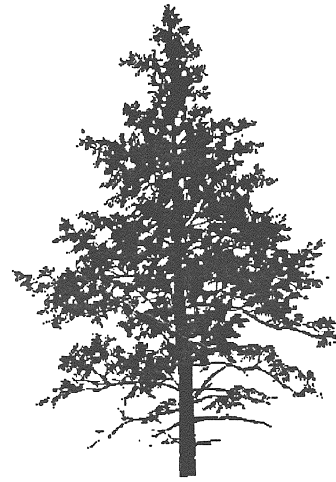


Haley Ridge Estates

Beacon Falls, Connecticut



King's Mark Environmental Review Team Report

King's Mark
Resource Conservation and Development Area, Inc.

Haley Ridge Estates

Beacon Falls, Connecticut

Environmental Review Team Report

**Prepared by the
King's Mark Environmental Review Team
of the King's Mark
Resource Conservation and Development Area, Inc.**

**for the
Inland Wetlands and Watercourses Commission
Beacon Falls, Connecticut**

August 1998

**CT Environmental Review Teams
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Acknowledgments

This report is an outgrowth of a request from the Beacon Falls Inland Wetlands and Watercourses Commission to the New Haven County Soil and Water Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark 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, June 25, 1998.

Roman Mrozinski	Senior Field Technician New Haven County SWCD 203-269-7509
Christopher Stone	Stormwater Permit Engineer Bureau of Water Management DEP - Stormwater Section (860) 424-3850
John Wiebke	Senior Planner Council of Governments Central Naugatuck Valley 203-757-0535

I would also like to thank Don Molleur, chairman, Beacon Falls IWWC, David Keating wetland enforcement officer, Gerald Sudimik, town engineer, James Martin, applicant/developer, Alan Shepard the project engineer and Douglas Hoskins of the DEP-Inland Water Resources Division for their cooperation and assistance during this environmental review.

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

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

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in reviewing this proposed residential development.

If you require additional information please contact:

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Introduction

Introduction

The Beacon Falls Inland Wetlands and Watercourses Commission has requested assistance from the King's Mark Environmental Review Team in reviewing a proposed residential development.

The 34 acre site is located on Burton Road in a R-1 zone. Twenty-two single family house lots are proposed which will be served by public sewers and on-site water supply wells. A new 1200 foot road is proposed that will end in a temporary cul-de-sac. Almost four (4) acres of open space is proposed that will require a wetland crossing for access.

Objectives of the ERT Study

The Commission has requested this review due to the large size of the subdivision and the steep slopes involved. Other major concerns that the ERT was asked to address are the high groundwater, risk of erosion and sedimentation during construction with regard to soil resources, the on-site stormwater management, wetland impacts and access to the open space.

Although the Team wetland specialist was present at the field review he did not issue a report. It is the policy of the DEP-Inland Water Resources Division to provide technical assistance on matters regarding inland wetlands and watercourses to those municipal agencies responsible for the administration of the Inland Wetlands and Watercourses Act. Such assistance is generally not offered to those commissions, such as planning and zoning commissions, which do not have jurisdiction over the inland wetlands and watercourses matters. In this case, the Beacon Falls Inland Wetlands and Watercourses Commission has already made a

decision on this matter and forwarded their findings to the Beacon Falls Planning and Zoning Commission for their consideration.

The ERT Process

Through the efforts of the Inland Wetlands and Watercourses Commission this environmental review and report was prepared for the Town of Beacon Falls.

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

The review process consisted of four phases:

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

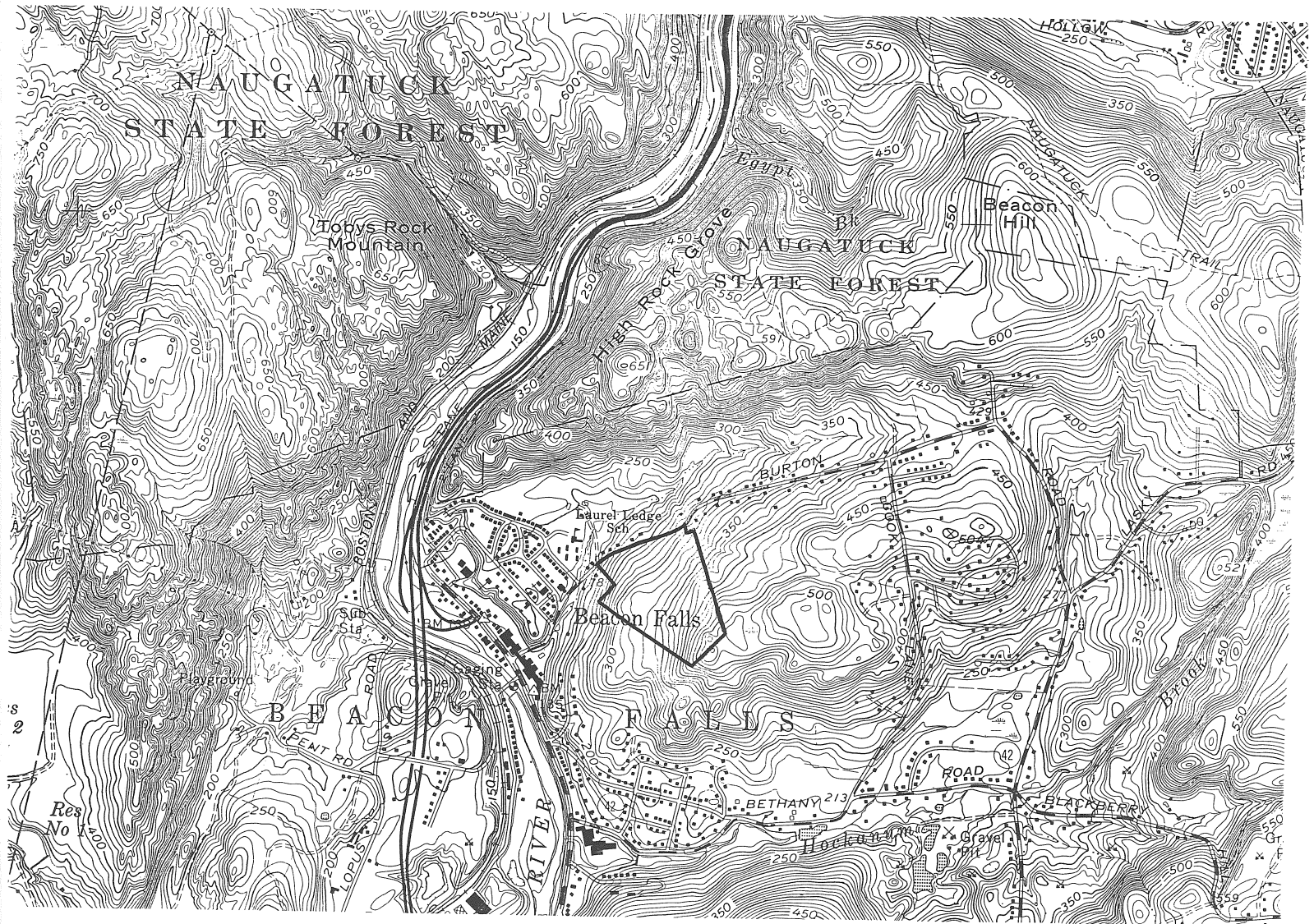
The data collection phase involved both literature and field research. The field review was conducted on Thursday, June 25, 1998. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

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

Figure 1

Location and Topographic Map

Scale 1" = 2000'



Soil Resources

This soils report applies to the Haley Ridge Estates proposal. The tract of land is a 37.97 acre wooded hillside located on the south side of Burton Road in the town of Beacon Falls. The information in this report is based on the soil series descriptions and the mapping units descriptions as presented in the 1979 USDA Soil Survey of New Haven County, and on field observations.

The site can be found in sheets 26 and 34 of the New Haven County Soil Survey.

Wetland Soils

Map Unit Le

The Le map unit consists of primarily of Leicester soils on 3 to 8 percent slopes. Leicester soils are very deep, poorly drained soils, formed in loamy glacial till, derived from gneiss schist. Typically, they have fine sandy loam textures to a depth of 60 inches or more. Leicester soils have a watertable within 1.5 feet of the surface throughout much of the year. This soil has poor potential for community development.

Non-Wetland Soils

Map Unit CrC

The Charlton-Hollis map unit is composed primarily of two soils that are so intermingled on the ground that they could not be separated on the map. Slopes range from 3 to 15 percent. One soil is named Charlton. Charlton soils are very deep and well drained. Typically, they have fine sandy loam textures to a depth of 40 inches or more. Depth to the seasonally high watertable is greater than 6.0 feet.

The Charlton soil has moderate or moderately rapid permeability. Runoff is medium to rapid. The soil has a slow shrink-swell potential. The Hollis soil has moderate or moderately rapid permeability above the bedrock.

This complex has fair to poor potential for community development. The Charlton soil has fair potential for development. It is limited mainly by the steepness of slopes and stoniness. The Hollis soil has poor potential for community development. It is limited mainly by bedrock at a depth of 10 to 20 inches.

During construction, conservation measures such as temporary vegetation and siltation basins are frequently needed to prevent excessive runoff, erosion and siltation.

Map Unit HpE

The Hollis-Charlton map unit consists primarily of two soils and rock outcrops that are so intermingled on the landscape that they could not be separated on the map. The soils formed in loose glacial till on bedrock controlled landforms. Slopes range from 15 to 35 percent. One soil is named Hollis. Hollis soils are shallow and well drained. They have fine sandy loam textures overlying consolidate bedrock at a depth of 10 to 20 inches.

This soil has moderate or moderately rapid permeability above the bedrock. It has a low available water capacity. Runoff is rapid. The Charlton soil has moderate or moderately rapid permeability. It has a high water capacity. Runoff is rapid. Both soils have a low shrink-swell potential.

This map unit has poor potential for community development due to limitations imposed by steep slopes, shallowness to bedrock, rock outcrops, and stoniness.

Map Unit PbC

The Paxton map unit is composed primarily of Paxton soils on 8 to 15 percent slopes. Paxton soils are very deep, well drained soils that formed in compact glacial till derived mainly from gneiss and schist. Typically they have friable fine sandy loam or loam surface layer and subsoil over a firm fine sandy loam or sandy loam dense till substratum.

Permeability is moderate in the surface layer and subsoil and slow in the substratum. The available water capacity is moderate. Runoff is rapid. The soil tends to dry out and warm up slowly in the spring and possesses a low shrink-swell potential.

This soil has fair potential for community development. It is limited mainly by its slow permeability in the substratum and the steepness of its slopes. Steeper slopes cause additional expense in building roads, installing stormwater infrastructure and water lines. During construction, fairly intensive conservation measures are needed to prevent excessive runoff, erosion, and siltation.

Map Unit PeC

This Paxton map unit exhibits extremely stony fine sandy loam on slopes ranging from 3 to 15 percent. This is a gently sloping, well drained soil on ridges and hills of glacial uplands.

Permeability is moderate in the surface layer and subsoil and slow in the substratum. The available water capacity is moderate. Runoff is medium to rapid. This soil has a low shrink-swell potential.

This soil has a fair potential for community development. It is mainly limited by stoniness, and in places, by steepness of slopes. Conservation measures are needed to prevent excessive erosion, runoff and siltation.

Map Unit PeD

This Paxton map unit is extremely stony fine sandy loam on slopes ranging from 15 to 35 percent. This is a moderately steep and steep, well drained soil on the sides of drumlins, ridges, and hills of glacial uplands.

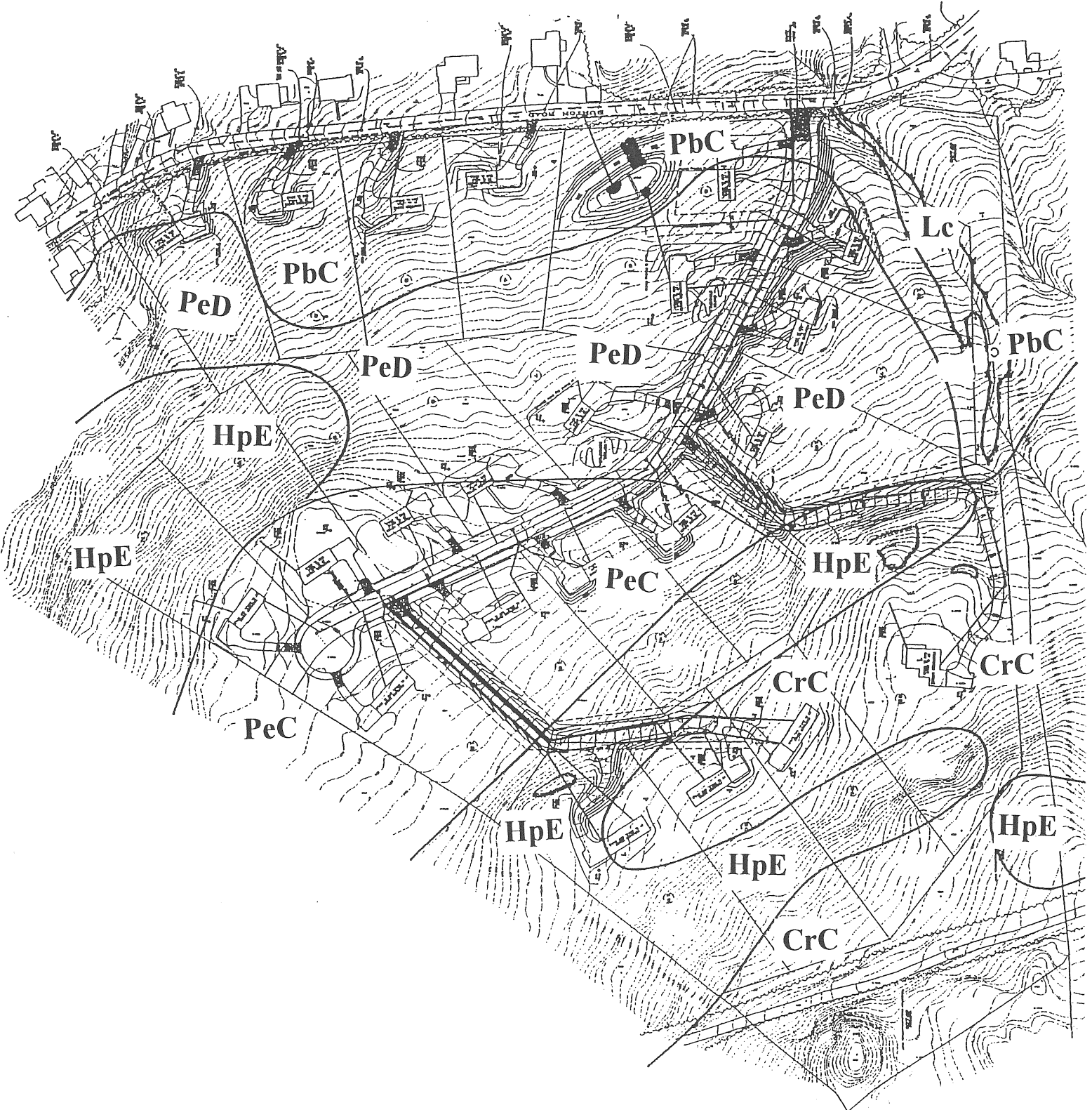
Permeability is moderate in the surface layer and subsoil and slow in the substratum. The available water capacity is moderate. Runoff is rapid. It has a low shrink-swell potential.

This soil has poor potential for community development, mainly because of the steep slopes and stoniness. Removal of the stones and boulders is costly. Intensive conservation measures such as diversions, temporary vegetative cover and siltation basins are necessary to control excessive runoff and erosion.

Figure 3

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N

Subdivision Soils Map



Stormwater Management

The Haley Ridge Estates subdivision is a proposed 34 acre residential development on Burton Road with 22 single family house lots. The lots average 1.3 acres in size and will be served by wells and connection to the sanitary sewer. Approximately 3.7 acres at the south end of the site will be dedicated as open space. The site has grades in the range of 10-15% sloping toward the north with periodic flatter areas. The subdivision is bordered to the east by a wetland corridor following an intermittent watercourse.

Most of the lots will served by the proposed Haley Ridge Road, a cul-de-sac approximately 1200 feet long with a possible future connection to property to the west. Four lots fronting on Burton Road will have their access on that road. The proposed drainage system consists of a series of catch basins eventually discharging to a detention basin. The outlet of this basin would then discharge to the storm sewer system in Burton Road. According to drainage calculations submitted, there will be no increase in post-development peak flows so the capacity of the Burton Road system should not be negatively impacted by the subdivision drainage. A drainage easement and agreement with the basin's lot owner will provide for maintenance of the proposed basin. There are underdrains located on the south side of the proposed road which will also discharge to the storm sewer as well as house foundation drains. Four of the proposed lots are rear lots which have their own drainage systems discharging to the storm sewer.

The design engineer indicated that during construction, a diversion swale will direct most of the drainage on the site into the detention basin which will be modified to function as a sedimentation basin. This swale and the details for the basin outlet modification should be shown on the plans. A maintenance schedule must also be included. To prevent, as much as possible, the transport of sediment on the site, gravel

and silt fence check dams should be provided along the shoulders and swales of the proposed road and driveways. Details for these should also be included on the plans. In addition, a sediment and floatables control structure utilizing swirl concentrator technology or equal should be installed in the storm sewer system prior to discharge to the detention basin. One of the most significant concerns with this site is the combination of steep slopes and high groundwater. Considerable attention has been paid to addressing groundwater in the completed subdivision but it also needs to be addressed during construction. Measures to control groundwater erosion of the steep cut slopes required for this project must be addressed. Special slope stabilization measures will likely be necessary. These should all be indicated on the plans. Also, a regular maintenance schedule should also be specified for the site prior to final stabilization and for the drainage system once complete.

A registration for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities must be submitted at least 15 days prior to the start of construction. A Stormwater Pollution Control Plan must also be prepared and submitted at the same time. In particular, erosion and sediment control measures utilized must be appropriate for temporary construction sedimentation control must be shown in detail on the plans. This basin shall have a capacity of at least 134 cubic yards per acre drained to it. Disturbed areas to be left bare for over 30 days will receive temporary seeding or heavy mulch. All disturbed areas must be seeded as soon as possible. No areas may be left bare by the end of the planting season. On a site as steep as this, care must be taken to properly stabilize seeded areas with mulch and/or geotextiles. Properly constructed and maintained, the site should have no measurable impact on the adjacent wetlands or the downstream sewer system and watercourses.

Planning Considerations

The Town of Beacon Falls is situated within the Central Naugatuck Valley Region. Predominately rural, the town's 5,150 residents are concentrated mostly east of the Naugatuck River within the vicinity of the town center and the Route 42 corridor. Based on a 1990 land use survey conducted by the Council of Governments of the Central Naugatuck Valley (COGCNV), a majority of the total land area (55%) is considered undeveloped. The next largest proportional land use classification is open space (17%), which is represented largely by the Naugatuck State Forest, forming much of the town boundary with the Borough of Naugatuck.

The site of the proposed 34-acre subdivision is situated off Burton Road near Town Hall (see enclosed land use map - Figure 4). The developer proposes to subdivide the property into 22 single family building lots, 4 of them being rear lots. Four of the lots (1 through 4) will front Burton Road while the remaining 18 lots will be accessed via yet-to-be-constructed Haley Ridge Road, which will lead into the interior of the subdivision and terminate in a temporary cul-de-sac. A right-of-way has been set aside at the end of the cul-de-sac for future road extension. Lots fronting either Burton Road or Haley Ridge Road will be approximately one-acre, while the four rear lots will range from 1 1/2 to 3 acres. A drainage easement/detention pond will be situated adjacent to Lot 5 at the corner of Burton Road and Haley Ridge Road. The lots will be served by public sewers and on-site water supply wells. Dedicated open space covering approximately 4-acres is proposed at the highest point on the property along an AT&T utility easement located at the subdivision's southern edge. The hilltop will be accessed via a designated open space wetland corridor running along the eastern boundary of the site that will terminate at Burton Road. Finally, the sight distance line from proposed Haley Ridge Road onto Burton Road will be 250 feet to the east and 312 feet to the west.

Regional Plan of Conservation and Development for the Central Naugatuck Valley

Expected to be formally adopted this fall, the overall mission of the 1998 Regional Plan will be to promote the orderly conservation and development of the Region, while encouraging community identity and character. Among the stated goals of the plan are to guide the location of growth toward the regional center and areas with infrastructure, and to encourage settlement patterns that reduce the rate of land consumption in the Region — such as cluster development.

Based on the future land use map, the proposed development site is recommended for conservation as a Rural Area. This means that any development should respect natural resources and environmental constraints. Intensity of development depends on the availability of infrastructure and other appropriate support services. The Plan also identifies significant natural resources in the Region, such as ridges and river valleys, soils, water resources, air, foliage, and wildlife. Among the natural resources that the Plan considers should be preserved include hilltops and ridgelines for their scenic views and community character, and steep slopes in excess of 15 percent for maintaining slope stability, erosion, and structural integrity.

The Plan divides the Region into four development constraint classifications, summarized below, that are based on a combination of these natural resources. Based on these guidelines, the proposed development site is considered to have moderate to severe development constraints. Factoring in the availability of infrastructure (i.e. public sewer/private water), the Plan recommends maximum lot sizes of .75 to 1.5 acres for a subdivision with the characteristics of the proposed Haley Ridge Estates.

Table 1
Natural Resource Summary Table

Development Constraint	Conservation Opportunity	Definition	Resource Condition
Minimal	Low	Having only few or slight environmental constraints on development. Most difficult to conserve from development.	<ul style="list-style-type: none"> • Excessively drained soils • Well drained soils, less than 15% slopes
Moderate	Modest	Having moderate or localized severe restrictions on development which may be overcome with environmental planning and mitigation. Difficult to conserve from development.	<ul style="list-style-type: none"> • Well drained soils, 15-25% slopes • Well drained soils, high seasonal water table • Hardpan soils, less than 15% slopes • Shallow or rocky soils, less than 15% slopes • Floodplain (500-year, 0.2% probability)
Severe	Important	Having some severe or very severe limitations on development which may be difficult to overcome with environmental planning and mitigation. Present many opportunities to conserve important natural resources and functions.	<ul style="list-style-type: none"> • Any soil with slopes in excess of 25% • Shallow or rocky soils, 15 to 25% slopes • Hardpan soils, 15 to 25% slopes • Hardpan soils, high seasonal water table
Prohibitive	Significant	Having only severe or very severe limitations on development. Represent areas where it is most important to conserve natural resources and functions.	<ul style="list-style-type: none"> • Watercourses and waterbodies • Poorly drained soils (wetlands) • Floodplain (100-year, 1.0% probability)

Conservation and Development Policies Plan for Connecticut 1998-2003

The State Plan categorizes the vicinity west of the proposed Haley Ridge Estates as a Neighborhood Conservation Area. This area represents the town center of Beacon Falls and ranks as a development priority 2. Neighborhood Conservation Areas generally reflect stable, developed neighborhoods and communities that are considered to be significantly built-up and well populated without the structural, occupancy, and income characteristics typical of Regional Centers such as Waterbury. The State Action Strategy is to continue support of basically stable developed neighborhoods and communities and to intensify development when supportive of community stability and consistent with the capacity of available urban services. The subdivision site itself, meanwhile, is classified as Rural Land with a conservation priority of 4. The stated strategy here is to discourage structural development forms and intensities which exceed onsite carrying capacity for water supply and sewage disposal.

Zoning Regulations

The project is located within the Town's Residential (R-1) District (see enclosed zoning map - Figure 5), which calls for minimum 45,000 square foot lots and 67,500 square foot rear lots for non-water supply parcels. The stated minimum width and depth of lots is 150 feet and 200 feet respectively. Town Regulations require that a soil erosion and sediment control plan be submitted for developments where the disturbed area is cumulatively more than 1/2 acre or for any slope greater than 25 percent. In order to be eligible for certification, the control plan must contain proper provisions that minimize erosion and sedimentation during construction, stabilize and protect the site from erosion when completed, and ensure that the development does not cause off-site erosion and/or sedimentation.

Subdivision Regulations

All proposed development proposal must be reviewed to ensure that they adhere to Town Subdivision Regulations, which states that any proposed subdivision plan must meet the following guidelines:

1. The land be of such character that it can be used for building purposes without imposing danger to health and public safety.
2. Proper provisions are made for water supply, drainage, sewerage and flood control.
3. Proposed streets are in harmony with existing or proposed principal thoroughfares, especially with regard to safe intersections.
4. Open space for parks and playgrounds are provided when deemed proper by the Commission.

Recommendations

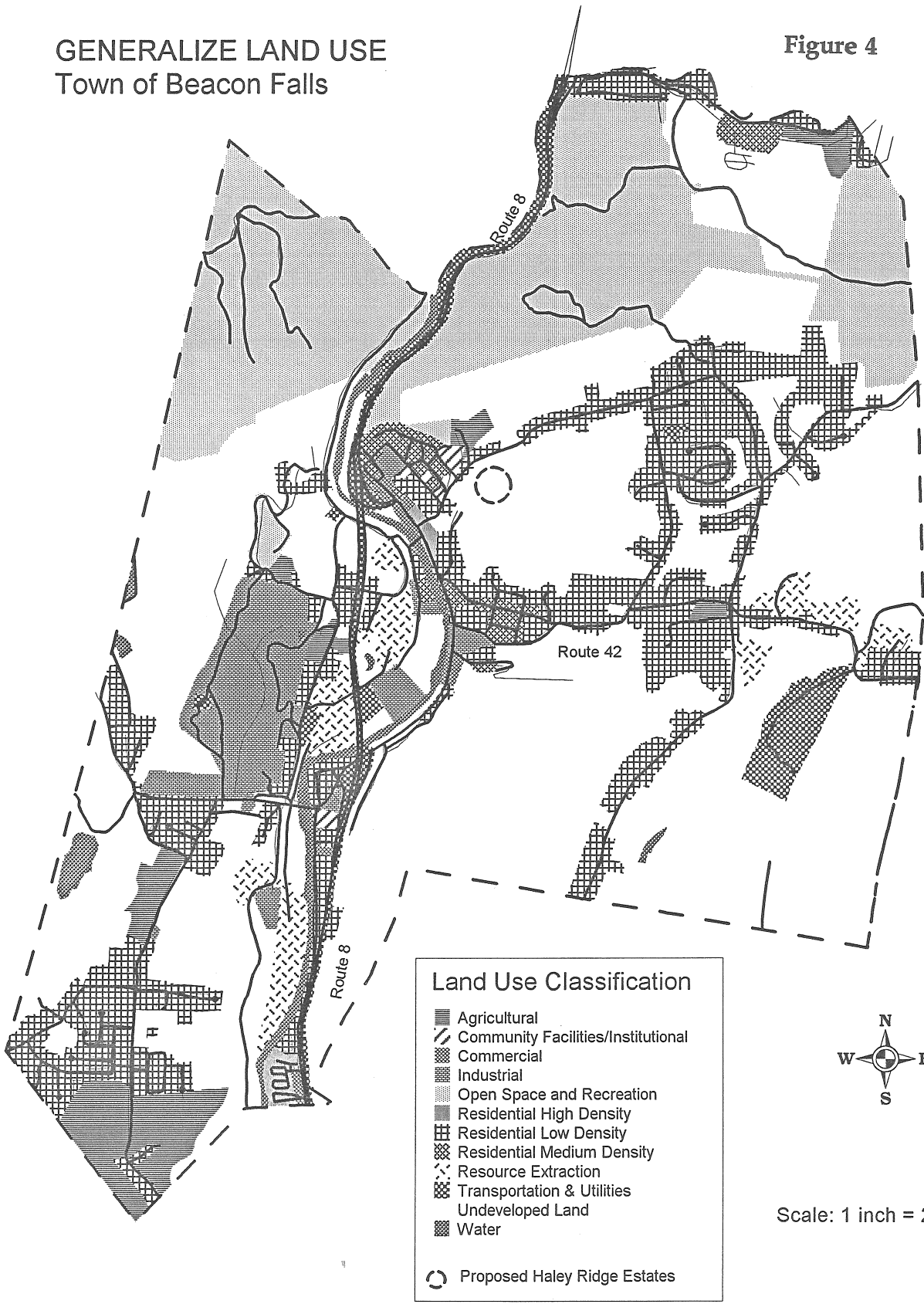
The overall development proposal appears to be in compliance with the Town Zoning and Subdivision Regulations. However, it will be imperative to ensure that appropriate measures are implemented to mitigate soil erosion and non-point source pollution. This is important because increased development throughout the region, particularly in steeply sloped areas, swells the amount of runoff and escalates the amount of pollutants that enter the region's watercourses. While areas proposed for housing development are generally sloped at 15 percent or less, other portions of the proposed lots have slopes in excess of 25 percent. Both the Regional Plan draft and the State Conservation and Development Plan advise caution in developing on sites with these characteristics. Furthermore, the State Plan categorizes the site as Rural Land where

structural development should be limited. However, access to infrastructure services, such as public sewer, are readily available along Burton Road and, given the proposed subdivision's close proximity to the town center, developing the site to a limited degree is feasible.

The proposed lots are oriented so that the housing structures will be situated on the most level areas of the site, thereby leaving the more steeply sloped areas undisturbed. The only access to the open space area located at the top of the hill will be from the wetlands corridor that leads to Burton Road. A secondary access to the proposed open space should be considered, possibly via an easement along the southwest boundary of the site adjacent to lots 12 and 19. Finally, installation of a timber foot-bridge or other measures should be implemented to ensure that disturbance to the wetlands that form part of the corridor to the hilltop are mitigated.

GENERALIZE LAND USE Town of Beacon Falls

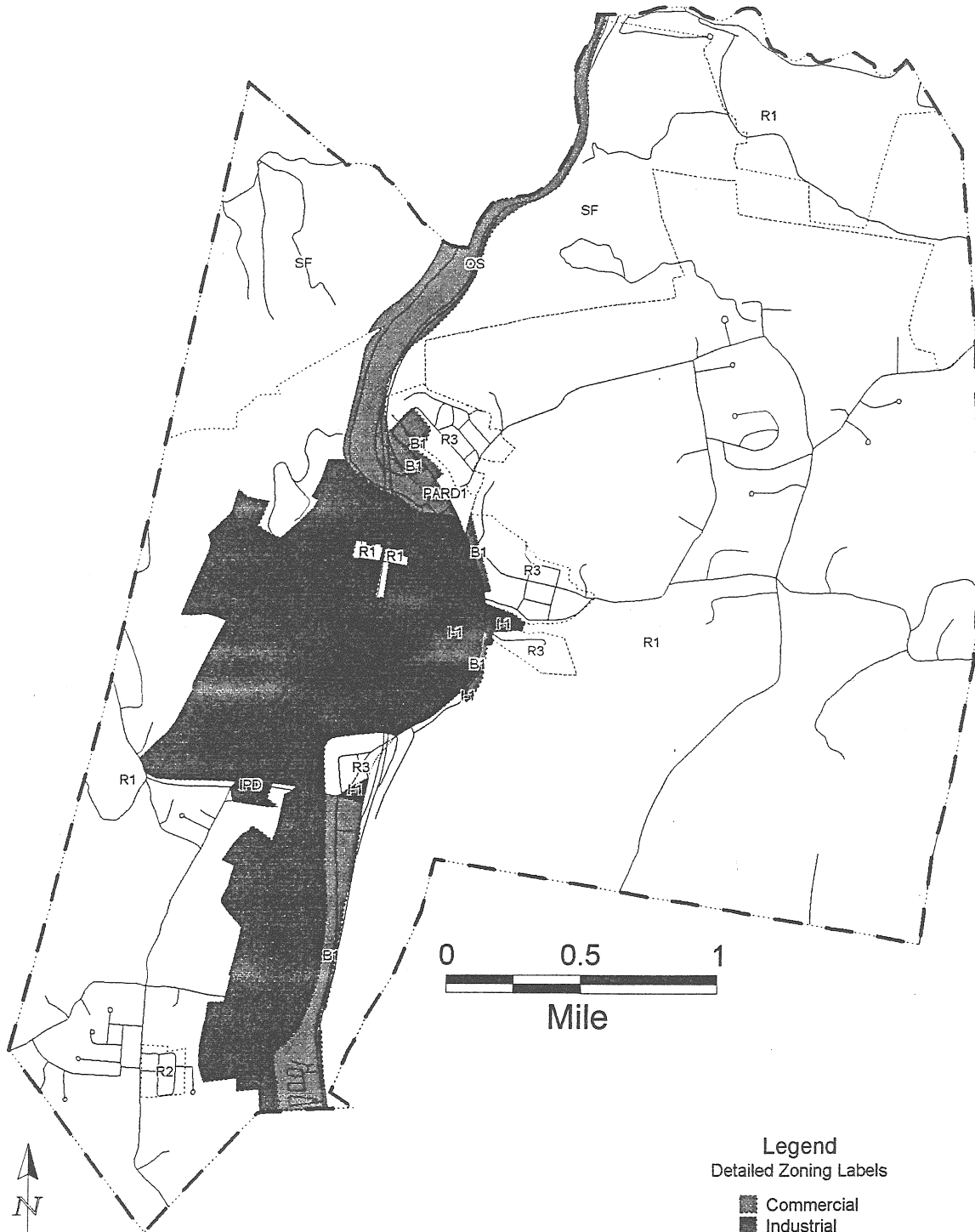
Figure 4



Source: Council of Governments of the Central Naugatuck Valley

Beacon Falls Detailed Zoning Map

Figure 5



Source: Council of Governments of the Central Naugatuck Valley.

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists and landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - *free of charge*.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreation/open space projects.

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 site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Soil and Water Conservation District and approved by the King's Mark RC&D Executive Council, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977.