Farview Farms Resubdivision

Sherman, Connecticut

King's Mark Environmental Review Team Report

Sherman, Connecticut

Environmental Review Team Report

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

for the

Inland Wetlands and Watercourses Commission
Sherman, Connecticut

July 2005

Report #331

CT Environmental Review Team Program
1066 Saybrook Road
PO Box 70
Haddam, CT 06438
(860) 345-3977

Acknowledgments

This report is an outgrowth of a request from the Sherman Inland Wetlands and Watercourses Commission to the Northwest Conservation District (NWCD) and the King's Mark Resource Conservation and Development Area (RC&D) Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

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

The field review took place on, Thursday, April 28, 2005.

Elizabeth Corrigan	Consulting Biologist Northwest Conservation District (860) 626-7222
Amanda J. Crovo	Environmental Sanitarian 2, RS DOH - Environmental Engineering Section (860) 509-7296
Jenny Dickson	Wildlife Biologist DEP – Sessions Woods WMA (860) 675-8130
Sean Hayden	Resource Conservationist Certified Soil Scientist, Certified Wetlands Soil Delineator, and Certified Professional in Erosion and Sediment Control Northwest Conservation District (860) 626-7222
Robin Blum	Wildlife Technician DEP - Wildlife Division (860) 295-9523
Kathy Johnson	District Conservationist USDA-NRCS (860) 626-8258
David Kalafa	Planning Specialist CT OPM – Intergovernmental Policy Division (860) 418-6301

Alan Levere	Wetland Reviewer DEP - Environmental and Geographic Information Center (860) 424-3643
Dawn McKay	Biologist/Environmental Analyst DEP - Environmental and Geographic Information Center (860) 424-3592
Sharon Okoye	Transportation Planner ConnDOT – Office of Intermodal Planning (860) 594-2146
Donna Seresin	Stormwater Permit Engineer DEP - Stormwater Section (860) 424-3267
Randolph Steinen	Geologist Emeritus Professor, Geology Program UCONN (860) 486-1383

I would also like to thank Tony Gwyther, chair, inland wetland & watercourses commission, Margery Josephson, inland wetland & watercourses commission member, Andrea O'Connor, first selectman, Ashleigh Blake, Geoff Gwyther, Joe Keneally and other conservation commission members, Jill Finch, planning and zoning commission, Ron Cooper, land use enforcement officer, Paul Szymanski, Arthur H. Howland Company project engineers, and Jodie Chase, wetland ecologist for the applicant, 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 plans and additional information. Some Team members received a wetland assessment report mailed to them after the field review. Some Team members conducted a plan review only. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the town and landowner/applicant. This report identifies the existing resource base and evaluates its significance to the proposed use, 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 King's Mark RC&D Executive Council hopes you will find this report of value and assistance in the review of this proposed subdivision.

If you require additional information please contact:

Elaine Sych, ERT Coordinator
CT ERT Program
P. O. Box 70
Haddam, CT 06438
Tel: (860) 345-3977 e-mail: ertcoordinator@sbcglobal.net

Table of Contents

Figures and Photographs

Introduction

Introduction

The Sherman Inlands and Watercourses Commission have requested Environmental Review Team (ERT) assistance in reviewing a proposed residential subdivision.

The proposed project is located on 107 acres in northern Sherman on Anderson Road. Most of the site is wooded with about 30% in pasture that was used for grazing cattle. There are 26.6 acres of wetlands with three vernal pools. Approximately 9 acres of the parcel consist of steep slopes (those greater than 25%).

The subdivision would consist of 19 single family house lots each with individual on-site sewage disposal systems and water supply wells. A 4,400 foot public road is proposed with three wetland crossings and one watercourse crossing. There are two wetland crossings associated with the driveways. There are two areas proposed for wetland mitigation. Three separate areas of open space protected by conservation easement are proposed for a total of 16.2 acres.

Objectives of the ERT Study

The town has requested the ERT to assist in review of this environmentally sensitive site. Many questions were raised by the town commission members and the general public in their preliminary review of this project. Questions about and areas of concern include: the topography and geology, hydrology, water supply, soils, sewage disposal, wetlands, vegetation, wildlife habitat, stormwater, erosion and sediment control, location of open space, site design, planning concerns, traffic and access and farmland preservation.

The location of the proposed open space is discussed by several of the ERT Team members and various recommendations are made based on specific criteria. While the Team members did not all agree on what area should be open space, they are in agreement that the open

space should be contiguous and that there should be justification provided by the applicant as to how and why the open space was determined on the plans reviewed or on any revisions.

The ERT Process

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

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

The review process consisted of four phases:

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

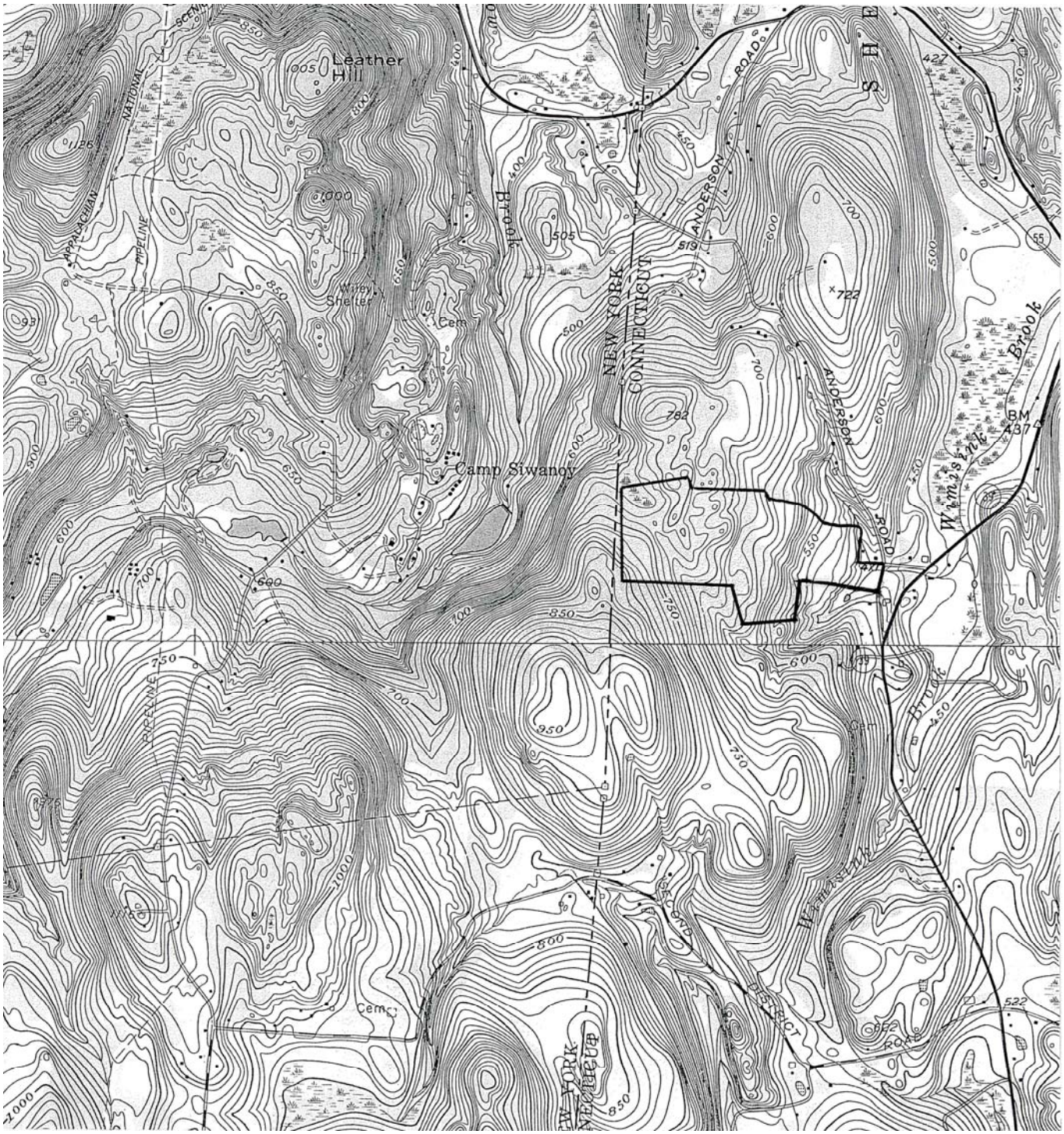
The data collection phase involved both literature and field research. The field review was conducted Thursday, April 28, 2005. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources. Some Team members unable to make the site visit relied on the plans and reports submitted.

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

Topographic/Location Map

Scale 1” = 2000’



Topography and Geology

Topography

The Farview Farm Resubdivision lies in the extreme southeastern corner of the Dover Plains 7.5 minute topographic quadrangle, just west of the quadrangle's boundary with the Kent Quadrangle and just north of the Pawling Quadrangle. The New Milford quadrangle lies to the southeast. Thus, geologic information comes from several different quadrangle reports by several different authors. The resubdivision is mostly on an east-facing slope that rises to a ridge crest near the parcel's western border. The slopes are mostly moderate to gentle with a few areas of ledge that have steeper slopes. The top of the ridge is a watershed boundary dividing the drainage basin of Wimisink Brook on the east from that of Deuel Hollow Brook on the west (in New York State). The ridge crest has a gentle, rounded topography with areas of subdued slopes and several bedrock-hollow basins that are currently occupied by vernal pools.

Surficial Geology

Data from the surficial geologic maps of the Kent Quadrangle (Kelley, 1975) and the New Milford Quadrangle (Thompson, 1975), extrapolated by Stone et al (1992), suggest that the Farview Farm area is covered by thin (<15') glacial till. This was confirmed by observing numerous bedrock outcrops (*i.e*. no till) on the upper slopes during the ERT site visit. In addition, many (31) of the "8-ft. deep" test pits (72) dug by the developer encountered ledge at depths shallower than 8 feet. Shallow soils over rather impermeable and poorly fractured bedrock would likely be poorly drained and water saturated most of the year resulting in upland and hill slope wetlands present on the Farview Farm parcel. In addition, thin or no soil (outcrops) exist in many of the upland lots and will make grading difficult, possibly requiring blasting to construct many of the proposed roads, driveways, and basements.

Kelley (1975) noted two tills in the Kent Quadrangle (although he did not show their distribution on his map). One till, presumably the older, is compact in nature such that on a

fresh exposure it is difficult to excavate. Compact till, if close to the surface would be poorly drained and also could be another possible cause of the upland and hill slope wetlands.

In the valley of Wimisink Brook just to the north and east of the parcel lies a thin deposit of sand and possibly gravel (Stone et al, 1992) that is considered a small aquifer by Meade (1978).

An unusual feature was noted on Lot 12 (Figure 2) where a proposed driveway comes off the cul-de-sac turnaround and crosses a shallow bedrock col that is on the drainage divide between the drainage basins of Wimisink Brook and Deuel Hollow Brook. The ledge exposed in the col has smooth water-worn features that suggest at one time torrents of water cascaded through the low spot in the ridge traveling from north (west) to south (east). The water was likely derived from melting ice age glaciers and could only travel up and over the divide if a melt-water stream flowed on or beneath remnant glacial ice. It is unfortunate that the proposed plans call for grading the bedrock (requiring blasting) and filling the col to accommodate the driveway.

Bedrock Geology

The rocks observed on the site convey a simple picture of what is a complex geological region (Figure 3). The rocks observed are dark gray, some slightly rusty, to pale orangish-gray-weathering schist and schistose gneiss. The rocks are medium to coarse grained and well foliated. Some are layered with layers of quartz-plagioclase mica schist interlayered with quartz-rich mica-poor gneiss. Some of the schist contains small staurolite porphyroblasts. Foliation is steeply dipping toward the northwest. The rocks are poorly fractured and poorly jointed which suggests low bedrock permeability. The vernal pools found on the parcel occupy local closed-basins that were formed by subglacial-erosion of the bedrock. The closed basins retain rain and melt water because the poorly developed bedrock joints and fractures do not provide sufficient conduits for the water to drain. This paucity of bedrock fractures suggests possible difficulty developing water wells with sufficient yield to support a household without special procedures such as hydrofracing.

The gray schist and schistose gneiss is thought to be part of the Cambrian-aged Manhattan Schist (Jackson, 1998; Rodgers, 1985; Walsh, 2003). This is of interest because rocks in the bottom of the valleys (e.g. Wimisink Brook) are Early Ordovician (younger than Cambrian) in age. They are part of the Walloomsac Schist and marble (Jackson, 1998; Rodgers, 1985). The normal relation is to find younger rocks on top of older rocks following the Law of Superposition, one of the primary tenants of geology. The above cited authors resolve this dilemma (Figure 4) by proposing that the schist and gneiss of the Manhattan Schist were formed originally several tens of kilometers east of their present location and were thrust westward over the Walloomsac schist and marble during the mid-Ordovician Taconic Orogeny (mountain building event).

Geologic History

About 600 million years ago the North American continent was not as wide as it is today. The edge of the "Proto-North American" continent ran diagonally north-north east from the Ridgefield area to east of the Canaan Valley and north into Massachusetts (see Bell, 1985, p.150). Geologists (i.e. Rodgers, 1985 and others) map the edge of the proto-continent as Cameron's Line. To the west of Cameron's Line rocks of Cambro-Ordovician age are metamorphosed equivalents of sedimentary rock initially deposited on a continental shelf. Such rocks are referred to as the Walloomsac schist and marble in the Sherman and surrounding area (Rodgers, 1985, Walsh, 2003). To the east of Cameron's line rocks of Cambro-Ordovician age are the metamorphosed equivalents of sedimentary rock and volcanic ash deposited in deeper water on the Proto-North American continental slope in an ancient, long-vanished ocean named the Iapetus Ocean by (Bell, 1985, ch.8). Such rocks are referred to as the Manhattan Schist. The Iapetus Ocean was formed by plate-tectonic processes about 600 million years ago. It began closing 500 million years ago and a plate tectonic event about 460 million years ago (see Bell, 1985, ch. 8 and McHone, 2004, ch. 4) resulted in metamorphism of the sedimentary rocks and their westward thrusting which resulted in the Manhattan Schist being thrust over the Walloomsac schist and marble.

The closing of the Iapetus Ocean was completed about 275 million years ago when the Afro-Eurasian plate collided with North America forming the super-continent Pangaea (Bell, pp. 152-156 and maps on p. 148). The rocks of western Connecticut were subject to several

periods of rock deformation and metamorphism during the closing of the ocean which resulted in the folding of the thrust fault surfaces (see cross sections associated with Rodgers, 1985, or Walsh, 2003).

Hydrology

Few fractures and joint surfaces are present on the outcrops of the Manhattan Schist at the Farview Farms Resubdivision parcel. This suggests that the development of domestic water wells may be locally challenging. In addition, schist is a somewhat ductile rock and the few fractures that exist near the surface may be squeezed closed at depths of near 300 feet. Engineering techniques, such as hydrofracing, may be necessary to develop many of the individual-lot water supply wells.

It is unlikely that the Taconic fault plane that is present under the parcel will contain water-bearing fractures because when it formed it was several kilometers beneath the surface and experienced temperatures high enough so that the deformation was ductile. Thus the rock flowed rather than fractured. In addition, subsequent metamorphic events would have annealed any open early-formed fractures.

References Cited

Bell, Michael, 1985, *The Face of Connecticut.* Connecticut Geol. And Nat. Hist. Survey, Bull 110, 196p.

Jackson, R.A., 1977, Bedrock Geologic Map of the Connecticut Portion of the Dover Plains Quadrangle. CT. Geol. and Nat'l Hist. Surv. File, unpub. Map.

Jackson, R.A., 1998, Bedrock Geology of the Kent 7.5 minute Quadrangle. CT Geol. and Nat'l Hist. Surv., OF 98-1, 164p.

Kelley, G.C., 1975, Surficial Geology of the Kent Quadrangle, Litchfield County, CT. U.S. Geol. Survey Open File Map, OF 75-171.

McHone, Greg, 2004, Great Day Trips to Discover the Geology of Connecticut. Perry Heights Press, Wilton, CT, 207p.

Meade, D.B., 1978, Groundwater Availability in Connecticut. St. Geol. and Nat'l Hist. Survey, Natural Resource Atlas Series.

Rodgers, John, 1985, Bedrock Geologic Map of Connecticut. Connecticut State Geol. and Nat. Hist. Survey, Atlas Series: Bedrock Geologic Map.

Stone, JR., Shafer, J.P., London, E.H. and Thompson, W.B., 1992, Surficial Materials Map of Connecticut. U.S. Geol. Surv. and. Connecticut State Geol. and Nat. Hist. Survey, 2 sheets.

Thompson, W., 1975, Surficial Geologic Map of the New Milford Quadrangle, CT. U.S. Geol. Surv. Open File map, OF 75-548.

Walsh, G.J., 2003, Bedrock Geologic Map of the New Milford Quadrangle, Litchfield and Fairfield Counties, CT. U.S. Geol. Surv. Open File Map, OF 03-487, 49p.

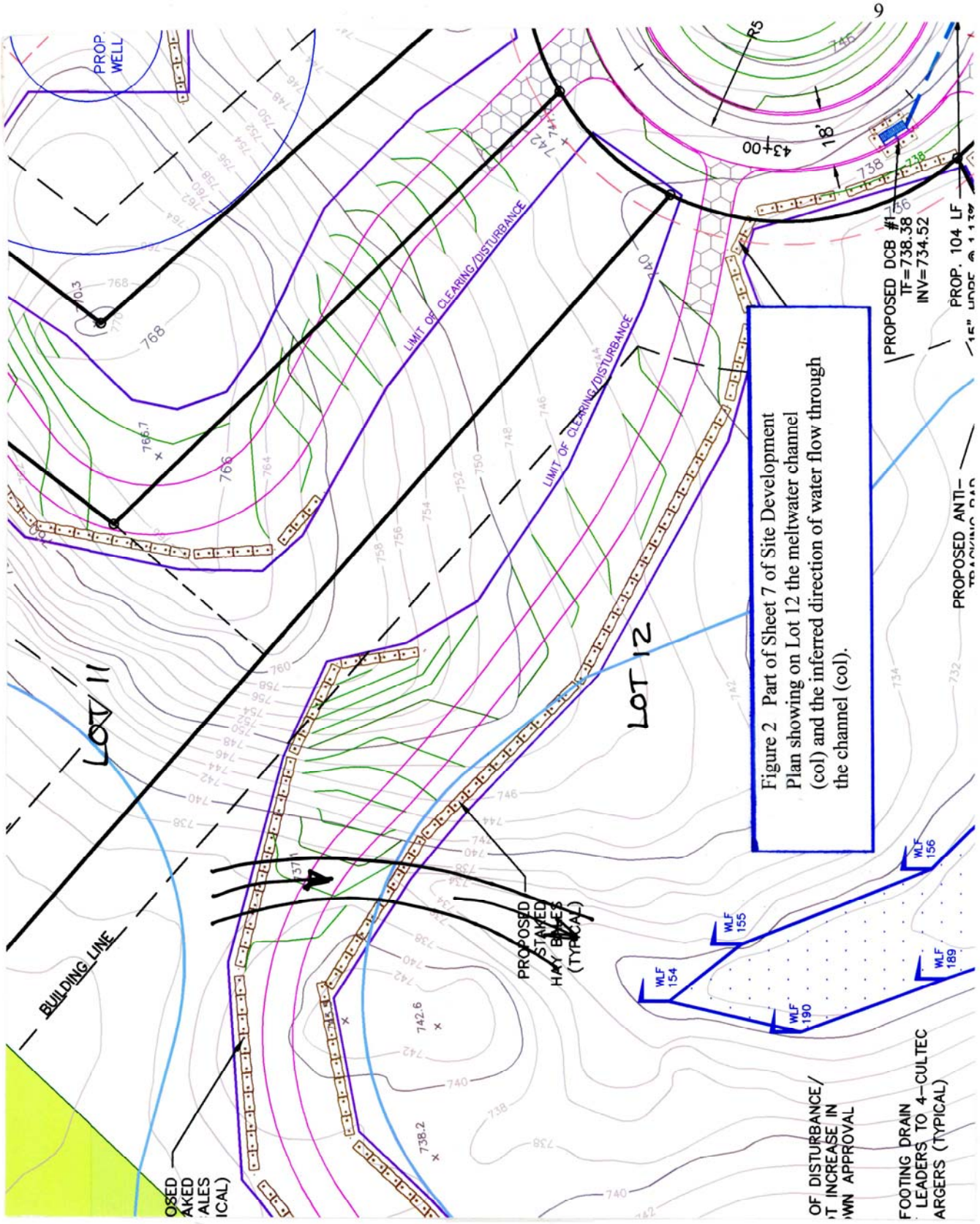


Figure 2 Part of Sheet 7 of Site Development Plan showing on Lot 12 the meltwater channel (col) and the inferred direction of water flow through the channel (col).

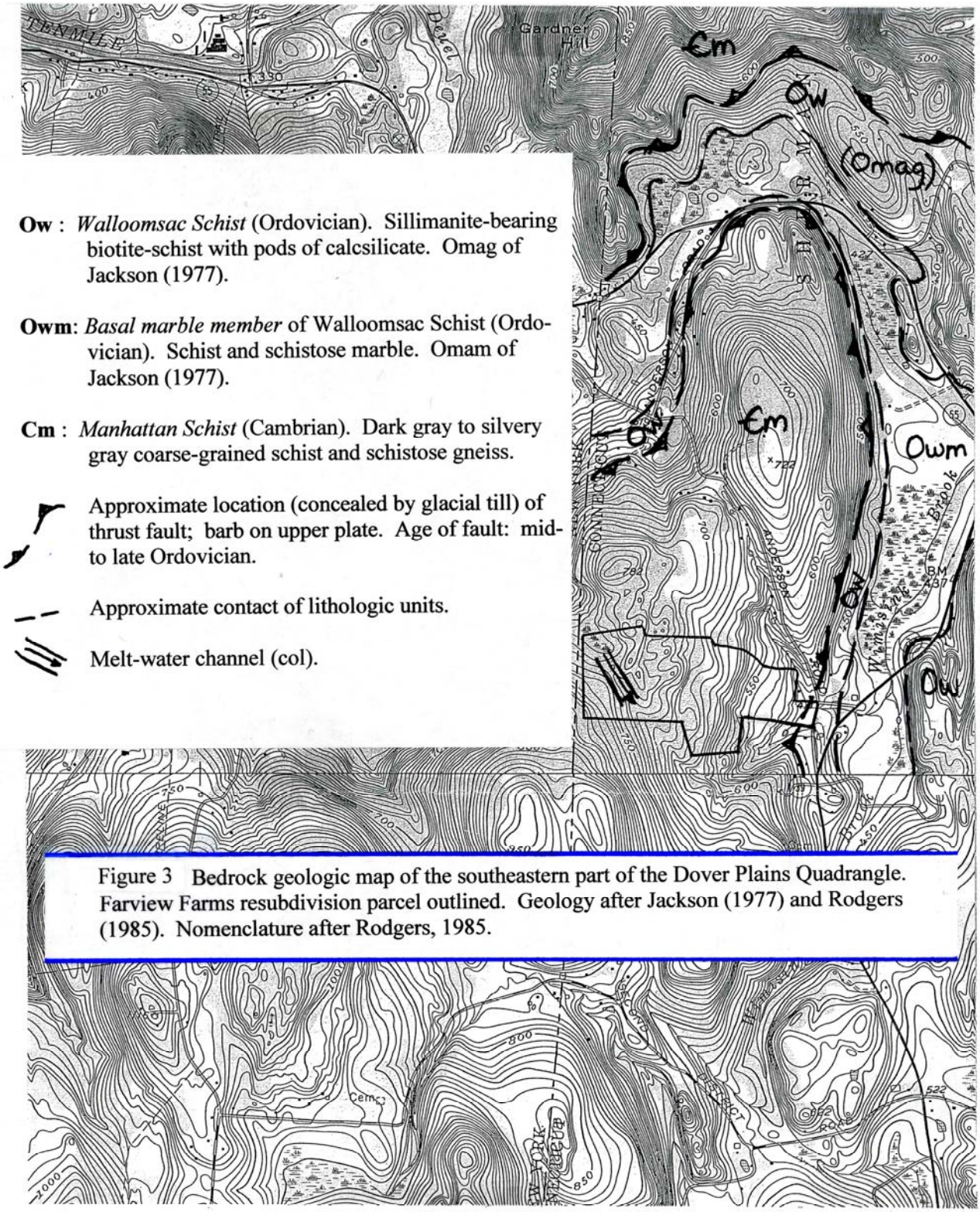


Figure 3 Bedrock geologic map of the southeastern part of the Dover Plains Quadrangle. Farview Farms resubdivision parcel outlined. Geology after Jackson (1977) and Rodgers (1985). Nomenclature after Rodgers, 1985.

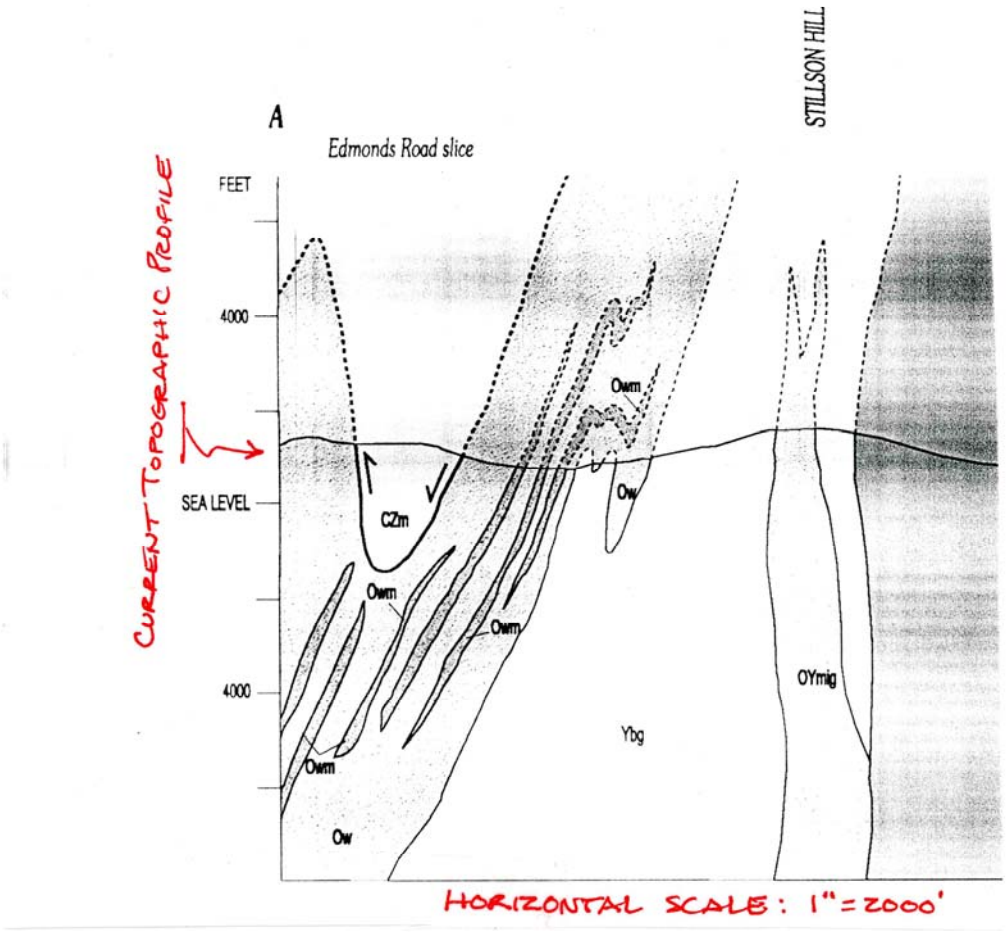


Figure 4 Cross section (A-A' of Walsh, 2003) of the northwestern edge of the New Milford Quadrangle (immediately southeast of Fairview Farms) showing the folded overthrust slice of Manhattan Schist (*CZm*) over younger Ordovician Walloomsac schist and marble (*Ow* and *Owm*). The bedrock underlying Fairview Farms has a similar structural configuration.

Northwest Conservation District Review

Soil Properties, Capabilities and Limitations

Soil Properties

All the upland soils proposed for development have a subsoil layer of dense, low-permeability, glacial till. The on site soil's inability to infiltrate water is well documented. Soils that form on a dense glacial till have a very low permeability (very poor at transmitting water) in subsoil layers. The dense till is within a few feet of the soil's surface in most areas on the site as evidenced by the deep hole test soil descriptions. Shallow-to-till soils are extremely vulnerable to stormwater erosion because of their inability to absorb and infiltrate larger rain events and most of the upland soils to be developed are classified as "Highly Erodible Land" by the US Department of Agriculture (USDA 1986). These soils quickly saturate and begin to shed water which will erode exposed soil. Soils on site contain anywhere from 40% to 60% silt and most of the site is sloping terrain. Silt-sized particles are the first and easiest soil fraction to be eroded and entrained in stormwater runoff. Treatment of stormwater laden with silt then requires a sequence of measures to renovate it before it is suitable to introduce back to the surrounding environment. The following is a list of soil and site characteristics that make this property particularly susceptible to soil erosion:

- Slow permeability of the till subsoil
- Shallow soil above the till on much of the site (less than 2 feet)
- High silt content
- Sloping terrain (steep sloping terrain in many areas)
- Large proposed excavation areas

The above list of soil characteristics will require that the project have a rigorous Soil Erosion and Sediment Control Plan as well as thorough Stormwater Management/Water Quality Management Plan (see Soil Erosion and Sediment Control Plan section below). Additionally, once vegetation on site has been removed and the soils and sub-soils are exposed, soils will become even more erodible. Unprotected and allowed to erode, these

soils will quickly be entrained in stormwater runoff and carry large amounts of sediment off site (see section on Soil Erosion and Sediment Control on how to avoid this).

Prime Farmland Soils

The site proposed for development is rich in prime farmland soils (PFS). PFSs have the best combination of physical and chemical properties for producing food and livestock feed. In general, PFSs have an adequate and dependable moisture supply, favorable temperature and growing season, acceptable acidity and alkalinity and few rocks. Approximately 13% of Litchfield County is classified as having PFS (USDA, 1970). However, the parcel proposed for development is made up of over 30% PFSs. The project area also contains a large headwater wetland system that services both Wimisink Brook and the Housatonic River. Many federal, state and local regulations exist to protect the wetland soils of Connecticut; however there are no comparable regulations that protect prime farmland soils. Given the importance of prime farmland soils to food security, and the lack of regulatory protection, the NCD would recommend that all parties involved in the application process consider the unique value of a portion of the soils on site, and advocate for the wise use and management of this valuable and highly productive natural resource. As proposed, much of the PFSs on the property would either be disturbed or developed.

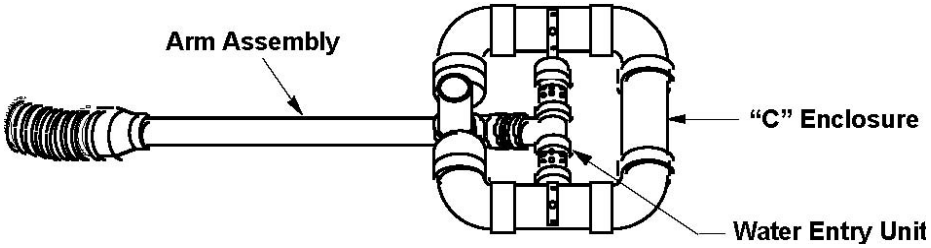
Soil Erosion and Sediment Control/Stormwater Management Plan

Sediment Basins/Water Quality Maintenance Pond

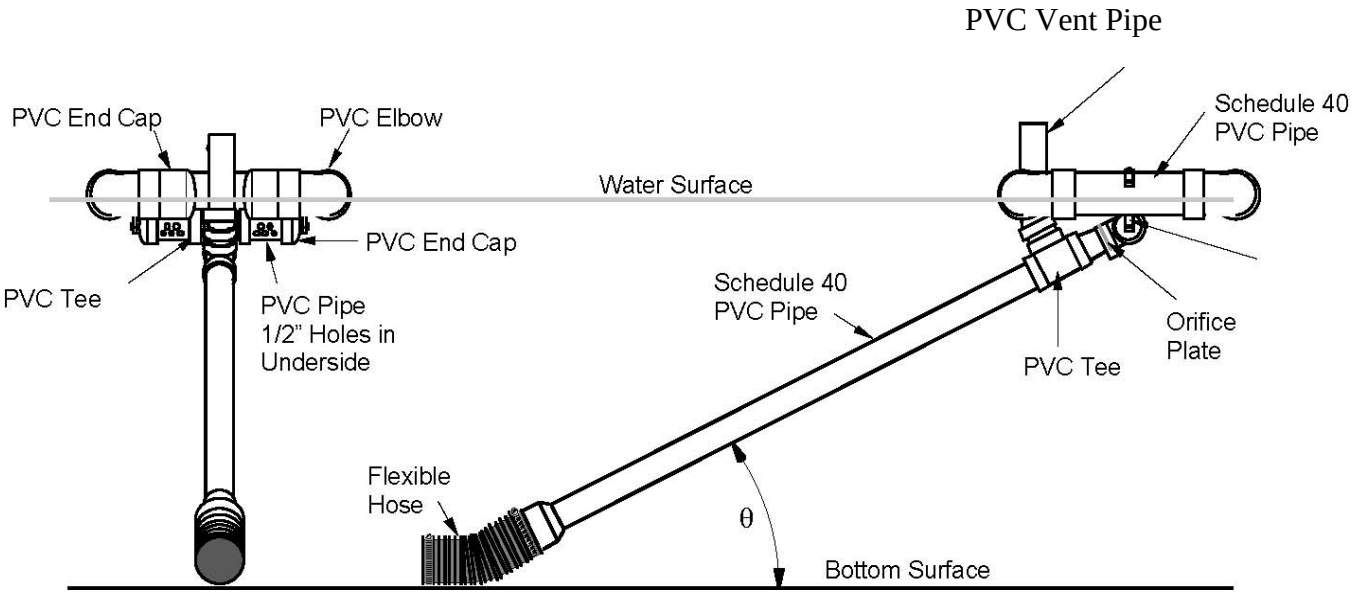
During construction the detention pond will be acting as temporary sediment trap. Before the site is stabilized, it is a given that this basin will intermittently receive large sediment loads. Large amounts of sediments in outflow water will affect the down gradient water and wetland resources. Therefore, the applicant should consider the use of a skimmer to drain the pond during the construction phase. The device pictured below will drain the very top layer of water off the pond and protect down gradient resources from being choked with sediments. The surface of the pond is the best place to drain the water from because it contains the lowest concentrations of suspended solids/pollutants. Post construction (when the entire site has been stabilized) the skimmer should be removed and then the basin can function as proposed/designed.

Faircloth Skimmer® Illustration

"C" Enclosure



PERSPECTIVE VIEW



SIDE VIEW

The wet area where the detention pond is to be placed appears to be saturated. Excavating to a depth of almost 10 feet below grade will most likely intercept ground surface water moving along the till and create a wet bottomed detention basin. A wet bottomed basin will work well in this application. However, the basin capacity will be diminished and a design alternative should be available to compensate for any reduction in water detention capacity.

There is a long stretch of road starting at the cul-de-sac draining down to the vicinity of road-centerline marker #24+00 and #25+00. There will also be a number of lots and driveways that will drain onto the road and down to the same location. The applicant should consider installing a temporary sediment trap in the area of road-centerline marker #24+00 and

#25+00 to mitigate any stormwater runoff that is created during the construction phase. Once Phase II has been completed and all soils have been stabilized this area can be constructed and completed as designed.

Many of the driveways are hundreds of feet long. However, there is no indication of how stormwater runoff generated by the driveway will be managed. Many driveways would benefit from being flanked by grass lined swales; the steeper ones might require more engineered alternatives. Regardless of the measure chosen they should be illustrated on the design sheets.

Connecticut General Stormwater Permit

Because this project will disturb an upland area greater than five acres the applicant will also need to comply with the conditions of the General Stormwater Permit administered by the CT -DEP. A copy of Connecticut's General Stormwater Discharge Permit can be down loaded at www.cicacenter.org. The filing of this general permit (along with the Storm Water Pollution Prevention Plan) is only accomplished when the town's application process has been concluded. It has been my experience that the general permits are usually filed at least 30 days prior to the commencement of construction activities. It is understood that the town has no responsibility in the application process for the state general permit. However, it will be required of the applicant, and complying with the stringent requirements in the permit will only further protect surrounding resources.

Open Space Issues

Selection of open space appears to be driven by convenience for house lot placement. When choosing areas for open space set-asides the priority should be:

1) Making one large contiguous parcel of open space;
2) Locating an open space parcel adjacent to other protected parcels (or parcels that are potentially going to be preserved);
3) Using open space to protect areas that are ecologically significant; and
4) Assessing the potential for passive and/or active recreation

If a new area of open space is proposed, a justification should be provided in a narrative in the Project Report. Otherwise, the town should consider requesting a fee in place of an open space set aside.

NRCS District Conservationist Review

Open Space Proposal

The plan for Farview Farms Re-subdivision currently calls for preserving three separate areas of open space/conservation easement that total 16.23 acres. This meets the Town's requirement for a 15% dedication for open space. The areas currently proposed for open space are wetland soils that are already have some protection from development through regulation. Areas that might be considered for preservation as open space instead of those currently shown include –

1. The vernal pools and surrounding uplands, up to a 700 ft. diameter surrounding the pool area. It is suggested that this area be preserved as a natural area to allow amphibians room to breed in the pool areas and use the surrounding upland habitat.
2. The three rocky high points located in the western section of the site around elevation 750'. These rocky uplands provide cover for numerous types of wildlife.
3. The stream and stream buffers, extending at least 35 feet from the top of bank– including the perennial streams along the eastern edge of the site and the intermittent stream that flows from the western watershed divide toward the southeastern property line. This easement would help to protect water quality and the aquatic ecosystems. While these areas already have regulatory protections, planting of native vegetation in the riparian zone and protection from future clearing where trees exists could be provided.

The wetland mitigation site is likely to be a high maintenance area that is not recommended for inclusion in the open space preservation plan. The existing wetland in the northwest corner of the property is already protected by regulations and appears to be so wet that future clearing is not likely.

Farming

There is a grass pasture area located along the eastern third of the site. The pasture extends from the stream, through wetland soils, up a steep slope. Approximately half of this area is shown as Prime Farmland Soil and Soil of Statewide Importance to Agriculture. Due to the slope of the land, the area lends itself to hay, pasture, or orchard crops (in the non-wetland soils) where perennial grasses can be used to control erosion. Town regulations concerning keeping livestock might be considered in planning the lot sizes in this area, to facilitate future land owner's abilities to use the farmland soil area.

Wetland Mitigation Area

The detailed wetland mitigation plan was not available at the time of this review. The basic proposal described is for a wetland area to be created that is twice the size of the proposed wetland disturbance and will consist of indigenous species specified and supervised by a certified ecologist. The property is overgrown with Japanese barberry in the area planned for the wetland mitigation. It is highly likely that the wetland mitigation site will overgrow with this invasive species unless continuous future maintenance is provided. Control of this species would require pulling out Japanese barberry bushes with a weed wrench, which can leave exposed soil, or spraying with herbicides, that may have other unwanted side effects. Protecting the existing wetlands, watercourses, and vernal pools is highly recommended over trying to construct a wetland on this site.

Detention Basin

The proposed road into the subdivision follows a path along the eastern edge of the wetland pasture. The design of the proposed drainage swale along the wetland edge and the proposed storm water detention basin should be reviewed to determine what effects this system may have on the wetland water table. The design should be revised as needed to protect the adjacent wetlands.

The drainage system outlet may act to partially drain the adjacent wetland, if the detention basin outlet elevation is lower than the existing wetland outlet.

Wetland Review

This parcel measures 107+ acres in size and the proposal depicts 19 lots ranging in size from ~2.3 to ~7.3 acres with a single large lot of 14.15 acres. Topography is quite varied. The low point is at 470 feet above Mean Sea Level (MSL) at the east end of the parcel. The high point is in excess of 820 feet above MSL in the west-south-west corner of the parcel in Lot 13. These elevation differences yield steep slopes. Going 2,000 feet due west from the road entrance there is an elevation change of about 11.5%. Many areas are mapped as exceeding 25% slope.

An unnamed stream flows north to south along the east side through proposed Lots 1 and 2, intercepts other stream flow from this property at a small pond, and flows east under Anderson Road. From there it flows .27 miles and empties into the Wimisink Brook. The Wimisink then flows 2.03 miles and enters the Housatonic River. Both the unnamed stream and Wimisink Brook enjoy a water quality rating of "A."

The Mapped Wetlands Observations

Eighteen of the 19 proposed lots have wetlands mapped on them. Lots 19 and 5, and to a lesser extent Lots 6 and 7, are dominated by wetlands. The ERT Team located 3 vernal pools and seepy wetlands on slopes. (It had rained the day before when .48 of an inch was recorded at Danbury.)

The trees on the parcel seemed to be more or less of the same age. The wooded wetlands, of which there is so much mapped, is dominated by red maple and typical shrub and herb level vegetation. Ms. Jodie Chase, in her report entitled: *Wetland Assessment for Farview Farms Resubdivision, Anderson Road, Sherman, Connecticut*, June, 2005, provides a thorough description of the on-site wetlands, their locations and functions.

The Vernal Pools

There are three mapped vernal pools on the site. The first is located on Lot 5. The second Vernal Pool is located on Lot 7 and the third is bisected by the line dividing Lots 7 and 10. Again, Ms. Chase has documented these wetlands and the need for upland distance from the pool center for use of the vernal pool species. The proposed impacts to the mapped vernal pools should be quite minimal to negligible.

It should be noted that the wetlands shared by Lots 7 and 10 provided the Team with an observation never before witnessed. By the date of the visit the wood frog egg masses had yielded to the pollywog stage of their development. The Team observed the results of a prolific reproduction cycle which produced what could only be described as a living and moving black carpet of pollywogs.

These images of the on-site vernal pools were assembled from the originals provided by Hunter Brawley of the Naromi Land Trust in Sherman, CT. They depict what must have been thousands and thousands of pollywogs.

Issue: Attention to Vernal Pools

The largest integral part of the vernal pool ecosystem is the upland area neighboring the pool. This typically extends away from the pool uphill or upslope to drier soil types. The slopes often vary from gentle to steep. It is in these slopey areas that amphibians spend over 90% of their adult lives. They travel up hill to the well drained soils to burrow. In places, some usable slopes can approach 45 or more degrees. The drainage areas for these pools are typically located on till-based soils and measure 2-3 to 5-6 acres. Thus, local impacts can have dramatic, damaging impacts to the vernal pool ecology, especially since vernal pools are fed primarily by precipitation and surface water runoff.

There is extensive information in print about vernal pools. Much of it points to the fact that the reduction of more than a certain percentage of critical habitat and adjacent upland will have telling impacts on the pool ecology.

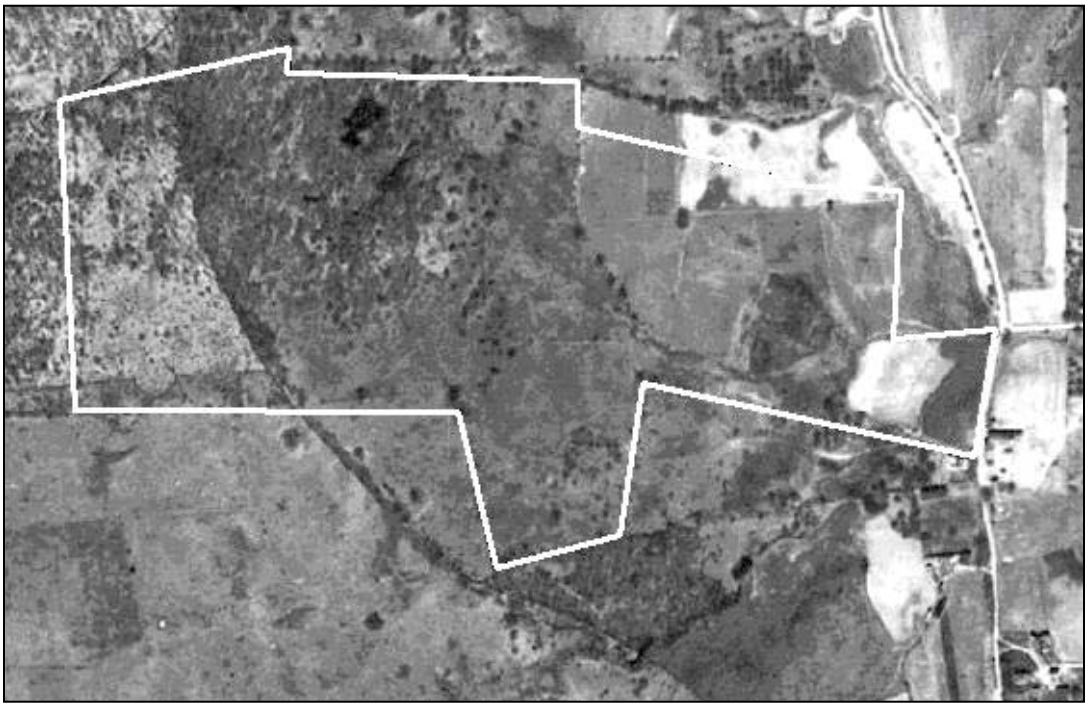
Dr. Michael Klemens suggests in his recent book, co-authored with Dr. Aram J.K. Calhoun, entitled: "*Best Development Practices – Conserving Pool Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States*" that there be no development in the 100 foot buffer around the vernal pool and no more than 25% in the critical terrestrial habitat, that is, the distance from 100 feet to 750 feet away from the pool. Indeed, the upland use by various vernal pool amphibians can range from 386 feet from the pool for spotted salamanders to 1,550 feet from the pool for juvenile wood frogs (3,835 feet for adults). (This document may be obtained from the DEP Store: http://www.dep.state.ct.us.)

Issue: Wetland Crossings

There are two major proposed wetland crossings. The driveway for Lots 13/15 and the road at Lots 5/19.

The driveway wetland crossing depicted on page D-1 of the plans is a design that is not typically acceptable to most municipalities and does not protect the integrity of the wetland. The wetland at this point is ~70 feet wide. At the time of the ERT visit there was 2-3 inches of water, much moss covered woody debris, and the dark alluvial soils were lush with skunk cabbage. Bridging this headwaters wetland or using open bottom box culverts to keep the wetland bed intact are better alternatives.

In addition, this alternative and accountability should be applied to the proposed road crossing between proposed Lots 5 and 19 at the vicinity of road mark 24.



1934 aerial photograph mosaic of the site showing land use within the approximate boundary of the proposed development area. The broad arcing line on the left hand side of the image is the match line for the different photos that went into this mosaic.

1990 aerial photograph of the site showing land use within the approximate boundary of the proposed development area. Some land marks are recognizable. The most dramatic change in the 56 years is the regrowth of the woodlands on the western side of the property.

Issue: Road Sand in Wetlands

The first 1800' of road will shed water down hill rapidly. From elevation 613 to elevation 484, the road will lose 129 feet, representing an 8% grade. Stormwater will be collected by 11 catch basins and deposited into the wetland opposite the driveway of proposed Lot 1. Four more pairs of catch basins team up further downslope to deposit the additional runoff into wetlands that drain to the existing pond by Anderson Road.

This section of road will be heavily sanded in the winter. The DEP estimates that 20+ tons of sand is applied to urban roads each year. For the sake of discussion we will assume (since no figures are available) that less is applied to suburban roads. We'll use 20% less, or 16 tons, per mile. Thus, onto the first 1,800 feet of road (34% of a mile) of this subdivision approximately five and a half tons of road sand will be applied each winter (16 tons X 34% = 5.5 tons). Of this, one third to one half is collected. So in this scenario about three tons of sand will be washed downhill every year to the lowest point in the road, typically wetlands and watercourses. This puts a tremendous burden on the sedimentation devices to work properly and efficiently.

In that the Team was told that the town does not have a very consistent record for prompt road sweeping and for keeping storm drains maintained it is very probable that sedimentation to downstream wetlands and the pond by Anderson Road will occur. This issue should be discussed and resolved before construction begins.

In subdivisions, a system to move excess water off site and away from homes has to be built. The question is, exactly how will this system be maintained in perpetuity to protect the wetlands?

Issue: Open Space in three places

Three separate areas of open space totaling over 16 acres have been proposed. These three areas are spread over 5 different proposed lots and as a result have limited value. A contiguous donation of open space that ties into, or abuts, other open space should be a consistent and preferred goal for maximizing the value of the land.

In addition, some towns have found that the second or third generation homeowner is not so friendly to the fact that they pay taxes for their 6.6 acre lot when half of it is dedicated open space. They then try to convey it to the local land trust since they cannot use it as their own. A contiguous tract that protects a remote or wild area or that offers a hiking trail is generally preferred.

Issue: Road Width

There was discussion of road width at the ERT meeting, with a leaning towards 26 feet, that being a reduction from the applied for 28 foot width. With regard to impervious surface and safety of the residents, this Team member has included language from Nonpoint Education for Municipal Official's (NEMO) website (http://nemo.uconn.edu):

From NEMO TECHNICAL PAPER NUMBER 1: "Research shows that for most local roads all that is needed is 20' or 24' road widths composed of two 10' or 12' travel lanes.

Design Speed - As design speed declines, road widths narrow. Research shows that long, wide, straight roads produce higher traffic speeds and higher accident counts particularly fatal accidents. Local residential roads should be designed to provide safe access to home sites and not as mini raceways. Research shows that narrow streets are the safest. For example, a study by Swift Associates and the City of Longmont, Colorado looked at 20,000 automobile accidents over an eight-year period and found, "The most significant casual relationships to injury and accident were found to be **street width** and **street** curvature." According to the Swift Report, "... as the **street** widens accidents per mile per year increases exponentially, and that the safest residential **street width** is 24 feet." (This Team member can provide copies of the Swift Report for anyone interested.)

With the goal of minimizing impervious surface, a road width of 24 feet over the length of the project can be substantial. Additionally, applications of road sands would be decreased - ultimately impacting the wetlands to a lesser degree than a wider roadway.

Additional Comments/Recommendations

- Reduce the total lots from the proposal. Let the proposed "open space" be open space and not backyards. This reduction would minimize impact to the integrity of the open space due to homeowner alteration (brush piles, fall leaf dumping. etc.)

- The center of the cul-de-sac should be concave/depressed to maximize recharge of precipitation to groundwater (i.e.: between Lots 9 and 14). The drawing depicts a conical median rising from street level (740 feet) to a high point mid-center of the cul-de-sac at 749 feet. A slightly depressed area would allow for precipitation recharge and improve the soil moisture for any vegetation planted there.

- Deed restrictions need to be documented so that current and future homeowners understand the preservation efforts that will have gone into the protection of the resources on the property they buy (i.e.: limits to their use of the open space on their property).

- Sherman should consider ridge top protection for the town as it comes under increasing developmental pressure. A ridge top protection compact has been enacted by several towns in the Connecticut River Valley and could be used as a model.

- If the project gets built, the regrowth of the now-mowed wetlands on the hillside would provide a great educational opportunity for the local schools to observe the transition from its current use as a hayfield to wetland based (hydrophytic) vegetation.

Has the Land Trust exhausted all possibilities to work with the owner of this property? It was this Team member's impression during the field walk that a meeting between the Land Trust and the land owner could very well prove to be beneficial to both parties.

Stormwater Management

Since the site construction involves the disturbance of over five acres, Connecticut's General Permit for the Discharge of Stormwater and Dewatering Wastewaters (the "Permit") will cover the project. The permit requires that the site register with the Department of Environmental Protection (CTDEP) at least 30 days before the start of construction. The registrant must also prepare, submit and keep on site during the construction project a Stormwater Pollution Control Plan (the "Plan"). The Plan must be followed and updated as needed during the course of construction.

Please note that while this review is based primarily on the State Permit, many of the erosion and sedimentation issues are included in the Connecticut Guidelines for Soil Erosion and Sediment Control ("the guidelines"), and are issues that must be dealt with on a local level before being included in the Plan.

The Plan must include a site map as described in Section 6(b)(6)(A) of the General Permit and a copy of the erosion and sedimentation (E & S) control plan for the site. The E & S plan that has been approved by the Town in conjunction with the CTDEP Inland Water Resources Division (IWRD) and the local Soil and Water Conservation District may be included in the Plan. This plan and site map must include specifics on controls and limits of disturbance that will be used during each phase of construction. Specific site maps and controls must be described in the Plan, as well as construction details for each control used. Wherever possible, the site shall be phased to avoid the disturbance of over five acres at one time. The permit requires that the plan shall ensure and demonstrate compliance with the guidelines.

This project has extreme slopes and wetland areas (both on-site and in close proximity off-site) to be protected, which will make ongoing inspections and adjustments of controls an important aspect of this project. The permit (Section 6(b)(6)(D)) requires inspections of all areas at least once every seven calendar days and after every storm of 0.1 inches or greater. The plan must also allow for the inspector to require additional control measures if the inspection finds them necessary, and should note the qualifications of personnel doing the inspections.

In addition, the plan must include monthly inspections of stabilized areas for at least three months following stabilization. There must be someone available to design and adjust E&S controls for changing site conditions, which has the authority and resources to ensure that such necessary changes are implemented.

Due to the amount of soil disturbance, one of the best ways to minimize erosion potential is to phase construction in order to minimize unstable areas. However, due to the balance of cuts and fills, phasing in some areas will be extremely difficult. The Plan must be flexible to account for adjustment of controls as necessary in order to meet field conditions. At a minimum, the Plan must include interior controls appropriate to different phases of construction. The plan should identify areas where stock piling of soil will occur and detail the type of erosion controls that will be used during the cut and fill portion of the project.

Particular attention must be paid to the construction in the area of the site, which has very steep slopes. Also, because there are pockets of poorly drained soils, soil type and the location of water table must be considered when cutting and filling of slopes during the construction process. Also, when the cutting and filling portion of the project is conducted please ensure that the tops of the slopes are stabilized with berms or other means that comply with the guidelines. It may be necessary to evaluate the use of foundation drains in this area. The Department recommends erosion control matting for slopes greater than 3 to 1.

The permit (Section 6(C)(i)) requires when construction activities have permanently ceased or been temporarily suspended for more than seven days or when final grades are reached at any portion of the site, stabilization must occur within three days.

Silt fence installation must comply with the guidelines, and may be used only in drainage areas of one acre or less. Structural practices including sedimentation basins are required for any discharge point that serves an area greater than 5 disturbed acres at one time. The basin must be designed in accordance with the guidelines and provide a minimum of 134 cubic yards of water storage per acre drained. Particular care must be taken near the brook. Leave as large a vegetative buffer as possible in these areas. Maintenance of all structural controls shall be performed in accordance with guidelines and the Plan must identify these practices.

The permit (Section 6(b)(6)(C)(iii)) requires that the plan include a design for post-construction stormwater treatment of 80% of total suspended solids from the completed site. In order to comply with this requirement, the Department recommends incorporating swirl concentrator technology.

Other Issues

In order to determine if all water will be contained on site, a detailed hydraulic analysis must be prepared.

For construction activities which result in the disturbance of ten or more acres of land area, the Plan shall be submitted to the commissioner no later than thirty days before the initiation of construction activities.

The developer must also be aware that if lots are sold off to individual homeowners, the developer is still responsible for maintenance of all control structures for three months after final stabilization of the site. The individual contactors are required to comply with the permit regardless of lot size.

On-site Sewage Disposal Review

The following comments are based on a preliminary review of the plans. This Team member was unable to attend the site visit.

1. All proposed subsurface sewage disposal systems must be located at least 50 feet up gradient of all soil cuts such as those required to construct driveways or roads.
2. Additional soils testing will be needed to demonstrate suitability in primary and reserve septic areas not located in an area tested. The local director of health must assure the accuracy of the findings of soils testing and deep observation pits and may require additional wet season testing.
3. Deep test pit and percolation test logs are confusing. Percolation logs are presented for every deep test pit, however, percolation tests were not done in each pit. Please include the following information with the test logs:
    - Date of testing for all pits and percolation tests
    - Person doing the testing
    - Health department witness
    - Depth of percolation tests
    - On plan, location of percolation tests
4. Include all locations of underground utilities
5. The length of individual leaching rows must not exceed 75 feet measured from the inlet in systems without intermittent dosing. This should be addressed in the final design plans for the proposed leaching systems.
6. All foundation drain pipes and outlets must be at least 25 feet from all subsurface sewage disposal systems including reserve areas. The outlets should also be directed away from leaching areas. These pipes can be extended, on several lots, allowing for a greater separation between discharge and septic area.
7. Several of the lot layouts do not allow for any flexibility in respect to house, drainage, well and septic location changes. There is little to no margin for construction error. It is recommended that the town, as a condition of approval on some of the lots, require the surveyor to locate and stake for review all house, well, septic areas, and drainage of concern prior to any permits being issued. Also, surveyor located foundation as-builts on some lots may be necessary to verify that a subsurface sewage disposal

system can be installed on the lot in compliance with section 19-13-B103 of the Connecticut Public Health Code, prior to issuance of a well permit.

8. It appears the reserve area for Lot 3 will require an extensive wetlands crossing if ever used. A more accessible location should be identified.

A more detailed review of revised subdivision plans will be required to address feasibility. Minimum leaching system spread (MLSS) calculations could not be verified on all lots. It is recommended that the Sherman Health Department confirm that the above items are satisfactorily addressed by the design engineer prior to submittal to the DPH for continued review.

The DOH-Environmental Engineering Program office is available to discuss any of the above comments or any other sewage disposal concerns.

Botany Review

After the introductory site review to familiarize the ERT members with the parcel, the ERT botanist returned to visit the site on three separate occasions (May 24, May 25, and June 7). The purpose of the botanical survey was to locate and identify important plant communities, including state-listed species and to assess the extent of non-native invasive plant infestations vis-à-vis the development plan and the proposed open space. This report, however, focuses on the areas that have been unimpacted by invasives; recommendations are made to preserve the ecological integrity of those areas.

Most of the Farview Farms property is infested with non-native invasive plants. Japanese barberry (*Berberis thunbergii*) dominates most of the forest while other invasives such as Oriental bittersweet (*Celastrus orbiculatus*), Garlic mustard (*Alliaria petiolata*) and Bittercress (*Cardamine impatiens*) tend to be more abundant long the edges. Other invasives were also observed and are included in the plant list. Despite the overwhelming degree of infestation, two areas, the wet meadow and the northwestern portion of the property, were found to be relatively free of invasives, and therefore, of apparent ecological value. Despite the presence of limestone-derived soils, the expected rich, associated plant communities, especially in wetlands, are sadly lacking probably due more to suppressive invasive plants than to past farming activities.

Wet Meadow at Lot 19

The southern portion (low area at base of hill, NE of Wetlands Flag (WF) 254, W of WF 300, and S of WF 274) of the wet meadow located at Lot 19 is the most botanically diverse part of this habitat type. Non-native invasive plants such as Multiflora Rose (*Rosa multiflora*) and Ragged Robin (*Lychnis flos-cuculi*) were seen, though few in number; agricultural weeds, such as Lesser Chickweed (*Stellaria graminea*) and Wild Madder (*Galium mullogo*), were also observed. Native plants, too early in the season to accurately identify, such as the graminoids, were either identified to genera or, when classification was uncertain, omitted from the plant list.

Recommendations for Wet Meadow

1. To safeguard the wet meadow plant community from potential nutrient input from fertilizers and other pollutants, conversion of regulated area to lawn - especially that of the intermittent stream that feeds the meadow - must be prohibited. However, management of invasives either by cutting/mowing at appropriate times (such as at the end of the growing season) or selective removal must be permitted to maintain habitat integrity. Invasive plant management/removal must be done according to best management practices.

2. Drains to or from wet meadow *must not* alter its hydrology. Abnormal decreases in input for prolonged periods will encourage growth of invasives; excess water can also alter the native plant community. (Removal of any existing pipes, creation of detention basins, etc. should not disrupt or alter current hydrology of lower portion of meadow.)

3. Cattails (*Typha* sp.) should not be planted wetlands mitigation area. Native plant diversity will be gradually displaced by competing cattails, resulting in a monoculture.

4. Plants selected for mitigation plan should be limited to species found on site. The Mitigation Plant List compiled by the applicant's consultant should be reviewed and compared to native plants growing at the site.

5. Mulch around plantings should be discouraged as it is often a source of non-native invasive plants. Other alternatives to reduce the need for irrigation of new plantings should be considered such as choosing plants that require less water. If mulch is used, it should be regularly inspected for invasives which should be immediately removed and properly disposed of, preferably off site, at a disposal facility that incinerates waste. Plants must not be composted, either on or off-site.

Proposed Open Space

Except for the northern half of the proposed open space at Lots 11/12, the ecological integrity of the other proposed open space areas has been severely compromised by Japanese barberry (*Berberis thunbergii*) and is therefore of limited conservation value, except, perhaps as a buffer for water quality protection. However, even as such, due to diminished forest strata, of which the herbaceous layer is almost non-existent, even this capability is questionable. Openings between the shrubs are populated mostly by non-native invasive herbs (e.g. garlic mustard) though some native species are also present but in low diversity. Privet (*Ligustrum* sp.) another invasive shrub, is also present. Occasionally, scattered individuals of native shrubs, e.g. spicebush (*Lindera benzoin*), and other native plants commonly found in the herbaceous layers remain. There is minimal tree regeneration as evidenced by a paucity of seedlings, though some saplings are present. As such, this area is of little or no importance from a conservation standpoint and, if anything, would pose a management nightmare to holders of the open space.

Sites such as this, infested with non-native invasive plants, exemplify the term "biological desert" as they are frequently referred to by biologists. In fact, during the course of the botanical field surveys, the only evidence of wildlife, aside from the presence of an occasional deer trail, was songbird activity, which appeared to be limited to the upper canopy of the forest- the sole, intact layer of native vegetation.

Recommendations for Proposed Open Space

1. Instead of preserving three disjunct "islands" of open space with little or no ecological value, it would make more sense to reconfigure the development so that the essentially invasive-free acreage in the northwestern section of the property is preserved. This also makes better sense from a connectivity standpoint: not only is there already existing preserved open space along the northern boundary of the property with which the recommended open space can be contiguous but the other abutting properties along the northern border are also relatively pristine and unfragmented. Therefore, preservation of this northern part of the development will, in essence, help preserve the ecological viability of a much larger area, one that extends beyond its borders. The concept that larger parcels

will sustain ecological viability longer (provided they are properly managed) than smaller, fragmented areas supports this recommendation. Additionally, conserving this "back end" of the subdivision will also preserve other natural resources such as the vernal pool communities, including their uplands, and the water quality of headwater areas from which some of the parcel's other water resources originate.

2. The boundary for the area recommended for open space begins just south of the Clover Leaf Association Property and follows a southerly/southwesterly direction along the limit of the clearing/disturbance line at the eastern edge of the Lot 7 proposed drive. It runs more or less along the 696 foot contour line and includes a small section of the northwest corner of Lots 5 and 6, just north of the 100 ft. wetlands setback. From here, the boundary changes course to a westerly direction, bisecting the drive to Lot 7, and continuing west into Lot 8 to the 736 ft contour line that runs just south of the rock outcrops located at the southern part of the lot. From here, the boundary extends north to Wetland Flag 77 and west to the 750 ft. contour line located just S of the blueberry knoll. From here, the boundary continues north to Wetlands Flag 129.

The boundary of the recommended open space approximates the "invasion front" of the barberry, north and northwest of which the forest is relatively invasive-free. The distinction between the infested and invasive-free areas is remarkably evident in the field along much of this proposed boundary.

3. Management of open space for non-native invasive plants is critical for long-term ecological viability. Some species such as shrub honeysuckles (*Lonicera* sp.) and Oriental Bittersweet (*Celastrus orbicularis*) were observed mostly as young, solitary plants with few occurrences while others, such as garlic mustard (*Alliaria petiolata*), were seen growing together in small groups. Barberry, as expected, was present, too, but tended to be scattered. The apparent limited presence of invasives in this area eases the task of eradication and should be accomplished by the entity holding the easement as soon as preservation assured. For successful invasive plant management, it is important that a comprehensive, but flexible plan for control, eradication and follow-up is written into any document or agreement. It is also important that owners of the subdivision lots are permitted to eradicate invasive plants, even in their own conservation-restricted areas. Eradication efforts will not only be

frustrating but futile if invasives are not controlled on surrounding parcels as they will be a constant source of plants into managed areas; open space will not remain viable for long if management is not instituted in all areas.

Other

That State-listed plant species have not been officially documented from the property does not preclude the possibility of their existence. Some species such as Swamp Birch (*Betula pumila*), Ginseng (*Panax quinquefolia*), and Sweet Gum (*Liquidambar styraciflua*) are reportedly present in the general area according to some residents, but they were not observed at Farview Farm probably because the parcel lacks the appropriate habitat and plant community types that these species are associated with.

Partial Plant List

NATIVE PLANTS

Acer pensylvanicum		Moosewood
Acer rubrum	Red Maple	
Acer saccharum	Sugar Maple	
Agrimonia sp.		Agrimony
Allium tricoccum	Wild Leek	
Amelanchier arborea	Downy Serviceberry	
Anemone quinquefolia	Wood Anemone	
Anemonella thalictroides	Rue Anemone	
Antennaria plantaginifolia	Plantain Pussytoes	
Aquilegia canadensis	Columbine	Columbine
Asclepias incarnata		Swamp Milkweed
Aster sp.		Aster
Betula alleghaniensis	Yellow birch	
Betula lenta	Sweet birch	
Betula populifera	Gray Birch	
Cardamine pensylvanica	Pennsylvania Bitter Cress	
Carex sp.		Sedges
Carex pensylvanica	*Carex pensylvanica*	Pennsylvania Sedge
Carpinus caroliniana	Ironwood	
Carya ovata	Shagbark Hickory	
Chimaphila maculata	Striped Wintergreen	
Cicuta maculata	Water Hemlock	Water Hemlock
Dennstaedtia punctilobula	Hay-scented Fern	
Dryopteris marginalis	**vMarginal Wood-fern**	Marginal Wood Fern
Erythronium americanum	Trout Lily	
Eupatorium sp.	Joe Pye Weed	Joe-pye Weed
Eupatorium perfoliatum		Boneset
Fagus grandifolia	Beech	
Fragaria sp.		Wild Strawberry
Fraxinus americana	White Ash	
Galium lanceolatum	Wild Licorice	Lance-leaved Wild Licorice
Gaylussacia sp.	Huckleberry	
Geranium maculatum	Wild Geranium	
Hamamelis virginiana	Witch Hazel	
Hepatica rotundifolia	Round-leaved Hepatica	
Hieracium venosum		Rattlesnake Plantain
Impatiens capensis	Jewelweed	Spotted Touch-me-not
Iris versicolor	Larger Blue Flag Iris	Larger Blue Flag Iris
Juncus sp.		Rush species
Juncus effusus		Soft Rush

Juniperus virginiana	Red-cedar Juniper	Red-cedar Juniper
Lindera benzoin	Spicebush	Spicebush
Liriodendron tulipfera		Tulip-tree
Luzula sp.		Woodrush
Lysimachia ciliata	Fringed Loosestrife	
Medeola virginiana	Indian Cucumber-root	Indian Cucumber
Mitchella repens	Partridge Berry	
Onoclea sensibilis	Sensitive Fern	
Osmunda cinnamomea		Cinnamon Fern
Osmunda claytoniana		Interrupted Fern
Osmunda regalis		Royal Fern
Ostrya virginiana	Eastern hophornbeam	Eastern Hophornbeam
Panax trifolium	Dwarf Ginseng	Dwarf Ginseng
Parthenocissus quinquefolia	Virginia Creeper	
Penthorum sedoides	Ditch Stonecrop	
Polygonatum pubescens	Hairy Solomon's Seal	
Polygonum arifolium	Halberd-leaved Tearthumb	Halberd-leaved Thearthumb
Polypodium virginianum	Polypody	
Polystichum acrostichoides		Christmas Fern
Populus grandidentata	Bigtooth Aspen	
Potentilla simplex	Common Cinquefoil	
Prenanthes alba		Rattlesnake-root
Prunus pensylvanica	Pin-cherry	Pin Cherry
Prunus virginiana		Common Chokecherry
Pteridium aqualinum		Bracken
Pyrola elliptica	Shinleaf	
Quercus alba	White Oak	White Oak
Quercus coccinea	Scarlet Oak	Scarlet Oak
Quercus prinus		Chestnut Oak
Quercus rubra		Northern Red Oak
Rhododendron periclymenoides	Pinkster-flower	
Rubus allegheniensis		Blackberry
Scirpus sp.		Bulrush
Sisyrinchium angustifolium	Stout Blu-eyed Grass	Blue-eyed Grass
Symplocarpus foetidus	Skunk cabbage	
Thelypteris noveboracensis		New York Fern
Thelypteris palustris	Marsh Fern	
Trillium erectum	Wakerobin	
Tsuga canadensis		Hemlock
Ulmus rubra		Slippery Elm
Uvularia perfoliata	Perfoliate Bellwort	Perfoliate Bellwort
Viburnum acerifolium	Maple-leaved Viburnum	Maple-leaved Viburnum

Viola cucullata	Marsh Violet	
Viola latiuscula	Broad Violet?	Broad Violet
Zizia aurea	Golden Alexanders	

NON-NATIVE INVASIVE PLANTS*

Alliaria petiolata[1]		Garlic Mustard
Berberis thunbergii [1]		Japanese Barberry
Cardamine impatiens[1]	Bittercress	Bitter Cress
Celastrus orbiculatus[1]	Asiatic Bittersweet	Oriental Bittersweet
Euonymus alatus[1]		Burning Bush
Glechoma hederacea [2]	Gill-Over-the-Ground	Gill-over-the-ground
Ligustrum sp.[2]		Privet
Lonicera sp.[1]		Shrub Honeysuckle
Lychnis flos-cuculi [2]	Ragged Robin	
Rosa multiflora[1]		Multiflora Rose

[1] Widespread and Invasive
[2] Potentially Invasive

* According to Mehrhoff, L.J., K.J. Metzler, and E.E. Corrigan. 2003.*Non-native Invasive and Potentially Invasive Vascular Plants in Connecticut,*
plants in Connecticut. Center for Conservation and Biodiversity, University of Connecticut, Storrs.

NON-NATIVE PLANTS **

Barbarea vulgaris	Winter Cress	
Galium mollugo		Wild Madder
Lotus corniculatus	Birdsfoot Trefoil	
Ranunculus acris		Tall Buttercup
Rumex crispus	Curled Dock	
Stellaria graminea		Lesser Stitchwort
Taraxacum officinale	Common Dandelion	Common Dandelion
Trifolium pratense	Red Clover	
Veronica officinalis	Common Speedwell	

** Does not include grasses

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 State Endangered, Threatened or Special Concern Species that occur within the project boundaries for Farview Farms. However, our information indicates that we have extant populations of *Sylvilagus transitionalis* (New England cottontail) from this area in Sherman. Additional information from the DEP *Wildlife in Connecticut* informational series "Cottontail Rabbits" can be found in the Appendix of this report.

The New England cottontail (NEC), while not currently a listed species in Connecticut, is of concern (due to the perceived decline in its population). This species is currently being reviewed for possible listing under the Federal Endangered Species Act.

The NEC prefers brushy second-growth tangles, briers, and dense thickets often near wet areas. Maintaining existing early successional stage habitats (such as pasture land and agricultural fields) as well as forested edges with a well-developed understory (with shrubs and brushy thickets) will conserve the preferred habitat of this species. Including these habitats into the town required minimum of 15% designated open space, will help insure continued use of this area by NEC. In general, larger contiguous patches of habitat are better for this species than small disjunct patches.

Consultation with this office should not be substituted for site-specific surveys that may be required for environmental assessments. This is a preliminary site review and is not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to the DEP for the proposed site. Please be advised that should state permits be required or should state involvement occur in some fashion, specific restrictions or conditions relating to the NEC may apply. In this situation, additional evaluations of the proposal by the DEP Wildlife Division should be requested and species-specific surveys may be required.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes 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.

Wildlife Resources

The property is approximately 107 acres in North Sherman, bordered by residential neighborhoods and extensive forestland. The site is approximately 70% wooded and 30% pasture. There are 26.6 acres of wetland including three vernal pools. The proposed development is for 19 single-family lots and a 4,400-foot public road. The development plan calls for multiple wetland crossings as well as wetland mitigation areas. Three separate areas totaling 16.2 acres (between 5 and 7 acres each) are to be protected as open space through a conservation easement.

Existing Wildlife Habitats

Pasture

The site contains approximately 30 acres of pasture that historically have been used for grazing. Housing units are proposed in the area around the pastures. Although current management practices are unknown, in its current state this area could support species such as ruffed grouse, American woodcock, migrating sandpipers, bluebirds and cottontail rabbits.

Early-successional habitat (grasslands, hayfields, meadows, etc.) of the size found on this property that are useful to wildlife are being lost at an alarming rate, due to intensive agricultural practices, lack of fire, natural succession, and development. Remaining early-successional areas are often too small to be of value to those species with large breeding acreage requirements. Agricultural haylands that are sufficiently large are usually mowed too frequently to allow birds to complete their nesting cycle. The result has been dramatic declines in species such as bobolinks and grasshopper sparrows. Proper management of remaining large early-successional areas is critical to the survival of these species.

Since these pastures are situated on wetland soils, proper management at this location could result in wet meadow habitat, providing highly valuable habitat for species such as red-winged blackbirds, water shrews, star-nosed moles, spotted turtles, painted turtles, and smooth green snakes.

Upland forested area

Housing units are proposed for the upland forested areas west of the pasture. This area contains black oak, red oak, red maple, and black birch. Large sections of understory are dominated by invasive Japanese barberry. While barberry provides nutrition in the form of berries, it is a non-native, invasive plant that significantly reduces understory native plant diversity. Despite the large amounts of barberry present, these forested areas are valuable to wildlife, providing cover, food, nesting, roosting places and denning sites. Mast produced by oaks provides excellent forage for a wide variety of mammals and birds including white-tailed deer, gray squirrel, southern flying squirrel, eastern chipmunk, white-footed mouse, eastern wild turkey and blue jay. Trees, both living and dead, also serve as a home for a variety of insects, which, in turn, are eaten by many species of birds, including woodpeckers, warblers and nuthatches. Other wildlife species found in this habitat type include white-breasted nuthatch, American redstart, barred owl, broad-winged hawk, redback salamander and northern ringneck snake.

Wetlands

Wetland complexes are found within the forested areas, including three vernal pools located in the north-central portion of the property. Vernal pools are small, temporary bodies of standing fresh water that are typically filled in spring and dry out most years. During the inspection, spotted salamander eggs were noted in one pool and thousands of wood frog tadpoles were seen in the other. Vernal pools are critical to the survival of many species of reptiles and amphibians, such as the gray tree frog and the spotted salamander, that use vernal pools for breeding and spend the balance of their time in forested uplands. Other wildlife likely utilizing wetland habitat for food and cover are raccoons, star-nosed moles, pickerel frogs, spring peepers and eastern garter snakes.

Impacts

Development of this site with single-family homes will negatively affect the existing wildlife habitat. Although plans call for 16.2 acres to be left as open space, it will be of limited value because it is separated into three small parcels. Outright habitat loss in the forested area will affect and change the species composition of the upland area and will also have significant impact on the wetland species, many of which require extensive areas of upland habitat. Additionally, wetland species will also be affected by the multiple wetland crossings outlined in the development plan. One hundred foot buffers are proposed for the vernal pools and a wetland mitigation area of 30,000 square feet is planned. Calhoun and Klemens (2002) recommend that the upland areas around breeding pools up to a distance of 750 feet be considered critical upland habitat, that at least 75% of that zone be kept undisturbed and that a partially closed-canopy stand be maintained.

Reducing Impacts

Given the number of single-family housing units proposed as well as the layout, reducing impacts to wildlife will be nearly impossible. The development plans should be adjusted to maintain the areas around the vernal pools as open space. If this is not done, adequate buffer zones around the wetlands (including vernal pools) should be instituted. According to the best science available, a buffer of at least 750 feet from the wetlands into the uplands is needed to somewhat reduce the impacts to reptile and amphibian species using the upland forest area in conjunction with the wetland. The pastureland should also be maintained as open space and, since it contains wetland soils, it should be managed with the intent of establishing a wet meadow in order to maximize wildlife benefits. The proposed open space amount would be much more valuable if it was contiguous and connected to other undeveloped areas.

Summary

The proposed project will almost totally replace the existing forest and pasture with residential housing, resulting in a direct loss of habitat. Development in the forested area (including the wetlands) will affect the number and composition of species found. Even for the wetland areas with no development planned, there are still potential impacts to the reptile and amphibian species that use the wetlands in conjunction with the adjacent uplands. Most reptile and amphibian species are not very mobile and cannot easily seek out suitable habitat elsewhere once disturbance has occurred. The impacts to wildlife should be expected to be significant.

References

Calhoun, A. J. K. and M.W. Klemens. 2002. Best Development Practices: Conserving Pool Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. MCA Technical Paper No. 5, WCS, Bronx NY, 57 pp.

Planning Review

State Plan of Conservation and Development Consistency Review

The project under consideration is only subject to consistency requirements with the Conservation and Development Policies Plan for Connecticut (C&D Plan) if state funding in excess of $100,000 is utilized for the development of the site or associated infrastructure improvements. However, the following review is offered for general planning purposes.

The project as proposed encompasses “Rural Lands”, “Preservation Areas” and “Conservation Areas” as defined in the C&D Plan and as shown on the C&D Plan Locational Guide Map (one copy given to the Town). *(Note: If you are interested in the text of either the 1998-2003 Plan or Recommended 2004-2009 Plan, they can be found on the OPM website at* www.opm.state.ct.us*. From the home page click on Publications/Reports and then scroll down to the Conservation and Development Plans.)*

C&D Plan “Rural Lands” policy guidelines that are germane to this particular development include: 1) Encouragement of development of a form, density, and location compatible with the carrying capacity of the natural environment, and which avoids the need for large scale and costly urban infrastructure for water supply, waste disposal and transportation; 2) Ensure new projects are consistent with “rural design” principles and do not have unacceptable adverse impacts upon districts and sites of historic significance, important natural areas or concentrations of prime farmland; and 3) Vigorously pursue sewer avoidance programs and limit development to those uses and densities that ensure indefinite functioning of on-lot or small community water supply and waste disposal systems.

C&D Plan “Preservation Area” policy guidelines that are germane to this development are based on wetlands characteristics. Wetlands policy seeks to achieve no-net-loss of wetlands and watercourses through development planning that avoids wetlands whenever possible, prevents or minimizes pollution or other environmental damage to wetlands and watercourses, and provides for compensatory mitigation.

C&D Plan “Conservation Area” policy guidelines that are germane to this development are based on agricultural soils and 100 year flood fringe characteristics. Flood fringe policy seeks to prevent inappropriate development in the flood fringe that would result in economic losses, loss of life and property in the event of a flood. C&D Plan policy regarding agricultural lands is to protect prime agricultural land in sufficient quantity to ensure a long-range food production capability within the state, to consider food production as the most appropriate use for prime agricultural lands in priority farm preservation areas and to protect all active agricultural lands until the necessity for conversion to non-agricultural uses is substantial or preservation is no longer feasible through available programs.

In general terms the proposed Farview Farms proposal appears to be consistent with the policies of the Conservation and Development Policies Plan for Connecticut. The development contemplates large lots that exceed local zoning requirements and would be considered consistent with C&D policy for the development of “Rural Lands” as the lots support on site sewer and water and do not contemplate major improvements to the existing roads. While there are some concerns regarding impact on the existing wetland areas (discussed below), the wetlands areas have generally been avoided, and the development proposes a mitigation area that exceeds the square footage of wetlands areas that are directly disturbed by the development. The prime agricultural soils located on this site are fairly small and fragmented and while there is some limited grazing activity taking place, the soils are not currently being used for food production. While the C&D Plan does not promote the development of prime agricultural soils, it does recognize that preservation of these lands may not always be practicable. The flood fringe areas appear to be restricted to the lands adjacent to the existing pond and brook that runs parallel to Anderson Road. The area of this flood fringe appears to be fairly limited in scope. Flood fringe area may have some impact to Lots 1 & 2.

Site Plan Comments

In general terms, the development appears to be consistent with C&D Plan policies. However, there are some specific site plan design issues that could be improved in order to maintain the rural aesthetic of the area and improve the public value of the dedicated open space areas of the site.

Both the Housatonic Valley Council of Elected Officials Regional Plan (1997) and the Town of Sherman Master Plan for Development (2001) are clear in the intent that Sherman should remain a rural town. As such, one aspect of the site plan that might be altered to maintain this rural aesthetic as you view the site from Anderson Road is consideration of clustering the development on the western two thirds of the site, just west of the current tree line and ridge line. At a minimum, this would require eliminating building Lots 1, 2 and 19 from the eastern portion of the site and, if possible, reconfiguring the western two thirds of the site to accommodate all 19 building lots. With the exception of the roadway leading to the subdivision, the view would remain pastoral, unencumbered by new houses as they would not be visible from Anderson Road.

The other site plan issue that might be altered to maintain the rural aesthetic of the site is consideration of reconfiguring the open space parcels. As they currently exist, they are fragmented and their location does not lend itself to any public benefit. Unless there are other considerations such as vegetation and wildlife habitat that suggest they stay as currently indicated, consideration should be given to making all of the open space contiguous on the eastern portion of the property including Lots 1, 2 and the pasture area included in Lot 19. This would permanently protect this area and maintain the rural aesthetic of the area, adding to the public benefit of this open space.

The route of the new road through the site on the eastern 1/3 of the site could also be reconsidered. As planned, the snaking access road will have a negative impact on the existing pasture and the rural aesthetic. Due to existing wetlands and slopes, a reconfiguration of this road may not be possible. However, some thought could be given to a route along the southern boundary of the parcel that is straighter and less disruptive to the rural nature of the site.

Lastly, the property contains a number of wetlands and vernal pools in the western two thirds of the site. While specific comment on these areas is more appropriate from those Team members with specific expertise in this area, it should be noted that appropriate buffers and monitoring of these areas are needed for their protection.

Amended Transportation Review *(7/18/05)*

A 19-lot subdivision is proposed for the north end of Sherman, approximately 800 feet west of the intersection of Route 39 North and Anderson Road. The following comments are offered in response to the Town of Sherman's Inlands Wetlands and Watercourses Commission's concerns regarding the roadway for the subject subdivision.

Topography

The proposed road traverses steep sections as well as wetlands and stream crossings. Are these appropriately designed?

Reviewing the proposed roadway profiles for the subdivision (sheets PP-1 through PP-5 of the plans submitted by the engineering consultant, Arthur H. Howland P.C.), the roadway grades appear to be in accordance with standards for local rural roads in *A Policy on Geometric Design of Highways and Streets*, 2001 edition, published by the American Association of State Highway and Transportation Officials (AASHTO). These guidelines are based on established practices for roadway construction, supplemented by ongoing research. To address stream crossings and wetlands, the plans show wetland mitigation measures and drainage structures proposed for protection of these areas, during and after construction.

However, preliminary subsurface investigation is recommended to determine if special construction techniques are needed for roadway construction in wetland areas. Organic soils in wetland areas are highly compressible (which could lead to settlement problems). In addition, the low shear strength in organic soils could lead to embankment stability problems. It is anticipated that standard roadway embankment construction will not be feasible in wetland areas. Possible alternatives include removal of the organic soils prior to embankment construction, use of a bridge/viaduct on a deep foundation over the organic deposit, use of lightweight materials in construction of the embankment, etc. Feasibility and evaluation of the various alternates would need to be made upon completion of a subsurface investigation in which the depth, limits, and soil characteristics of the organic deposit would be determined.

Wetlands/Vernal Pools

The design of the road and lots come close to or cut across wetlands in several areas. Does the design show sufficient protection of these sensitive areas?

As shown on sheet OSD-1 of the plans, grassed swales are proposed between the toe of steep wetland slopes and the proposed roadway. Underdrains are recommended in the subsurface underneath the proposed roadway in these areas to maintain the roadway's integrity during the seasonal high groundwater table.

Site Design

The road as proposed goes along a wetland and up a steep slope. Is there an alternative?

The proposed roadway follows the terrain of the land for the most part, with a maximum grade of 10%. This maximum grade does not exceed AASHTO design standards for this type of roadway. Moreover, since the slopes in this area are very steep, any additional excavation to reduce the proposed roadway grade would require substantial land cuts and fills, which would drive up construction costs.

Traffic and Access

The neighbors who live on Anderson Road say that sightlines would be dangerous for an intersection at the spot proposed. Are there guidelines for an intersection of town roads, and for anticipated use by an additional 19 houses?

Upon review of sheet STLN-1 of the submitted plans, an existing crest vertical curve is located just south of the intersection of the proposed roadway and Anderson Road. This curve could pose a potential sight line problem for a driver stopped at the intersection looking south on Anderson Road. The Town is proposing roadway improvements to Anderson Road at this location to alleviate this problem.

Ideally, the proposed road should intersect Anderson Road at the Anderson Road extension. However, it appears that with the steep terrain of the land, the presence of wetlands, and the existing pond, this may not feasible.

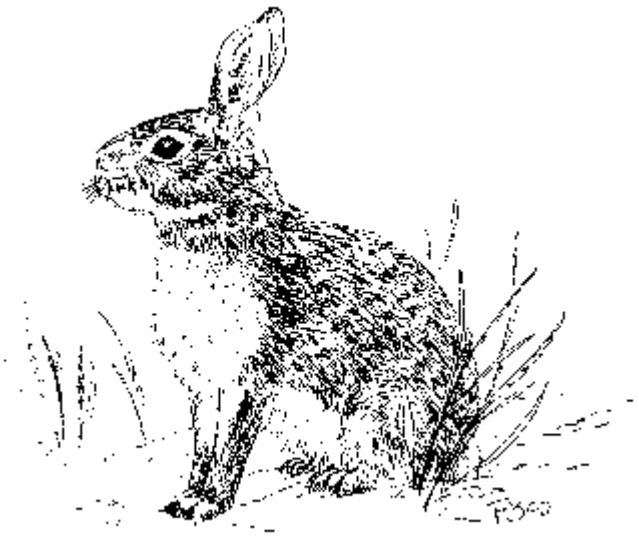
Appendix

WILDLIFE IN CONNECTICUT

INFORMATIONAL SERIES

COTTONTAIL RABBITS

New England Cottontail:
Sylvilagus transitionalis
Eastern Cottontail:
Sylvilagus floridanus



Habitat: Edges of open fields and meadows, areas of dense high grass, in wood thickets, along fence rows, forest edges, and the borders of marshy areas.
Weight: New England cottontail: 1.64-2.94 pounds; eastern cottontail: 1.8-2.95 pounds.
Length: New England cottontail: 14.2-18.8 inches; eastern cottontail: 14.8-18.0 inches.

Food: In summer, cottontails feed almost entirely on tender grasses and herbs; crops such as peas, beans, and lettuce are also eaten. In winter, bark, twigs, and buds of shrubs and young trees are eaten. Rabbits will also re-ingest their own fecal pellets, increasing their level of vitamins and minerals.

Identification: The cottontail rabbit is a somewhat stocky animal with large hind feet, long ears, and a short, fluffy tail that resembles a cotton ball. Its long, coarse coat varies in color from reddish-brown to a black or grayish-brown. The underparts are white. The New England cottontail and the eastern cottontail are almost identical in appearance, except for a slight variation in color. About half of the eastern cottontail population show a white, star-like shape on the forehead while none of the New England cottontails exhibit this trait. A comparison of the skull characteristics is the most reliable way to distinguish the two species.

Range: New England cottontail: New England west to the Hudson River and south down the Appalachian Mountains. Eastern cottontail: eastern United States and southern Canada south to eastern Mexico and into Central America; another population in Texas, New Mexico and Arizona. The eastern cottontail is more abundant and is expanding its range, while the New England cottontail's range is diminishing.

Reproduction: Breeding occurs from March through early fall. Females do not dig their own nest burrows, but rather scratch out a slight depression in the ground in an area of dense grass for concealment. The nest is lined with fur and dry grass. The gestation period is about 28 days. There are usually two to four litters per year with about three to eight young per litter. Young rabbits are born blind, naked, and helpless but grow rapidly, leaving the nest after only two to three weeks. They are weaned and totally independent at four to five weeks. On the average, 15% of the young will survive their first year. Adults are usually solitary by nature except when a female is caring for its young.

Interesting Facts: Cottontail rabbits are active all year long, foraging mainly at night. During the day they remain concealed in dense brush, protected from predators and harsh weather. In times of extreme weather conditions or to escape predators, rabbits will readily utilize an abandoned woodchuck burrow for protection. A rabbit's home range varies greatly with the quality of habitat, but generally averages about three acres for females and eight acres for males.

Cottontails have very keen sight and hearing. When danger is sensed, the animal will usually freeze in place until the danger has passed, but they will flush readily if approached too closely. Rabbits normally move slowly in short hops or jumps, but when frightened they can achieve speeds up to 18 miles per hour over a short distance. They often zig-zag to confuse a pursuing predator. Although they do not take to the water often, rabbits are good swimmers. They will thump the ground with their hind feet regularly, probably as a means of communication. When playing, breeding, or fighting they often make low purring, growling, or grunting sounds. If captured by a predator, the animal may produce a loud, shrill scream.

Because of its high productivity rate, the cottontail rabbit is an important link in the food chain and a principle prey item for many species. It is also a popular game species throughout its range. Depending on its availability, the cottontail can be considered a buffer prey species, meaning if rabbit numbers are high, predators will concentrate on them, thus reducing the pressure on other prey species.

History in Connecticut: The eastern cottontail was introduced into New England in the late 1800s and early 1900s and since has been expanding its range, outcompeting the native New England cottontail for its habitat. In the mid-1930s, New England cottontails were still considered abundant and more numerous than the eastern cottontail. However, as agricultural areas reverted back to forest and these forests matured, populations of both species were reduced. Presently, the eastern cottontail is now the predominant species.

Management of Nuisances: Cottontail rabbits often cause problems by browsing garden crops or chewing on shrubs and trees. Rabbit browsing can be distinguished from deer browsing by looking at the clipped-off end. A rabbit will leave a clean, angled cut while a deer will leave a rough, jagged cut. Browsing and debarking by rabbits usually does not extend more than 2 1/2 feet above the ground or snow line.

Cottontails can be restricted from gardens and other areas by erecting a 3-foot high fence with two-by-two inch mesh. They are not good climbers or diggers but to discourage other animals from feeding in the garden, a 1-foot extension can be added to the top of the fence and bent outward at a 90-degree angle. Also, a 1-foot extension should be added underground to discourage burrowing animals. Existing deer fences can deter rabbits by attaching a small mesh wire fence to the lower part of the deer fence.

Individual trees and shrubs can be protected by wrapping plastic tubing or 1/2-inch mesh wire around the trunk. These guards should be loose-fitting, extend below the ground about four inches, and be at least two feet above the average snow depth.

There are chemical taste and odor repellents available from many lawn and garden stores. These repellents offer only a limited amount of protection and usually have to be reapplied at regular intervals, especially following a rain storm.

Live-trapping rabbits can help control rabbit problems to a certain extent, however, captured animals may soon be replaced by others moving into the area. Trapping is best done during the winter or during rainy, foggy nights in the warmer months. Bait traps with a combination of apples, carrots, and rabbit droppings. Trapped animals should be released as soon as possible in suitable habitat at least five miles from the capture site.

Hunting is also a means of control. Check state and local regulations before shooting any animal on your property.

The Technical Assistance Informational Series is 75 percent funded by Federal Aid to Wildlife Restoration - Pittman-Robertson (P-R) Program. The P-R Program provides funding through an excise tax on the sale of sporting firearms, ammunition, and archery equipment. The remaining 25 percent of the funding is matched by the Connecticut Wildlife Division. (rev. 12/99)

Top

Informational Series
Fact Sheet Index

Bureau of Natural Resources - Wildlife Division

Wildlife Division | Learn About CT's Wildlife | Common Wildlife Problems | Hunting & Trapping Info | Publications | Special Features

Last Edited January 2000

ABOUT THE TEAM

The King's Mark 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 King's Mark Resource Conservation and Development (RC&D) Area — an 83 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, active adult, 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 and/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 Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is reviewed by the local Conservation District and approved by the ERT Subcommittee, 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, e-mail: ertcoordinator@sbcglobal.net.