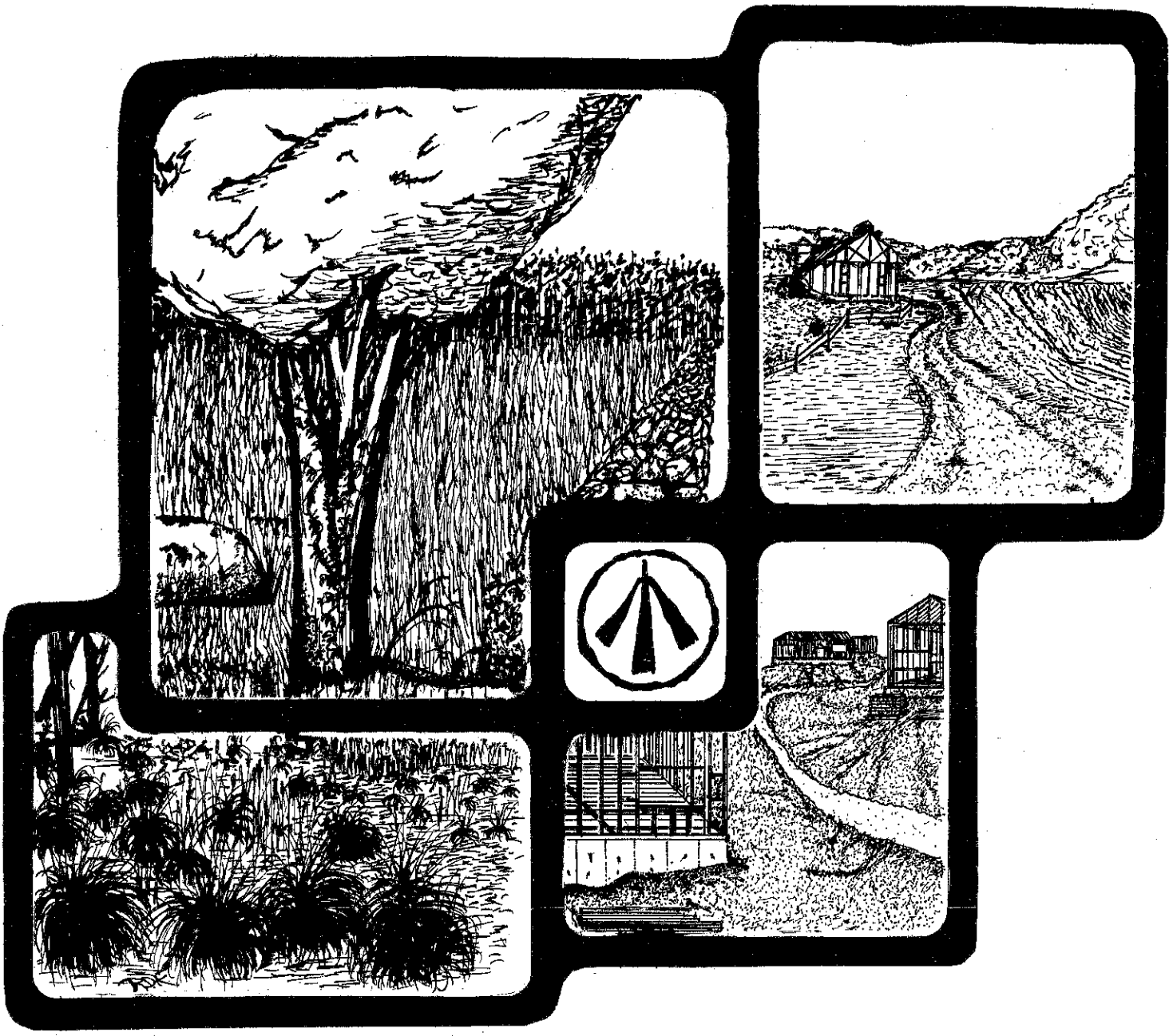
ENVIRONMENTAL REVIEW TEAM REPORT



OLIN POWDER FARM
HAMDEN, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION AND DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

On

OLIN POWDER FARM
HAMDEN, CONNECTICUT

AUGUST 1979

King's Mark Resource Conservation & Development Area

Environmental Review Team
P.O. Box 30
Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies

U.S.D.A. SOIL CONSERVATION SERVICE

State Agencies

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF HEALTH
DEPARTMENT OF TRANSPORTATION
UNIVERSITY OF CONNECTICUT COOPERATIVE EXTENSION SERVICE

Local Groups and Agencies

LITCHFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NEW HAVEN COUNTY SOIL AND WATER CONSERVATION DISTRICT
HARTFORD COUNTY SOIL AND WATER CONSERVATION DISTRICT
FAIRFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NORTHWESTERN CONNECTICUT REGIONAL PLANNING AGENCY
VALLEY REGIONAL PLANNING AGENCY
LITCHFIELD HILLS REGIONAL PLANNING AGENCY
CENTRAL NAUGATUCK VALLEY REGIONAL PLANNING AGENCY
HOUSATONIC VALLEY COUNCIL OF ELECTED OFFICIALS
AMERICAN INDIAN ARCHAEOLOGICAL INSTITUTE

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Stanley J. Pac, Commissioner

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KING'S MARK RESOURCE CONSERVATION AND DEVELOPMENT AREA

Victor Allan, Chairman, Executive Committee
Stephen Driver, ERT Committee Chairman
Moses Taylor, Coordinator

Staff Administration Provided By

NORTHWESTERN CONNECTICUT REGIONAL PLANNING AGENCY

Bruce M. Ridgway, Chairman
Thomas A. J. McGowan, Director
Richard Lynn, ERT Coordinator
Rebecca West, ERT Draftsman
Irene Nadig, Secretary

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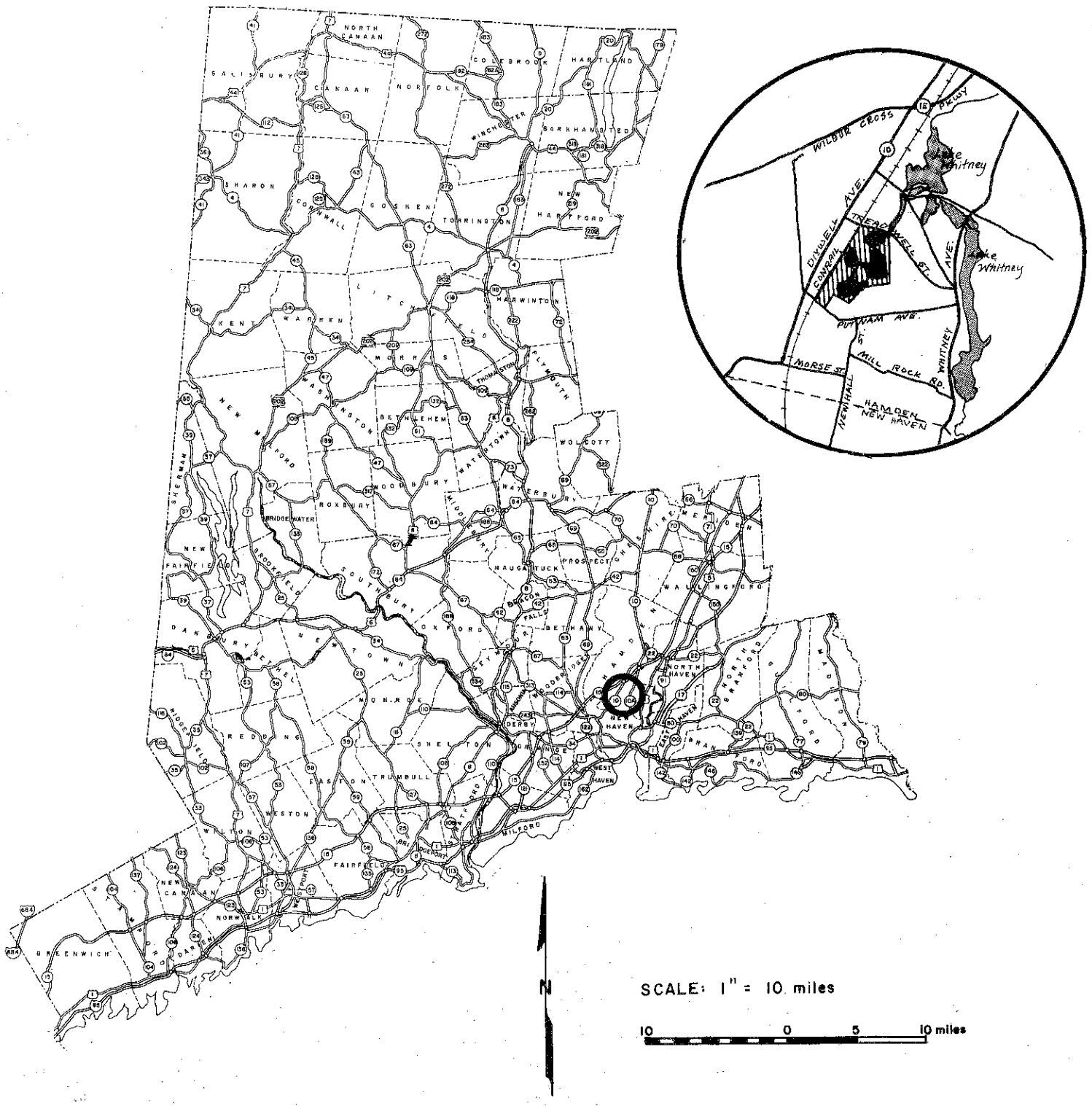
HAMDEN, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
OLIN POWDER FARM
HAMDEN, CONNECTICUT

I. INTRODUCTION

The Town of Hamden, Connecticut is interested in applying for federal funds through the Heritage Conservation and Recreation Service to purchase a tract of land for open space and recreation purposes.

The subject site, known as the "Olin Powder Farm", is ± 101 acres in size and is located in the south-central portion of Town off Putnam Avenue and Treadwell Street. About half of the area is covered by six small ponds with the remaining area mostly wooded.

The Mayor from the Town of Hamden requested the assistance of the King's Mark ERT to help the Town in applying for the federal funds. Specifically, the Town requested the ERT to prepare an environmental assessment of the proposed land acquisition according to HCRS guidelines. Such an assessment is required as part of the HCRS grant application. The Town's request was considered and approved as an ERT project by the King's Mark RC&D Executive Committee.

The ERT met and field reviewed the site on June 20, 1979. Team members for this review consisted of the following:

Jay Etlinger	Town Administrative Assistant	Town of Hamden
Frank Indorf	District Conservationist	U.S.D.A. Soil Conservation Service
Robert Orciari	Fishery Biologist	State Dept. of Environmental Protection
Edward Rizzotto	Recreation Specialist	State Dept. of Environmental Protection
Robert Rocks	Forester	State Dept. of Environmental Protection
Michael Zizka	Geohydrologist	State Dept. of Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a detailed soil survey map, a soils limitation chart and a topographic map. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

This report presents the team's findings and recommendations. The format for the report was designed to be consistent with that suggested in the "HCRS Environmental Assessment Outline". If any additional information is required, please contact Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P. O. Box 30, Warren, Connecticut 06754.

II. DESCRIPTION OF THE PROPOSAL

The Town of Hamden proposes to acquire from the Olin Corporation approximately 101 acres of unimproved land for passive recreation purposes. The subject site is a unique parcel of land consisting of several ponds and numerous tree-lined walkways. The area offers high potential for passive recreational activities such as bird watching, hiking, fishing, picnicking, nature study, and ice skating. In addition,the area offers the opportunity to walk or sit in a quiet, restful park-like environment. Acquisition of the parcel would allow its use and enjoyment by literally hundreds of people in the immediate neighborhood and Greater New Haven area.

The "Powder Farm" property is located in the built-up section of south-central Hamden approximately 2 miles south of the municipal center of town. The site is situated between two major north-south traffic arteries: Dixwell Avenue to the west, and Whitney Avenue to the east. Putnam Avenue, a main cross road between Dixwell Avenue and Whitney Avenue, abuts the property on its southern border. Treadwell Street, another cross road, abuts the property on the north. Both Dixwell Avenue and Whitney Avenue afford access northerly to the center of Hamden and to the Wilbur Cross Parkway and Interstate 91; thus the subject site is easily accessible from the surrounding region.

The general area surrounding the Powder Farm site is known locally as "Whitneyville" and the area consists primarily of single family dwellings. During recent years the residential uses of the area have been intensified with the development of garden-type apartments and residential complexes devoted to senior citizens such as the Hamden Village, The Davenport Residence and the new Whitney Center Life-Care Retirement facility. In conjunction with the general growth of the area, the immediate neighborhood has enjoyed an influx of new industrial and light manufacturing concerns.

Discussions about the proposed "Powder Farm" acquisition have been taking place for several years. The Town was officially encouraged to pursue this by the Olin Corporation in 1978. One appraisal of the property has been completed and another is in the process with completion expected by the end of August, 1979. Permission to conduct formal negotiations should be forth coming shortly thereafter by the Land Acquisition Unit of the Department of Environmental Protection. Should this schedule be maintained, it is hoped that formal discussion will produce a satisfactory sale in one years time. There is presently no facility development contemplated for the property; only its use for passive recreation.

Acquisition of the property as planned will provide a much needed open space and passive recreation parcel in southern Hamden. Presently there is little park land in this built up section of town. Most of the town's park areas are located at the northern extremes of the town.

III. DESCRIPTION OF THE ENVIRONMENT

A. LAND USE AND SOCIOECONOMIC CONDITIONS

The 101 acre site has been used in the recent past by the Olin Corporation as a storage area for gunpowder. To facilitate this use, numerous narrow asphalt-paved pathways were constructed on the property together with a number of concrete structures for gunpowder storage. A fence was also constructed around the perimeter of the property.

Today, the pathways and fence remain but the concrete structures have been removed. The sites dominant landscape characteristics at the present time are the ponds, together with the tree-lined network of interior pathways.

Approximately 14 acres on the southern and eastern borders of the site are zoned for light industrial or manufacturing use. The remaining 87 acres are designated as a residential zone and are also classified as a floodplain zone (see Zoning Map in Appendix). All of the usual utilities including gas, water, electricity and telephone service, as well as sanitary sewers, are available to the tract from both Treadwell Street and Putnam Avenue.

The subject area is part of Census Tract 1654. Surrounding census tracts include 1652, 1653, 1655, and 1656. Table 1 below is adapted from a table entitled "Concentrations of Minority Groups and Lower Income Families" in the U.S. Census, 1970. This Table indicates that the subject site and its surrounding area has the highest concentration of minority groups and lower income families in town.

TABLE 1

CONCENTRATIONS OF MINORITY GROUPS AND LOWER INCOME FAMILIES*

(Source: U.S. Census, 1970)

Census Tract	Total Families	Lower Income** No.	%	Total Persons	Black No.	%	Spanish Speaking No.	%
1651	1,206	287	23.8	4,481	28	0.6	--	--
1652	896	129	14.4	3,317	15	0.5	--	--
1653	692	168	24.3	2,573	13	0.5	35	1.4
1654	1,154	285	24.7	4,428	409	9.2	40	0.9
1655	1,228	540	44.0	4,796	757	15.8	29	0.6
1656	1,726	643	37.3	6,279	63	1.0	44	0.7
1657	1,114	253	22.7	3,943	84	2.1	26	0.7
1658	1,914	381	19.9	7,272	104	1.4	46	0.6
1659	995	177	17.8	3,929	36	0.9	90	2.3
1660	2,112	477	22.6	8,339	97	1.2	23	0.2
total	13,037	3,340	25.6	49,357	1,606	3.3	333	0.6

* Subject site is part of Census Tract 1654.
** Lower Income:
SMSA Median Income = $11,113
80% = $ 8,890

According to the Census Bureau, the population of the Town of Hamden in 1975 is 50,200. The 1970 census for Hamden listed the population at 49,357. Expected population projections are in the process of being developed based on an updating of the Town's Comprehensive Plan of Development and new information forthcoming in the 1980 census.

B. TOPOGRAPHY AND GEOLOGY

The Powder Farm site is located in an extensive glacial outwash deposit that, in its southernmost section, underlies most of the City of New Haven.

The deposit generally has a flat or very gently sloping surface; these topographic conditions made it ideal for the high-density development that has occurred in both Hamden and New Haven. The Powder Farm site itself is characterized by ponds occupying large basins within the outwash. These basins apparently are natural, having formed when large blocks of stagnant ice, that were partly or wholly buried by outwash, melted. This resulted in the collapse of the surrounding sediments. Such natural basins are called kettles. Those parts of the outwash deposit that did not collapse have remained as islands or peninsulas within the ponded area. The topography of the site is shown in Figure 1.

The surficial geologic materials on the site consist of sand, gravel, silt, and clay that were deposited by meltwater streams in contact with stagnant glacier ice. Test hole and well completion data from the vicinity of the site (reported in Connecticut Water Resources Bulletin No. 26) indicate that most of the deposits are sand. Gravel is a minor component and silt and clay are trace components. The deposits are probably more than 100 feet thick in most areas. One nearby well recorded 175 feet of sand and gravel overlying 125 feet of "hardpan" (possibly glacial till). Bedrock occurred at a depth of 300 feet in this well. The bedrock is New Haven Arkose, a dark reddish-brown sandstone.

Isolated areas within the site, primarily along the existing pathways, have been excavated in the past. This activity was apparently undertaken for the installation of the concrete powder storage units. Although the storage units have been removed, the bowl shaped "pockets" which previously housed the units remain. These pockets are cut into elevated sand and gravel knolls present on the property and are about 50 feet in diameter. The side slopes of these pockets, rising 10 - 15 feet, are steep.

C. SOILS

A soils map of the project area, prepared by the U.S.D.A. Soil Conservation Service, is presented in Figure 2 of this report. Basically, there are four soil series located in the "Powder Farm" area. A brief description of each of these soils is presented below together with discussion of a number of soil related concerns.

Soil Descriptions

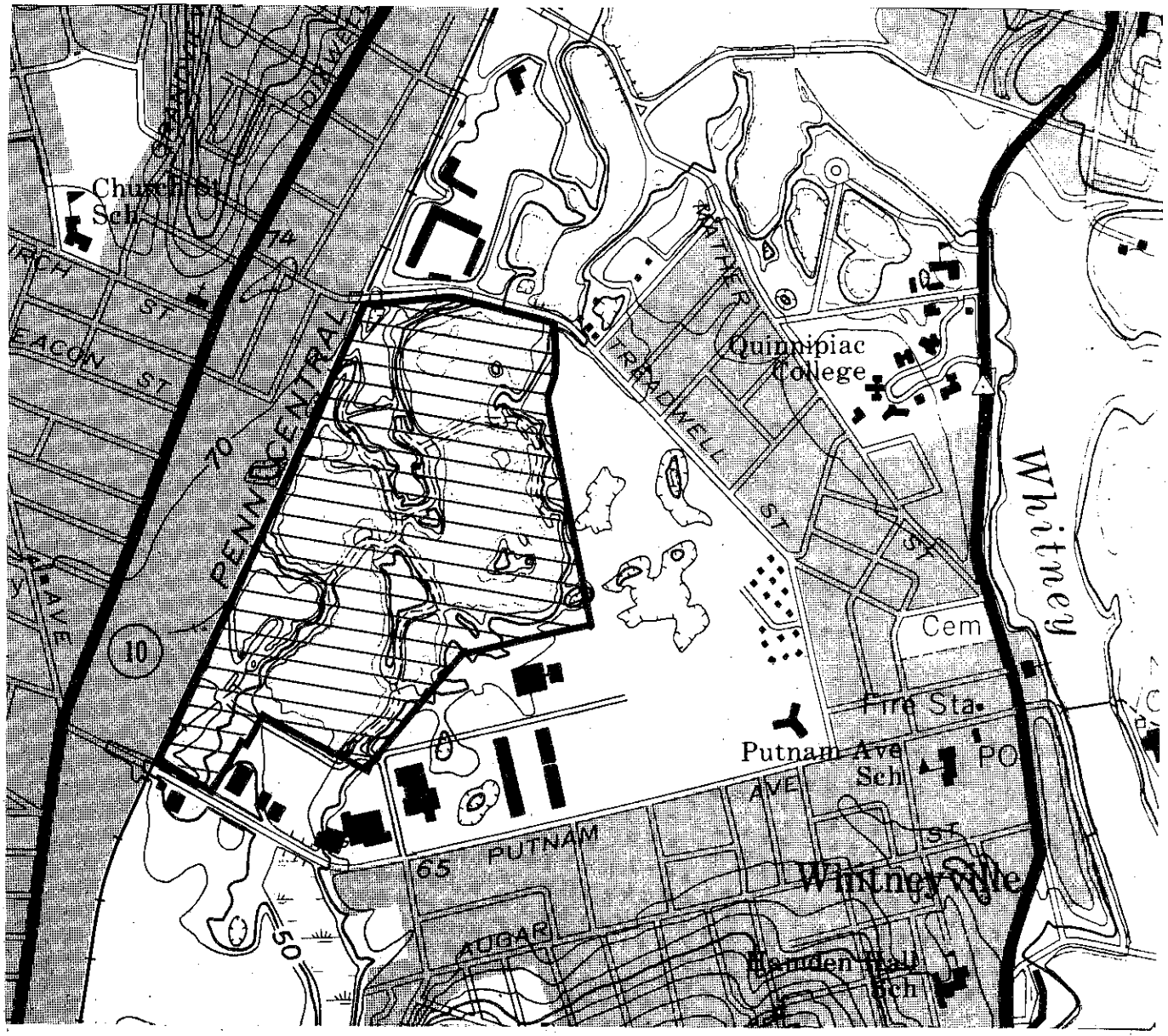
PENWOOD SOILS (Map Symbol: PnB, PnA) - The Penwood soils are deep, excessively drained, and have a yellowish red loamy sand and reddish brown sand B horizon over a reddish brown sand C horizon. They formed on sandy outwash terraces in material that was derived mainly from sandstone, shale, conglomerate, and basalt. The Penwood soils are on broad outwash terraces.

Permeability of these soils is rapid; runoff is slow. Unless limed, this soil is very strongly acid through slightly acid. The droughtiness of this soil is a major concern in landscaping. Tree growth is slow, and seedling mortality is severe because the soil lacks sufficient moisture to sustain the seedlings.

MANCHESTER SOILS (Map Symbol: MgB, MgC) - The Manchester series are excessively drained and have a yellowish red gravelly sandy loam and gravelly loamy sand B horizon over a reddish brown stratified sand and gravel C horizon. The Manchester soils are on outwash terraces of stream valleys. Permeability is rapid in the surface layer and subsoil and very rapid in the substratum. This soil has

FIGURE I.

TOPOGRAPHIC MAP



OLIN POWDER FARM PROPERTY

N

SCALE: 1" = 1000'

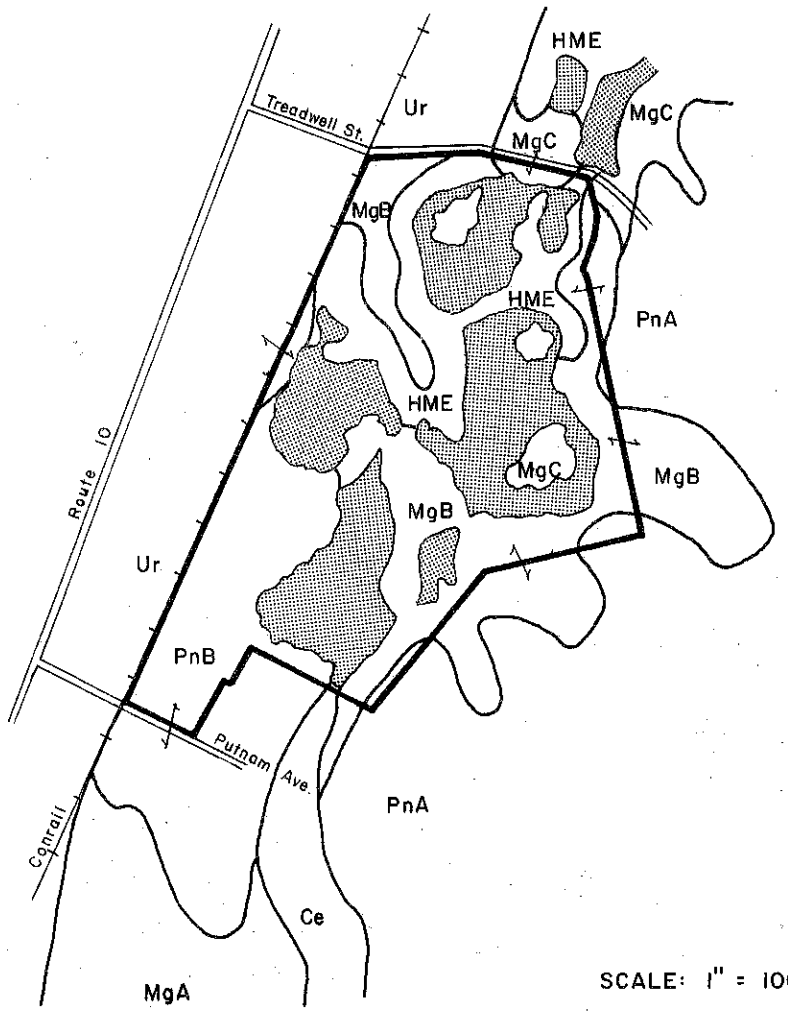
0 1/4 1/2 mile

0 1000' 2000' 3000'

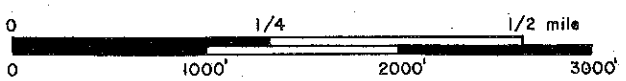
FIGURE 2.

SOILS MAP

ADAPTED FROM NEW HAVEN COUNTY
SOIL SURVEY, U.S.D.A. – S.C.S.



SCALE: 1" = 1000'



WATER

a low available water capacity. Runoff is slow. This soil is fairly well suited to trees, however, productivity is low because the soil is droughty. Seedling mortality is severe because the soil lacks sufficient moisture to sustain the seedlings.

CARLISLE MUCK (May Symbol: Ce) - The Carlisle series are very poorly drained and have very dark brown, dark reddish brown, and dark brown organic layers. They formed in decomposed organic material. The Carlisle soils are in low depressions on outwash terraces and glacial till plains. Slope ranges from 0 to 3 percent, but it is dominantly less than 1 percent. The organic layers range from 50 inches to more than 30 feet in depth.

This soil has moderately rapid permeability. It has a high available water capacity and runoff is very slow. This soil remains wet most of the year. Unless limed, the soil ranges from medium acid through neutral. This soil is poorly suited to trees. Seedling mortality is high and plant competition is severe.

HINCKLEY AND MANCHESTER SOILS (Map Symbol: HME) - This map unit consists of moderately steep to very steep, excessively drained soils on outwash terraces. These soils are on breaks at the edge of terraces, along ravines, and in steep areas where the terraces join the glacial till uplands. Slopes are smooth and mostly less than 300 feet long.

The Hinckley soil typically has a dark brown gravelly sandy loam surface layer 3 inches thick. The upper part of the subsoil is strong brown gravelly sandy loam 10 inches thick, and the lower part is brown gravelly loamy sand 3 inches thick. The substratum to a depth of 60 inches, is yellowish brown stratified sand and gravel.

The Manchester soil has a reddish brown gravelly sandy loam surface layer of 3 inches thickness. The upper part of the subsoil is yellowish red gravelly sandy loam 7 inches thick. The lower part is yellowish red gravelly loamy sand 6 inches thick. The substratum to a depth of 60 inches, is reddish brown very gravelly sand.

Both soils have rapid permeability in the surface layer and subsoil and very rapid permeability in the substratum. Runoff is rapid. The available water capacity is low and the droughtiness makes the establishment of tree seedlings difficult.

Erosion and Sedimentation

Due to the gravelly and sandy texture of the soils found on the site there is a low potential for any significant soil erosion or sedimentation. During periods of construction, if any, simple conservation measures should be adequate to prevent excessive runoff, erosion and siltation.

Soil Fertility

Without irrigation, the sand and gravel soils dominant on this site have poor potential for most crops because of droughtiness. The soils are extremely acid to moderately acid and any cultivation of plants will require liming. The soils are fairly well suited to trees, however seedling mortality is severe because the soil lacks sufficient moisture to sustain the seedlings.

Soil Conditions and Proposed Land Use

The soils of the Olin Powder Farm site are generally favorable for "passive recreation" uses. The slight to moderate slope and good drainage of these soils are the major positive factors with regards to potential for recreational use. Only in those areas of very steep slopes or heavy use would erosion become a problem. In such areas, simple conservation measures would be adequate for control.

Septic systems function satisfactorily on most of the soils at this site with normal design and installation. However, because of the rapid permeability of these soils, caution must be taken to prevent the pollution of groundwater. Septic systems should not be placed on the steeper Hinckley and Manchester soils.

Table 2 presents a summary of the suitability of the soils on the site for various recreational uses.

D. CLIMATE

The subject site is located in the southcentral lowlands ecoregion as defined by I. Dowhan and R. Craig in the publication "Rare and Endangered Species of Connecticut and Their Habitats" (The Natural Resources Center, Connecticut Department of Environmental Protection, 1976). The following is an excerpt from that document:

> "The mean annual temperature of the (southcentral lowlands) region is 50.5°F., the warmest in the state outside of the coastal area. Average winter temperature is about 29.5°F., with the monthly mean minimum for the coldest month approximately 20°F. Mean annual minimum temperature is -5°F. Seasonal snowfall accumulation averages somewhat less than 40 inches. The average frost-free season is 165 days. This region, along with the southern portion of the Northcentral lowlands, has one of the earliest spring warm-ups (initiation of the growing season) in the state. The average summer temperature is 70°F.; the monthly mean maximum temperature for the warmest month is 83°F. The average annual precipitation is about 45 inches, with wide variations over the region as a whole."

E. WATER RESOURCES

Six ponds and associated wetland areas are present on the property. These water bodies are all interconnected and tributaries of Lake Whitney.

All of the ponds and wetlands on the site are fed by groundwater; hence, the quality of surface water and groundwater on the property are closely related. The quality of water, in turn, is related to the extent of urbanization, the nature of the local bedrock and surficial deposits, the proximity of buried wastes, and other factors. Connecticut Water Resources Bulletin No. 27 indicates that groundwater from a well in the vicinity of the site was soft (low in calcium and magnesium) but relatively high in iron. The dense development around the site suggests the likelihood of contaminated runoff affecting the water quality. The possibility also exists of buried wastes in or around the site, which could adversely affect water quality, considering the past and present industrial uses in the area. The quality of both surface water and groundwater should be assessed before the property is formally acquired by the Town.

TABLE 2

SOILS LIMITATION CHART
OLIN POWDER FARM PROPERTY - HAMDEN, CT.

MAP SYMBOL	SOIL NAME	PICNIC AREAS RATING	PICNIC AREAS REASON	PLAYGROUNDS RATING	PLAYGROUNDS REASON	PATHS & TRAILS RATING	PATHS & TRAILS REASON	STREETS & PARKING LOTS RATING	STREETS & PARKING LOTS REASON
PnA	Penwood loamy sand, 0-3% slope	Moderate	Sandy	Severe	Sandy	Moderate	Sandy	Slight	--
PnB	Penwood loamy sand, 3-8% slope	Moderate	Sandy	Severe	Sandy	Moderate	Sandy	Moderate	Slope
MgB	Manchester gravelly sandy loam, 3-8% slope	Moderate	Small stones	Severe	Small stones	Moderate	Small stones	Slight	--
MgC	Manchester gravelly sandy loam, 8-15% slope	Moderate	Slope, Small stones	Severe	Slope, Stones	Moderate	Small stones	Moderate	Slope
Ce	Carlisle Muck	Severe	Water	Severe	Water	Severe	Water	Severe	Water
HME	Hinckley & Manchester (terrace escarpments) 15-35% slope	Severe	Slope	Severe	Slope	Severe	Slope	Severe	Slope

EXPLANATION OF RATING SYSTEM:

1. SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.
2. MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.
3. SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

In terms of water supply, the site probably could sustain several moderate to high-yielding wells. Plate B of Connecticut Water Resources Bulletin No. 27 suggests that coarse-grained stratified drift (mostly fine to coarse sand) about 10 to 30 feet thick overlies "significant thicknesses" of clay, silt, and very fine sand in the area. However, no record of such fine-grained deposits in wells or test holes on or near the site was known to the ERT at the time of this report. Hence, although Bulletin No. 27 estimates potential yields from wells drilled into stratified drift on the site as ranging from about 50 to 500 gallons per minute, higher yields may also be possible.

Flood Insurance Rate Maps have been published for the Town of Hamden by the U.S. Department of Housing and Urban Development, Federal Insurance Administration. These maps identify those areas in Town subject to the 100-year flood. A copy of a portion of those maps, depicting the Olin Powder Farm Area, is shown in Figure 3.

F. VEGETATION

About one-half of the property is covered by terrestial vegetation. This vegetation may be divided into five vegetation types (see Figure 4). A description of each vegetation type is presented below.

STAND A. Mixed Hardwoods. This 23 acre two aged stand is fully-stocked with sawlog size red oak, white oak and black oak with sapling and pole size red oak, sugar maple, red maple and occasional scotch pine. Many of the trees in the overstory are becoming crowded. Flowering dogwood, blue beech, chestnut sprouts, witch hazel and maple leaf viburnum form a spotty understory in this stand. Ground cover in this area is made up of club moss, Canada mayflower and grasses. The tree species mentioned above, plus healthy species of catalpa, red mulberry, black gum, gray birch, sassafras, staghorn sumac, smooth sumac and many wild flowers and weed species are located along the paved trail which passes through this stand. There are also a considerable number of damaged and dead trees along this trail.

STAND B. Mixed Hardwoods. Pole to sawlog size white oak, black oak, and scattered hickory are present in this twelve acre fully-stocked stand. The oaks in this stand are beginning to decline in health and vigor as a result of being crowded. The understory is made up of mapleleaf viburnum, highbush blueberry, scattered mountain laurel and eastern white pine seedlings. Huckleberry, Canada mayflower and club moss make up the ground cover vegetation in this area.

STAND C. Pine. Pole to sawlog size eastern white pine, scotch pine and red pine are present in several scattered fully-stocked stands totaling eight acres. Understory and ground cover vegetation is lacking except for scattered viburnum and Canada mayflower.

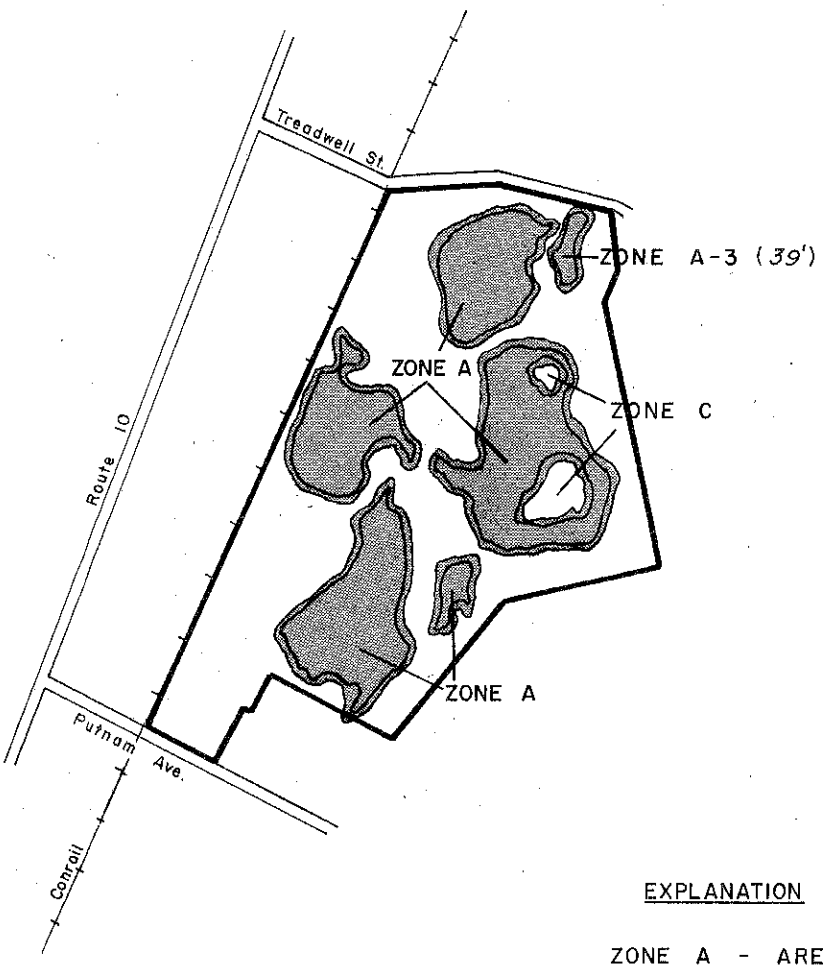
STAND D. Softwoods - Hardwoods. This five acre fully stocked stand is made up of pole to sawlog size eastern white pine, black oak, white oak, and scarlet oak which are becoming crowded. Hardwood tree seedlings, mapleleaf viburnum and mountain laurel form this stand's understory. Ground cover is made up of huckleberry, lowbush blueberry and club moss.

STAND E. Wetlands/Islands. There are a total of four acres of wetlands present on this property. A dense thicket of red maple seedlings, highbush blueberry, speckled alder, sweet pepperbush, buttonbush and viburnum are present with skunk cabbage and several species of ferns.

FIGURE 3.

100 - YEAR FLOODPRONE AREA

Adapted from Flood Insurance Rate Map - Town of Hamden



EXPLANATION

ZONE A - AREAS OF 100-YEAR FLOOD; FLOOD ELEVATIONS NOT DETERMINED

ZONE A-1 - A-30 - AREAS OF 100-YEAR FLOOD; FLOOD ELEVATIONS DETERMINED (39')

ZONE C - AREAS OF MINIMAL FLOODING

N

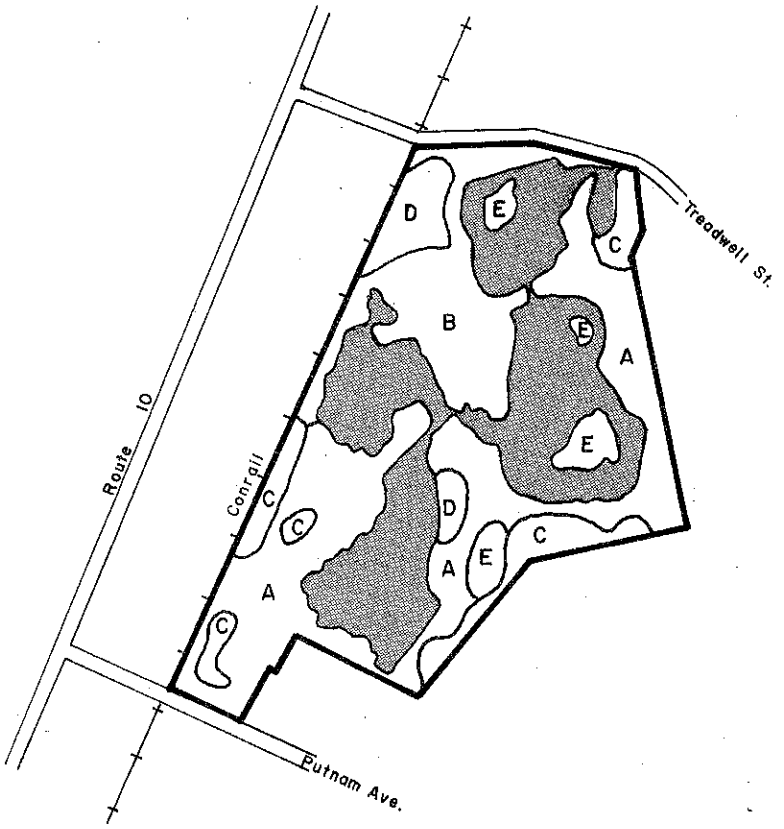
SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

FIGURE 4.

VEGETATION MAP



SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

VEGETATION STAND DESCRIPTIONS*

STAND A Mixed hardwoods, fully-stocked, two age, sawlog-sized, sapling to pole-size, 23 acres.

STAND B Mixed hardwoods, fully-stocked, pole to sawlog-size, 12 acres.

STAND C Pine, fully-stocked, pole to sawlog-size, 8 acres.

STAND D Softwoods - hardwoods, fully-stocked, pole to sawlog-size, 5 acres.

STAND E Wetlands/Islands - wetland shrubs, 4 acres.

LEGEND

ROAD

PROPERTY BOUNDARY

RAILROAD

VEGETATION TYPE BOUNDARY

WATER

*Seedling-size = trees 1 inch and smaller in diameter at breast height (d.b.h.)
Sapling-size = trees 1 to 5 inches in d.b.h.
Pole-size = trees 5 to 11 inches in d.b.h.
Sawlog-size = trees 11 inches and greater in d.b.h.

Commercial Utility and Aesthetics/Suggested Management Practices

At the present time the trees throughout most of this property are declining in health and vigor due to crowding. In some places this crowding has caused mortality of pole and sawlog size trees. This mortality when near trails presents a potential hazard to trail users. In other areas, the overstory is closing up and only a limited amount of sunlight is reaching the shrub layer. As the shrub layer is shaded out by the closing overstory, the value of this area for wildlife food and cover will decline.

Uneven aged forest management, resulting in a healthy forest made up of a variety of tree species in all size classes, would probably provide the greatest aesthetic appeal and the best wildlife habitat over an extended period of time for this property.

To reach the goal of an uneven aged forest, some forest management practices would be advisable.

A harvest of about one-third of the volume of both large and small trees in stands A, B, C, and D, leaving the highest quality, healthiest trees in the residual stand would improve the condition of this property. This harvest would reduce the competition between trees for space, sunlight, water and nutrients and would, in time, increase the health, vigor and stability of residual trees. The increased sunlight reaching the forest floor after the harvest should stimulate the growth of shrubs and sprout vegetation, that will in the short run, substantially improve food and cover for wildlife. The additional sunlight will also improve the flowering of dogwood, mountain laurel, and other flowering species present; thus increasing the aesthetics of the area. This harvest could also remove the trees that are along the trail system that are a potential hazard to trail users. If fuelwood is salvaged from the tops of the felled trees, the visual impact of the harvest will be minimized.

Stands once treated would benefit from inspection by a public service forester or private consultant forester every ten years and probably would benefit from cutting a size range of trees within intervals of 25 years.

The initial improvement harvest could be implemented all at once, before the area was officially opened to the public. This would reduce the potential hazards to the public during the harvesting operation and also reduce negative public reaction.

An alternative to harvesting this property all at once is harvesting areas of ten plus acres every three to five years until the entire property has received the initial thinning. Harvesting in this manner would provide high quality wildlife habitat over an extended time period, slowly improve the overall condition of the vegetation on the property, and minimize negative aesthetic impact.

As a minimal positive change alternative, the dead trees which are a potential hazard near the trails should be removed to prevent possible injury to users of this area. Any trees with large dead or damaged branches should also be removed or pruned, if they present a potential hazard. This could be accomplished by a maintenance crew on an individual tree basis. It should be recognized that this is the only vegetation management practiced on this property, wildlife habitat will continue to decline. Ideally, commercial harvesting of this property will remove all potential hazards.

An underplanting of approximately 100 hemlock seedlings per acre in the mixed hardwood stands would improve cover for wildlife and help to increase variety in these areas. It would eventually improve aesthetics, especially during the winter months when the deciduous trees have lost their leaves.

If any of the above management practices are agreed to, a state employed service forester or a consulting forester should be contacted. They could provide advice on preparing a time table for management practices, marking the trees to be removed, overseeing the harvest operation and carrying out the prescribed underplanting. Revenues from timber sales will easily cover consultant costs.

G. WILDLIFE

The wildlife present on this property may be divided into two broad categories: those species that utilize the upland mixed hardwoods, and those that utilize the open water ponds and associated wetlands (see vegetation type map for habitat delineation).

The most common upland woodland species present on this property are gray squirrel, chipmunk, song birds and woodpeckers. Raccoons may also frequent this area, however, none were observed.

The ponds and their associated wetlands are utilized by many species of wildlife. Painted turtles, snapping turtles, water snakes and frogs are among the permanent residents of the pond area. Raccoons and other small nocturnal mammals visit the wetland and pond shores to search for prey. Waterfowl such as mallard ducks and mute swans utilize this area for feeding, nesting and raising of their brood.

H. FISHERIES

Located on the Olin Powder Farm Property are six ponds, which total approximately fifty acres in surface area. The average depth of all ponds is about five feet and no pond is deeper than fifteen feet. About one-third of the total surface area of the ponds is covered with white water lilies. There is little submergent rooted vegetation and filamentous algae present. The water is tea colored from naturally occurring humic and tannic acids. The tea colored water and the abundance of water lilies are responsible for limiting the growth of submergent vegetation by reducing light penetration. Aquatic plants are not over-abundant and do not present a nuisance. The ponds should not be susceptible to summer fish kills caused by the decay of large amounts of plant material. Although the Olin Powder Farm Property is located within a heavily developed area, the pond water, which flows into a public drinking supply, appears to be of good quality.

The ponds are inhabited by a variety of warm-water fish species including largemouth bass, chain pickerel, bluegill sunfish, brown bullhead, black crappie, carp, and blacknose dace. Stocking of additional fish species is not recommended. Stocked trout would not likely survive through the summer in these shallow ponds. The existing populations of game fish and pan fish species should provide good fishing within an area where ponds, that are open to the general public, are very limited. Fishing from shore could take place along most of the pond's edges. Additional fishing opportunities could be provided by constructing modest launching sites on the larger ponds for car top carried boats and canoes.

I. ACCESS

Located in the built-up section of southcentral Hamden, the site is readily accessible. Dixwell Avenue and Whitney Avenue serve as feeder roads to Putnam Avenue which provides direct access to the property from the south. An alternate access to the property is available from the north via Treadwell Street. Presently there is a small parking lot (4 - 5 car capacity) located on the property off Putnam Avenue. The interior of the site is accessible via the asphalt paved pathways which transect virtually all of the land area within the property.

The subject area is served by busses of the mass transit system operated by the Connecticut Company of the State of Connecticut. Specifically, there are busses which operate on a regular schedule on Whitney Avenue and Dixwell Avenue. There is also a regular scheduled bus on Putnam Avenue. Plans are in the works to extend the Winchester Bus from its present terminus at Mill Rock into the Olin Powder Farm area, terminating at the Whitney Life Care Center which is adjacent to the subject property. The site is therefore readily accessible by mass transit, and promises to be even moreso in the near future.

J. PROBABLE FUTURE ENVIRONMENT IF PROJECT NOT INITIATED

The probable future environment if the project is not initiated is to see the land used for commercial/industrial uses and for some kind of restrictive residential uses.

IV. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

A. PLANNING CONSIDERATIONS

The project will not affect a site listed on the National Register of Historic Places. The Olin Powder Farm does, however, have a unique history with its previous use for gunpowder storage and mixing. Preserving the land as open space will serve to retain the historic perspective of the area.

Keeping this land intact as open space will also provide a valuable open space and recreation amenity to the surrounding neighborhood. This will enhance neighborhood "image" and likely encourage nearby landowners to upgrade and maintain their properties.

Acquisition of the subject property will serve to stabilize the surrounding region insofar as development is concerned since there is little undeveloped land in the area. Settlement patterns should become strengthened and there will be no displacement of persons. Values of existing properties in the vicinity of the site should increase following acquisition, however the acquisition will result in a loss of dollars in the land property tax structure.

Some solid wastes will be generated due to human usage. Disposal of sewage will be considered through on-site arrangement first or by connection to the city sewer lines which are adjacent to the property should that become necessary.

Transportation routes are not expected to be adversely affected. Use of the mass transit system serving the area will be encouraged.

Impact on energy consumption, air quality, and ambient noise levels will be little or none.

Upon acquisition by the Town, the Olin Powder Farm will be administered by the Town's Recreation Department. This Department is fully staffed with a paid director and staff and operates with a million dollar plus budget for the current fiscal year. There is also a Recreation Commission which develops and recommends policies to the Mayor and Legislative Council.

B. SOILS

The soils on the property are suitable for the proposed land use. As a result, no significant adverse impacts should result from the project. Only in areas of steep slopes or heavy use would erosion be a problem. In such areas, simple conservation measures should be adequate for control.

Care should be taken in siting any subsurface waste disposal systems on this property due to the rapid permeability of most of the soils. This characteristic may present a hazard with regard to pollution of groundwater.

C. VEGETATION

If the proposed acquisition occurs, there should be very little adverse impact on the vegetation, especially if the previously established paved trails are utilized. Damage to trees and shrubs along the trails caused by vandalism will probably be the greatest threat as the use of this area increases. Intermittent and regular patrolling of the park area should lower the incidence of vandalism.

Without management, the health and vigor of the vegetation on this property will continue to decline. Over time this forest will be more susceptible to damage by adverse weather conditions, disease, insects, and fire if it is left alone and unmanaged. (See suggested management practices on pages 13 & 14.)

D. WILDLIFE AND FISHERIES

Preservation of this property for open space and passive recreation should have some, but limited impact on the area's wildlife. Many of the species that are already present adapt very well to human presence. Squirrels, chipmunks and some bird species may even become dependent on humans for handouts. Those species which cannot become accustomed to human intrusion will flee from the area.

As trails are already present on this tract, and no further development is planned, habitat destruction will be minimal. Any practices which will allow more sunlight to penetrate to the forest floor and stimulate brush and herbaceous growth will improve habitat conditions. Timber or fuelwood harvests or clearings will improve the carrying capacity of the woodland areas by increasing food and cover for wildlife.

Management practices which improve nesting conditions, or increase food production would serve to enhance the area for waterfowl. Food production can be improved for waterfowl through a variety of techniques. Nesting conditions could best be improved by clearing the islands of all tree growth, allowing herbaceous vegetation and small shrub species to become dominant. Another technique would be to place woodduck nesting boxes around the ponds at approximately one box per five acres of pond. Should the Town of Hamden be interested in actively planning and managing for waterfowl on this parcel, the regional Department of Environmental Protection Wildlife Biologist is a good source of advice.

The ponds on the property offer good warm water fish habitat and can support moderate fishing pressure without adverse environmental effects.

E. WATER RESOURCES

Acquisition and use of the Olin Powder Farm for passive recreational purposes should have no significant adverse effect on water resources.

V. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES

Acquisition of the Olin site for open space and passive recreation purposes should cause no adverse environmental effects of great consequence. Some minor adverse environmental effects may be expected however with public use of the site. These may include littering, damage to vegetation by vandalism, and elevated noise levels. For the most part, these can be mitigated by caretaker personnel and establishing/enforcing hours for use of the park.

VI. SHORT TERM VS. LONG TERM VALUES

Acquisition of the Olin Powder Farm will provide for the open space/passive recreation needs of one section of the Town of Hamden heretofore not specifically accommodated. A similar facility has simply not been available in this portion of Town. Acquisition of the property will ensure both its short-term and long-term use for open space and passive recreation purposes. Without the acquisition, there would likely be further development of the land increasing the people density of the area.

VII. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed acquisition should not irreversibly or irretrievably commit any natural resources.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

The alternative to the proposed action is the "no action" alternative. No acquisition by the Town would likely lead to the development of the 14 acres so zoned for industrial purposes together with a limited amount of residential development in the remaining portions of the site. Under this alternative the Town would benefit from additional property tax revenues, but would lose the opportunity to utilize the site for public park purposes.

IX. CONSULTATION AND COORDINATION

The general public of Hamden has been informed of the proposed action through public announcements from the Mayor's office and through newspaper articles.

The proposed acquisiton has been discussed with the Conservation Commission, the Planning & Zoning Commission and the Recreation Commission of the Town. All of these commissions have given their informed approval to exploring the acquisition issue. At this time, the landowner of the parcel has made no commitment to sell the property to the Town, but has encouraged exploring the issue.

Currently, a second appraisal is being made of the property to satisfy the requirements of the Land Acquisition Unit of the Department of Environmental Protection. It is expected that the formal negotiation process with the owner will commence when the second appraisal is completed and with the completion of this Environmental Impact Assessment.

The setting aside of this property for non-development has been a high priority goal of the Hamden Land Trust, a private non-profit organization in Town. They have been successful in gathering together considerable land, primarily donated, for protected public use. This acquisition, however, would be beyond their financial capability.

There has been no indication from the public that acquisition by the Town would be resisted.

X. RECREATION POTENTIAL

The Olin Powder Farm site is well-suited for passive recreation. Given the developed character of the surrounding neighborhood, and the attractive natural features of the site itself, the parcel stands as truely unusual. Notable physical characteristics include the abundance of water and a level of topographical diversity which provides aesthetics and a feeling of remoteness while not encumbering pedestrian travel. The variety of biota is excellent at the site and enhances the value of the property as a passive recreation area.

There are a number of potential "passive recreation" uses which can be recommended for the site. These include hiking (walking), fishing, jogging, ski touring, skating, picnicking (individuals and small groups), nature study, and cultural interpretation (considering prior North American usage and Olin activities). Picknicking at the site would be particularly suitable in the "bowl shaped" pockets on the site which formerly housed the gunpowder storage facilities.

The site offers potential for use by a wide range of the area population. Characteristics of the site (such as the excellent educational potential, gentle gradient path system, public transportation availability, and urban proximity) make use of the area particularly well suited for school groups, nearby senior residents, urban disadvantaged, and the handicapped.

As discussed previously in this report, access to the parcel is excellent via public transportation, automobile, bicycling and walking. A limited amount of parking is presently available on the site and consideration may be given to enlarging the facility in the southwestern corner of the site. The land appears suitable for expanding the parking lot in this area, but any decisions on this matter should carefully consider what effect additional parking facilities will have on use (or over-use) of the site. This southwestern corner of the property

could alternatively be used for a limited amount of active recreational facility development (tot lot, basketball court, exercise trail, etc.). If usage so dictates, this area would also be suitable for the installation of toilets and a public drinking water fountain.

The limited demands of maintaining and managing a site such as this for passive recreational use can apparently be met by the Town recreation department. A volunteer neighborhood group such as "The Friends of Olin Farm" may prove helpful for surveillance, litter control, etc. As mentioned previously, some management work may now be warranted, such as forest improvement thinning, hazardous tree limb removal, constructing modest launching docks off the larger ponds for canoes, etc. It may also be desirable to clear some additional trails on the site and repair some bridges for safety and convenience reasons. Consideration should also be given to creating a north boundary access point to enhance access and use of the area.

* * * * *

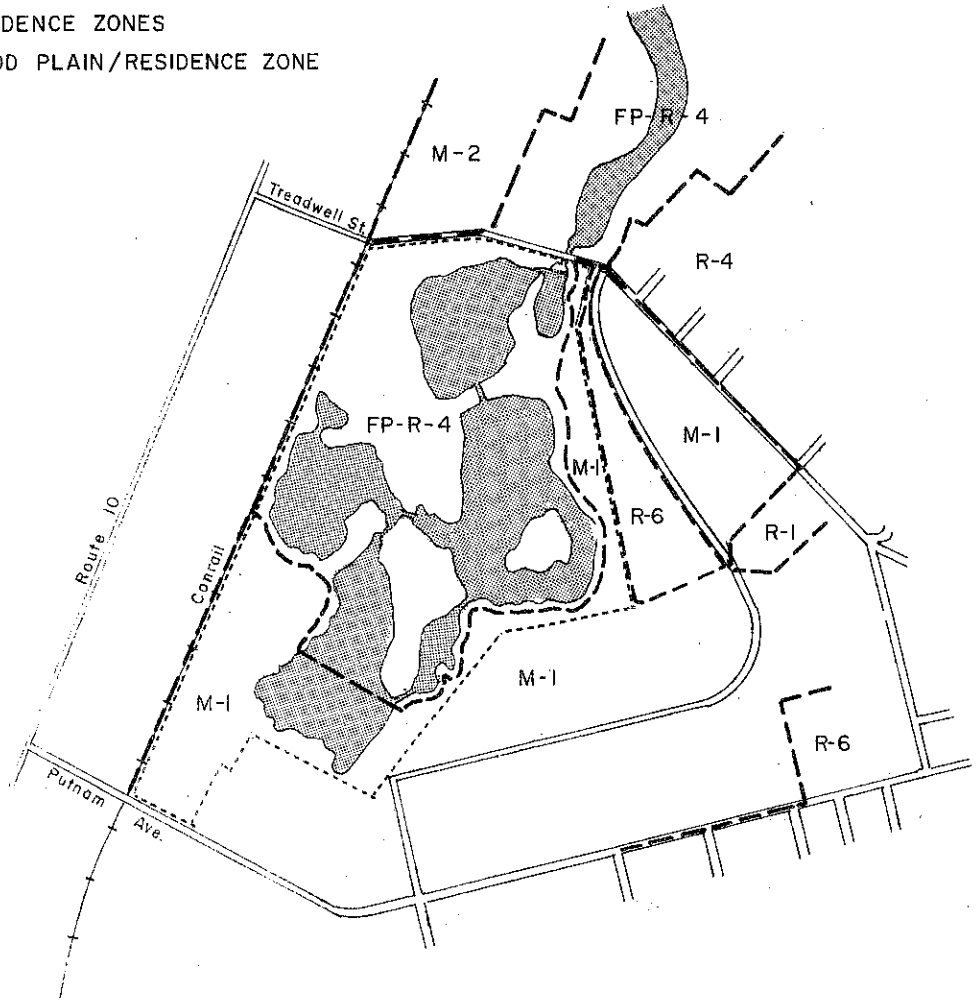
APPENDIX

ZONING MAP

• Adapted from town zoning maps

EXPLANATION

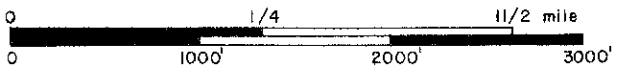
M-1, M-2 – MANUFACTURING ZONES
R-4, R-6 – RESIDENCE ZONES
FP-R-4 – FLOOD PLAIN/RESIDENCE ZONE



--------- PROPERTY BOUNDARY

— — — — ZONING BOUNDARIES

SCALE: 1" = 1000'



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, foresters, climatologists, soil scientists, landscape architects, recreation 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 - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

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 the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrical 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 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 an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter 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 purposes of review, and a statement identifying the specific areas of concern the team should address. When this request is approved by the local Soil and Water Conservation District and the King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.