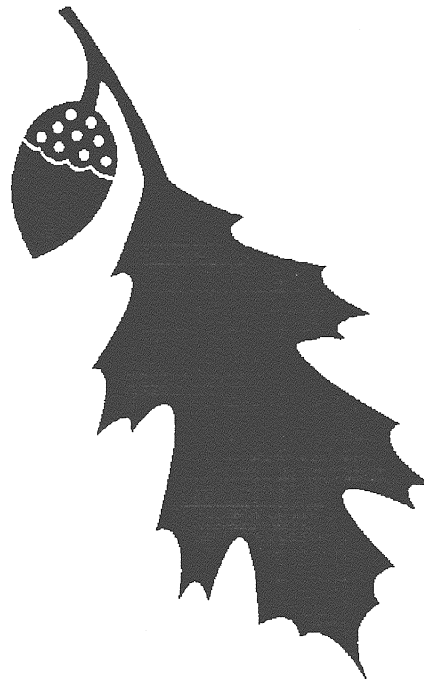


Valley Falls Park

Vernon, Connecticut

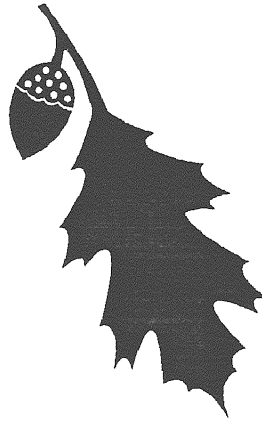


Eastern Connecticut Environmental Review Team Report

Eastern Connecticut Resource Conservation & Development Area, Inc.

Valley Falls Park

Vernon, 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
Conservation Commission
Vernon, Connecticut**

June 2002

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

Acknowledgments

This report is an outgrowth of a request from the Vernon Conservation Commission to the Tolland County Soil and Water Conservation District (SWCD). The SWCD referred this request to the Eastern Connecticut Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The 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 Wednesday, March 6, 2002.

David Askew	District Manager Tolland County Soil & Water Conservation District (860) 875-3881
Nicholas Bellantoni	State Archaeologist Office of State Archaeology (860) 486-5248
John Guskowski	Planner Capitol Region Council of Governments (860) 522-2217 Ext.29
Barbara Kelly	Program Assistant Tolland County Soil & Water Conservation District (860) 875-3881
Ann Kilpatrick	Wildlife Biologist DEP - Eastern District Headquarters (860) 295-9523

Alan Levere	Environmental Analyst III, Wetland Reviewer DEP - Environmental & Geographic Information Center (860) 424-3643
Brian Murphy	Senior Fisheries Biologist DEP - Eastern District Headquarters (860) 295-9523
Sherwood R. Raymond	Forester II DEP - James L. Goodwin State Forest (860) 455-0699

I would also like to thank Sheryl McMullen, conservation commission, Ginnie Gingras, Friends of Valley Falls, Dave Bower and Bruce Dinnie, Vernon Parks and Recreation Department, and Harry Jones and Tom Jenkins, Baystate Environmental Consultants, and other town officials 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 individual or additional visits to the project site. 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 town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in evaluating current management practices and planning for future stewardship of this town park.

If you require additional information please contact:

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

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Introduction

Introduction

The Vernon Conservation Commission has requested assistance from the Eastern Connecticut Environmental Review Team in a review of Valley Falls Park for the purposes of evaluating current management practices and in making recommendations for future management of the park that would best preserve natural resource values.

The ±193 acre town park is located on Valley Falls Road in the southeastern portion of Vernon. The park consists of a ±3.8 acre swimming pond, picnic pavilion, parking lot, hiking trails and a rail-to-trail along an old railroad line. The pond is man-made and was created by damming Railroad Brook. Most of the park is wooded with some reverting meadow areas. The park has a long history and many reports and studies have been generated over the past 30+ years. (See Appendix A for a listing.)

The town has recently approved a plan to dredge the pond which has experienced a substantial deposition of sediment which threatens to degrade the recreational value of this waterbody.

Objectives of the ERT Study

The Conservation Commission is requesting assistance because they have concerns about the dredging of the pond, trail locations, control of erosion on steep slopes, reclamation of the meadow areas and managing public access. Concerns with the dredging project include road construction, use of heavy machinery, deposition of dredge spoils, aquatic resource impacts and protections, wildlife resource impacts and protections. Other issues include trail maintenance and access issues. The commission desires to assess the current and future state

of the park as a whole to ensure that management will best foster a natural environment that will continue to host flora, fauna, clean water and recreational activities that are sustainable and harmonious with each other.

The ERT Process

Through the efforts of the conservation commission this environmental review and report was prepared for the Town of Vernon.

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

The review process consisted of four phases:

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

The data collection phase involved both literature and field research. The field review was conducted on Wednesday, March 6, 2002. Some Team members made individual and/or additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

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

Figure 1.

Location and Topographic Map

Scale 1" = 2000'

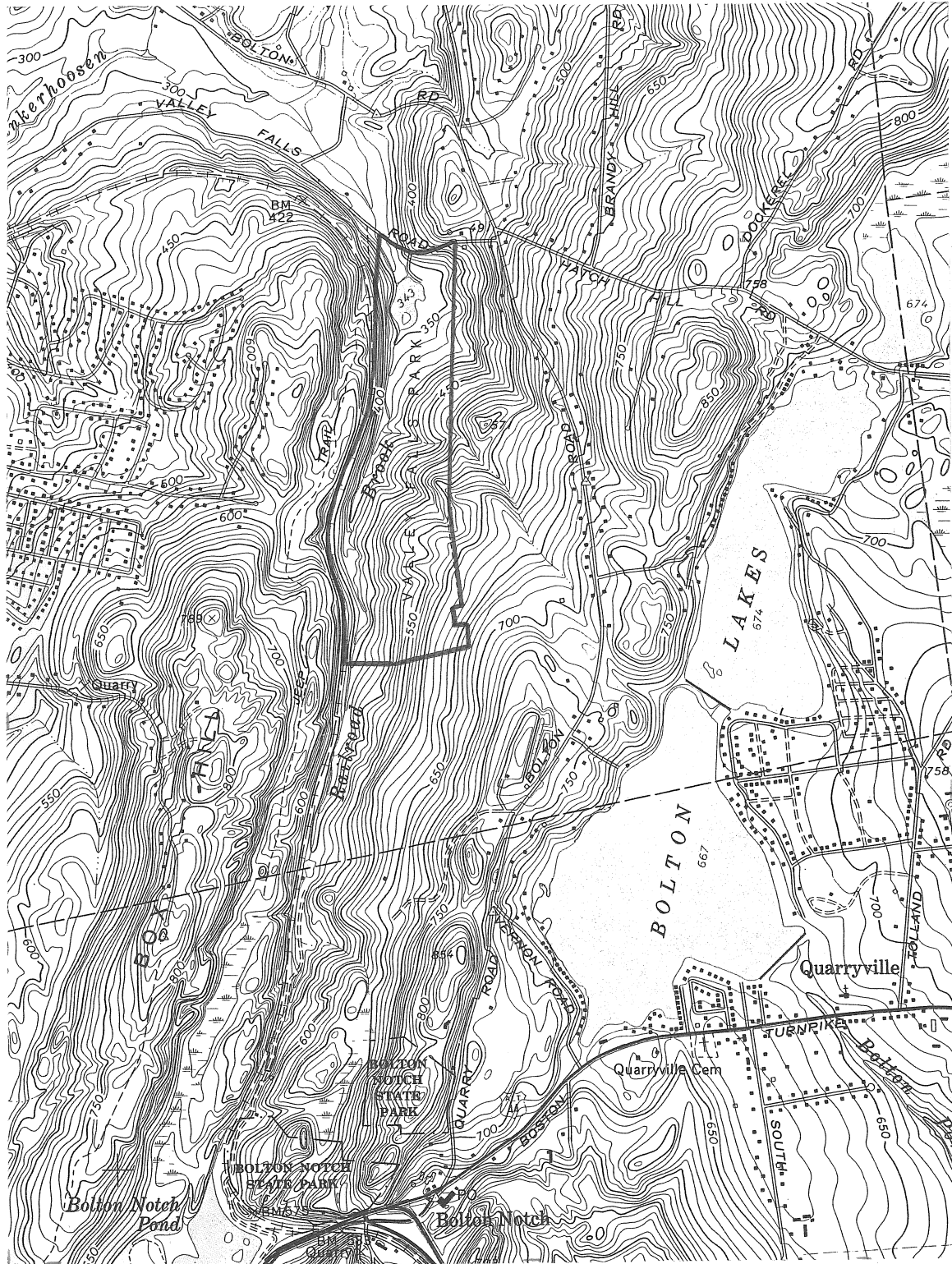
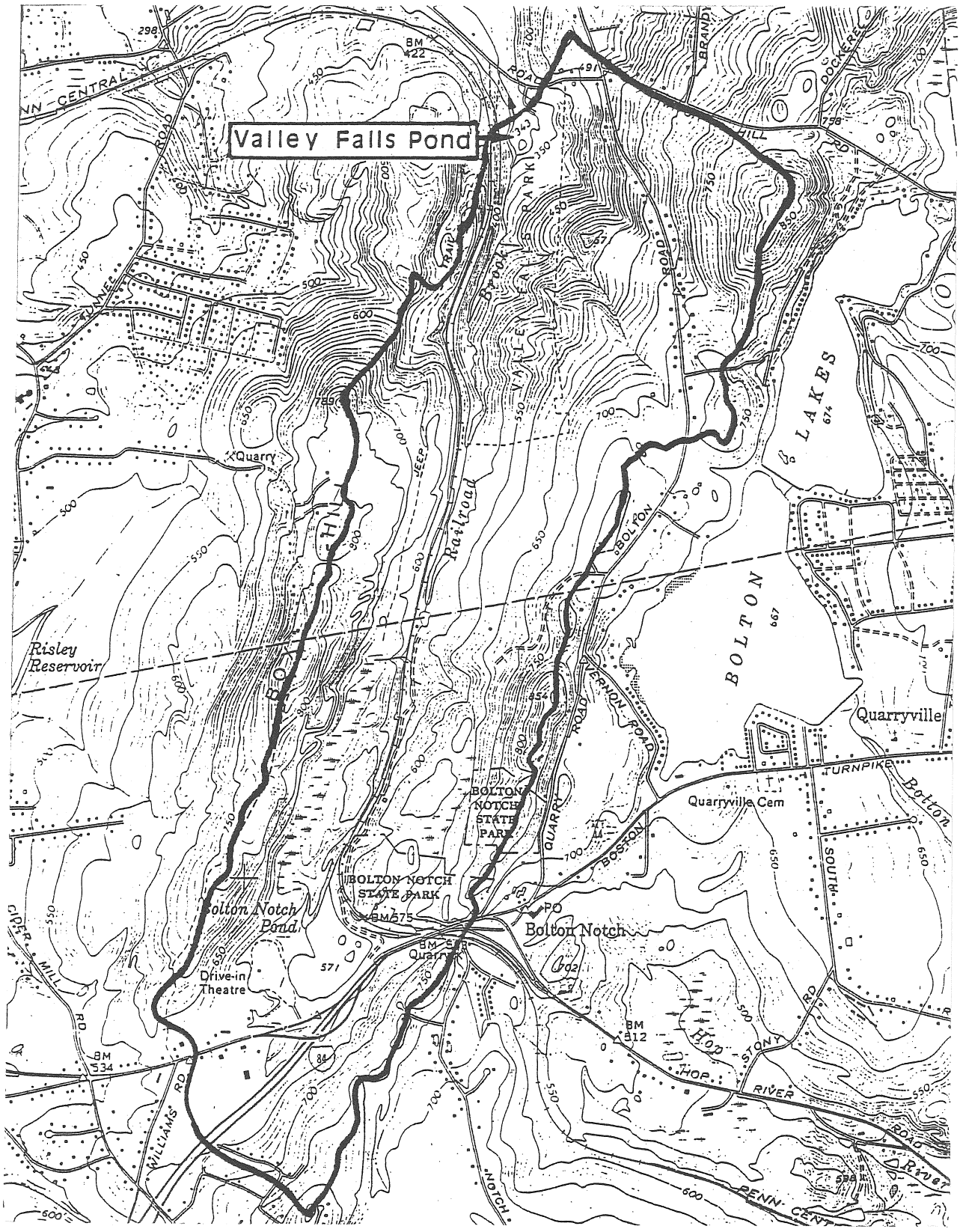


Figure 2.

Valley Falls Drainage Basin



Soil and Water Conservation District Review

Numerous studies of the park have been conducted over the years and there is a lot of information available regarding natural resources. Much of this material provides baseline information, such as soil maps, that is typically part of the ERT report. Therefore, the following narrative focuses on the proposed pond dredging and specific management issues requested by the Conservation Commission.

A site inspection was conducted on 3/6/02. The park is bordered on the west by the rail trail that follows the former New York-New Haven-Hartford railroad line. Railroad Brook runs through the park from the south to the north, where it enters Valley Falls Pond. Comments on the dredging are based on the plans dated April 2001.

Soils

- The steep (15-35%) slope on the west side of the pond contains Hollis extremely rocky fine sandy loam. The meadow areas to the east/southeast of the pond are primarily Sudbury fine sandy loams on 0-6% slopes.
- Charlton stony fine sandy loam on 15-25% slopes, Charlton very stony fine sandy loam on 15-25% slopes, Hinckley gravelly sandy loam on 3-15% slopes, Hollis very rocky fine sandy loam on 15-35% slopes, Merrimac sandy loam on 3-8% slopes, Manchester gravelly sandy loam on 3-15% slopes, and Terrace escarpments make up the balance of the upland soils.
- Sudbury soil is moderately well drained. The drainage classes of the other soils range from well drained to excessively drained.

- Sudbury soil has a low erosion hazard.
 - Hinkley, Hollis, Manchester, and Merrimac soils have a low to medium erosion hazard.
 - Charlton and Terrace escarpment soils have a medium erosion hazard.
-
- The wetland soil along Railroad Brook is Alluvial land. There is a low erosion hazard with all this moderately well drained soil (see discussion below regarding pond sedimentation).

Proposed Dredging

In the ERT request, the Conservation Commission expresses a number of concerns regarding the pond dredging. Most of the discussion below focuses on specific issues of regarding the dredging. However, there was some discussion during the ERT, which questioned the need to dredge. Basically, that question is a management issue, best suited to debate at the local level. Natural resource inventories and "experts" can only provide basic information to be considered during discussion of these critical policy issues.

That said, the District recognizes the need to maintain public places as public places. Valley Falls provides a valuable resource to the town and this value is reflected in the number of people who use it. If the pond is going to be used for swimming, it must be maintained, and the dredging is necessary to maintain this use. All uses of the park must be weighed equally to provide the maximum public benefit - no single use should drive management. Uses that have been determined by the town to be inconsistent with other park uses, such as the use of motorized vehicles, have been appropriately banned.

Sediment Sources

One of the most important issues to consider when developing a dredging plan is to determine if there are upstream sources of sediment that can be eliminated. Baystate Environmental Consultants, Inc. (Baystate) investigated the watershed and determined that there are no sources other than the natural bedload of the stream and internal stream dynamics (bank erosion). The District is familiar with most of the watershed and was involved with the DEP in the restoration of 1000 feet of Railroad Brook (part of the project involved bank stabilization). The District concurs that there are no apparent major sources of sediment other than bedload. The Town should attempt to monitor the progress of the proposed dam repair at Bolton Notch Pond. This is the only known future source of sedimentation to Valley Falls Pond.

Baystate prepared a Report on Sedimentation and developed the dredging plans. The plans include installation of a 1000 cubic yard forebay and a permanent access road. Dredging will occur in two areas: at the inlet to the pond and at the beach. The plan for the beach includes construction of an upslope surface drain and a reconfiguration of the beach area. The plan for this area appears consistent with existing uses and upslope drainage control will help maintain the beach. Regular maintenance of the beach, including dredging and sand reclamation, is a fact of life.

Based on estimates provided by Baystate, the proposed forebay, at 1000 c.y., should provide a minimum of 2-3 years storage. The forebay design is typical to others installed within Connecticut and should serve its intended purpose. The benefits of forebays are well established. They typically reduce future impacts to waterbodies by concentrating sediment deposition within a discreet location, thereby protecting the rest of waterbody from future sedimentation and reducing the need for future dredging of the whole system. In addition, they reduce the cost of future maintenance.

Wetlands

Wetland impacts associated with the dredging include permanent filling associated with the access road and elimination of a vegetated “sandbar” within the pond. The sandbar supports a diverse mix of grasses and herbaceous vegetation. However, it appears that woody vegetation is beginning to colonize. The proposed permanent access road follows an existing foot trail for a short distance and then proceeds through a diverse wetland area south of the pond. There doesn’t appear to be a better alignment for the proposed road that would reduce wetland disturbance. The area is very flat and it is not clear how ground and surface water flows through the area. Roads constructed on very poorly drained soils often alter the hydrology of wetlands by increasing ponding on the upgradient side.

Recommendation: The project engineer should explore the need for additional cross culverts under the road in the area between wetland flags 52-84. In addition, clearing for the road should be carefully managed and supervised to minimize vegetation removal. The access road should be seeded after the dredging operation. The access road will be used by the public to access the pond unless it is gated or signs are used to discourage its use.

There is no staging area shown for loading of trucks or turning trucks around in the area of the dredging. It is likely that more area will be required for the operation than that shown on the plan. The erosion control plan does not discuss truck loading and the loading area is not shown on the plan.

Recommendation: The logistics of the loading operation should be prepared prior to initiating the dredging operation. In particular, a staging area should be defined. Some provision should be made for preventing dredge spoils from leaking along the access road through the wetland. The contract should either specify “sealed” trucks or develop a plan for partially dewatering spoils prior to loading.

A wetland mitigation plan has been proposed to compensate for the proposed wetland alterations associated with the dredging. The plan involves wetland creation within a field adjacent to the pond. The District did not receive details of the mitigation plan relative to wetland functions and values. Typically, well developed mitigation plans attempt to match mitigation with wetland functions and values to be lost. Based on the information presented, it is difficult to understand how the proposed plan replaces the wetland resources to be altered. All things considered, maintaining and enhancing the existing field (see discussion below) may have more general habitat benefits than creating an isolated wetland pocket.

Recommendation: If the wetland creation plan is required as a permit condition, the hydrology of the area should be investigated for at least a year before construction. Failure to understand hydrology is the most common cause of failure of wetland creation.

The ERT request raises the question of vernal pools in the area of the road and dredging. No vernal pools were noted during our inspection. The small ponded area south of the trail is most likely not a vernal, based on observed hydrology, small size, and shallow depth.

Meadow Restoration

Dredge spoils are to be placed within approximately 1/2 acre of an existing meadow and seeded. Based on our experience with other dredging projects, dredge spoils are a very poor growth medium and will not seed well without amendments of organic material. Spoils typically require at least a 50/50 mix of spoils to organic matter.

Recommendation: Amend dredge spoils with at least 50% organic compost. The District has worked with material composted by the Town of Vernon from leaf pick-up. This material would work well as a soil amendment. Obviously, trucking material to the site will increase the cost of the project.

Interest has been shown by the Conservation Commission regarding meadow restoration within the fields east of the pond. Both fields are currently overrun with multiflora rose and require some maintenance.

Attached is a guide for conserving grassland bird habitats. (See Appendix B) It should be noted that maintaining these areas may require a significant amount of continued effort. If the town does not have the resources to maintain a specialized habitat, either a volunteer group, contractor, or other conservation organization should be enlisted for long term maintenance of the meadows.

Trails

Concern has been expressed about the location and impact of trails throughout the park. Relocating trails to areas where people are not interested in walking can be futile, especially if there are well-developed networks to preferred places. Main trails were inspected, including those on the slope on the west side of the pond, through the wetland along the brook, and through the two meadows and pine stand. No signs of significant erosion were noted on any of the trails. Observations regarding specific trails are discussed below.

Hemlock Hill: A relatively new trail has been developed up the slope and the previously used trail has been covered with brush to prevent use. The soil on the slope is relatively resistant to erosion. Problems could develop if overuse compacts soil and creates concentrated flow. However, currently there is no erosion or serious compaction. There are no signs that soil material is being carried to the pond. Brush on the slope, resulting from the salvage cut of

hemlocks, is being effectively used to control foot traffic. Unless alternative access to the rail trail is developed, people are likely to access from Valley Falls and the slope is the shortest path. It appears that the slope can maintain a fair amount of traffic without damage. If compaction becomes a problem, immediate installation of water bars will be necessary to get water off the trail.

In terms of management of the slope, it may be best to let nature take its course, as opposed to replanting with an introduced species. The soils are shallow and well drained - plants that can tolerate the shallow soils will colonize naturally.

Stream Trail: The trail through the stream corridor is well used and moderately compacted. However, it does not appear to be contributing to stream or bank erosion. The Parks and Recreation Department has been adding mulch to the trail - this should reduce future compaction significantly. Compaction can kill trees by smothering roots, and there are many trees with exposed roots along the trail. Straight mulching will help by preventing further compaction and allowing more air-flow. Fortunately, many of the trees are red maples, which are tolerant of compaction. Attached is some information on "vertical mulching", which may reduce the damage to roots from compaction. This is a somewhat labor intensive job, but it may improve the survivability of trees with severe compaction. (See Appendix C)

Meadow/Red Pine Trail: This trail traverses the meadows and red pine stand. It is generally in good shape. The pine stand is potentially hazardous and should be cut. Allowing the area to revegetate naturally will provide a nice area of secondary growth.

Currently, there is no signage in the park to direct hikers. Placing signs in some strategic areas, either to direct flow, or discourage use of sensitive areas would help with trail management.

General Management Issues

The Conservation Commission raised a number of issues regarding disruption of wildlife, location of trails and general "overuse" of the park. These issues are becoming common in parks throughout the country and there are few simple solutions. Restricting general use is inconsistent with management of public places. Restricting uses that are destructive will usually garner public support if the reasons for the restrictions are clearly articulated. Managing access and the location of access is the most practical and successful strategy. For instance, if the meadows are going to be managed for grassland bird species, the trail should be located to one edge of the meadow to maximize the area left for birds. Some of the existing shrubs could be left remaining on the meadow side of the trail to provide a buffer between the grasslands and human disturbance.

Wetland Resources Review

Site Overview

This municipal owned property is located in the southeast part of town and encompasses ±193 acres. Included on the site is Valley Falls Pond of just under four acres in size. Railroad Brook runs through the park south to north along the west boundary. A tributary joins Railroad Brook about a quarter mile below the pond after flowing in from the east southeast.

The elevation of the parcel ranges from over 700 feet where the park extends east towards Bolton Road to about 320 above sea level where Railroad Brook passes under Valley Falls Road at the northern boundary of the property. In general, the land surface slopes from about 600 feet plus on the east down to the stream course located on the west side. Railroad Brook enters the property from the south at about 450 feet above sea level and leaves the property along the north boundary as mentioned above.

The land surface of the park, and very nearly the entire Railroad Brook watershed, is forested. The exceptions to this being one open field along the east central finger of property and other open meadow and shrubby fields north of, and southeast of, the pond.

The dominant wetlands as delineated by soils mapping are found along the watercourses and in the vicinity east and southeast of the pond.

National Wetland Inventory Classification

The U.S. Fish and Wildlife Service has mapped and classified the wetlands and watercourses using a system of codes for all the topographic maps in the state.

This parcel occurs on the Rockville quadrangle, 1:24,000 scale National Wetland Inventory (NWI) maps. Because of the scale of mapping, the inventory classifies wetlands that are the largest or most conclusively observed on the aerial photography.

At this location all the wetlands observed are mapped as palustrine wetlands, with palustrine being defined as: *of or pertaining to a swamp; marshy*. All of the wetlands with the exception of the pond carry the classification of PFO 1E. This is palustrine (P), forested (FO), mixed broad-leafed deciduous (1), seasonally saturated (E). The pond is classified as POWH. This is Palustrine (P), Open water (OW), Permanent (H).

Water Quality

The surface water quality (which includes the wetlands and watercourses) of the parcel have all been mapped by the Department of Environmental Protection as being *Class A*. Assumptions are made on many of the watercourses over the extent of the map and not every watercourse gets quality tested, but with no known sources of pollutants and this being a headwaters wetland it has been given the water quality classification of *A*.

In addition, the groundwater classification for the area is also *A* for the same reasons listed above. The descriptions of these classifications are:

Class A

Designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

Discharge restricted to: same as allowed in AA (i.e.: Discharge restricted to: discharges from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges.).

Class GA

Designated uses: existing private and potential public or private supplies of water suitable for drinking without treatment; base flow for hydraulically connected surface water bodies.

Discharge restricted to: same as for GAA (i.e.: discharges limited to: treated domestic sewage, certain agricultural wastes, certain water treatment wastewaters) and discharge from septage treatment facilities subject to stringent treatment and discharge requirements, and other wastes of natural origin that easily biodegrade and present no threat to groundwater.

Source: *Protection Summary of the Water Quality Standards and Classifications (1997)*, Connecticut Department of Environmental Protection, Bureau of Water Management.

Soils

The wetland soil information for this parcel was taken from existing Natural Resources Conservation Service mapping which was completed in the 1990s. The wetland areas delineated on this mapping are shown on the attached sheet. The wetlands the Team visited on the field walk were all forested wetlands with a full overstory of trees and a mixed, often thin, understory of shrubs and herbs. The wetlands are dominated by red maples.

Four soil types make up these mapped wetlands. They are from the pond south:

- Alluvial Soils (Fluvaquents) often exist as narrow strips along streams consisting of sandy or sandy and gravelly riverwash sediments;
- Ridgebury, Leicester and Whitman soils complex, which are extremely stony; and with a varied rating of poorly drained and very poorly drained within the complex. These soils, along with the alluvial soils, are dominant on the parcel;
- Ridgebury Fine Sandy Loam soils generally occurs in small, widely scattered areas and has formed over glacial till; and
- Winooski Silt Loam soils are typically flooded once a year and are fine textured to silty. They are considered an alluvial soil being the result of stream deposition and seasonal flooding.

As mentioned above and documented on the NWI maps, the wetland areas are all forested and in many cases, especially near the pond, featured at the time of the field walk a damp, leaf covered, forest floor of woody debris and moss.

Comments

To best consider the work proposed being done to Valley Falls Pond, an understanding of the water system it is part of should precede the discussion.

Function of the Breached Pond

Valley Falls Pond is ~11,300 feet downstream from Bolton Notch Pond, and functions as a sediment basin for 2.14 miles of stream. Until approximately 1973 (plus or minus a year), there was a pond between Bolton Notch Pond and Valley Falls Pond. This was Bolton Club Pond (also mapped as Vermides Pond) which

was just slightly larger than half an acre and was about 4,150 feet downstream from Bolton Notch Pond. It served as a sediment basin for the stream length between it and Bolton Notch Pond. This pond appears on the 1944 USGS Topographic map so it was on the landscape for at least three decades before it breached, and possibly longer. Thus, for years Valley Falls Pond was the sediment trap for only about 7,150 feet of stream.

But when the dam ceased to exist at Bolton Club Pond, Valley Falls Pond became the sediment basin not only for the 7,150 feet of stream from Bolton Club Pond to Valley Falls Pond but for all 11,300 feet of stream course, all the way upstream to Bolton Notch Pond.

In addition to this increase of 4,150 feet of stream length, it is likely that at least some, and possibly a great deal, of the accumulated deposition of Bolton Club Pond was moved downstream over the years and deposited in Valley Falls Pond.

Since Railroad Brook drops 227 feet in elevation from its exit point at Bolton Notch Pond (571 feet) to its entrance into Valley Falls Park Pond (343 feet), this drop in elevation over the 11,300 feet of stream course is a gradient of almost exactly 2%, or 106 feet per mile. By definition this is a very steeply sloping channel which has the capacity to move large sediment loads.

Thus, in the roughly thirty years since the breach of the dam, Valley Falls Pond has accreted a sediment load that now needs to be reduced.

Wetland Replacement

The replacement of the two for one acreage is a generous idea and, gladly, one that can be carried out here because there are no major space limitations. Two considerations that might be discussed before work begins:

- The outline of the replacement area is roughly an east - west rectangle with its north border intercepting the existing wetland. Its south border is roughly a straight line ultimately contacting the upland dredge disposal area. If that south border were more of a meandering or serpentine line then the length of it would be increased thus creating more edge distance. This transitional edge ecotone can be a valued wildlife area and increasing its distance would add habitat value to its length.
- The bottom profile of the replacement wetland is currently proposed as flat. Consideration might be given to adding a few tussocky or mogully areas to further diversify the wetland with these small island/upland interspersion areas.

Stream Crossing

At the point where the proposed service road will cross the intermittent stream course, where the footbridge is now, the Town may want to consider the use of a bottomless box culvert instead of side by side 30 inch pipes to preserve the integrity of the stream bed if the area is deemed worthy of protection.

Vernal Pools

The possibility was brought up in the ERT field walk that vernal pools exist on the site. These were located near the area of the existing foot bridge and further down the trail approaching the proposed location of the forebay. This possibility should be investigated and documented as soon as is possible. The presence of certain species (wood frogs egg masses, fairy shrimp, etc.) would be recognized as obligatory vernal pool residents but these need to be identified in the field by a professional. If these wet areas are vernal pools, the proposed service road

should be reevaluated for impact to this wetland resource and the upland areas deemed necessary for the protection of the vernal pool species.

Pond Turtles

A question arose regarding the preservation of the pond's turtle species while the pond was dewatered. It is likely that typical pond species are present there - Painted turtles and Snapping turtles. The snappers may very well burrow deep into the mud for the duration of the work, but the painted turtles may be better off if hand collected. If this is the case, they should be removed to water within the same drainage. The best relocation would be their removal to Bolton Notch Pond upstream. (Personal communication, Michael Klemens, 3/28/02)

Other Issues

The placement of the access road

Since the maintenance road will ultimately have to enter the wooded wetland to approach the area of the forebay, care should be given to preserve and protect the largest of the various trees in its path maintaining as closely as possible the shaded conditions which now exist.

Open meadow management

The two main meadow areas that the Team visited might be managed differently to keep the vegetation as diverse as possible. One could be mowed at appropriate intervals to provide a habitat dominated by grassland species. The other could be managed for its shrub cover that other species would take advantage of. The size of these areas, while not all that large, could still provide specific habitats and with the multitude of dead standing trees in the area and grassy areas below the opportunity for raptors could well be enhanced.

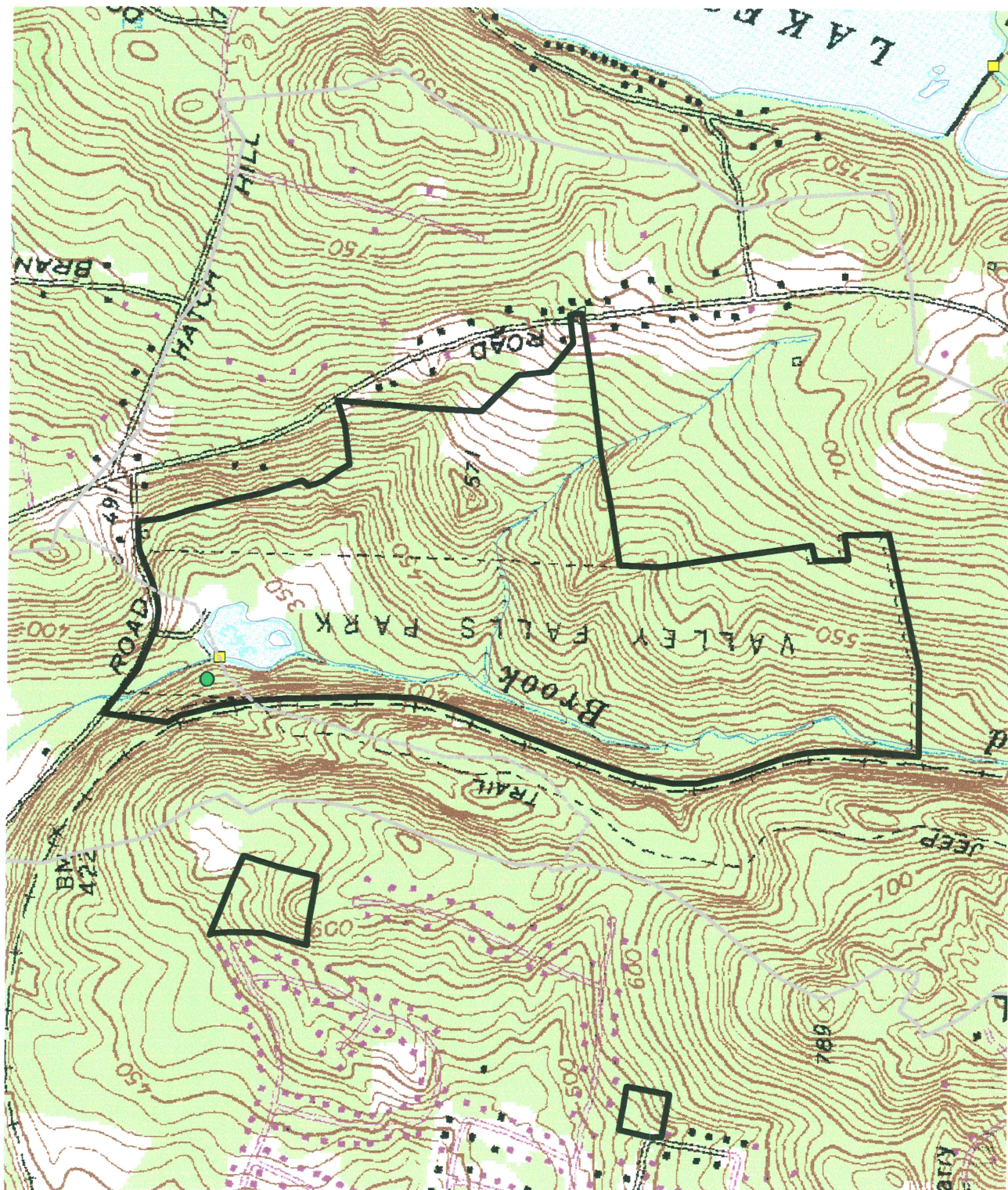
Trail system

The Town should explore the possibility of making use of or tying into abutting state owned and/or town owned properties for its trail system. This might work to ultimately move some of the intensity from existing trails with the knowledge that hikers could venture off in other directions from the same starting point.

Valley Falls Park, Vernon

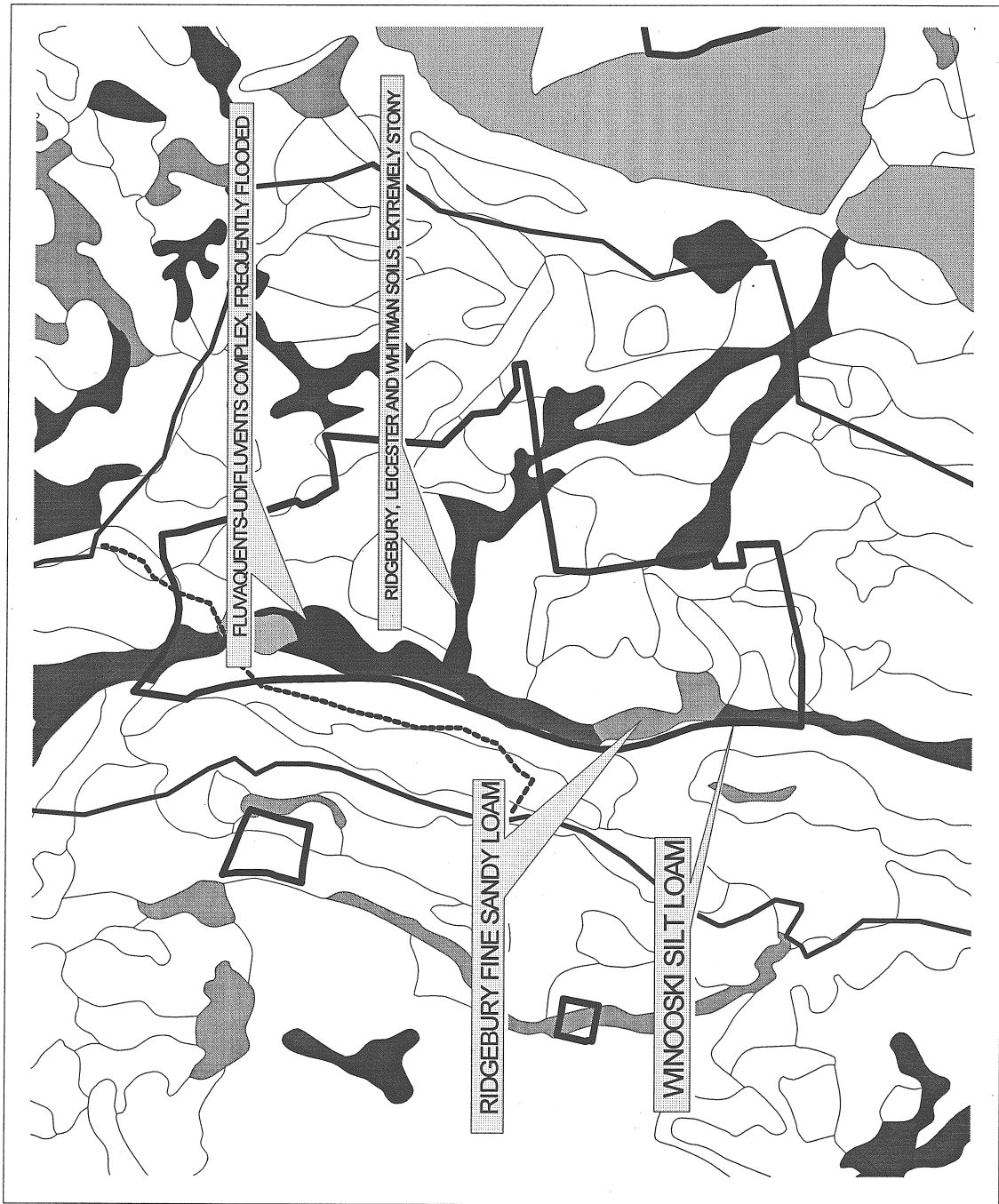
Boundary for this map and the following maps taken from the DEP GIS system municipal property coverage.

Figure 3.



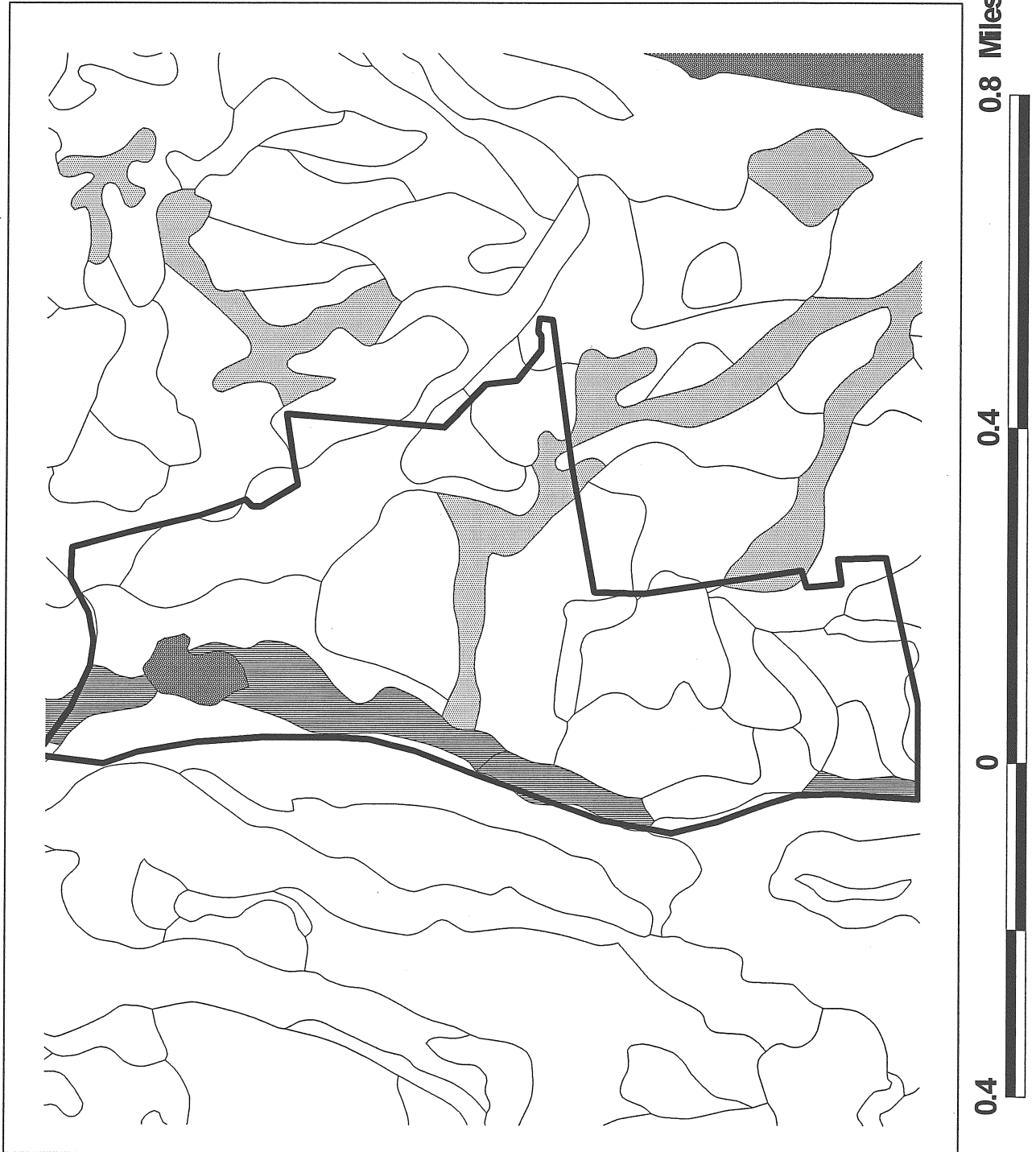
Valley Falls Park Soils

Figure 4.



Valley Falls Park Soils

Figure 5.



Wildlife Resources

The following comments will address anticipated impacts to wildlife associated with the proposed dredging of Valley Falls Pond. More specific guidance with respect to wildlife habitat enhancement and wildlife-based recreation opportunities will be provided to the Town as long-term planning for Valley Falls Park proceeds.

Significance of Valley Falls Pond to Wildlife

Man-made ponds dominated by deep, open water do not support a high diversity of wildlife as compared to emergent marshes, wet meadows and other shallow wetlands. However, they do provide food and cover for fish, frogs, turtles, aquatic invertebrates, muskrats, river otters and raccoons, and can serve as nesting and temporary resting sites for waterfowl such as Canada geese and mallards. The eastern and southern portions of the pond provide the greatest value to wildlife due to the interspersed of grasses, sedges and emergent vegetation in the shallow water areas along the pond edge and the peninsula.

Common reptiles and amphibians such as red-spotted newts, northern spring peepers, bullfrogs, green frogs, pickerel frogs, northern water snakes, painted turtles, and snapping turtles can be expected to use Valley Falls Pond. It is possible that spotted turtles also may be found in the more shallow, vegetated portions of the pond and peripheral wetlands, although the availability of this habitat is limited. With exception to the spotted turtle, these species are considered wetland "generalists," in that they are adapted to living in a wide variety of aquatic habitats including those altered or created by human activity,

e.g., ponds and reservoirs. Populations of these species are widespread in distribution and increasing, whereas populations of species such as wood frogs and spotted turtles that require shallow water wetlands that are structurally diverse (contain several layers of shrubs and vegetation) and interconnected by unfragmented uplands, are declining.

Frogs lay their eggs in ponds and shallow wetlands beginning in late March or early April. The peak period of metamorphosis (transformation from larval to adult stage) occurs during July and August. The egg-laying period for red-spotted newts extends from late March through May. They have three stages of development, an aquatic larval stage, a terrestrial stage, and an adult aquatic stage. They require large areas of wooded habitat located adjacent to breeding sites, but also may be found in pastures and meadows. Newly-metamorphosed newts (efts) will leave the pond beginning in late August and move into upland habitats where they will live for 2 to 7 years before returning to water.

Overland movements by gravid (containing fully shelled eggs ready for laying) female turtles occurs from May through July. Turtles will nest in upland habitats including embankments, pastures, railroad beds, lawns, and cultivated fields with well-drained, sandy soils. Although the timing of hatching can be quite variable depending on temperature, sunlight and nest location, most hatching occurs from late August through October. Boxturtles and wood turtles, two Species of Special Concern in Connecticut, have been documented in the area. Wood turtles require riparian habitats bordered by floodplain, meadows, or woodlands. Both Railroad Brook and the Tankerhoosen River provide high quality habitat for this species. The terrestrial habitats used by wood turtles during summer for nesting and feeding include pastures, old fields, woodlands, powerline cuts and railroad beds bordering on or adjacent to streams and rivers. Nesting occurs from mid-May through July. As fall approaches, wood turtles will return to streams where they often will congregate in small groups at hibernating sites, i.e., undercut banks and deep pools. Box turtles are primarily

terrestrial, although they are typically found within close proximity to small streams or ponds. They prefer overgrown fields, powerline cuts and woodlands that have been logged where adequate cover (herbaceous plants and shrubs) and sunlight exist.

Anticipated Impacts

Winter survival of amphibians and reptiles is dependent on the availability of hibernation habitat. Some species will hibernate in the muddy bottoms of permanent waterbodies and in deep pools and undercut banks in streams; they begin moving into these habitats in late October. Partial drawdowns of lakes and ponds conducted before December 1 or until a steady freeze generally will not pose a severe problem for amphibians and reptiles. However, completely draining the pond in the fall and into the winter months will jeopardize winter survival due to a direct loss of habitat, increased sedimentation and turbidity, and potential for exposure to freezing temperatures. In addition, increased sedimentation and turbidity can seriously impact fish reproduction and survival and degrade feeding and wintering habitat for amphibians, reptiles and aquatic mammals downstream.

Recommendations

The recommended time frame for construction is July through September.

For most wildlife species that use the pond and adjacent uplands, the negative impacts of construction can be significantly reduced by conducting activities outside of the peak breeding period (April through August.) Draining and dredging from mid September (end of breeding period) to mid-October (prior to hibernation) would have the least impact on the pond's amphibian life. However, this time frame also overlaps with the spawning period for native brook trout. Taking into account the great importance of Railroad Brook and the

Tankerhoosen River to fisheries resources, priority should be given to protecting downstream spawning habitat from turbidity and sedimentation from October through May.

De-watering the pond during the summer months will result in direct mortality (i.e., physical removal, stranding, and increased susceptibility to predation within the small pockets of remaining open water) of the majority of the amphibian life in the pond, however, the species impacted have high reproductive rates and will readily re-colonize the site. Conducting construction activities during the summer months also would reduce potential impacts to wood turtles and other species that use Railroad Brook and the Tankerhoosen River for feeding and hibernation. Effort should be made to maximize survival of adult turtles during the construction process; this is particularly important for box turtles and wood turtles since they take at least 10 years to reach sexual maturity. Silt fences should be staggered in shorter lengths and removed immediately following construction so as not to impede amphibian and reptile movements between the uplands and stream/riparian corridor.

Consider other alternatives for placement of dredge material and mitigating for the loss of wetland habitat.

Rather than create additional disturbance within the wetlands and field, consideration should be given to locating the spoil material in a currently disturbed site or site less valuable to wildlife, e.g., manicured lawn area adjacent to the beach. Trying to mitigate for wetland losses as proposed may do more harm than good. More often than not, wetland mitigation sites are colonized by generalist species and create ideal conditions for colonization by invasive plants. It may be more beneficial to focus on the control of invasive plants and replanting with native shrubs along the tributary stream and field/wetland borders.

Carefully evaluate the potential impacts of the proposed project relative to the degree of use of the swimming area versus the importance of the park to wildlife resources and current/future opportunities for compatible wildlife-based recreation.

The most significant/diverse habitat for wildlife associated with the pond will be eliminated or disturbed if the project is permitted. The Town should carefully weigh how much additional benefit will be gained versus what will be lost in terms of wildlife resource values and associated wildlife viewing and environmental education opportunities. Valley Falls Park lies within an extensive corridor of largely undeveloped land and protected open space that contains high quality streams and a diversity of habitats. Tremendous opportunities exist for the Town to maximize long term benefits to wildlife and the public by focusing its resources on habitat enhancement and maintenance including erosion and invasive plant control, managing the fields to promote plant and wildlife diversity, and implementing silvicultural practices to promote forest health and improve food and cover for wildlife. Given the property's high resource value and importance to the health of the watershed, public recreation would best be restricted to passive uses, e.g., hiking, bird-watching, fishing and environmental education.

References

Hank Gruner, personal communication.

Klemens, M.W. 1993. Amphibians and Reptiles of Connecticut and Adjacent Regions. State Geological and Natural History Survey of Connecticut. Bulletin 112. 318 pp.

Fisheries Resources

Note: This is a copy of correspondence from Brian Murphy to Melissa Toni at the DEP Inland Water Resources Division regarding the Town of Vernon's Water Diversion Permit application. The report is dated 12/27/01.

Project Scope

The project involves the rehabilitation of the Valley Falls Pond, an impoundment of Railroad Brook. Specifically, the following activities will take place:

- (1) removal of 3,000± cubic yards of sediment immediately below the inlet of Railroad Brook,
- (2) construction of a permanent sediment forebay at the inlet area,
- (3) construction of an access road to the forebay,
- (4) restoration of the public beach area, and
- (5) stormwater management improvements to address non-point source pollution sources at the beach area.

The pond will essentially be drained to accomplish the work, leaving approximately a 0.5 acre basin of water that will be 2 feet deep. A temporary filter fabric lined diversion channel will be constructed to isolate sediment removal and forebay construction at the inlet area. The proposed duration of construction is for a three month period during the non-summer months. All dredged materials will be placed within an adjacent field and stabilized. A wetland replacement area (11,000 SF) is proposed adjacent to the field as mitigation for impacts.

Environmental Significance of the Area/Fishery Resource

Valley Falls Pond is a 3.7 acre man-made impoundment that supports a warmwater pond fish community. The fish community in the pond is expected to be comprised of largemouth bass, yellow perch, various sunfish species, and brown bullhead.

Railroad Brook upstream and downstream of Valley Falls Pond supports a high quality coldwater fish community comprised of native brook trout, wild or naturally reproduced brown trout and blacknose dace populations. Relative to the trout community, Railroad Brook above the pond mainly supports a native brook trout population whereas downstream of the dam there is a mixed brook trout and brown trout population. Railroad Brook confluence's with the Tankerhoosen River, just 0.49 miles downstream from the base of the dam.

The Tankerhoosen River supports a very high quality and diverse coldwater fish community. A portion of the river within the Belding property is managed by the DEP Inland Fisheries Division as a "Class I Wild Trout Management Area", which supports abundant and catchable size wild brown trout and native brook trout. Fishing within this special management area is restricted to catch-and-release with no closed season.

Project Impacts

1. Turbidity and downstream sedimentation impacts due to this dredging project are a major concern. Albeit it appears that best management practices have been incorporated into project design, inevitable there is bound to be turbid waters conveyed downstream sometime during the three-month construction period. Given the presence of a very high quality trout fishery in Railroad Brook and the Tankerhoosen River, it is critical that downstream fish communities and their

habitats are afforded maximum protection from the adverse affects of turbidity and sedimentation. Potential adverse impacts are as follows:

- (1) Sediment reduces the survival of resident fish eggs and hinders the emergence of newly hatched fry,
- (2) Sediment reduces the survival of aquatic macroinvertebrates. Since aquatic insects are important food items in fish diets, reduced insect populations in turn will adversely affect fish growth and survival,
- (3) Sediment reduces the amount of usable habitat required for spawning purposes. Resident fish may be forced to disperse to other areas not impacted by siltation,
- (4) Turbid waters impair gill functions of fish and normal feeding activities of fish. High concentration of sediment can cause mortality in adult fish by clogging the opercular cavity and gill filaments,
- (5) Sediment encourages the growth of filamentous algae and nuisance proportions of aquatic macrophytes. Sediments contain plant nutrients such as phosphorous and nitrogen. Once introduced into aquatic habitats, these nutrients function as fertilizers resulting in accelerated plant growth, and
- (6) Sediment contributes to the depletion of dissolved oxygen. Organic matter associated with soil particles is readily decomposed by microorganisms thereby effectively reducing oxygen levels.

2. Although some fish will find refuge upstream or downstream during the dewatering process, it is likely that a complete mortality of the fish community will occur due to pond dewatering and construction related activities.

Mitigation Measures/Recommendations

1. Application materials state that the pond has experienced substantial deposition of sediment in recent years; however, the source or sources have not been delineated. Perhaps that information has been presented in the report

entitled, "Report on Sedimentation at Valley Falls Pond". The report was not included in application materials. Given the small size (1.68 mi²) of this relatively undeveloped watershed, the lack of tributaries that enter Railroad Brook and the presence of Bolton Notch Pond within the headwaters of Railroad Brook, which captures stormwater runoff from Route 384, it is somewhat perplexing that annual stream sediment yields would be considered excessive enough to cause extensive pond sedimentation and water quality degradation. A cursory glance at past aerial photographs did yield some interesting information. A mainstem pond (approximately 0.5 acres in size) is evident on the 1975 aerial photograph, approximately 1.32 miles upstream from Valley Falls Pond. The pond, referred to as Bolton Club Pond on DEP GIS mapping, can no longer be seen on the 1980 aerial photograph. A field inspection of the site revealed a breached earthen dam. When you enlarge and compare digitized aerial photographs between 1975 and 1980 you can distinguish the difference in delta deposition at the Valley Falls Pond inlet area. Although this evidence may not be conclusive, it does point to the fact that deposition may have occurred due to a catastrophic sediment event such as this dam removal and breaching and not due to normal annual sediment loading. Thus, while one could argue for the removal of sediment at the inlet, does that justify and substantiate the need for the permanent, long term wetland and pond disturbances associated with road construction, sediment forebay installation and periodic sediment forebay maintenance? Prior to permitting this project as presently designed, it is recommended that the watershed be surveyed to determine location and extent of any active sources of instream and non-point sources of pollution. If there are active sources of instream erosion and non-point source pollution, it is incumbent upon the Towns of Bolton, Vernon, and the DEP to cooperatively work together to eliminate or minimize these sources. If not, it's quite possible that one time dredging of the pond is all that is required which would eliminate the need for a sediment forebay and long term permanent impacts associated with its installation and maintenance.

2. If this project is permitted, it is strongly recommended that dredging be conducted when it will least impact the downstream aquatic community. As a best management practice, dredging should be restricted to the period from June 1 to September 30, inclusive. A June 1 through September 30 time frame can be utilized as an effective mitigation measure for construction related disturbances due to the following reasons:

- (1) timeframe will serve to protect the spawning, egg incubation, and fry development of resident fishes. Brook trout typically spawn in Connecticut during the month of October whereas brown trout spawn in November. Eggs incubate within gravel over the fall and winter periods with eggs hatching in late winter and early spring. Fry remain in the gravel until their yolk sacs are absorbed at which time the fry emerge from underneath the gravel and move into preferred stream microhabitats,
- (2) timeframe does not interfere with seasonal migratory behaviors, and
- (3) timeframe coincides with historic low rainfall levels in Connecticut, a period in which instream construction activities such as dewatering, excavation, trenching, and cofferdam placement are most effective.

Forest Resources

Sherwood R. Raymond, Jr., the DEP Service Forester for the Vernon area was contacted concerning the ERT request and he said that a service forester had been out to Valley Falls Park several times in the past four years. James Parda, a DEP Forester had made forest management recommendations in December 1988. S.J. Raymond had conducted a preliminary site inspection of Valley Falls Park in September 1999 with the Mayor and Friends of Valley Falls concerning the hemlock situation. In September 2000, S. R. Raymond made another site visit to look at the completed hemlock harvest operation. (Copies of correspondence follows).

At this time S.R. Raymond has suggested that the Vernon Conservation Commission and the Vernon Parks and Recreation Department formally request his assistance to update the forest management recommendations for Valley Falls Park. He indicated that he would be available Fall 2002. Please contact Fred Borman, DEP Forestry Division, 79 Elm Street, Hartford, CT 06106 to request this assistance.

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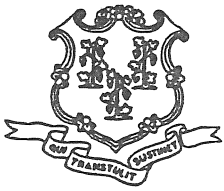
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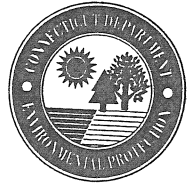
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STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BRANCH OF ENVIRONMENTAL CONSERVATION
DIVISION OF FORESTRY



September 29, 1999

Mr. Bruce Dinie, Director
Parks and Recreation Department
Town of Vernon
120 South Street
Vernon, CT 06066

Dear Mr. Dinie,

On July 26th, a preliminary site inspection of a portion of Valley Falls Park was undertaken by the Mayor, representatives of the Friends of Valley Falls, Inc. and myself. Concerns were raised about the health of the hemlocks found between the pond and the "Rail to Trails" pathway.

This area of approximately 7 acres is a softwood-hardwood stand growing on steep, rough, rocky slopes with thin soils. The overstory of pole to sawtimber sized trees is comprised of 70% hemlock and 30% oak, maple and birch, with a developing understory of birch, hemlock, oak and sassafras seedlings and saplings. This understory is open to moderately open. An open to moderately dense shrub layer of mountain laurel and witch hazel exists in portions of the stand. Softwood needles or hardwood leaves form the majority of the ground cover with some washing of this cover on the steeper slopes. (See letter of forest management recommendations, J. Parda, DEP Forester, December 22, 1988, attached).

The hemlocks are heavily infested with hemlock woolly adelgid (*Adelgid tsugae*), a small non-native insect. The adelgid, now found in every Connecticut town, damages hemlock trees by sucking sap from the branches. Once infested, the trees become defoliated and eventually die. Some mortality has already occurred on this site and some hemlocks appear to have declined dramatically over the summer when viewed on September 13th. This increased rate of decline is due to a lack of water uptake caused by the extended drought of this spring and summer. Additional mortality will occur within the next year and most of the hemlock is likely to die in 3-5 years.

The safety of the public using the hiking trails through this area is at risk as the dead and dying hemlocks deteriorate, lose structural integrity and fall. Failure of the branches, trunk or root system can occur at any time following death of the tree. Two options exist to reduce the risk of injury to the public. One is to close off the trails, the other is to remove the hazard trees.

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Mr. Bruce Dinie, Director

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September 29, 1999

In addition to physical barriers to close off the trails, signs warning of the falling tree hazard and explaining the situation with the hemlock woolly adelgid should be posted at all possible points of entry. Fencing the entire perimeter of the area including an additional safety zone equal to twice the height of the nearby trees may be the only practical method of closing the site. These barriers and signs may have to be maintained for up to ten years until all the hemlocks are down. Enforcement of the closure would be difficult at best.

Removal of the hazard trees is the best option at this time. Harvesting should be undertaken prior to additional mortality occurring as dead hemlock has no commercial value and the Town would likely incur costs to remove the trees. With hemlock presently having a stumpage value of \$20-50 per thousand board feet for sawtimber and \$0-5 per cord for pulp, the Town might expect to break even on the costs of removal (see Second Quarter, 1999, Southern New England Stumpage Price Survey Results, attached). The reduction in liability to the Town also has a monetary value which must be considered in the equation. Hemlocks determined to be non-hazardous due to their size or distance from established trail might be left standing. All hemlocks within a distance equal to twice their height from the trails should be felled.

The accumulation of dead and down material on the forest floor is a potential fire hazard. Logging slash and non-merchantable material may be chipped, burned or lopped and scattered about the site to reduce the fire hazard. The branches should be scattered as, in addition to holding the soil in place, they contain the majority of the nutrients tied up in the tree, thus allowing long term nutrient recycling. These branches if lopped to within 2 feet of the ground will decompose within 3-5 years. Some large woody debris should also be left on site as cover for forest invertebrates. Bear in mind that the more work required of the contractor to complete the sale, the greater the potential cost to the Town.

Conditions such as difficult access, steep slopes and aesthetics will make harvesting this site a challenge. Best management practices (BMP's) should be followed to protect the area. Harvesting should take place when the ground is dry or frozen to minimize the impact of the activity on the thin, fragile soils. The skid trails used to remove the merchantable material to the yarding area must be carefully laid out in relation to the topography to prevent the washing of soil into the pond. BMP's to stabilize skid trails and yarding areas and prevent soil erosion include hay bales, water bars, and seeding with grasses. One individual should be appointed as the person responsible for erosion and sediment control activities during the harvest. Continued inspection and maintenance of the erosion controls will be necessary until vegetation fully occupies the site again.

Mr. Bruce Dinie, Director

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The services of a private forester certified by State of Connecticut, Department of Environmental Protection, Division of Forestry should be engaged to oversee the sale in behalf of the Town. This forester would designate the trees to be removed, contact potential bidders, contract with the buyer and supervise the harvesting activities. All individuals involved in the harvesting should be certified and should produce a wallet-sized identification card with their unique number upon request. The current State of Connecticut Directory of Certified Forest Practitioners and a copy of *Foresters and the Care of your Land, How to select one & what they do* was provided at our field meeting.

In the forest, as the hemlock dies, black birch, red maple and other hardwoods intermediate in tolerance to shading will begin to regenerate and occupy the site. Following completion of a harvest, shade intolerant species such as the oaks, gray birch and aspen would be expected to occupy the site. This is due to the site now having a greater amount of sunlight reaching the forest floor in a shorter period of time. However, the end result is the same, the site becomes occupied by woody vegetation but the appearance and values changes with the loss of the softwood component. After all clean up activities are completed, planting of selected softwoods may be undertaken to artificially regenerate the site and recapture, over time, the appearance and values now present.

Suitable species to restore the appearance of the conifer component and wildlife habitat are white pine, red spruce and Norway spruce. Eastern white pine (*Pinus strobus*) is native and occurs throughout Connecticut. It is not as shade tolerant as hemlock, but does provide cover for wildlife. Red spruce (*Picea rubens*) is native to northwestern Connecticut and northern New England. In these areas, it grows in association with hemlock and shares some structural characteristics. The non-native Norway spruce (*Picea abies*) has been widely planted in Connecticut for over 100 years. It is non-invasive and does grow quite large. White pine and Norway spruce seedlings are available at cost from the Pachaug State Forest Tree Nursery, Voluntown (860/376-2513) each spring. Red spruce seedlings would have to be acquired from a private nursery.

A mixture of the species should be planted on the site to avoid creation of a monoculture and to better create the appearance of a naturally developing forest. Seedlings may be planted at spacings varying from 7'x7' (889 trees/acre) in the created openings to 15'x15' (194 trees/acre) in wooded areas. When underplanting in wooded areas, it is important to plant the seedlings in openings, rather than under brush, next to trees, or against rocks; so the spacings recommended are meant only as a guide to the number of trees per acre resulting from those spacings.

Mr. Bruce Dinie, Director

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Some maintenance may be necessary to ensure the survival and proper development of the newly planted trees. Brush and undesirable trees competing with the conifers for sunlight, water and soil nutrients should be removed as needed. Cutting the competing vegetation from July to mid-August will reduce the amount of resprouting as their energy reserves are at the lowest levels. Vigorous sprouts may need to be controlled by spot spraying a herbicide such as *Roundup TM* on the cut surface. Annual inspections of the plantings are desirable to ensure that side clearance of 2'-3' as well as overhead clearance of 4'-5' exists. If browsing by deer becomes a problem, repellents or barriers may be needed to force the deer to feed elsewhere.

Should you have questions or wish additional assistance, please call. As I stated during our field meeting, I will be available to update the forest management recommendations for the Park in mid to late winter.

Sincerely,

Sherwood R. Raymond, Jr.
Forester II

SRR/ns

cc: file

computer file: vnvfhem.wpd

SOUTHERN NEW ENGLAND STUMPAGE PRICE SURVEY RESULTS
SECOND QUARTER—1999

The table below summarizes reported prices paid for standing timber during the **SECOND** quarter of 1999 (April - June). Prices for sawtimber are in \$ per thousand board feet (International ¼-inch scale). Pulpwood and fuelwood are reported in \$ per cord, biomass in \$ per ton. The *Range* shows the high and low prices reported. Half of the prices reported are below the *Median*; half are above. Reporting is voluntary, and this is not a complete record of sale activity in the southern New England region. A total of 76 timber sales was reported for the **SECOND** quarter of 1999. Sale characteristics (in percent):

Size	%	Type	%	Reported by	%	Buyer/seller	%
< 50 Mbf	22	Lump sum	71	Consulting foresters	17	Buyer	66
51-100	28	Mill-tally	25	Public lands foresters	7	Seller	30
>100 Mbf	39	No data	4	Industrial foresters	18	No data	4
No data	11			Loggers	33		
				Sawmills	16		
				Utility foresters	0		
				No data	9		

EAST OF CT RIVER

WEST OF CT RIVER

SPECIES	no. of reports	median	range	no. of reports	median	range
red oak	36	300	70 - 450	18	368	175 - 500
white oak	29	100	55 - 200	7	200	90 - 350
other oaks	29	150	60 - 200	6	180	60 - 300
ash	22	100	60 - 200	13	135	55 - 200
cherry	10	110	80 - 380	7	300	135 - 350
sugar maple	14	115	60 - 250	11	300	100 - 350
red maple	32	48	20 - 150	10	50	40 - 60
tulip poplar	6	50	30 - 80	7	75	50 - 200
yellow birch	15	80	35 - 160	10	100	50 - 150
black birch	27	65	20- 200	10	100	50 - 150
paper birch	15	80	25 - 100	10	50	25 - 50
beech	10	40	25 - 50	8	30	25 - 50
pallet hdwd	13	40	25 - 75	5	25	10 - 30
other hdwd	8	45	35 - 60	3	50	40 - 100
white pine	38	80	35 - 140	11	90	30 - 130
red pine	7	60	30 - 178	0	-	-
hemlock	14	35	20 - 40	16	35	20 - 50
spruce	3	95	30 - 120	3	35	30 - 80
other sfwd	0	-	-	1	50	-
Poles, hardwd (\$/lin.ft)	0	-	-	0	-	-
Poles, sftwd (\$/lin.ft)	0	-	-	0	-	-
fuelwood (\$/cd)	23	4	0 - 10	6	5	0 - 8
pulpwood (\$/cd)	6	0	0 - 1	1	5	-
biomass (\$/ton)	3	0	0 - 0.1	0	-	-

This information is meant to be used as a guide only. Use with care. Prices paid for standing timber can be influenced by many factors, including but not limited to: timber quality, distance to market, accessibility of property, sale volume, market demand, season, skid distance, landowner requirements, and logging costs.

This survey is a result of joint efforts of Cooperative Extension at the Universities of Connecticut and Massachusetts, and the state forestry agencies in CT and MA.

25 September 2000

Recon of completed harvest operation, Stand 11, Valley Falls Park, Vernon
S. R. Raymond, Jr., Forester II

3-4 acres harvested, mostly thinned.

Uphill skids with most slash pulled up to "Rails to Trails" path.

Slash piled in trails, mainly at top of hill; instead of being scattered throughout harvest area.

1 truckload of logs remaining on path.

Southernmost skid trail needs to have waterbars installed to divert runoff into woodland.

Hemlock remains on much of Stand 11 ranging from 6-8" DBH to sawtimber-size (12"+).

Several hardwood trees, which appear hazardous, remain within area harvested.

Trails along pond edge and up to "Rails to Trails" path are closed with barricades and closed signs.

Phoned Parks & Rec Director with comments.

Mailed 2001 seedling applications from DEP Pachaug Nursery.

SR
25 Sept. 2000

Archaeological Review

A review of the State of Connecticut Archaeological Site files and maps show no known archaeological site in the project area. In addition, field review indicates that the steep topographic features of the park suggest only a moderate sensitivity toward undiscovered archaeological resources. Nonetheless, historical and archaeological investigations into the early mill that created the pond may indicate that ruins of the original dam and mill features may be intact below the ground.

The Office of State Archaeology recommends that any proposed changes to the dam area should be reviewed for its historic integrity prior to any construction activities. The historic mill ruin and dam could have an added educational component for the park. The Office of State Archaeology would be pleased to assist in either of these regards.

Planning Comments

From a regional perspective, there is little in the proposed Valley Falls Park to generate much concern. Issues of dredging, wildlife and wetlands protection, and forest management are best handled by local specialists. The park's direct proximity to the multi-use rail-trail, however, merits some careful consideration. When developing a management plan for Valley Falls Park, a convenient well-marked connection to the rail trail should be included.

One of the ongoing goals of the Capitol Region Council of Governments is to expand and connect bicycle and multi-use trails within and between towns, as well as linking inter regional and interstate trails. While the rail-trail that abuts Valley Falls Park is not along a major inter-regional or interstate trail system, it does connect the Capitol Region towns of Manchester, Vernon, and Bolton, giving Valley Falls Park the potential to become a recreation and conservation location of wider regional importance. Currently, the only point of access to the park is via Valley Falls Road, a street that is not suitable for pedestrian or bicycle travel. Providing linkage to the rail-trail will help to enable safe and convenient bicycle and pedestrian transportation to and from the Park.

The number and nature of the park-trail connections, however, must depend on the overall philosophy of park management. Both Town and Park officials expressed reservation at allowing bicycle access to the Park. One proposed approach to a park-trail connection was to provide bicycle racks along the rail-trail, and then a walkway down the steep slope into the Park. Though this approach will philosophically meet both goals of linking the Park to the trail and keeping bicycles out of the Park proper, it is unlikely to have this actual result. Linking the rail-trail to the Park will likely result in more bicycles in the Park. Despite the presence of signs and bike racks, experience shows that bicyclists will

see the linkage as an organic extension of the trail system and continue riding into the Park.

In an effort to control the negative effects of bicycle traffic in the Park (i.e. the proliferation of "blaze-it-yourself" trails) while still connecting the Park to the rail-trail, a different management strategy may be in order. Concise, stern, and friendly signage could indicate that bicycles are welcome in the Park, but it is essential to respect the established trail system. Creating clear signage and establishing specific trails that could be traveled by bicycles would also help reduce the off-trail damage. Finally, enacting and enforcing a small fine for those found off-trail on bicycles would help solidify the Park's policies.

Valley Falls Park is, and should continue to be, a treasured asset for the Town of Vernon. The natural beauty and environmental resources present there are among the among the most unique in the Region. Its proximity to an important rail-trail provides a tremendous opportunity to expand the Park's regional importance and to encourage pedestrian and bicycle transportation to the Park. With the proper management strategy and vigilant ongoing maintenance and enforcement, connecting the rail-trail to the Park can take advantage of these opportunities with a minimum of damage to the precious resources of the Park.

Appendix A

For Appendix Information Please Contact
the ERT Office at 860-345-3977

ABOUT THE TEAM

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

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

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is 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.