Huwiler Property

West Haven, Connecticut

King's Mark Environmental Review Team Report

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

Huwiler Property
West Haven, 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
Office of the Mayor
West Haven, Connecticut

March 1997

CT Environmental Review Teams
1066 Saybrook Road
P.O. Box 70
Haddam, CT 06438
(860) 345-3977

Acknowledgments

This report is an outgrowth of a request from the Office of the Mayor of West Haven 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 Wednesday, December 4, 1996.

Carol Donzella	Project Coordinator USDA - Natural Resources Conservation Service (203) 787-0390
Joseph Hickey	State Park Planner DEP - Bureau of Outdoor Recreation (860) 424-3202
Doug Hoskins	Wetland Specialist/Environmental Analyst III DEP - Bureau of Water Management Inland Water Resources Division (860) 424-3903
Dawn McKay	Biologist/Environmental Analyst III DEP - Natural Resources Center (860) 424-3592
Brian Murphy	Fisheries Biologist DEP - Eastern District Headquarters (860) 295-9523

Peter Picone	Wildlife Biologist DEP - Sessions Woods Wildlife Management Area (860) 675-8130
Rob Rocks	Forester DEP - Eastern District (860) 295-9523
Rich Stoecher	Principal Planner South Central Regional Council of Governments (203) 234-7555

I would also like to thank Doug Cutler, of the West Haven mayor's office, Bill Slater, West Haven parks and recreation director, Bob Gilmore, West Haven grant administrator, Mr. and Mrs. Paul Huwiler, the landowners and Roman Mrozinski of the New Haven SWCD 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 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 City. 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 City. 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 making your decisions on this piece of property.

If you require additional information please contact:

Elaine Sych, ERT Coordinator
CT ERT Program
P.O. Box 70
Haddam, CT 06438
(860) 345-3977

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Introduction

Introduction

The Mayor's Office of the City of West Haven has requested assistance from the King's Mark Environmental Review Team in conducting a natural resource inventory and environmental review of the Huwiler Property.

The Huwiler Property, which is made up of two parcels, is located on Chestnut Street. The parcels total approximately five acres and include a home and outbuildings. The owners are offering the property to the City for purchase to be used as open space/passive/active recreation. Ray Park, an undeveloped city park, is located across the street and Painter Park, which is used for active recreation, is in close proximity.

The City is requesting assistance in determining the best use for the site if they decide to purchase the property for parkland.

Objectives of the ERT Study

The ERT review will provide a natural resource inventory, highlight special features of educational or noteworthy value, and discuss special considerations for acquisition as open space/recreation. This information will assist the City in evaluating the open space/recreation development potential of the site. Specific information addressed includes geologic and soils limitations, wetland resources and concerns, wildlife and vegetative resources, land use, site design, and active and passive recreation potential.

The ERT Process

Through the efforts of the Office of the Mayor this environmental review and report was prepared for the City of West Haven.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the City. Team members were able to review maps 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 December 4, 1996. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

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

Figure 1

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Location and Topographic Map

Scale 1" = 2000'

——— Approximate Site

Figure 2

⇑
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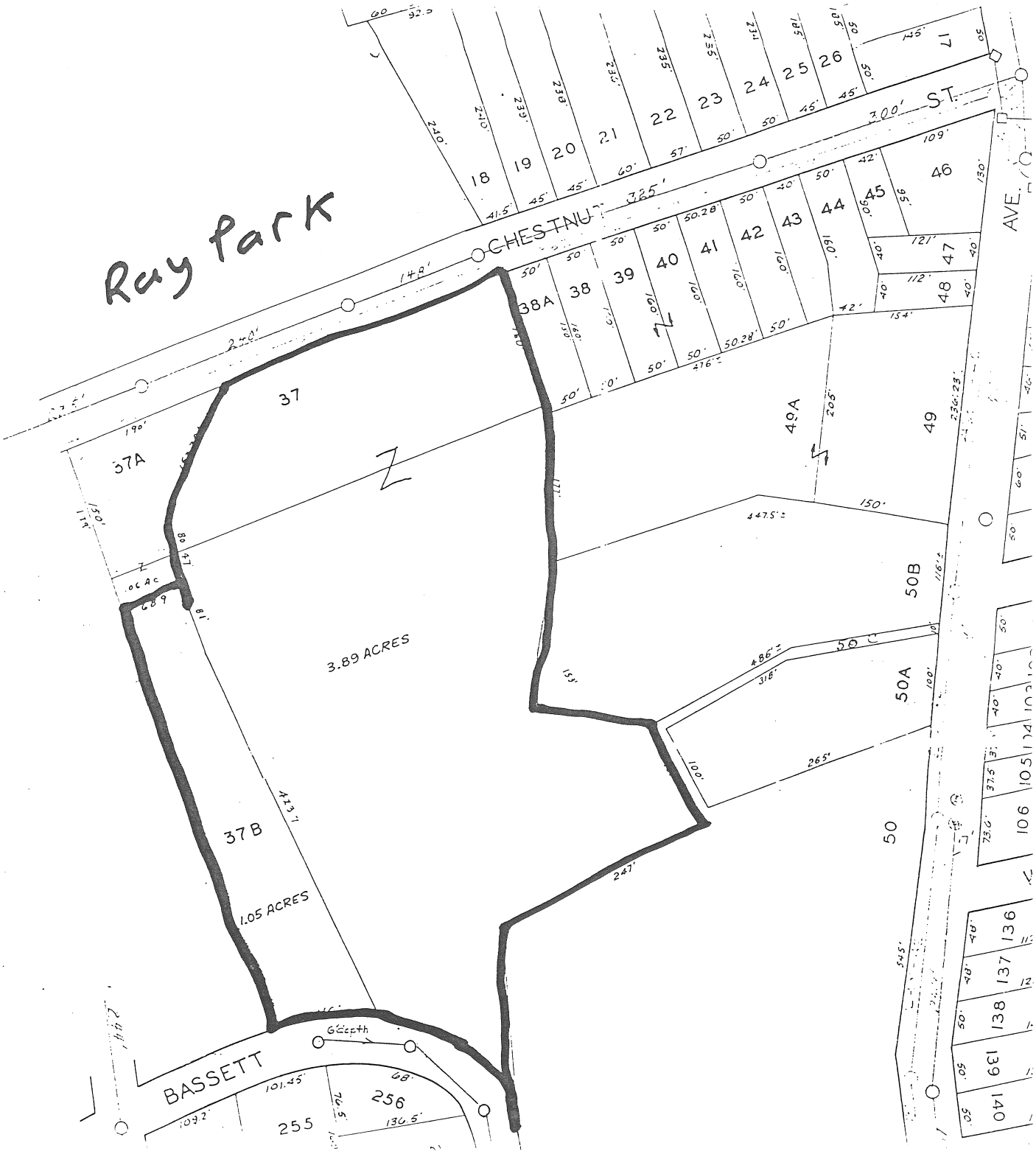
Assessor's Map



Topography and Geography

The ±5 acre Huwiler property lies on the Northeastern corner of a prominent 50 foot high, 5000 x 25000 foot long hill which is completely surrounded by the near level plain on which the rest of the City of West Haven is built. The surface on the western side of the hill has a relatively smooth and streamlined appearance due to a thick blanket of glacial till molded to the topography by the flow of ice at the height of the last ice age, 20,000 - 30,000 years ago. In striking contrast the overburden on the eastern slope is thin and discontinuous. The topography is hummocky and slopes are dissected by steep-sided ravines cut deeply into the underlying bedrock. The till cover has presumably been stripped from the hillside by rapidly flowing glacial meltwaters as the ice sheet retreated northward 12,000 to 14,000 years ago. The extensive near horizontal outwash plain at the base of the hill is underlain by stratified sands and gravels deposited somewhat later by the West River swollen by meltwaters from the retreating ice sheet to the north.

The bedrock exposed on the Huwiler property and across the street in Ray park is a very fine-grained dark gray to green colored phyllite containing abundant chlorite, mica and quartz. On a weathered surface the color is more rust gray to brown. The rock readily splits into thin slabs or sheets due to the parallel arrangement of the mica and chlorite flakes. The foliation is very prominent as is a distinct lineation due to small “crumples” or crenulations of the mica and chlorite sheets. Geologically, the rock is known as the Oronoque Schist (Oo on the State Bedrock Geologic Map). Although now deformed and metamorphosed the Oronoque is believed to have been originally deposited as muds and volcanic debris in a deep sea roughly 500 million years ago.

References

R. F. Flint, 1965. Geologic Map of the New Haven and Woodmont Quadrangles, CT. Connecticut Geologic and Natural History Survey, QR-19.

John Rodgers, 1985. Bedrock Geological Map of Connecticut. Connecticut Geological and Natural History Survey.

Terminology

Chlorite - a group of platy, usually greenish minerals of the general formula

$$(mg, Fe^{+2}, Fe^{+3})_6 AlSi_3O_{10}(OH)_8$$

Foliation - A planar arrangement of textural features in any type of rock.

Soil Resources

The soils within the Huwiler Property include the Cheshire-Holyoke complex.

Cheshire-Holyoke Complex - (CyC) consists of gently sloping and sloping, well drained soils on uplands of 3 to 15 percent slope. The relief is affected by underlying bedrock. The areas have a rough surface with bedrock outcrops, a few small wet depressions, and narrow intermittent drainageways. Approximately 45 percent of this unit is Cheshire extremely stony fine sandy loam, 30 percent is Holyoke silt loam, and about 25 percent is other soils. These soils have fair potential for community development. It is limited mainly by steepness of the slopes and stoniness. (Figure 3)

Tables 1, 2, and 3 summarize the soil suitability for recreational development, woodland management and productivity, and wildlife habitat. The soil limitations which may be associated with the development of this property do not necessarily preclude development. Recommendations to address these limitations can be made in order to provide guidance to minimize disturbances to the soil resources during the planning and implementation process.

The soil limitation for recreational development is SLIGHT. Paths and trails for hiking should require little or no cutting and filling. It is recommended that if a path/trail system is implemented, it should be marked away from any stone outcrops or other possible hazards (Table 1).

For woodland management and productivity, the soil limitation is SLIGHT. Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where soil is exposed along trails. A rating of SLIGHT indicates that no particular prevention measures are needed under ordinary conditions. (Table 2).

When considering wildlife habitat, the soil limitation is GOOD for woodland wildlife. A rating of GOOD indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. (Table 3).

Recommendations

- Soils on this site are suitable for passive recreation. One limitation is water ponding/puddling at the bottom of slopes.

- Erosion controls are recommended on the steeply sloped areas.

- The abundance of trees on this site indicate that the soils are well suited for tree growth and wildlife habitat.

- This area could be developed for an outdoor living classroom to benefit the nearby schools and local citizens.

Figure 3

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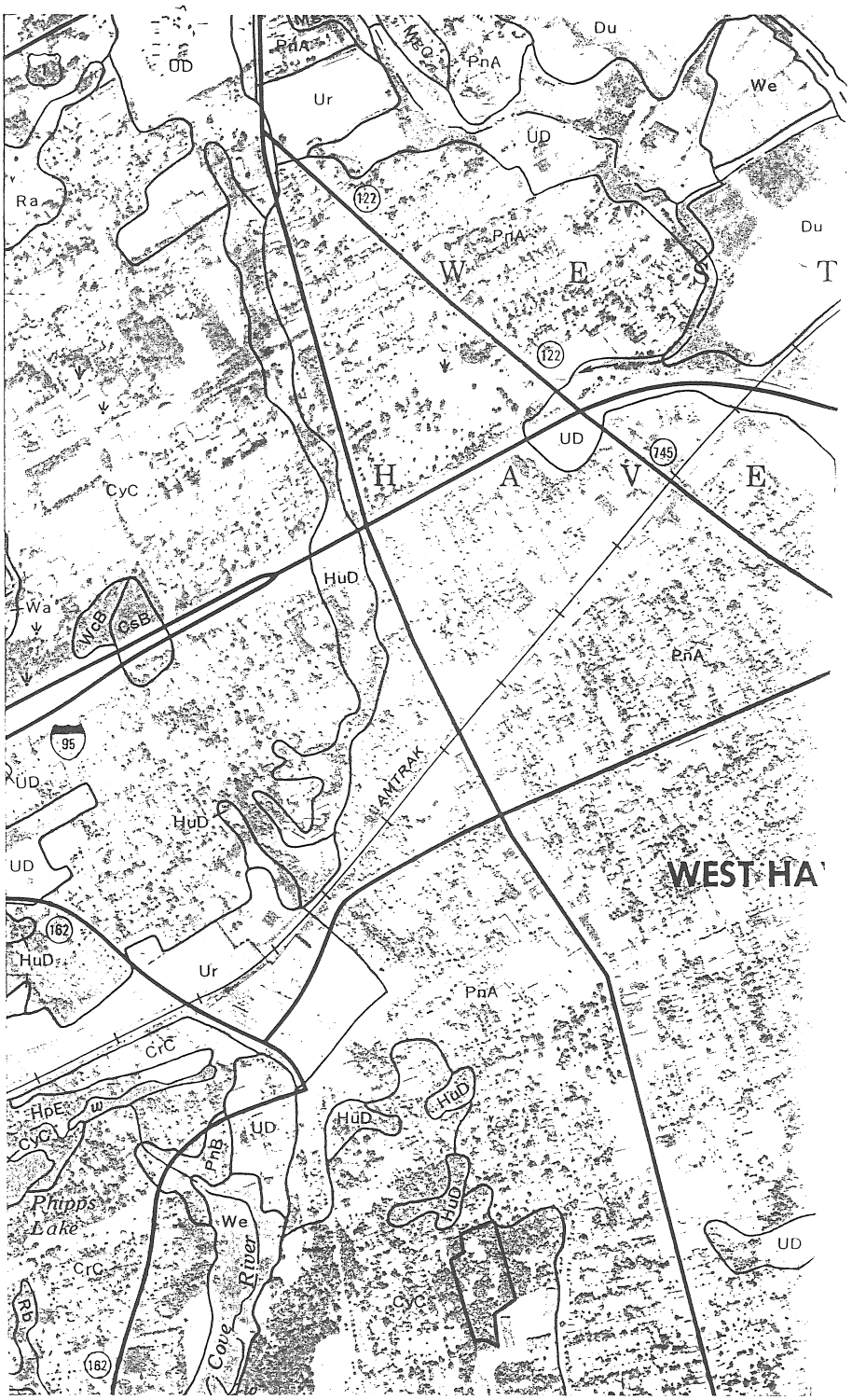
Soils Map

Scale 1" = 1320'



RECREATIONAL DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
CyC:					
Cheshire	Moderate: slope, large stones	Moderate: slope, large stones	Severe: large stones, slope	Slight	Moderate: large stones, slope
Holyoke	Severe: depth to rock	Severe: depth to rock	Severe: large stones, slope, depth to rock	Slight	Severe: depth to rock

RECREATIONAL DEVELOPMENT

Endnote -- RECREATIONAL DEVELOPMENT

The soils of the survey area are rated in this report according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In this report the degree of soil limitation is expressed as "Slight," "Moderate," or "Severe." "Slight" means that soil properties are generally favorable and that limitations are minor and easily overcome. "Moderate" means that limitations can be overcome or alleviated by planning, design, or special maintenance. "Severe" means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in this report can be supplemented by information available in other reports, for example, interpretations for septic tank absorption fields in the Sanitary Facilities report and interpretations for dwellings without basements and for local roads and streets in the Building Site Development report.

CAMP AREAS require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

PICNIC AREAS are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

PLAYGROUNDS require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or hardpan should be considered.

PATHS AND TRAILS for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, and not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

GOLF FAIRWAYS are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

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TABLE 2

WOODLAND MANAGEMENT AND PRODUCTIVITY

(Only the soils suitable for production of commercial trees are listed)

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment Limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
									m3/ha	
CyC:										
Cheshire--------	3A	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	Sugar maple---------			European larch, eastern white pine, eastern hemlock
							Shagbark hickory----			
							Northern red oak----	60	3	
							Eastern white pine--	65	8	
Holyoke---------	2D	SLIGHT	SLIGHT	MODERATE	SEVERE	SLIGHT	White ash----------			Red pine, eastern white pine
							Northern red oak----	47	2	
							Eastern white pine--	55	6	

Endnote -- WOODLAND MANAGEMENT AND PRODUCTIVITY

This report can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The report lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the ORDINATION SYMBOL, a number, indicates the potential productivity of the soils for an indicator tree species. The first species listed under common trees for a soil isthe indicator species for that soil. It is the dominant species on the soil and the one that determines the ordination classs. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter "Rn" indicates steep slopes; "X", stoniness or rockiness; "W", excess water in or on the soil; "T", toxic substances in the soil; "D", restricted rooting depth; "C", clay in the upper part of the soil; "S", sandy texture; "F", a high content of rock fragments in the soil; and "N", snowpack. The letter "An" indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, F, and N.

In this report, "Slight", "Moderate", and "Severe" indicate the degree of the major soil limitations to be considered in management.

EROSION HAZARD is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, fire lanes, and log-handling areas. Woodlands that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of "Slight" indicates that no particular prevention measures are needed under ordinary conditions. A rating of "Moderate" indicates that erosion-control measures are needed in certain silvicultural activities. A rating of "Severe" indicates that special precautions are needed to control erosion in most silvicultural activities.

EQUIPMENT LIMITATION reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of "Slight" indicates that under normal conditions the kind of equipment or season of use is not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of "Moderate" indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of "Severe" indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

SEEDLING MORTALITY refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of "Slight" indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of "Moderate" indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of "Severe" indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

WINDTHROW HAZARD is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of "Slight" indicates that under normal conditions no trees are

Endnote -- WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of "Moderate" indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of "Severe" indicates that many trees can be blown down during these periods.

PLANT COMPETITION ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are the depth to the water table and the available water capacity. A rating of "Slight" indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of "Moderate" indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of "Severe" indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The potential productivity of merchantable or COMMON TREES on a soil is expressed as a site index and as a volume number.

The SITE INDEX is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The VOLUME OF WOOD FIBER, a number, is the yield likely to be produced by the most important trees. This number is expressed as cubic meters per hectare per year, indicates the amount of wood fiber produced in a fully stocked, even-aged stand. Cubic meters per hectare converts to cubic feet per acre per year as follows: (1 m3/ha = 14.3 ft3/ac). The 14.3 number is rounded up from 14.2999.

The TREES COMMONLY MANAGED FOR to plant are those that are suitable for commercial wood production.

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TABLE 3

WILDLIFE HABITAT

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
CyC:												
Cheshire--------	VERY POOR	POOR	GOOD	GOOD	GOOD	---	VERY POOR	VERY POOR	POOR	GOOD	VERY POOR	---
Holyoke---------	VERY POOR	POOR	FAIR	POOR	POOR	---	VERY POOR	VERY POOR	POOR	POOR	VERY POOR	---

WILDLIFE HABITAT

Endnote -- WILDLIFE HABITAT

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In this report the soils are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat. The potential of the soil is rated "Good," "Fair," "Poor," or "Very poor." A rating of "Good" indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of "Fair" indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of "Poor" indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of "Very poor" indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible. The elements of wildlife habitat are described in the following paragraphs.

GRAIN AND SEED CROPS are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

GRASSES AND LEGUMES are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

WILD HERBACEOUS PLANTS are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

HARDWOOD TREES and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated are Russian-olive, autumn-olive, and crabapple.

CONIFEROUS PLANTS furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

SHRUBS are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are mountainmahogany, bitterbrush, snowberry, and big sagebrush.

WILDLIFE HABITAT

Endnote -- WILDLIFE HABITAT--Continued

WETLAND PLANTS are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

SHALLOW WATER AREAS have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds. The habitat for various kinds of wildlife is described in the following paragraphs.

HABITAT FOR OPENLAND WILDLIFE consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

HABITAT FOR WOODLAND WILDLIFE consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

HABITAT FOR WETLAND WILDLIFE consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

HABITAT FOR RANGELAND WILDLIFE consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include antelope, deer, sage grouse, meadowlark, and lark bunting.

Wetland Resources

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

Existing Conditions

There do not appear to be any wetlands on this site, however, there is an intermittent watercourse located in the southwestern portion of the property which was flowing at the time of inspection (12/4/97). Some of the watercourse seems to be in a natural state, however the majority of it has been created through ditch excavation. There are several "lateral" ditches which join the main course at right angles, a very unnatural arrangement. The watercourse is approximately 250 feet long, beginning in the west-central portion of the lot, flowing south to Bassett Street, then southeast along Basset Street to the abutting lot where it enters a small depressional area. No outlet was observed leaving this depression and no stormwater management system was detected.

Watercourse Functional Values

The primary functional value of the watercourse is stormwater conveyance. Its intermittent nature affords it little value for aquatic or wildlife habitat value.

Proposed Activities

It has been stated that the city's future utilization of this parcel is limited to passive or active recreation.

Impact of Proposed Activities on Watercourses and Wetlands

The absence of wetlands and the limited aquatic/wildlife value of the watercourse, makes this particular natural resource incidental to any future use of this property. With properly engineered stormwater management techniques, development of the southwestern portion of this property for a more active recreational use is not out of the question, however higher costs for the necessary infrastructure should be expected.

Recommendations

Specific recommendations on future use of this property based on the wetland/watercourse resources present at this location would be somewhat irrelevant given the limited abundance and functional value of the resources involved. However, proper management of the intermittent watercourse flowing off this site (i.e. a suitable outlet) should be considered, especially if any proposed site modifications should act to increase stormwater runoff volumes.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding Huwiler Property have been reviewed. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur 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 Data Base as it becomes available.

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

Vegetation

The two parcels offered to the City of West Haven for open space and passive recreation have excellent potential for this use. The vegetation which is present on this tract falls into three categories. These include Mixed Hardwoods, Softwoods/Hardwoods and Old Field/Open Field. The location and acreage of these areas were obtained from 1986 and 1995 aerial photographs and are only approximate. They are depicted on the Forest Vegetation Map (Figure 4).

A. Mixed Hardwoods: The mixed hardwood type totals approximately 3.5 acres. The majority of the trees in this type are pole and sawtimber size red oak, black oak, scarlet oak, white oak, black birch, black cherry, sassafras, red maple, hickory, flowering dogwood and eastern red cedar. Fruit trees including apple and pear are also present. Many of the largest trees are damaged and unhealthy. Several could be improved by proper pruning. In some areas the trees are crowded which is causing a general decline in their health and vigor. A fuelwood thinning in these areas, which reduces the crowded condition, would be beneficial to the long term health of this forest. Understory vegetation includes hardwood tree seedlings, maple leaved viburnum, highbush blueberry, lowbush blueberry and barberry. Ground cover vegetation includes bull briar, poison ivy, Virginia creeper, raspberry, dewberry, partridge berry, wood aster and many other species of grasses, sedges and wild flowers.

B. Softwoods/Hardwoods: Approximately one acre of pole and sawtimber size white pine, eastern hemlock, Norway spruce, red oak, black oak, scarlet oak and other hardwoods are present within this property. The eastern hemlock are infested with the Hemlock Woolly Adelgid and will probably not live too much longer. The same understory and ground cover vegetation which is present in the mixed hardwood type is also present here.

C. Old Field/Open Field: About .5 acres of old field/open field is present on this tract. This area was used as a garden by the present owner. Bull briar, Japanese honeysuckle, raspberry, poison ivy, aster, goldenrod, ragweed, grasses and assorted wildflower and weed species have become established.

Figure 4

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Forest Vegetation Map

Scale 1" = 500'

VEGETATION TYPES

A. Mixed Hardwoods.....3.5+- ACRES

B. Softwoods/Hardwoods.....1+- ACRES

C. Old Field/Open Field.....1/2+- ACRES

LEGEND

PROPERTY BOUNDARY

STAND BOUNDARY

PAVED ROAD

WOODS ROAD/TRAIL

STRUCTURES

Wildlife Resources

This section of the report will address the following wildlife resource issues: current conditions for wildlife; wildlife habitat/nature trail potential and other considerations and conclusions.

Current Conditions

The following wildlife were observed during the site inspection on December 4th either directly or indirectly and evidence of their presence was confirmed by identifying tracks, scat, calls, or other sign: American robin (*Turdus migratorius*), Northern cardinal (*Cardinalis cardinalis*), Wood thrush (*Hylocichla mustelina*), and Gray squirrel (*Sciurus Virginianus*). The owner of the property, Mr. Huwiler, indicated that he has observed White-tailed deer (*Odocoileus virginianus*), woodchucks (*Marmota monaz*) and Bald eagle (*Haliaeetus leucocephalus*) perched in a tree. Although this parcel is relatively small, the habitat conditions are unique to such a highly urbanized area. The condition of this small forested area for adaptive wildlife is good to excellent. The structural diversity (vertical stratification of plants) is noteworthy. The understory and mid-story of the forest are well developed and add to the habitat quality. Wildlife that can be expected to be on this small parcel are the more adaptable species. It can be expected that during migration a variety of neotropical migrant birds may stop over to feed or rest in the forest.

Wildlife Habitat/Nature Trail Potential

Wildlife habitat is represented by the collective summation of all the environmental factors that occur at a given location such as food, water, cover and their spatial arrangement. As properties become developed, natural areas

are divided into smaller, isolated pieces. Land that is in public ownership can be managed for wildlife habitat for the long term. In contrast, private land, which comprises 88 percent of the land in Connecticut, is mostly not managed for wildlife for the long term. Wildlife habitat near urban areas can be places that residents can enjoy wildlife in close proximity to where they live. This five acre property is located adjacent to other public owned property and can, collectively, be valuable for providing habitat for wildlife. It can also be a place for teachers, students and the general public to learn about nature. In a survey of urban residents in five metropolitan areas of New York State, 96 percent of the respondents indicated that it was important for their children to learn about nature and 73 percent were interested in wildlife in their backyard or neighborhood area (Brown et al. 1979).

An interpretive trail can be developed on the property which revolves around the theme that wildlife need food, water, cover and space to survive. Habitat can be broken down into various components such as:

1. Spring and early summer seeds
2. Summer berries
3. Fall berries
4. Winter persistent foods
5. Conifers and evergreens
6. Nuts and acorns
7. Grasses and forbs
8. Nectar plants
9. Dead or decaying trees
10. Artificial nest boxes
11. Brush and/or rock piles
12. Water Sources.

Each component of habitat has representative examples that can be located on the property along the trail. The plants which supply the seasonal foods and

cover for wildlife can be identified using trail signs or markers. Also, a trail guide can be developed which corresponds to a number along the trail. This can reduce the maintenance of signs and requires the trail user to pick up a guide from a school or centralized trail head.

Other Considerations and Conclusion

The proximity to other open space and habitat quality of this property makes its a valuable possible addition to the open space of West Haven. A small interpretive trail can be developed with an accompanying trail guide. The trail should not however criss-cross the entire property because wildlife need places where they can avoid constant disturbance from hikers. This is especially important during the nesting season. Hikers should be encouraged to stay on well marked trails and avoid blazing additional unauthorized trails.

It is recommended that a conservation easement be secured for the property which runs with the land to secure long term conservation of the property. The conservation easement, however, should allow for modern forest and wildlife management practices.

Additional technical help is available from the Team wildlife biologist upon request.

Literature Cited

Brown, T. L., C. P. Dawson , and R.L. Miller, 1979. Interests and attitudes of metropolitan New York residents about wildlife. Transactions of North American Wildlife and Natural Resource Conference, 44:289-297.

Land Use Planning Considerations

Site Location

Two adjacent parcels of land located in the central district of the City of West Haven have been offered for sale to the City of West Haven by the owners. The parcels are in a residential neighborhood with close proximity to Painter Park, Ray Park the Central Business District and both the Junior High School and Senior High School. The properties represent some of the last remaining open space parcels in the central district of the community.

Site Characteristics

The property is located in the R-2 residential zone which requires a minimum of 8,000 sf. per housing unit. The West Haven Plan of Development classifies the existing land use of the area as Low Density Residential. That categorical definition may fit for built urban areas, however low density residential areas in the suburban and rural areas of the region would consider low density residential standards to be 40,000 s.f. to 120,000 s.f. of buildable land per dwelling unit. The comparison of land use definitions illustrates the need for the City of West Haven to seek to acquire more open space property whenever the opportunity presents itself. The property is characterized by relatively steep terrain and rather dense overgrown upland area with numerous rock outcroppings. The larger parcel of land includes a large single family house with some accessory buildings. The available residential property is located directly across the street from an existing park area (Ray Park) which provides popular passive recreational opportunities and nature trails for the community residents.

Traffic Circulation/Site Access/Offsite Impacts

The site is located on Chestnut Street, a residential street which connects Kelsey Avenue with Savin Avenue. The site provides good access to both pedestrian and vehicular traffic. Limited parking would be available on site, leaving other access by public transportation, small drop off vans and pedestrian means. As stated earlier, the site is directly across the street from another community park (Ray Park) and within close proximity to Painter Park and both the Junior and Senior High Schools. The site would provide needed open space to the City which has one of the highest population density rates in the state. The 1990 Bureau of Census listed the City of West Haven of having 5,047 persons per square mile which ranks fifth highest in the state. An added advantage of purchasing the properties would be to provide linkage with the area and neighborhood open space/recreation systems. The property currently acts as a buffer between an apartment complex to the rear of the property and the surrounding single family residential dwellings. Should the City purchase the properties, it would provide an excellent opportunity to enhance the quality of life for the community residents and retain much needed natural habitat.

Land Use Considerations

The purchase of these two properties by the City would appear to conform to all existing community development plans which are aimed at improving the overall quality of life for the City. The 1990 West Haven Plan of Development indicated that the overall park acreage for the City of West Haven does not meet general standards. The plan recommended that the City acquire 150 to 500 acres of land throughout the city and targeted the area around Painter Park and the High School. The Plan stated that the City of West Haven had the highest ratio of persons per open space acre in the state at 105 persons per open space acre. The 1990 document compared the figure of 105 persons per open space acre in West Haven with 9 persons per open space acre in the South Central Region and 6 for the entire State. The current development strategy being pursued by the City of West Haven is aimed at improving the overall quality of life for all

the residents. Part of this strategy includes providing a less dense residential environment. The acquisition and development of more pocket parks and small open space areas helps to lessen the impact of the built environment.

Recreational Opportunities - Open Space Priorities

Although the City of West Haven will always be looking for improving and adding facilities for active recreation, the Huwiler property provides a wonderful opportunity to create a needed outdoor environmental center. Opportunities exist to work with other organizations to develop environmental programs for the community especially for children and families who may not have the opportunity for "hands on" environmental educational pursuits. The property would be an excellent addition to a park system which already includes excellent active recreational parks and a popular public beach frontage and multi-use trail.

Management Issues

If purchased by the city, the properties and existing structure should be deed restricted to assure long term protection as open space. Arrangements could be made to provide space to other appropriate community or non-profit organizations in the building to offset any operational costs incurred at the site. Partnership programs may be pursued with other organizations like the Historical Society, Regional Water Authority, and the New Haven Soil and Water Conservation District. Additional funding opportunities for programs may be available through the Community Foundation, or other nonprofit organizations, and state and federal agencies. The property could provide an opportunity for volunteer groups and youth organizations to help develop an outdoor education center at the site with interpretive trails, greenhouse displays and possibly an observatory. The site could provide valuable resources for Junior High School or Senior High School science or environmental curriculum

Summary

The Huwilers should be commended for their civic responsibility in seeking to provide the City of West Haven with valuable property to be enjoyed and appreciated for current residents and future generations. The Huwiler property provides an excellent opportunity for the City of West Haven to add to the existing park system and provide the residents with a unique property to be appreciated for the natural physical attributes it possesses. The property provides linkage with other passive park and trail systems found in the community. The site could be utilized by community organizations for outdoor education awareness programs. Additional operational funds might be pursued through grants from local foundations and other state and federal programs.

Park Planner Comments

(These comments are based on office review only.)

The "Park and Open Space" discussion distributed to Team members was excerpted from the municipal plan of development. It indicates that West Haven is deficient in park acreage. Although a substantial increase of park or open space land ideally would be desirable, the existing high degree of land development rules out this option. Therefore, small scale or incremental improvements should be the goal, including both appropriate acquisitions and improvements of existing facilities.

Although the Huwiler property is not located in an area recommended in the town plan cited above for additional parkland acquisition, its purchase as basically passive open space deserves consideration. Situated across the street from Ray Park,.it could serve as an expansion of an "Island" or green space in an urban community. Furthermore its hilly and somewhat rocky character lends itself to a passive open space dedication and one which could be visually attractive, especially if a handsome woodland including a strong coniferous component was developed and/or maintained.

The house on the property poses other issues including possible civic uses and operating/maintenance costs. The structure is old enough (1864) to be considered historically significant, but a structural and reuse potential analysis is needed to determine the relative costs and benefits of various reuse options or of demolition. If deemed feasible following such analysis, consideration to a community center/meeting place could be an interesting option. An existing model is Wethersfield's Solomon Welles House, located within Cove Park and available for group meetings and including a caretaker's apartment in the rear.

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.