintenance of erosion and sediment control measures is very important.

A minimum 100 open space buffer zone should be maintained along the edge of all wetlands, no construction or alteration of the natural vegetation should be allowed in this zone.

The Lot #11 driveway crossing should be eliminated. A common driveway with Lot #12 is one alternative.

All septic systems should be properly designed and installed. When septic leach fields are proposed to be located within 100 feet of wetlands or watercourses, analyses of phosphate/nitrate transport should be considered. Doing this may go beyond the standards of the State or regional health codes but it may be warranted to protect surface waters from avoidable sources of eutrophication.

The developer should submit a detailed stormwater management for town review.

Homeowners should limit liming, fertilization and the introduction of chemicals to their lawns to lessen the amount of additional nutrients to the pond and wetlands/watercourses.

LAND ACQUISITION AND MANAGEMENT

Public Safety/Parking - It is desirable to have off-road parking for 12-24 cars, plus a restricted use area for emergency vehicles south of the dam to remedy the current parking problems and those that may be caused by the development. The parking lot should be visible from the road and fenced off from any development road or driveway to discourage partying. Ownership should be transferred to the State of Connecticut.

Dam Maintenance Assurance - The present situation of a 2 year dam maintenance easement from the landowner should be changed. Lot #7 contains a portion of the downslope area of the spillway that is not covered in the maintenance easement which makes the developer or future owner of Lot #7 responsible for maintenance and liability

of this area, this is another situation which should be altered. It is suggested that transfer by Warranty Deed of the 2.6 acre easement area plus sufficient land (120 feet along Kennerson Reservoir Road by 90 feet deep north of the easement area) and an area south of the easement area (measuring 90 feet along Kennerson Reservoir Road by 220 feet deep) be done to assure future dam maintenance, creation of an off-road parking area and the placement of a dry fire hydrant accessible from the parking area.

Legal Public Access - Recreational access to Halls Pond is across a small peninsula of land immediately south of the dam on the west side of Kennerson Reservoir Road. To assure continued public access the State would like the landowner to transfer by Quitclaim Deed any and all land and rights that the landowner may have or ought to have, if any, to this small parcel. A dry fire hydrant easement could be granted to the Town of Eastford and it would provide a safe area for the off-loading of cartop boats and canoes. Legal access to the pond should enhance the value of subdivision lots.

Wetland Protection - Wetlands and their associated buffer zones should be transferred by Warranty Deed to the Town of Eastford or a local land trust to provide a greenbelt corridor for the purposes of watershed protection, wildlife habitat, open space and public recreation.

STATE PARK PLANNER COMMENTS

The 2 year renewable maintenance easement for the dam/spillway needs to be changed into a permanent easement.

Legal parking for access to Halls Pond which is of limited size and has appropriate signage is necessary. A combination of management techniques may be necessary to discourage partying activities, and other towns have found that limiting parking lot size, guardrails, signage and a neighborhood "watch" have helped in controlling usage.

Dedicating wetland acreage as permanent open space could be the first step in creating a local greenbelt along Slovik Brook. Ownership options include the town, State or a regional land trust.

DISTRICT REVIEW OF OPEN SPACE AND AESTHETICS

The plan for development of the subdivision addresses the maximization of building space in lots with wetlands and steep terrain. In many instances the size of the lots severely

restricts the placement of the proposed building and the well and septic system. A reconfiguration of the lot lines and the elimination of one lot (either Lot #1,2, or 4 or 5) will help to provide more usable space with each lot and significantly change the appearance of the development and create less of an undesirable impact on the area.

It is recommended that the Eastford Planning Commission amend the town's plan of development to include guidelines and recommendations for the long-range development of a greenway or open space corridor in town. A designation of open space through deed restriction, conservation easements or deeded to a land trust is recommended for the area between the Slovik Brook wetland and the wetland in the northeast corner of land designated "not to be approved for building purposes". The wetland/stream corridors are a logical base for any open space system. Designated open space within this development can help to insure that wildlife can move in and through the subdivision.

It is also recommended that the wetlands have restrictions placed on them for permanent protection in their natural state. The wetland that is located south of the cart path behind Lots #1,2,3 and 4 should be looked at in terms of how it best can be incorporated into the open space corridor should there be future development on this site. Any future road to the large undeveloped section of the parcel should also take into consideration this open space corridor and should protect the access that wildlife will have from that wetland area to Slovik Brook.

ARCHAEOLOGICAL SENSITIVITY

A review of the State of Connecticut Archaeological Site Files and Maps show no known archaeological resources in the project area. However, examination of topographic and environmental factors suggest that the area has a high potential for prehistoric Native American campsites.

Models demonstrate that areas of well-drained soils and with little slope adjacent to wetlands, especially drainages similar to Slovik Brook, were used by small bands of peoples as campsites for over five thousand years. In addition, the lack of development and below ground disturbance within the project area suggests that these possible campsites may have maintained excellent integrity.

The Office of State Archaeology recommends an archaeological survey of the area that exhibits well-drained knolls of little slope next to wetlands. A survey can indicate the

location and distribution of below ground cultural resources. Any archaeological sites can then be avoided or mitigated based on site development plans. The Office of State Archaeology is prepared to offer technical assistance in conducting this survey.

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, 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 reviewed by the local Soil and Water Conservation District and approved by 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: 203-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.