

## Hillsdale Planning Board Minutes

May 14, 2012

Present: Hank Henward, Chairman; Patti Rohrlich; Richard Freiman; Mark Barbato; Ellen Levy; Bud Gardner; Deborah Bowen; Vivian deGeorges, Secretary

CAC: Gretchen Stevens; Ruth Dufault; Bud Atwood  
Jeff Paige, community member

The Public Hearing was called to order at 7:05 PM by Mr. Henward but then closed because Mr. Roche's letter to abutting neighbors was incorrect as to the time of the hearing and said 7:30 instead of 7:00. Mr. Henward said it wouldn't be fair to start the meeting before 7:30, giving the neighbors a chance to appear at the time stated on the letter.

Planning Board meeting opened at 7:10 PM.

### **Edward Thyberg Tax ID 137-.1-.1-.112; Dan Russell, Surveyor; Frank Roche, Attorney; Shun Toll and McCartney Rds. 2-parcel Subdivision**

Received: DOH letter for septic perc tests; Town of Hillsdale driveway permit; credentials of Andrew James Didio, Environmental Scientist; Army Corps of Engineers Wetland Determination Forms for the three wetlands described on the site; DEC environmental resources map showing wetlands in the area. Mr. Russell then submitted and described the site maps showing wetland areas and said that Mr. Bervy, Mr. Henward and he went up to the site and the areas filled in with dots are going to be set aside as protected wetlands. He also showed on the map areas of purple striping which are suggested building sites. Also shown on the map are the 5 balloons which were installed for sighting from roads. He asked that if they could get approval on this in time for the purchaser to do the subdivision, then the purchaser can come in later for site plan approvals on any building projects. This area was a cross-country skiing area at one point and the trails have been surveyed and are shown on this map. Mr. Russell suggested that perhaps they can be used at a later date for roads/driveways to lessen further cutting.

Mr. Henward said that this is a compromise to allow the prospective buyers to go ahead with the subdivision and then come in and speak to us about sites for buildings. This is an Army Corps wetland designation map, not a DEC wetlands map. Mr. Russell showed the wording on the map that states that the building areas will not be in the mapped wetlands area nor on steep slopes.

Mr. Henward asked if there were any further questions. Ms. Bowen still has concerns about whether cutting will happen to show the parcels to their best advantage. Mr. Henward said

that no action on this land can happen, including clearing or driveway development, until the new owners come before the Planning Board for site plan reviews. We can then work with the owners regarding clearing/thinning of undergrowth, etc. anywhere where it could possibly be seen from a public road. The developer said that he doesn't know at this time where a prospective buyer would want to build a house. We can give them some flexibility and they can come in and let us know and we can then decide to approve or request changes.

Ms. Rohrlich asked if we can require that NOTHING can be done at all until they come in for site plan approval. We've had many cases where cutting/balding has been done to show the property at its best regarding vistas, and then restoring it was not possible.

Mr. Russell asked Mr. Henward to give him some language for our conditional approval. Mr. Henward said that we can say what we'd like but that doesn't stop people from doing things. The only thing is there can now be a penalty that's not just monetary, for instance no building permits of any kind for 5 years, if they do violate our requirements. He further said that he is trying to give the applicant the benefit of the doubt – why would they want to go in and prepare 3 sites at considerable expense not even knowing where a prospective owner would want his home?

Mr. Roche said that it would be good to have the public hearing in June if Mr. Russell can come up with the possible language. Mr. Henward said that we have some from Dick Alford and we can maybe use some of that as well. The CAC has a report on this property and I'd like to hear it now.

Ms. Stevens submitted a three-page study of this parcel which is *included at the end of these minutes so will not be completely restated here*. There is a fen on the property as well as large wooded areas. There are also other wetlands than those shown on the map, just offsite. There is an intermittent pool which is important because of it being a spawning area for amphibians listed as species of special concern which need isolated pools that dry at certain times. There is a stream, however, that may extend over to Mitchell St. which needs to be investigated because if fish can get to this pool, it would make it less important as a breeding ground. She explained that even if wetlands aren't disturbed by bulldozers, they can still be affected by pesticides from lawns, driveway runoff, etc. which may be treated by toxic substances and this needs to be taken into account to make sure they can't reach the water sources that drain into the wetlands. Also, even if a house and driveway don't have a large footprint, the presence of people, pets, etc., can have an effect on nearby wetlands. Since this has a large contiguous portion of wetlands and woodlands which are large intact habitats, it's important to keep building to the edges of the area and not break up the large portions.

Mr. Freiman asked how wide the trails are that in there now are. Mr. Russell suggested 8',

Mr. Henward 12', so they are probably somewhere in between. Mr. Russell further said that there would probably be as little cutting as possible because as tree-lined roads, they're a selling point.

Ms. Stevens continued her report saying they found mermaid weed which is a "red flag" that tells her this is an area that should be looked at more closely, because it may contain even more unusual species. They also found native honeysuckle, which is very rare, wood frogs, wood salamanders, and jefferson and marbled salamanders. They require substantially undisturbed woodland for most of the year. They breed in the pools, but then spend the rest of the year in the woods. At least a 750' zone around the pools should be considered. These are recommendations followed by the New England Army Corps of Engineers.

Ms. Dufault reported that in woodlands, there are species, rare and not rare, that need their habitat to have integrity with the woodlands, and any disturbance can bring in invasive species. The native species of flora feed the native fauna and an invasive plant species can come in and kill off the native ones. Landscaping around a new building can wind up bringing invasive species. She said that she's not sure what the solution is because people will build and landscape, but that she just want the Board to know the scope of this problem not in just this site, but everywhere.

Ms. Stevens continued to say that new roadways allow predators to get into areas where they can't get now or don't go because there aren't human habitations there, which they prefer to be near. These predators, using roads and driveways, can also disturb the populations of many other animals.

Ms. Levy to Ms. Stevens – in your opinion are these suggested building sites appropriate or would you suggest they be placed in different areas on these parcels? Ms. Stevens said just not near the wetlands, but closer to the existing road, where there is already disturbance. Mr. Russell noted that the closer you get to the road, of course, the more it can be seen from the road, which is what the Board is also trying to prevent. Ms. Stevens said that ecological and esthetic concerns are often at odds with each other.

*Recommendations from the CAC are included in their report, following these minutes.*

Mr. Henward asked Ms. Stevens if she has any comments about the pond on this site. She answered that it's a constructed pond which is there on older maps. It's fairly deep but doesn't have much vegetation except for common reeds. It's not as rich a habitat as a natural pond. Mr. Henward further said that to get a road to cross a stream, a culvert or bridge has to be used. We would send a letter to the Army Corps to see what they recommend. Does that sound appropriate to you? Ms. Stevens said yes, they may recommend how to construct a bridge or culvert. Mr. Henward then said that according to

the law firm Whiteman, Osterman, Hanna, the DEC can take jurisdiction when wetlands are deemed to be a local significant biodiversity area. Can you shed any light on that?

Ms. Stevens said that usually the DEC pays attention to fauna, not flora. If it were to become known to them that an important animal dependent on the wetlands was there, they would be interested, or if it affects public water supply, which this doesn't. If so, they might impose a 100' buffer around the wetlands. Mr. Henward said that it could become a contingency for approval, so we should at least notify the ACE and possibly DEC.

Mr. Roche added that Whiteman, Osterman, Hanna currently has a client who's suing the DEC for becoming involved where it shouldn't be and thought we should keep that in mind.

Mr. Atwood – I walked it and whoever laid out the ski roads did a good job, no erosion, staying away from stuff, etc. I wouldn't want to live on a road, but the Board has to use its best judgment.

There was more discussion about building envelopes and ROD regulations regarding sighting from a road. Mr. Henward said that regardless of ROD qualification, all other regulations regarding zoning, building/clearing slopes, etc., are still in effect and will subject these parcels to site plan approvals. That needs to be printed on the maps.

***Public hearing on this subdivision June 11 at 7PM***

**Public Hearing Wesley, Marcia, Coon Tax ID 127.-1-7 127.-1-19 127.-1-21 Frank Roche, Attorney; Kent Peer-Nous, abutting neighbor**

Mr. Henward opened the Public Hearing at 8:45 PM.

Mr. Roche submitted the returned certified mail cards for: Jennifer Cooper, Seth Grosshandler, Garrett & Mary Sarley, Kent Peer-Nous, Stavros Ierodionou, Barri Belnap and Harry Meola. When he didn't get a return from Mercedes Pacheco, he hand-delivered another copy to her home.

Mr. Peer-Nous owns 75 acres northeast of the Coon property, in NY. He said that it's unfortunate that the original clear cut had to occur on an otherwise unscarred ridgeline and asked where the law stands as to any additional clear cutting on the site. Mr. Henward said that it is our understanding that there won't be any additional clearing. Mr. Peer-Nous said that some of the clearing was done on very steep slope and some of it is regrowing. Will that regrowth be left intact or can it be recut? Mr. Henward said that we don't have jurisdiction according to the courts over visibility from Massachusetts road. The SEQRA processing is undergoing changes and I've asked the law firm about this and as it stands, all the storm water and everything can flow down into Massachusetts and it wouldn't be our concern if you listen to the courts. All we can do is encourage some screening which will

soften the ridgeline. Mr. Peer-Nous said that there is an old road up there which was supposed to be preserved as a nature trail. Mr. Henward said that the trail that was shown on the map was ceded to the town. Mr. Roche said that trail was rejected by the Town. He continued that he had FOIed the minutes regarding this trail and there was nothing in them about why the trail wasn't deeded to the Town and that he was told that the Town didn't want the liability. He further said that it was sold to Mr. Coon roughly five years ago, that he bought it from Bervy or Bervy Company. Mr. Roche submitted the deed showing that the trail was owned by Bervy and sold to Coon and never owned by the Town. Mr. Henward offered that it's an old Indian fur trail.

Discussion with Mr. Peer-Nous regarding his land and how he gets to it, which is off Rt. 71 and Riverside Farm Road, and about the clear cut part allowing runoff. He asked if there other restrictions, even if it's not the ROD, to clearing on slopes. Mr. Henward said yes, it's over 25% so there can't be clearing there legally.

Mr. Henward said that some neighbors who couldn't attend tonight let us know that they see the owner as a good neighbor and know that he has to go through strict regulations as far as building materials, colors, lighting, etc. The thing we have to decide is do we approve this subject to conditions or do we let the ZBA handle it?

Mr. Henward declared the Public Hearing closed at 9:06PM at which time the Planning Board meeting was reopened.

More discussion about the trail on the Coon land. Mr. Russell showed an original White Hill Estates subdivision map which has wording about the "orphan trail."

Ms. Bowen – can you please recap what we're deciding tonight? Mr. Henward – we can hand this off to the ZBA or decide that they can build outside the building envelope or vote it down saying that they can't build outside the building envelope. Mr. Roche asked what variance the ZBA would be voting on. Mr. Henward answered the variance to go outside the building envelope shown on the approved and filed map. Mr. Freiman – how many feet outside the envelope does he want to build? Mr. Russell – about 40 or 50'. Ms. Bowen – why does he want to build outside? Because the further he moves back the more he loses the view he wants.

Mr. Henward asked if anyone wanted to make a motion. Ms. Levy made a motion to deny because once we set a precedent, any future homeowner can cite this case in order not to honor a building envelope and there is no particular hardship to staying within the envelope in this case. This motion was seconded by Ms. Rohrlich.

Mr. Roche said that this predated the Town's ridgeline requirements so the Planning Board had no authority to establish building envelopes in 2002. Only the Homeowner's Association

could do that. Mr. Henward agreed saying they're not building envelopes, they are setbacks which only the Homeowner's Association can set and enforce.

Mr. Roche proposed setting this aside for a week and talking to Mr. Alford. Mr. Henward said he's already spoken to Mr. Alford and these setbacks are the responsibility of the Homeowner's Association. If the Homeowner's Association agrees and the Planning Board does not, it is arbitrary and capricious on our part to rule against the Homeowner's Association.

Discussion on why the Planning Board should vote at all, if we don't have a legal right to enforce this.

Ms. Levy withdrew her motion.

Mr. Henward said that we need to move on the merger of the three lots. Ms. Rohrlich suggested writing a letter to the Homeowner's Association advising them that we think it's best for the community to keep the ridgelines intact. Mr. Roche said that the sole job of the Planning Board is to uphold the law and not to advise. Ms. Rohrlich disagreed and said that we are, indeed, here to advise applicants on the vision of the Town regarding development. Mr. Roche asked wasn't there a building permit that was later revoked? You're telling us that you'd like to write a letter and that's lobbying against an applicant. He asked why it is important to the Planning Board when it's not important to the neighbors, based on the fact that none except Mr. Peer-Nous came to the Public Hearing. The wording of the law says one thing but your intent is to say another.

Mr. Henward said he was going to suggest we vote on the merger of these lots and with the regard to the location of the house, he'd discuss with Dick Alford the course of action. He said his position is that the Planning Board has no jurisdiction on this issue. It's not a variance because it's within the setback, it's not in the ROD, it's not leading to further clearing because it's on a steep slope. The inspector will say it's outside the building envelope but we'll tell him it's not a building envelope, it's a setback.

Mr. Henward asked for a motion on the merger of the three parcels.

***Ms. Rohrlich made the motion and Ms. Levy seconded it. The vote was all ayes to approve the merger of the three parcels.***

Mr. Henward said that since we have to stamp it, it doesn't hurt to have the housing site on it.

Discussion of proposed amendments to the Town's Zoning and Land Use Control Laws.

Ms. Levy went through the laws and pointed out the changes made in Local Law 2 which amends the Zoning and Land Use Control Law and which she wanted to point out as being significant to the Planning Board.

The first change is from section 4.72a being the addition of the wording "provided that there shall be no minimum lot size requirement in those portions of the HM district that are served by municipal sewers..."

The second change is from section 4.62b which now includes a definition of "affordable housing" being "Affordable housing is housing that is affordable to a household with a combined income of eighty percent (80%) or less than the County median income and in which the household spends no more than thirty percent (30%) of their household income on housing costs."

The next section, 14.2, has to do with the definition of accessory apartment housing. Before this change, the primary unit on the property had to be occupied by the owner but that wording has been changed to read: "A dwelling unit occupying the lesser of 1000 square feet or 30% of the floor space of either a single-family residential structure in which either the primary unit *or the accessory apartment* is owner-occupied..."

There was then a discussion prompted by Mr. Barbato regarding section 8.12-5-h, Additional Town Driveway Requirements. The specific sections Mr. Barbato thought were excessive were the sections for "Minimum cover over culverts", which requires "12 inches of soil cover over top of pipe" and "Driveway construction", which requires "12 inches of clean gravel or crushed stone with ½" per foot crown."

For the cover over culverts section, Mr. Barbato said that 12" of soil is not necessary to withstand 40,000 lbs/axel and that without sinking the culvert deeper than ordinarily required, would result in quite a "bump" for vehicles to go over.

For the driveway construction section, Mr. Barbato explained that excavating a driveway of any length to the depth of 12" to accommodate this requirement would generate an enormous amount of soil which would need to be removed and carted away. He doesn't feel that most people could afford to adhere to this requirement while constructing their driveways.

Mr. Henward said that most of these driveway descriptions are from State requirements but that he could speak with Doug Clark for further information.

Mr. Henward asked for a motion to approve Local Laws 1 and 2 with a proviso of concern about the excessive requirements on driveway construction.

***Ms. Levy made the motion. Mr. Henward seconded the motion. The vote was all ayes.***

Mr. Henward then asked for a motion to adjourn. Mr. Freiman made the motion and Mr. Gardner seconded it. The vote was all ayes. Mr. Henward declared the meeting closed At 10:20 PM.

# Conservation Advisory Council

## Town of Hillsdale, NY

### Preliminary report on the Thyberg site, Shun Toll Rd

14 May 2012

A 2-lot subdivision has been proposed on a ca 84-acre parcel owned by Edward and Vera Thyberg on Shun Toll Rd in Hillsdale, adjacent to the Massachusetts border.

Hillsdale Conservation Advisory Council members visited the site on two evenings in late April and early May 2012. Ruth Dufault, Gretchen Stevens, Guy Winig, and Bud Atwood participated in one or both visits on 25 April and 1 May. On 25 April we were accompanied by Deborah Bowen, Bud Gardner, and Hank Henward of the Hillsdale Planning Board, Judy Gardner, and applicant's agent Nikki Carchedi, and on 1 May only by Carchedi. We did not see the site interior, but walked the western, southern, and eastern perimeters, and saw some of the western wetlands. We hope to visit the site again after the wetland boundaries have been flagged.

Elevations range from approximately 1200 ft asl in the northeast corner to approximately 1390 ft in the southeast (estimated from USGS 7.5-minute topographic map, Egremont quadrangle). Much of the property occupies west- and northwest-facing slopes and a mid-slope topographic "bench" (more-or-less level area) containing several wetlands and a constructed pond. The site drains westward into the Roeliff-Jansen Kill valley and eastward into the Prospect Lake basin (Massachusetts). According to Fisher et al. (1970), the western part of the site is underlain by Everett Schist—mainly schist with greywacke lenses—and the eastern part by the Walloomsac formation—predominantly slate, phyllite, and schist. According to Case (1989) the predominant soils are in the Macomber-Taconic association. These are acidic soils formed in glacial till that range from well drained, moderately deep to somewhat excessively drained and shallow soils. We learned from Nikki Carchedi that the site was formerly used as a cross-county ski center.

#### Upland Forest

The parcel is largely forested, but contains a large pond at the north end, apparently excavated in a former wetland. Within the forest are ledges, hardwood swamps, woodland pools, and intermittent streams. We did not have a site map depicting elevation contours or other ground control features, so have not pin-pointed the locations of some these habitats with respect to the parcel boundaries. Most overstory trees were in the range of 8-20 inches diameter-at-breast-height (dbh), with occasional larger trees of 30-35 in dbh. Common trees in the western forest were red oak, black oak, chestnut oak, white ash, black birch, and red maple. Less common were white oak, white birch, gray birch, yellow birch, black cherry, eastern hemlock, and white pine. Witch-hazel, maple-leaved viburnum, low blueberries, and gooseberry (or currant) were common in the shrub layer, and Pennsylvania sedge, Canada mayflower, starflower, white wood aster, and hardwood seedlings in the ground layer. Less common herbs were Christmas fern, trailing arbutus, sessile bellwort, purple trillium, jack-in-the-pulpit, and an unidentified avens. The steep west-facing slope below the bench had a grove of eastern hemlock (6-20" dbh). 2

The northern and eastern forests had abundant sugar maple, black cherry, black birch, red oak, and white ash in the overstory, with scattered hop-hornbeam, gray birch, and white ash. The understory was very sparse, with a few striped maple, serviceberry, and hardwood saplings. The ground layer had lots of Pennsylvania sedge, Canada mayflower, and low blueberries, and occasional prince's pine (clubmoss), running clubmoss, hay-scented fern, cinnamon fern, white snakeroot, starflower, and hardwood seedlings—especially sugar maple.

Exposed bedrock was visible at moss-covered ledges in the eastern part of the site and at the edges of woods roads. There were many snags (standing dead trees) and down logs. Hardwood and white pine snags had feeding excavations of pileated woodpecker and northern flicker, and live white oak had evidence of yellow-bellied sapsucker feeding. Birds were quiet on both evenings. We heard black-capped chickadee and chipping sparrow in the forest on 1 May. We conducted no active searches for reptiles or amphibians, but saw a wood frog in the upland forest on 25 April and a red eft on 1 May. On the western slope we noticed many instances of broken (snapped off) trunks, and toppled, uprooted trees, suggesting high exposure to wind and/or ice build-up in those areas. We saw few signs of recent cutting or other disturbance except along the woods roads and at recent soil test pits. Non-native plants such as garlic-mustard and multiflora rose occurred on and within a few feet of those roads, but did not seem to extend into the forest interior.

#### Swamps, Woodland Pools, and Pond

The ca 3-acre constructed pond at the north end of the site was created in a former wetland, and is now partially impounded by a berm at the northeastern and northern perimeter. It drains via culvert beneath Shun Toll Rd. We saw the pond only from the southern and eastern sides, and did not examine it closely. A marsh with common reed was visible along the northwestern edge. We heard spring peepers calling from the pond, red-winged blackbird singing from the vicinity of the reed marsh, and black-throated green warbler singing from the forest adjacent to the marsh.

A ca 1.3-acre forested swamp southwest of the constructed pond drained via a small stream that ran southwest down the western hillside toward Mitchell Street. We did not enter the swamp interior, but from the perimeter observed winterberry holly, red-berried elder, and northern wild-raisin in the shrub layer, and abundant skunk-cabbage throughout. Because we found golden saxifrage and watercress near the stream outlet, we speculate that the swamp is at least partially fed by springs.

Other herbaceous plants included cinnamon fern, royal fern, sensitive fern, crested fern, Pennsylvania bittercress, white turtlehead, tall meadow rue, and marsh marigold. We heard spring peepers calling from the swamp, and disturbed a pair of (?) black ducks that flew from the swamp interior.

Ca 140 ft south of and disjunct from the large swamp was an intermittent woodland pool. We saw it only from a distance, but it appeared to have no surface water connections to other wetlands or streams.

South of that pool was a long, narrow, pool-like swamp, ca 35 ft wide and perhaps 500 ft long. At the south end it had winterberry holly, mermaid-weed (*Proserpinaca*) and waterweed (*Ludwigia palustris*), with royal fern, white turtlehead, and an unidentified native honeysuckle at the pool edge. 3

We did not examine other parts of the wetland, but it appeared to have no surface water connection to nearby wetlands and streams. The presence of mermaid-weed and waterweed indicate a fairly long hydroperiod but, if the pool ordinarily dries up during the summer, this would be classified as an intermittent woodland pool—a vernal pool in a forested setting.

South of and disjunct from the long narrow swamp was another swamp partially or entirely outside the Thyberg parcel boundaries. We encountered at least two more intermittent woodland pools (one

of them dry on 1 May) that may both have been outside (south of) the Thyberg property. We will need to reexamine these locations when we have a better site map in hand.

### Conservation Issues

The main conservation issues we have identified at this early stage are associated with forest fragmentation, the “edge effects” of human activities--such as noise, lights, and water pollution--and consequent degradation of wildlife habitat, direct or indirect disturbance of wetlands and streams. Although there are steep slopes on some areas of the site, it seems as if driveways and building envelopes could easily be aligned to avoid the steepest areas.

The Thyberg property is within the Taconic Mountains, and is part of the largest unfragmented forest area in the Town of Hillsdale. Large forests provide many habitat values not duplicated by small forest patches, and the increasing fragmentation of forests by roads, driveways, and other developed uses has been associated with the decline and disappearance of many of the sensitive forest-dependent wildlife species of the Hudson Valley. Mammals such as black bear, bobcat, and fisher, many raptors and songbirds, and pool-breeding amphibians, and other area-sensitive wildlife require large expanses of forest to sustain local populations.

Roads, driveways, and other corridors cut into forest interiors provide access for nest predators such as raccoons and skunks, and nest parasites such as the brown-headed cowbird. Soil compaction or other disturbance to the forest floor can destroy habitat for salamanders and other amphibians that need the loose organic duff and fine and coarse woody debris typical of an intact forest. The effects of noise and lights associated with human habitation extend long distances into forest habitats, and can negatively affect the reproductive, hunting, and foraging behavior of many kinds of wildlife. Forest clearing in areas subject to high winds and ice damage will tend to make the remaining trees at the clearing edges more vulnerable to those stresses. (This is less an ecological problem than a potential threat to developed features.)

For a residential subdivision site such as this, the concern is not so much about the direct habitat loss from the footprints of the driveways, yards, and buildings, but the much larger fragmentation and disturbance effects that extend far beyond those footprints.

Hardwood swamps and woodland pools are important to many species of birds, mammals, amphibians, reptiles, and invertebrates, and especially when contiguous with large areas of other intact habitats. Red-shouldered hawk (NYS Special Concern), barred owl, wood duck, white-eyed vireo, and many other songbirds nest in hardwood swamps. Several species of turtles use swamps for summer foraging, drought refuge, overwintering, and travel corridors. Pools within swamps are used by several amphibian species for breeding and nursery habitat, and are the primary breeding habitat of blue-spotted salamander (NYS Special Concern). Four-toed salamander, believed to be regionally rare, uses swamps with rocks and abundant moss-covered downed wood or woody 4

hummocks. Isolated woodland pools that dry up each summer are the core breeding habitat for a group of pool-breeding amphibians—spotted salamander, marbled salamander, Jefferson salamander (all NYS Special Concern) and wood frog--that require those isolated fish-free environments. They use the wetlands only for brief periods for breeding and nursery areas, and spend most of the year in the surrounding forests, often moving long distances from the breeding pools. The large forests surrounding the wetlands are thus essential habitat components for these amphibians.

Land development activities have the potential to harm the onsite and offsite swamps and pools directly (e.g., by filling, flooding, or draining), or indirectly (e.g., by altering the quality or quantity of runoff into the pools), and to alter the quantity and quality of groundwater recharge. Siltation from construction activities, pollution from septic systems, from lawn and garden fertilizers and pesticides, or hydrocarbons or heavy metals from driveways can pollute groundwater and surface runoff, and

render the wetlands unsuitable for the certain species of conservation concern. Conversion of forest to lawns, driveways, and buildings in the watersheds of wetlands can raise the wetland water temperatures and degrade the habitat values for temperature-sensitive species. Forest clearing can also reduce the volumes of groundwater recharge unless special measures are taken to insure that groundwater recharge and surface runoff from the site remain unchanged from pre-construction volumes.

In the long, narrow wetland we were surprised to find mermaid-weed, a regionally uncommon species typically associated with calcium-rich waters. Its presence suggests an unusual environment that may support other rarer species.

At least three small streams rise on and near the Thyberg property and run down the west slope toward Mitchell Street, and ultimately into a tributary to the Roe-Jan classified by the state as a trout-spawning stream. Small streams such as those on this hillside have important habitat values in their own right, and contribute much to the quality of downstream areas; they help to maintain the cool, clear waters required by trout and other sensitive fish species for spawning, nursery, and foraging habitat.

The Taconic Ridge has been designated a Significant Biodiversity Area by the New York State Department of Environmental Conservation (Penhollow et al. 2006) because of the large areas of contiguous high-quality forest habitat, and recognized for its importance for wintering and breeding birds and as a corridor for migrating birds, the known occurrences of regionally rare plant and animal species, and the importance for groundwater recharge supporting rich fens in the Harlem Valley. (Perhaps Hillsdale's largest and highest-quality fen lies along the Roe-Jan tributary fed in part by the streams originating on this hillside.)

The site lies within Hillsdale's Ridgeline Overlay District, and eventual forest clearings and buildings could be visible from large areas in New York and Massachusetts.

#### Preliminary Recommendations

The applicant has not yet proposed locations for building envelopes, driveways, and other developed features, but here are some early recommendations based on our current knowledge of the site. 5

For subdivision application:

- Delineate and map wetlands and streams throughout the site, and note the presence of nearby offsite wetlands and streams that may be affected by site development.
- Conduct a conservation analysis to help determine the most appropriate locations for development.
- Locate building envelopes as close as possible to Shun Toll Road to minimize intrusion into the large forest, and to minimize visual impacts to the large viewsheds in New York and Massachusetts.
- Locate septic leachfields distant from streams and wetlands.
- Minimize proposed areas of forest clearing.
- Design short driveways on gentle slopes to minimize the need for complex stormwater management infrastructure.

For eventual site planning:

- Carefully design clearings, developed features, and stormwater management to protect onsite and offsite streams and wetlands.
- Design outdoor lighting to minimize effects on nearby wildlife habitats.

#### References Cited

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