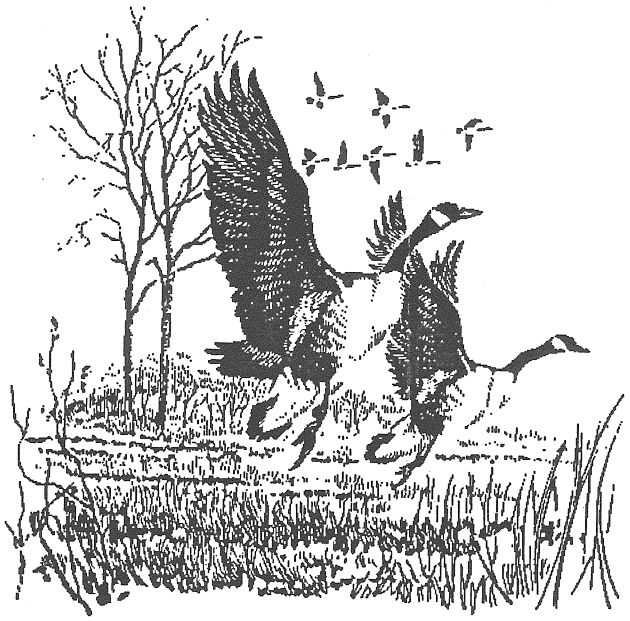

Tunxis Mead Park Expansion

FARMINGTON, CONNECTICUT

Eastern Connecticut Environmental Review Team Report

Eastern Connecticut
Resource Conservation and Development Area, Inc.

Tunxis Mead Park Expansion
Farmington, Connecticut

Environmental Review Team Report

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

for
The Town Council
Farmington, Connecticut

May 2000

CT Environmental Review Teams
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ACKNOWLEDGMENTS

This report is an outgrowth of a request from the Farmington Town Council to the Hartford County Soil and Water Conservation District (SWCD) and the Eastern Connecticut Resource Conservation and Development Area (RC&D). The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The Eastern Connecticut Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Tuesday, February 22, 2000.

Nicholas Bellantoni	State Archaeologist Office of State Archaeology (860) 486-5248 nbell@uconnvm.uconn.edu
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Peter Picone	Wildlife Biologist DEP - Wildlife Division Sessions Woods Wildlife Management Area (860) 675-8130

I would also like to thank Jeffrey Ollendorf, planning director, Bruce Chudwizk, town council member, Bruce Toll, parks and recreation director, Jim Grappone and Liz Dolphin, town of Farmington, 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. Some Team members made separate or follow-up field visits. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

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

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in planning and designing the expansion of facilities at Tunxis Mead Park.

If you require additional information please contact:

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(860) 345-3977

SUMMARY

The Farmington Town Council has requested that an environmental review be conducted on the portion of Tunxis Mead Park that is proposed for recreational use expansion. The approximately 180 acre study site is within the town-owned Tunxis Mead Park. It is located off of Red Oak Hill Road and bisected by Tunxis Mead Road. The study site is adjacent to the Farmington River. A portion of the site is presently developed with an athletic field complex and parking. A skateboard park is being developed within the large parking lot and there are trails through some of the wooded areas. There are areas of wetlands and agricultural soils. The agricultural land is being leased to a farmer to grow crops.

The town is proposing to add two soccer fields to the park and to develop the northern portion with a picnic area, playground and volleyball/basketball courts. The northern recreation area would be accessed via a new unpaved road through a wooded area.

The purpose of the review is to inventory and assess existing natural resources, particularly the floodplain wetland forest and the agricultural land. This environmental information will be used by the town in the location, planning and design of new soccer fields and new recreation facilities while preserving and protecting assets such as wetlands and prime agricultural soils.

As will be noted when the report is read Team members stressed the importance of preserving different areas of the study site from soccer field development depending upon their area of expertise. The proposed locations are discussed and some alternatives are offered. Team members did agree that development of new access roads should be minimized. The existing road to the northern recreation area should be used and safety and aesthetic issues could be mitigated. Also the northern area should be evaluated for the boat launch to avoid another access road and further fragmentation of the floodplain forest. The town will have to weigh all the professional opinions in deciding the level of importance that will be given to the various site attributes. The town should decide now what the overall development, use and management will be for Tunxis Mead Park and the adjacent town property. A multiple use management plan that combines conservation, recreation, historic preservation and education should be developed.

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INTRODUCTION

Introduction

The Farmington Town Council has requested assistance from the Eastern Connecticut Environmental Review Team in conducting a natural resource inventory and a review of proposed additional athletic fields and passive recreation area to Tunxis Mead Park.

Tunxis Mead Park is a town owned park located off of Red Oak Hill Road and bisected by Tunxis Mead Road. The study area is approximately 180 acres in size adjacent to the Farmington River. A portion of the site is presently developed with a ballfield complex and parking. There are extensive areas of wetlands and agricultural soils, and a large portion of the study area is forested. There are some trails existing through the forested portions of the site. The agricultural land is being leased to a farmer to grow corn.

Objectives of the ERT Study

The town is looking to add two additional soccer fields to the park due to the expansion and popularity of youth and adult soccer leagues. The northern portion of the park is being considered for more passive recreation uses such as a picnic grove, children's playground, fishing area, and volleyball/basketball courts. This area would be accessed by the development of a new unpaved road. A planned skateboard park has been moved from this area to the large parking lot close to the developed ballfields.

This review by the ERT will assist the town in locating new athletic fields and recreation amenities in the most appropriate areas while preserving critical environmental elements such as wetlands and prime agricultural soils.

The ERT Process

Through the efforts of the Town Council this environmental review and report was prepared for the Town of Farmington.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the town.

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 Tuesday, February 22, 2000. 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.

⇑ N

Location and Topographic Map

Scale 1" = 2000'

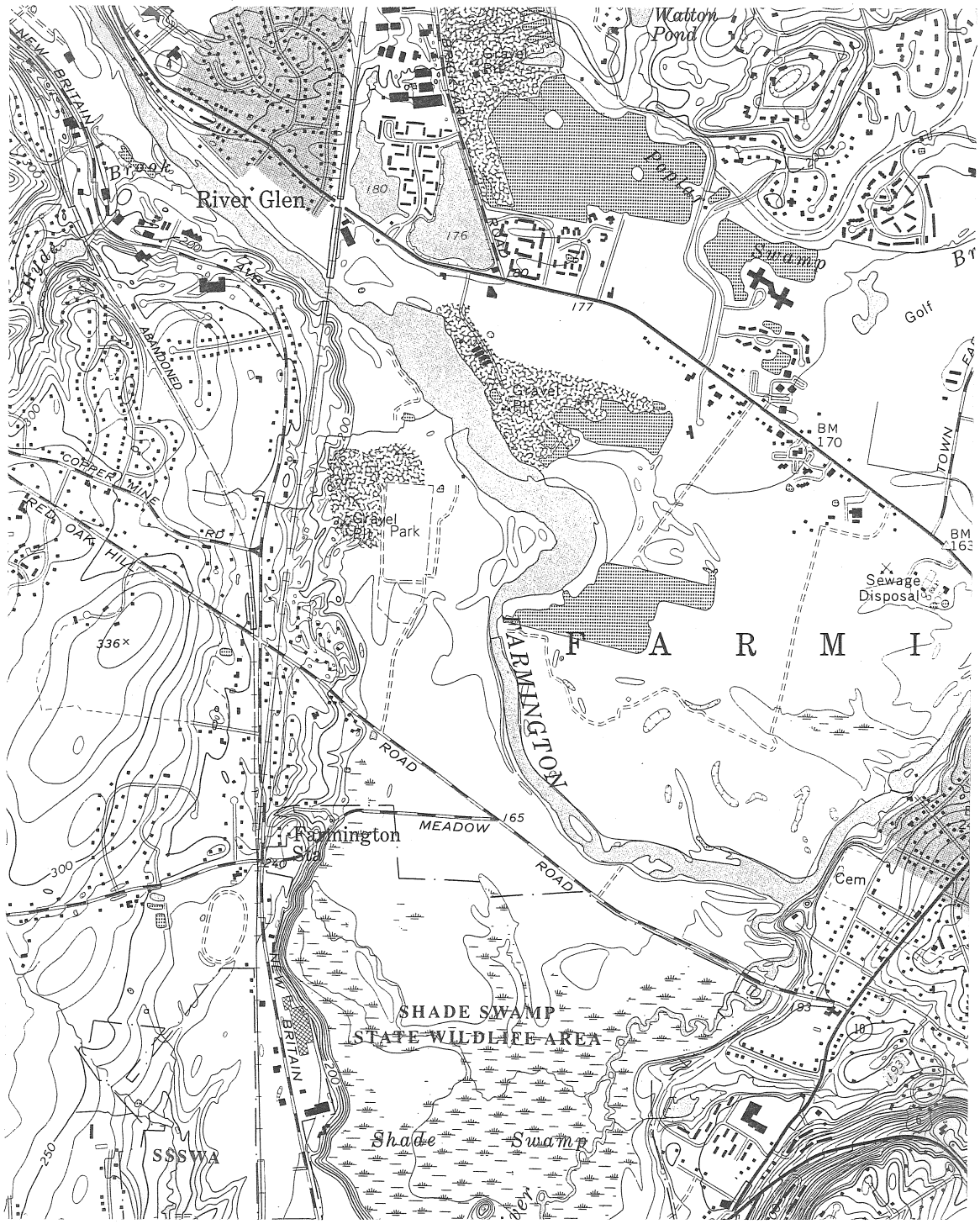


Figure 2.

⇑ N

Aerial Photograph

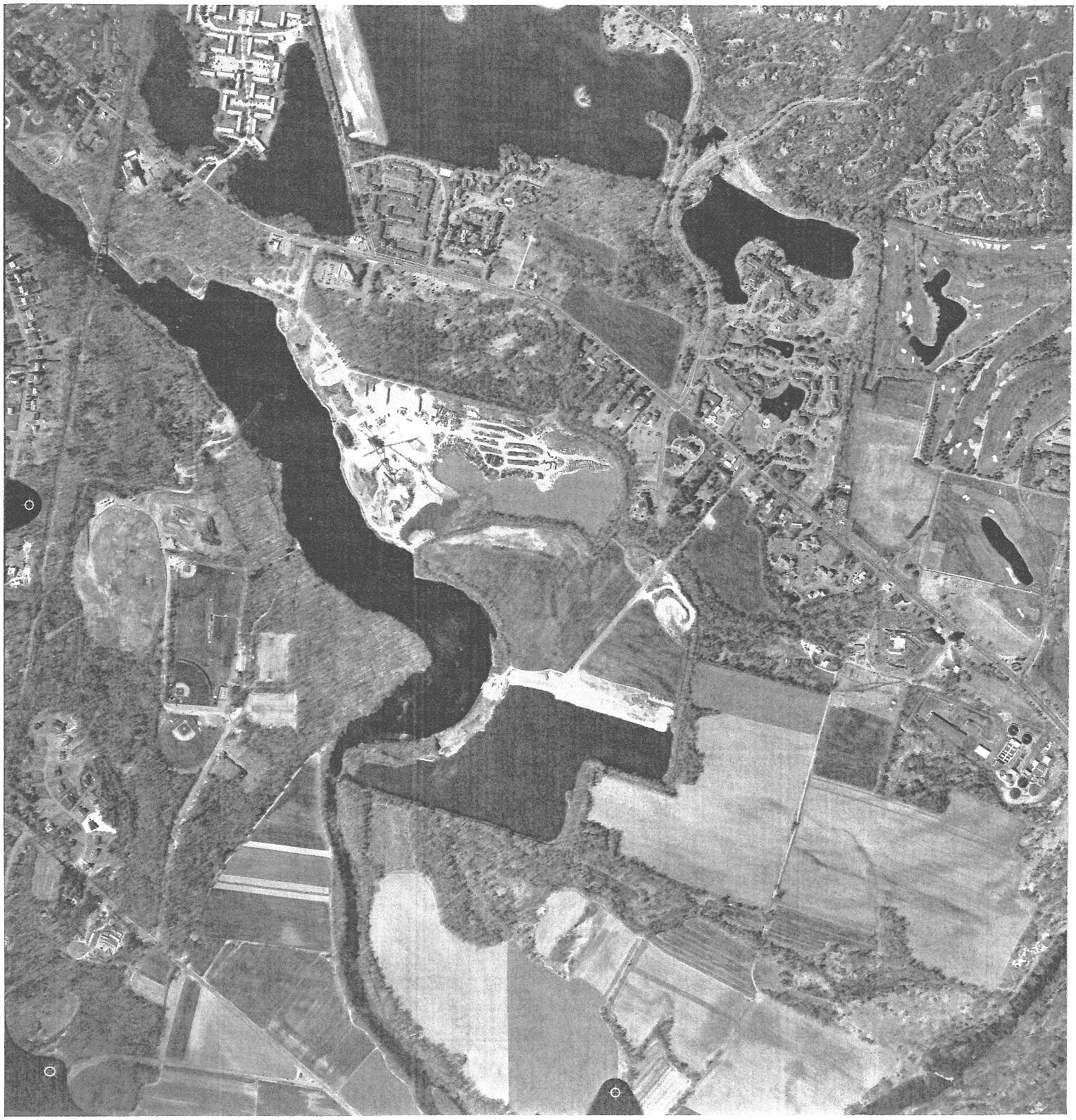
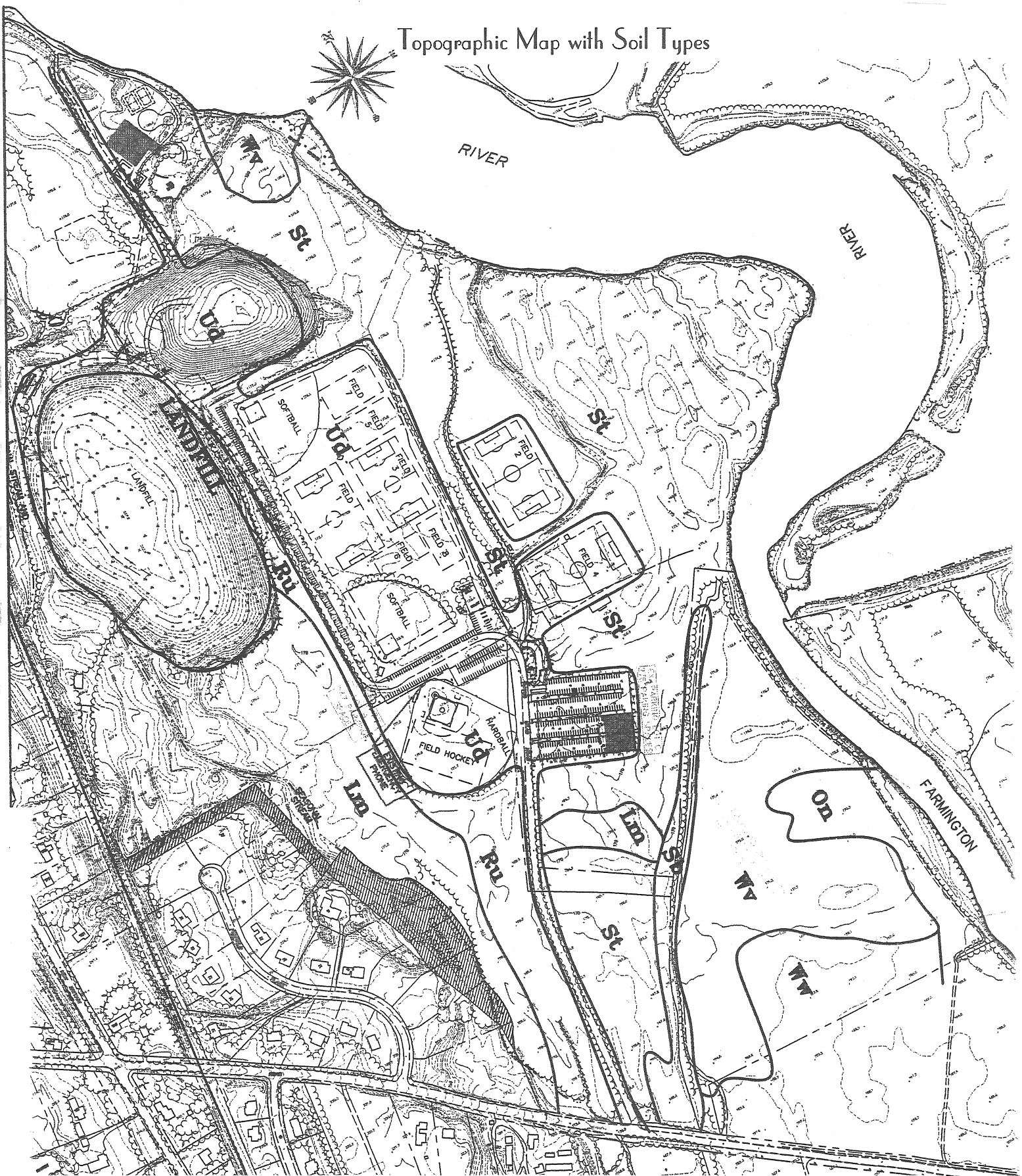


Figure 3.


Topographic Map with Soil Types
RIVER
RIVER
FARMINGTON
LANDFILL
LANDFILL
SOFTBALL
SOFTBALL
FIELD 1
FIELD 5
FIELD 7
FIELD 3
FIELD 6
FIELD 2
FIELD 4
HARDBALL
FIELD HOCKEY
BASEBALL DIAMOND
PICNIC AREA
St
Ud
Ru
Lm
Sp
Ww
On

SOIL RESOURCE REVIEW

Existing Conditions

Currently, the town park activities are concentrated mainly within the center of the parcel. It is bordered by a contiguous tract of vegetation that runs along the Farmington River. There is a well-used trail system within the wooded buffer zone. Current proposals for park expansion would fragment this contiguous open space tract.

According to the USDA Soil Survey of Hartford County, 1962, most of the woodland contains Suncook loamy sand (StA), an excessively drained soil. The gravel pit area has been disturbed and now includes a pond and stockpiles of soil. A drainage swale diverts water away from the gravel pit area through the woodland and outlets into the pond. Other soils found in the parcel are Podunk sandy loam (PoA), Limerick silt loam (LmA), Ondawa sandy loam (OnA) Riverwash (Re), Rumney sandy loam (RuA), and Windsor loamy fine sand (WvA). Limerick and Podunk soils tend to experience frequent flooding with short durations in the winter and early spring. Rippowam soils tend to flood frequently with short durations from fall through spring and Suncook soils tend to flood frequently with brief durations in the spring time. Occum soils may flood occasionally and Windsor soils generally do not flood. See the soil tables and soil map for more details (Appendix A).

Proposed Picnic Area/Playground

An additional recreation site is proposed adjacent to the Farmington River, northeast of the town's transfer station. Passive recreation such as a picnic pavilion, a children's playground and parking lot are some of the proposals. It appears that the well drained soils on site would provide a good subgrade for a parking lot. However, due to the well-drained nature of the soils, there may be a pollution risk from contaminants related to cars and trucks that would be in the parking lot. Parking lot runoff should be collected and treated.

The proposed recreation area would be located near the banks of the Farmington River. Currently, there is little vegetation, due to past mining activities, however there is some vegetation along the banks of the river. For water quality, maintaining a vegetative buffer along the banks, a minimum of thirty-five feet wide, is recommended. Selected sites can

be developed for access to the river and planting low growing shrubs in certain locations can provide views of the river. Soil erosion along riverbanks caused by foot traffic can be minimized by maintenance of access points and vegetative barriers along the banks. To reduce sedimentation into the river during construction, soil erosion control practices should be installed prior to construction and maintained until all disturbed areas are permanently stabilized.

Access to this proposed area will be shared from Red Oak Hill Road, up Tunxis Mead Road, to the transfer station. The road currently used for transfer station activities continues to the proposed recreation site. However, because of pedestrian safety concerns and aesthetics, a new access road is proposed which would run through the woodland, around the transfer station and to the proposed recreation area.

Creating a new access road from the transfer station to the proposed recreation area would require removing trees, land grading, and redirecting existing drainage patterns. An alternative is to utilize the existing access road. Sidewalks and crossings can be installed to provide safe access to pedestrians and bicyclists and vegetative barriers can be planted to limit views of the transfer station.

The proposed recreation expansion site can also be evaluated for inclusion of a boat launch, which is currently proposed south of this area. The existing boat launch proposal would require the development of a new access road. By utilizing existing access roads and sites that have already been disturbed, the woodland can be left as a productive natural area.

Proposed Soccer Fields

Two soccer fields have been proposed. One proposal is to construct a field in the northern edge of the existing agricultural field. Another proposal is to construct both the fields within the woodland adjacent to the existing soccer fields.

It is strongly recommended that the agricultural field be left in agricultural production. The soils within the agricultural field are prime farmland soils. Prime farmland is land best suited for producing food, feed, forage and fiber crops. Once the soil has been manipulated for other uses, its characteristics can change and it may no longer be prime farmland.

One alternative soccer field site is between Tunxis Mead Road and the farm field access road. The field could be constructed near the intersection of Tunxis Mead Road and

Red Oak Hill Road. The soccer field would be bordered on the west by Tunxis Mead Road, the south by Red Oak Hill (with a buffer of trees between the road and the field), the north by woodland and the west by the agricultural field. This narrow area between the two roads is currently wooded and according to the USDA Soil Survey there is a band of poorly drained Limerick soils north of the potential site. It appears that these wetland soils could remain undisturbed by the soccer field. Using this alternative would leave prime farmland soils undisturbed and keep development along the roadway.

Another site alternative for one soccer field is adjacent to the two existing soccer fields. Grades may allow for the existing manmade drainage swale to be moved closer to the eastern edge of the existing soccer field and a new field can be constructed east of the swale. Trees would need to be removed and minor land grading would be needed.

Summary

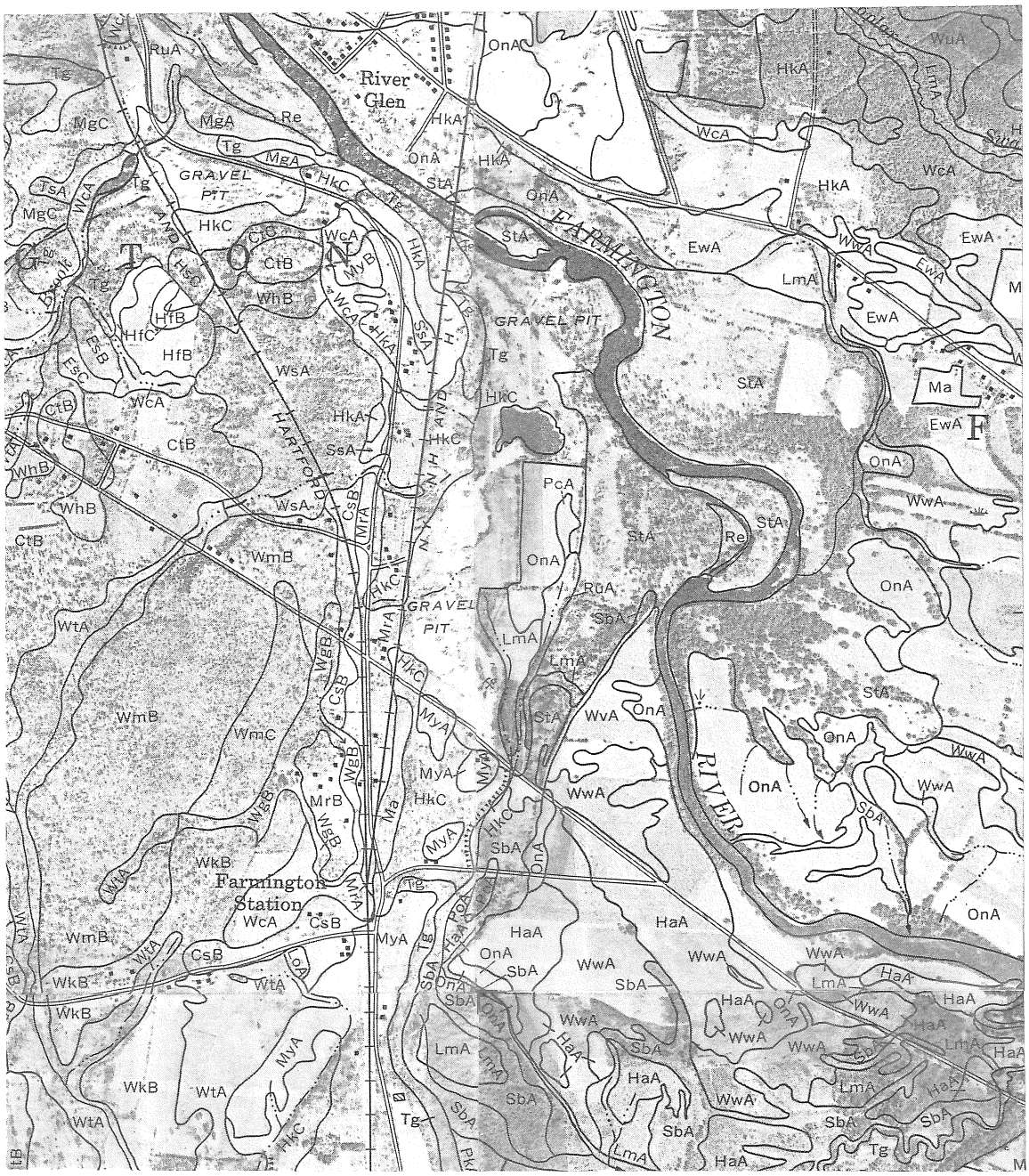
The town-owned parcel contains many contiguous acres of productive open space utilized by wildlife, hikers and agricultural producers. The maintenance of vegetative buffers are important in keeping healthy and scenic rivers. Leaving prime agricultural soils undisturbed allows the town to continue producing agricultural products. To protect these assets, the town may want to determine now, limits for future expansion of this parcel. Keeping new development close to existing developed areas will help to reduce the fragmentation of the undisturbed natural areas. Protecting these areas will help support the town's open space protection efforts.

Figure 4.

⇑N

Soils Map

Scale 1" = 1320'



WETLANDS REVIEW

According to Farmington town officials, the need exists for additional soccer fields. The focus of this portion of the ERT is to analyze the study area, from the view point of inland wetland and watercourses regulation, in order to recommend possibilities of locating additional soccer fields as well as a picnic area/playscape within the study area presented.

Inventory of Wetland and Watercourse Resources

Inland wetland and watercourse resources of this parcel include the adjacent Farmington River and its on-site, associated floodplain/alluvial soils, a lesser amount of poorly drained, non alluvial soils, as well as a small watercourse tributary to the Farmington River. Refer to the accompanying soils map provided by the Town of Farmington, for the location of regulated soil types (see Figure 3). A majority of these soil delineations have been acquired from generalized soils information and as such represent a lower level of precision than can be achieved by a more intensive, site specific soil survey. Apparently the far northern portion of the study site has been surveyed in this, more detailed manner.

Excessively well and well-drained alluvial soils make up a majority of the inland wetland soil map units of this study area (see soil map unit "St" on accompanying map). An area of poorly drained, alluvial soil (Ru, Lm) has been mapped to the west of the park access road.

A description of these alluvial soils as well as their functions and values is contained within a previous letter issued by this office and will not be repeated here (see Appendix B). However, it should be emphasized that in general, for all their high functional value, floodplain forests such as those existing within this study area have been heavily impacted throughout this state and development proposals for those that remain should receive a high level of review.

One of the critical functions of our floodplains is that of conveying flood waters during periods of high flow. While a majority of the study area exists within the 100-year floodplain as designated by the Federal Emergency Management Agency, a substantial portion of it has been designated as a more critical "Floodway" with velocities of

approximately 6.8 feet per second measured on site at cross-section "L"(see Figure 5). Development within a FEMA floodway, such as the placement of any material that may restrict or divert flood-flows is heavily restricted. During site walks, the Team wetland specialist saw no signs of high velocity flow on floodplain areas marked as "floodway", however, any planning for recreational facilities should be made with this in mind. It appears that some of the existing southern parking area exists within the mapped floodway. It is recommended that contingencies for dealing with high-velocity flood flows should be made for this facility.

Approximately 200 feet south of the aforementioned parking area, there is a "Lm" soil map unit depicted. This map unit (Limerick) is a poorly-drained alluvial/floodplain soil. During two on-site inspections of this area, the Team wetland specialist could not find vegetative or landscape conditions that would indicate the presence of a poorly-drained soil. Further investigation by a soil scientist is recommended to confirm the presence of this soil map unit.

In the northern portions of the study area the Team wetland specialist noticed a waterbody associated with a watercourse that flows in from the west just to the north of the landfill. This waterbody appears to have been created as a result of soil excavation which captured the flow of the stream. A significant amount of fresh fill material has recently been placed back in to this excavated area effectively filling portions of this waterbody. The filling of this waterbody is a regulated activity for which a permit should be sought. At a minimum, this activity should be reviewed to ensure that soil erosion does not effect downstream areas.

Proposed Activities

Recreational facilities are being planned for this area including two soccer fields, picnic area, additional parking, playscape areas, basketball and volleyball courts.

Potential Impacts to Regulated Areas and Recommendations

Tree clearing on forested sections of floodplains, primarily within designated floodway areas and more active portions of the floodplain could have negative impacts such as increasing velocities of flood-flows and de-stabilizing the soil. The more active areas of the floodplain appear to be the peninsula of land protruding out into the Farmington River to the east of the existing soccer fields as well as the mapped floodway areas.

If development is to occur in these aforementioned sensitive areas, activity should take place at grade and vegetation should be maintained that can withstand expected flood-flow velocities.

The floodplain forest located to the south of the existing parking lot and to the east of the access road appears to be in a poor condition. The preponderance of grape and poison ivy vines seems to be slowly "pulling down" many of the trees. If soccer fields are to be located within the floodplain areas, it may be preferable to locate them here rather than to the north of the existing soccer fields.

To assist in preserving existing wildlife corridors currently situated along this bank of the Farmington River, it is recommended that an undisturbed buffer area of at least 200 feet and preferably 300 feet be maintained.

Development within the previously excavated areas of the northern portion of the study area should have minimum additional impacts. Care should be taken not to concentrate stormwater flows in order to avoid erosion of the sloping, unconsolidated soils located here.

Impacts to floodplain soils could be avoided by utilizing the existing access road leading from the existing playing fields to the storage yards.

Incorporating the proposed boat launch into the picnic/playscape area or developed shoreline areas immediately to the north of this area would preferable to clearing existing floodplain forests as are currently proposed.

Unavoidable impacts to regulated areas could be mitigated through the dedication of conservation restrictions on other undeveloped areas of Town-owned property. Such areas would include Farmington River setback areas, the poorly-drained floodplain soils to the west of the access road, or those lands outside of the study area, yet apparently still on town-owned property located to the north of the landfills and to the east of the railroad right-of-way.

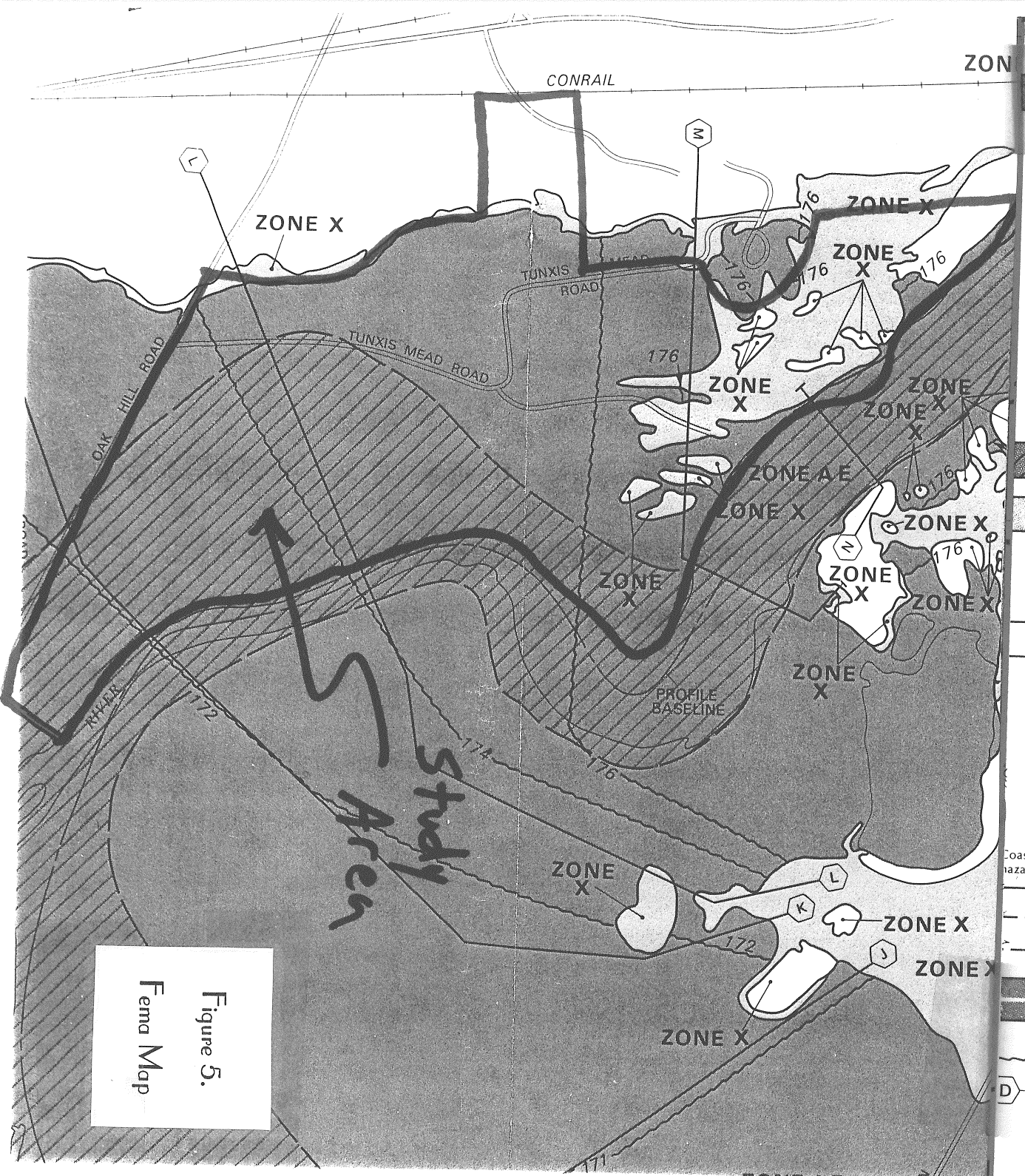


Figure 5.
Fema Map

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding; velocities also determined.
ZONE A99	To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
ZONE V	Coastal flood with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X	Areas determined to be outside 500-year floodplain.
ZONE D	Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 or later | Otherwise Protected Areas Identified 1991 or Later

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM 7x — Elevation Reference Mark

•M1.5 — River Mile

THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the project area 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 in 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 Environmental & Geographic Information 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.

VEGETATION REVIEW

The previous biological assessments, by Baystate Environmental Consultants (1991) and ENSR (1998) have presented in detail the vegetative characteristics of wooded areas of the Park. Thus, there is no need to re-iterate what those reports contain. What follows are observations and comments based on a site visit, and from review of the maps, plans, aerial photos and reports concerning the Park.

To help focus the comments and observations, it is useful to divide the wooded areas of the Park into various sections. For the purposes of this report, the wooded area of the Park will be divided into seven sections (see Figure 6), as follows:

1. The heavily disturbed and pitted area at the northern tip of the Park. This area currently is largely non-wooded, with large, dug pits, sand piles, roads and old industrial structures dominating the section.

2. Section two is bordered from section one by a small stream. This wooded area lies between the landfill and the river, and is bounded on the east by the river and on the south by the trail that runs from the corner of Field 7 to the proposed boat launch ramp. This area is crossed by several well-established trails.

3. Section three is a small area just south of section two, adjacent to Fields 3, 5 and 7 to the west, Field 2 to the south and the drainage way that runs from between Fields 2 and 4 out to the river. It is largely a stand of young trees, 10 to 20 inches in diameter at breast height (dbh). There are several young red oaks and sycamores that are both well formed and healthy, giving this section promise.

4. Section four is a large section, consisting of the land east of the drainage way and bounded to the north and south by the bend of the river. The largest trees are found within this section, including at least one 60" dbh white ash and one 50" dbh sugar maple. In terms of diversity of species, size of trees and relatively low number of invasive exotics in the understory, this section is in the best shape.

5. Section five is the area between Field 4 and the parking lot. The eastern border is the agricultural field. It is distinguished from section four by the change in cover type that occurs approximately in a diagonal line running from the southeast corner of Field 4 to the river. The wooded area directly east of the end of the parking area may

be considered as part of this section. This is an area with large pits and mounds, indicating extensive previous disturbance. Tree species are largely ash and apple.

6. Section six is the area east of Tunxis Mead Road and west of the agricultural field, between the skateboard parking area and Red Oak Hill Road. There are numerous red maples and pin oaks in this section, some approaching 30" in dbh.

7. Section seven is the area west of Tunxis Mead Road, between Red Oak Hill Road and the baseball fields and landfill, and east of the conservation area abutting the subdivision. Due to the wet soils and proximity to the conservation area, this section did not receive extensive consideration.

Comments and Observations

The area of section one, while heavily disturbed and with little aesthetic appeal at present, does present opportunities for replanting. At present, there are very few conifers within the park. The planting of a mix of coniferous species, such as eastern white pine or white spruce, may be a means of reclaiming this area, both environmentally and aesthetically. Before any planting is done, the soil should be tested as to quality and characteristics.

Section two at present supports some recreational use, as evidenced by its trails. It is likely that this area could support additional recreational use without significant additional harm to the forest stand. That is said in part because of the amount of black locust and low quality black oak in the overstory, and Japanese barberry and Tartarian honeysuckle in the understory. The locust, barberry and honeysuckle are each considered to be invasive plants that will likely persist despite the increased disturbance that will likely result from greater use of this land.

If this section is used as a picnic area, the overstory trees will need to be assessed as to hazard potential. Picnic sites could be chosen so as to select for the removal of hazardous trees and invasive species.

Section three has two features that give it specific value. First, there are several young, healthy and well-formed red oak and sycamore trees within this section. These trees have the potential to be the basis for an attractive and long-lived forest stand. Given sufficient time, it might well be that that people will comment on how the "best trees" in the park are growing in this area.

This section also provides protection to section four. As one travels from the athletic fields to the river, the number of understory invasive exotic plants declines. One likely explanation is that, following the construction of the fields, the increased penetration of sunlight has allowed such species as Tartarian honeysuckle and Japanese barberry to become established near to the fields, while deeper into the woods the taller trees have inhibited the establishment of these plants. Moving the boundary of the woods closer to the river would be likely to accelerate the establishment of these and other undesirable plants along the river.

Section four contains the largest trees in the park, and appears to be the oldest forest stand. In just a casual walk through this section, a 60" dbh white ash tree, a 50" dbh sugar maple and a 30" dbh sycamore were all noted. This is a fairly diverse stand, in that a greater variety of trees may be found here than any of the other sections. Among the overstory species noted were white ash, sycamore, cottonwood, sugar maple, red maple, silver maple, white oak, black oak, red oak, pin oak, ailanthus, white pine and eastern hemlock. The diversity and age of the trees in this section suggests a well-established forest stand that is capable of dealing with a variety of impacts, such as those that may be caused by weather, climate, insect and disease or human pressure.

Also in this section, the remnants of the foundation of a small building and of a cedar post fence give some visible indications of the history of the property.

Section five appears to be an area that is recovering from heavy previous disturbance. The topography is very pitted, indicating substantial movement of earth. Apple trees, cottonwood and white ash are the common tree species in this section. The contorted form of these trees, with their twisted trunks, multiple leaders and limby growth pattern, suggests that this stand grew out of a thicket in which the young trees were subject to repeated impacts.

Section six is an interesting section with very little aesthetic appeal. It is wetter underfoot than most of the other sections (the exception being section 7), and because of that and the thick understory, it is difficult to walk through. The understory contains a variety of shrub species, including spicebush. The trees are predominately either red maples or pin oaks.

Based on form and size, some of these trees, especially the pin oaks, appear to be doing quite well. Some of the pin oaks are approaching 30" dbh. Large cottonwoods are also present.

As noted earlier, section 7 was largely left out of consideration in this report, due to its proximity to the conservation easement. Like section 4, this is also a diverse area, though

not as old or diverse as that other section. Besides red maple, cottonwood and pin oak, butternut, silver maple and black alder were seen in this area.

Discussion

In any discussion of this site, the role of riparian forests should be considered. Riparian forests, of course, are stream and riverside forests that perform a variety of functions, of benefit both to the water resource and to the land adjacent to the water. Riparian forests are also unique and complex ecosystems in their own right, deserving of special consideration due to their diminished occurrence in Connecticut.

With regards to the water resource known as the Farmington River, the forest in Tunxis Mead Park provides its first set of benefits by acting as a buffer between the river and the developed lands within and surrounding the park. The forest acts as a filter, removing sediment and pollutants from runoff from the adjacent fields and from impervious surfaces as roads and parking lots. As the flow is slowed, sediments precipitate out. Also, a percentage of the a runoff will infiltrate into the more porous forest soil, allowing such potential pollutants as pesticides and excess nutrients to be adsorbed to soil particles or absorbed by the roots of the streamside vegetation. Pollutants captured by soil particles can then be broken down by soil organisms, including soil micro-organisms.

Riparian forests provide a second set of benefits for the water resource, through the provision of shade and shelter along the riverbanks, and through the furnishing of a balanced supply of organic materials to the aquatic food web. These organic materials include the bits and pieces of vegetation from the riverside trees and shrubs, and such organisms as the forest insects which live in or near the water and thus enrich the aquatic food chain. Riparian forests also contribute the bulky pieces of forest detritus that fall into the water and create structures for use by aquatic organisms.

In times of flood, riparian forests also provide benefits for the adjacent fields and developed areas. The size of the vegetation breaks up the dynamic flow of the water, protecting property surrounding the river. The roots anchor the soil, helping to minimize erosion. Soil and other material carried by the river will often accumulate in the forest. As the water recedes, the trees will help dry out the soils, by pulling the water from the soil into their roots and up through the stems and leaves and into the atmosphere.

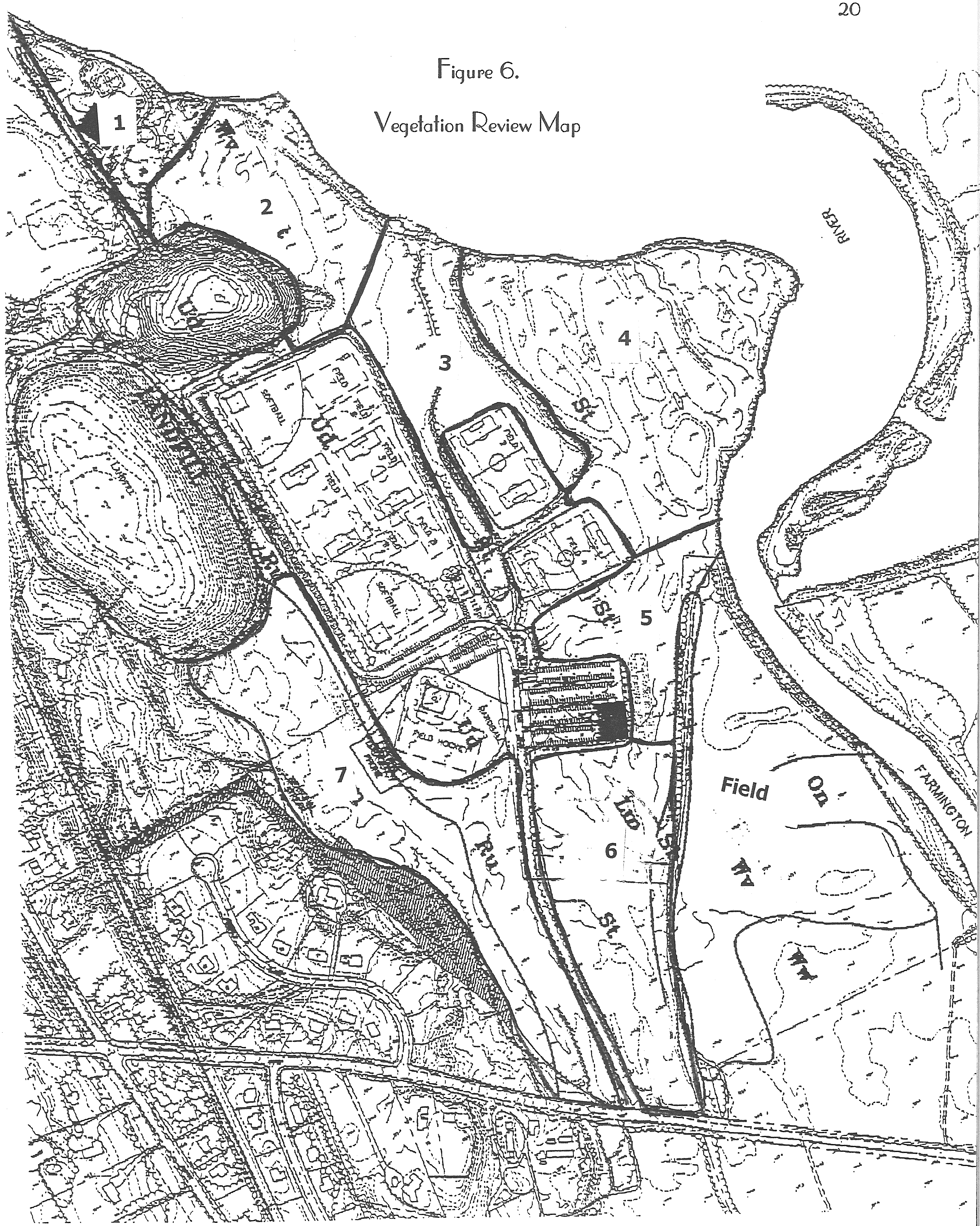
In addition to the benefits to the water resource and to the lands adjacent to the forest, the riparian forest has ecological values of its own. The assemblage of trees, such as seen in section four, is fairly unique, and is dependent upon the presence of tree species which

are capable of existing in an environment in which the roots stay wet and in which the soil is dynamic. Such trees must have very adaptable root systems, that remain strong and functional despite the demands placed upon them. This combination of tree species, while once common along the major waterways throughout the state, has declined in occurrence due to the extensive history of land clearance along rivers, for agriculture, for river access and for industry and development.

Thus, in making decisions about the forestland in the park, the role of section two and section four, as riparian buffers, and the role of section four, as a relatively mature riparian forest ecosystem, should be given a great deal of consideration. Likewise, the role of section three as a protector of section four and as a stand that has a great deal of potential on its own, should be given importance. Finally, the less than ideal aesthetic characteristics of section six should not lead to the quality and properties of the trees in this stand being overlooked.

Figure 6.

Vegetation Review Map



WILDLIFE REVIEW

This section will address the following wildlife resource issues:

1. Current Conditions for Wildlife
2. Wildlife-related Impacts Regarding Hypothetical Development of Soccer Fields
3. Other Considerations and Conclusions.

Current Conditions
Site Inspection of Forested Floodplain Area at Tunxis Mead Park

The following wildlife were observed during the site visit on March 21, 2000 either directly or indirectly by identifying calls, tracks, scat or other sign: white-tailed deer *(Odocoileus virginianus)*, eastern coyote *(Canis latrans)*, red fox *(Vulpes vulpes)*, cottontail *(Sylvilagus* spp.), American robin *(Turdus migratorius)*, American woodcock(*Scolopax minor)*, and red-winged blackbird *(Agelaius phoeniceus)*. These are just a few examples of the types of wildlife that utilize the property's habitats. It can be expected, with more thorough field investigations, that the species list will be large for the property. The forest overstory is comprised of a variety of older, large trees. This type of floodplain forest has many valuable attributes (mentioned later) for wildlife. The understory layer, especially the shrub layer, is somewhat degraded because of the predominance of an invasive non-native shrub - tartarian honeysuckle *(Lonicera tartarica)*. It appears that this invasive shrub has competed well against the heavy deer browsing that has been evident in the last two decades throughout Farmington and the Shade Swamp area. Deer browsing effects were evident and little regeneration of native understory shrubbery was found during this field inspection.

Wildlife-related Impacts Regarding Hypothetical Development of Soccer Fields

The development of soccer fields requires landscaping a parcel of land to make it suitable for playing the sport and requires removal of forest cover, filling, shaping, and adding underground irrigation. Forests such as these along the Farmington River are unique and important as wildlife habitat in several ways:

1 - Migratory Corridor - forested land along rivers provide migratory pathways for migratory birds during the fall and spring migrations. Birds use the forest cover for resting and feeding while migrating to their spring ranges.

2 - Forested Habitat - the large, older trees of this forested area provide habitat for nesting, feeding and raising young for a variety of wildlife including neotropical migrants. The older trees in this area have developed cavities and provide dens for wildlife. Woodducks may nest in larger cavities.

3 - Natural Wildlife Corridor - As urbanization of the landscape continues and parcels of land are fragmented and developed, habitats become isolated. A forest that is continuous along a river helps to interconnect habitats of wildlife. Birds, mammals, reptiles(especially wood turtles and box turtles) and amphibians can move along their foraging areas with less vulnerability to roads and predators.

4 - Moist Forest Conditions - Moist conditions afforded seasonally through flooding and the rising fog adjoining rivers creates a microclimate for insects. Wet pockets, vernal pools and other moist sites in the forests along the river provide microhabitats for wildlife.

Impact # 1 - Loss of forest cover along Farmington River.

With continued removal of forest cover along the river, less habitat will be available for wildlife. This may have a negative effect on wildlife that utilize the forested habitat as a migratory corridor or breeding habitat. There are many scientific studies in wildlife ecology that indicate a strong relationship between small forests and high human use leads to declining function as meaningful reserves for area-sensitive wildlife (wildlife that require larger unbroken parcels) (Bond 1957, Levenson 1981, Hohne 1981, Askins et al. 1987). As forest and habitat sizes shrink in size, they are less viable as breeding places for interior forest birds and an increase in predation and parasitism of nests occurs (Blake and Karr 1985).

Recommendation to lessen impact #1

The park's forested areas along the Farmington river should be avoided. The town of Farmington is currently 56.5 % forested (DEP GIS data), which is slightly less than the statewide average of 60%. What will the future of forested habitat in Farmington be like? With future private land development, it will inevitably become less and more fragmented. Maintaining forested land along the river on town-owned parcels is highly recommended from a wildlife habitat perspective.

Currently, the field crop areas are basically being maintained with seasonal vegetation. The type of vegetation on the cultivated fields are usually monotypic and have two size classes: field corn- up to 7 feet and winter rye- up to 6 inches. The farming of the fields adds a beneficial but limited value for wildlife on the property. It benefits some of the generalist species such as deer, wild turkey, fox, coyote, and geese.

If development of soccer fields or other mowed grass fields is to occur, it would be best to place them in the cultivated field areas rather than in forested areas. The use of soccer fields by wildlife will be limited, however not much different from its current use as cultivated fields. The major differences will be the lower cover values for the mowed grass versus the taller vegetation of field crops, alteration of slope and soils and there may be a increase in use of the fields by Canada geese for grazing. If one were to weigh the options of building soccer fields on forested habitat versus placing them in existing field or cropland, the latter option is less destructive to wildlife. If cropland were to be used for soccer fields, it would be best to place them closer to roads and away from the river.

The hayfields that the town owns on Meadow Road may also be a good alternative choice for soccer fields because of their existing fragmentation. Although hayfields may be good for grassland birds, these particular fields are already fragmented and of less value than forested land along the Farmington river (see Appendix C).

Need For a Long Range Plan

The town of Farmington has valuable land which provides a multitude of functions including the provision of habitat for wildlife. Maintaining habitat for wildlife is generally a lower priority for many towns. The Town of Farmington has the opportunity to manage their land in a manner which is good for wildlife, the ecosystem and also fulfill its recreational needs. It is advisable that the Town develop long range plans for their town-owned properties which balances the need for recreational fields and maintenance of habitat for wildlife.

Conclusion

It is advisable to avoid further fragmentation and development of forested areas along the Farmington river. Rather, use of existing unforested parcels will have less impact.

Literature

Askins, R. A., Philbrick, M. J., and Sugeno, D. S., 1987. Relationship between the regional abundance of forests and the composition of forest bird communities, Biol. Conserv.39: 129-152.

Bond, R. R. 1957. Ecological distribution of breeding birds in the upland forests of southern Wisconsin. Ecol. Mongr. 27:351-384.

Hohne, L. M. 1981. The groundlayer vegetation of forest islands in an urban-suburban matrix. Pages 41-54 in R. L. Burgess and S. M. Sharpe eds. Forest islands dynamics in man -dominated landscapes. Springer-Verlag, New York, NY.

Levensen, J. B. 1981. Woodlots as biogeographic islands in southeastern Wisconsin, Pages 13-39 in R. L. Burgess and D. M. Sharpe eds. Forest islands dynamics in man-dominated landscapes, Springer-Verlag, New York, NY.

ARCHAEOLOGICAL REVIEW

A review of the State of Connecticut Archaeological Site Files and Maps show two prehistoric Native American encampments (CT Site, 52-11), including a village (52-15), located in the park property. In addition, three archaeological sites (52-03,52-08 and 52-12) are located in close proximity to the park along the Farmington River floodplain, one of which includes Fort Hill, a Contact (17th century - 52-12) village and cemetery of the Tunxis Indian tribe. The earliest of these sites (52-11) dates to the Late Archaic Period, approximately 4,000 years ago. The earliest sites represent groups of hunters-gathers moving through the river valley utilizing natural resources on a seasonal basis, while the later site indicates the use of the floodplain by Indian peoples for corn, beans and squash horticulture.

The archaeological sensitivity of Tunxis Mead Park varies from high to low depending upon specific location. Areas of extant ballfields and former landfill have no archaeological sensitivity due to the extent of prior ground disturbance. In contrast, Sites 52-11 and 52-15, located within the park expansion area should have good integrity. That is, they are still capable of yielding important information concerning Native American lifeways in the area.

Field review located a new archaeological site not previously recorded (Site 52-18). Prehistoric and historic cultural materials were surface collected in the plowed fields while conducting the walkover of the park expansion site. The plow turns over a good foot of soil and deposits below ground artifacts to the surface. Studies have shown that plows do not drag artifacts, but turn them vertically in the field. Hence, artifacts found on the surface indicate a site immediately beneath your feet. Artifacts recovered from this area include quartz and flint flakes from stone tool manufacturing processes, as well as 19th century brass and ceramic objects.

The Office of State Archaeology (OSA) and the Connecticut Historical Commission (CHC) strongly recommend an archaeological survey for the expansion area. Specific site locations are confidential and withheld from this public report. However, the Office of the State Archaeology is prepared to provide specific information for preservation purposes. This survey can determine the distribution of the site areas and provide a management plan of avoidance or mitigation through excavation. The survey must be

undertaken in accordance with the State Historic Preservation Office's *Environmental Review Primer for Connecticut's Archaeological Resources*. The OSA and the CHC are prepared to offer any technical assistance to the Town of Farmington in conducting the recommended survey.

The Town of Farmington is further encouraged to consider the educational opportunity provided by an archaeological excavation at the park. The survey work can be coordinated with local schools to provide students with a field experience including the science of archaeological field techniques and an understanding of Native American adaptation to the river's resources. Once again the OSA and the CHC can assist. Dr. Kenneth L. Feer, CCSU, has conducted an overall survey of the Farmington River Valley sites and should be consulted concerning additional information on the archaeological sensitivity of Tunxis Mead Park.

The Office of State Archaeology and the Connecticut Historical Commission look forward to working with all parties in the preservation and conservation of the archaeological resources at Tunxis Mead park.

NONTECHNICAL SOILS DESCRIPTION REPORT
Tunxis Mead

Map Symbol	Soil name and description
LmA	limerick silt loam, 0 to 3 percent slopes These soils have moderate limitations for cultivated crops. They are poorly drained soils with a moderate to high water holding capacity for plant growth. A seasonal high water table and flooding in the spring and fall is a limitation to crop production in most years. These nearly level, poorly drained soils formed in alluvial deposits. They are on flood plains of major tributaries. Depth to bedrock is commonly more than 60 inches below the surface. These soils have seasonal high water tables at or near the surface and they are subject to frequent flooding. Permeability is moderate in the loamy layers and rapid or very rapid in the underlying sandy materials. Surface runoff is slow and the available water capacity is high. These soils are not suited to community development because they are subject to periodic flooding.
OnA	ondawa sandy loam, 0 to 3 percent slopes These soils have few or no limitations for cultivated crops. They are well drained soils with a moderate to high water holding capacity for plant growth. This nearly level, well drained soil formed in recent alluvial deposits. It is on flood plains along major streams and tributaries. Depth to bedrock is commonly more than 60 inches below the surface. The soil has a water table that is commonly below a depth of 6 feet but it is subject to frequent flooding, mainly from fall to spring. Permeability is moderately rapid in the surface layer and subsoil and rapid in the substratum. Surface runoff is slow and the available water capacity is moderate. These soils are not suited to community development because they are subject to periodic flooding.
PoA	podunk sandy loam, 0 to 3 percent slopes

NONTECHNICAL SOILS DESCRIPTION REPORT
Tunxis Mead

Map Symbol	Soil name and description
	These soils have slight limitations for cultivated crops. They are moderately well drained soils with a moderate to high water holding capacity for plant growth. The seasonal high water table may be a limitation for some crops, and prohibit early spring planting and late fall harvests. This is a nearly level, moderately well drained soil formed in recent alluvium deposits. It is on flood plains of major streams and their tributaries. Depth to bedrock is commonly more than 60 inches below the surface. This soil is subject to frequent flooding. It has a seasonal high water table at a depth of about 20 inches, mainly from fall through spring. Permeability is moderate or moderately rapid in the surface layer and subsoil and rapid or very rapid in the substratum. Surface runoff is slow and the available water capacity is moderate. These soils are not suited to community development because they are subject to periodic flooding.
Re	riverwash These soils have few or no limitations for cultivated crops. They are well drained soils with a moderate to high water holding capacity for plant growth. This nearly level, well drained soil formed in silty alluvial deposits. It is on floodplains of major rivers. Depth to bedrock is commonly more than 60 inches below the surface. The seasonal high water table is at a depth of greater than 3 feet from fall to spring. This soil is subject to common flooding in late winter to early spring. Permeability is moderate in the surface layer and moderate or moderately rapid in the substratum. Surface runoff is slow and the available water capacity is high. These soils are not suited to community development because they are subject to periodic flooding.
RuA	rumney sandy loam, 0 to 3 percent slopes

NONTECHNICAL SOILS DESCRIPTION REPORT
Tunxis Mead

Map Symbol	Soil name and description
	These soils have moderate limitations for cultivated crops. They are poorly drained soils with a moderate to high water holding capacity for plant growth. A seasonal high water table and flooding in the spring and fall is a limitation to crop production in most years. This nearly level, poorly drained soil formed in recent alluvial deposits. It is on the lowest parts of the flood plains of major streams and tributaries. Depth to bedrock is commonly more than 60 inches below the surface. The soil has a seasonal high water table at a depth of about 10 inches and is subject to frequent flooding, mainly from fall to spring. Permeability is moderate or moderately rapid in the surface layer and subsoil and rapid or very rapid in the substratum. Surface runoff is slow and the available water capacity is moderate. These soils are not suited to community development because they are subject to periodic flooding.
StA	suncook loamy sand, 0 to 3 percent slopes These soils have moderate limitations for cultivated crops. They are excessively drained soils with a low to very low water holding capacity for plant growth. They are subject to drought in most years and respond to irrigation. They can be planted earlier and harvested later than other soils. This nearly level, excessively drained soil formed in recent sandy alluvial deposits. It is on natural levees of floodplains. Depth to bedrock is commonly more than 60 inches below the surface. The seasonal high water table is commonly at a depth of greater than 3 feet in the winter and spring. It is subject to common flooding of brief duration in spring. Permeability is rapid or very rapid throughout. Surface runoff is slow and available water capacity is low. These soils are not suited to community development because they are subject to periodic flooding.
WvA	windsor loamy fine sand, 0 to 3 percent slopes

NONTECHNICAL SOILS DESCRIPTION REPORT
Tunxis Mead

Map Symbol	Soil name and description
	These soils have moderate limitations for cultivated crops. They are excessively drained soils with a low to very low water holding capacity for plant growth. They are subject to drought in most years and respond to irrigation. They can be planted earlier and harvested later than other soils. This nearly level, excessively drained soil formed in water-sorted sands. It is on outwash plains, terraces, kames and eskers. Bedrock is commonly more than 60 inches below the surface. The water table is commonly below a depth of six feet. Permeability is rapid or very rapid throughout. Surface runoff is slow and the available water capacity is low. These soils are well suited to community development. However, the rapid permeability of the subsoil may cause groundwater pollution in areas used for onsite septic systems. Steep slopes of excavations are unstable.

SOIL FEATURES
Tunxis Mead

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
LmA:									
LIMERICK	>60	---	---	---	---	---	High	High	Low
OnA:									
OCCUM	>60	---	---	---	---	---	Moderate	Low	Moderate
PoA:									
PODUNK	>60	---	---	---	---	---	Moderate	Moderate	Moderate
Re:									
RIVERWASH.									
RuA:									
RIPPOWAM	>60	---	---	---	---	---	High	High	High
StA:									
SUNCOOK	>60	---	---	---	---	---	Low	Low	High
WvA:									
WINDSOR	>60	---	---	---	---	---	Low	Low	High

SOIL FEATURES

Endnote -- SOIL FEATURES

This report gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is either "Soft" or "Hard". If the rock is "Soft" or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is "Hard" or massive, blasting or special equipment generally is needed for excavation.

Cemented pans are cemented or indurated subsurface layers within a depth of 5 feet. Such pans cause difficulty in excavation. Pans are classified as "Thin" or "Thick". A "Thin" pan is less than 3 inches thick if continuously indurated or less than 18 inches thick if discontinuous or fractured. Excavations can be made by trenching machines, backhoes, or small rippers. A "Thick" pan is more than 3 inches thick if continuously indurated or more than 18 inches thick if discontinuous or fractured. Such a pan is so thick or massive that blasting or special equipment is needed in excavation.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. This report shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which usually is a result of oxidation. Not shown in the report is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severe corrosion environment. The steel installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer. For uncoated steel, the risk of corrosion, expressed as "Low", "Moderate", or "High", is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as "Low", "Moderate", or "High". It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

WATER FEATURES
Tunxis Mead

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
LmA:									
LIMERICK--------	C	Frequent	Brief	NOV-MAY	0.0-1.5	Apparent	Nov-May	---	---
OnA:									
OCCUM----------	B	Occasional	Brief	FEB-APR	4.0-6.0	Apparent	Nov-Apr	---	---
PoA:									
PODUNK -------	B	Frequent	Brief	NOV-APR	1.5-2.5	Apparent	Nov-Apr	---	---
Re:									
RIVERWASH.									
RuA:									
RIPPOWAM--------	C	Frequent	Brief	OCT-MAY	0.0-1.5	Apparent	Sep-Jun	---	---
StA:									
SUNCOOK---------	A	Frequent	Brief	MAR-MAY	3.0-6.0	Apparent	Jan-Apr	---	---
WvA:									
WINDSOR---------	A	None	---	---	>6.0	---	---	---	---

WATER FEATURES

Endnote -- WATER FEATURES

This report gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms. The four hydrologic soil groups are:

Group " A". Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group "B". Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group "C". Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group "D". Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in this report, the first letter is for drained areas and the second is for undrained areas. Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes. This report gives the frequency and duration of flooding and the time of year when flooding is most likely. Frequency, duration, and probable dates of occurrence are estimated.

Frequency is expressed as "None", "Rare", "Occasional", and "Frequent". "None" means that flooding is not probable; "Rare" that it is unlikely but possible under unusual weather conditions; "Occasional" that it occurs, on the average, once or less in 2 years; and "Frequent" that it occurs, on the average, more than once in 2 years.

Duration is expressed as "Very brief" if less than 2 days, "Brief" if 2 to 7 days, "Long" if 7 to 30 days, and "Very long" if more than 30 days. The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons that form in soils that are not subject to flooding. Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods.

WATER FEATURES

Endnote -- WATER FEATURES--Continued

Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in this report are the depth to the seasonal high water table; the kind of water table, that is, "Apparent", "Artesian", or "Perched"; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in this report.

An "Apparent" water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

An "Artesian" water table exists under a hydrostatic beneath an impermeable layer. When the impermeable layer has been penetrated by a cased borehole, the water rises. The final level of the water in the cased borehole is characterized as an artesian water table.

A "Perched" water table is water standing above an unsaturated zone. In places an upper, or "Perched", water table is separated from a lower one by a dry zone. Only saturated zones within a depth of about 6 feet are indicated.

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, evaporation, or a combination of these processes.

This report gives the depth and duration of ponding and the time of year when ponding is most likely. Depth, duration, and probable dates of occurrence are estimated.

Depth is expressed as the depth of ponded water in feet above the soil surface. Duration is expressed as "Very brief" if less than 2 days, "Brief" if 2 to 7 days, "Long" if 7 to 30 days, and "Very long" if more than 30 days. The information is based on the relation of each soil on the landscape to historic ponding and on local information about the extent and levels of ponding.

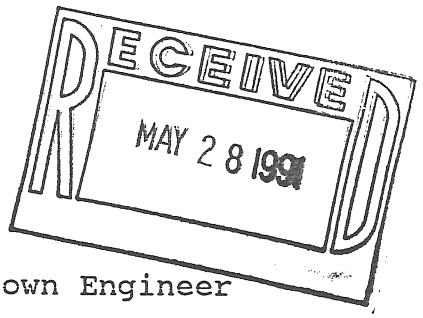
Appendix B

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

file: Tunxis Meade

Bureau of Water Management

May 24, 1991



Town of Farmington
1 Monteith Drive
Farmington, CT 06034-0948

Attention: James A. Grappone, P.E., Town Engineer

RE: Tunxis Mead Ballfield - Farmington River Floodplain

Dear Mr. Grappone:

This letter is in response to your request for assistance in reviewing the proposal to install ball fields adjacent to existing fields along the Farmington River. The following is a report of our findings and recommendations.

The property in question is located on the east side of Tunxis Mead Road in Farmington. The Tunxis Mead Master Plan dated November 14, 1988 shows four additional ballfields (two baseball and two soccer fields) to be located immediately east of the existing ballfields. A new entrance to the park is proposed from Red Oak Hill Road, approximately 1200 feet east of Tunxis Mead Road. This new access road snakes around a proposed pond and the new ballfields to the northwest portion of the site.

The four proposed ballfields are located in an area containing soils mapped as Suncook on 0 to 8 percent slopes. Suncook soils are excessively drained and are formed in sandy alluvial deposits. Suncook soils flood at least once every ten years for a period of two to seven days. Flooding occurs during the spring snow melt.

The flow patterns (as well as the flooding patterns) of the Farmington River in this location have changed over the years due to man's alteration of the river and natural migration of the river channel. To the east of the proposed ball fields, the river winds around the tip of what is known as a point bar, which protrudes into the river. The formation of this point bar is caused by eastern migration of the river channel.

In a natural state, flood plain forests are dynamic systems that are controlled by and adapted to the river. The Farmington River floodplain environment exhibits a rich and diverse array of vegetation including abundant spring ephemerals (spring flowers which last only for a short period of time). Many species of wildlife frequent the floodplain environment, including numerous migratory and

Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

resident songbirds. As water overflows the bank of the river during heavy flows, the vegetation on the floodplain acts to slow and detain the water.

Given the high value that this floodplain system possesses, we would recommend the following:

1. The two ball fields nearest the river be eliminated to concentrate the impact closer to the existing ballfields and to maintain as much of the floodplain area as possible. The new entrance road to the park could then be realigned to the west.

2. Any trails to be located in the floodplain should not be paved. They should be constructed from porous material such as crushed rock, wood chips, etc.

3. A pond located in the proposed area would more than likely fill up with sediment and require extensive maintenance. We would not advise digging a pond for passive recreation in this location.

4. When clearing trees for trails or picnic areas, as many of the larger trees as possible should be left standing.

If you have any questions regarding the above comments, please do not hesitate to contact Carla Guerra at 566-7160.

Sincerely,

Doug Cooper

Doug Cooper
Supervising Environmental Analyst
Inland Water Resources Division

DC:CAG

Appendix C

THE TOWN OF FARMINGTON

INCORPORATED 1645

TOWN HALL
1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 06032-1053

INFORMATION (860) 675-2300
FAX (860) 675-7140
"TOWN TALK" (860) 675-2301

February 23, 2000

Ms. Elaine Sych
ERT Coordinator
Eastern Connecticut Review Team
P.O. Box 70, 1066 Saybrook Road
Haddam, CT. 06438

Dear Ms. Sych

Enclosed are the additional copies of the maps you requested for the study.

During our walk the issue of alternative sites came up for the athletic fields. I believe the alternatives previously explored included the purchase of new land, locating the fields on other lands the Town owns on Meadow Road (these lands are either farmed or leased to a model airplane club) or placing the fields on the Westwoods property. The Westwoods site is located on Route 177 just north of Route 6. The property is predominantly used for a municipal golf course although there is some additional land available for other uses. The Town is currently building a firehouse on a portion of this remaining land.

Let me know if you have additional questions.

Sincerely

Jeffrey Ollendorf
Planning Director

c. File

ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a varety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area — an 86 town region.

The services of the Team are available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, landfills, commercial and industrial developments, sand and gravel excavations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.