

April 5, 2008

Don Bartles, Jr. Chairman  
Pine Plains Planning Board  
Town Hall  
3284 Rte. 199  
Pine Plains, NY 12567

Dear Chairman Bartles and Members of the Pine Plains Planning Board:

The following constitute my findings on ***DEIS Chapter 8-Ecological Communities, Flora, and Fauna*** for the Carvel Property Development in Pine Plains and Milan NY. My review included not only the summary (Chapter 8) but all 18 Appendices to Chapter 8. These appendices contain the raw data and analyses that form the foundation of Chapter 8. I also conducted a site visit on April 23, 2007 accompanied by Dr. Joe Bridges of MDRA, supplemented by an additional drive through of the site on January 19, 2008, using public roads, to re-acquaint myself with some of the features on the property in preparation of this report. My *curriculum vitae* is appended to this letter, documenting my qualifications to address you on these particular issues. My summary conclusion is that the proposed development will have serious adverse impacts on the biodiversity and ecological integrity of the site. These impacts could have been avoided by a much fuller consideration to the site's ecological and biological diversity during the project planning process.

The goals of my analyses were threefold:

**A:** To review the adequacy of the DEIS investigations specifically pertaining to natural resources and biodiversity (Chapter 8 and Appendices 1-18).

**B:** To use the data in the DEIS to create an ecological constraints and integrity map and compare it to the Applicant's development proposal.

**C:** To review the proposed dedicated open space on the proposed development in the context of both on site and off site ecological integrity and biodiversity.

**A: Adequacy and Quality of the Field Work and Data Collection**

The DEIS is a voluminous document, and does contain *denovo* data, but also has accumulated and repackaged existing data sets and information. It is always important with projects of this scope and size to determine the quantity (time) and quality (expertise) of site-specific *denovo* field efforts, versus compiling data from secondary sources including lists of potentially occurring species, agency data, web sites, and the literature. For example, several of the Appendices are stand alone data sets from other sources that were not collected as a part of this study. Overall, the work is adequate, and

several of the Appendices are of high quality (the bat, mollusks, and cricket frog surveys).

The ornithological studies are inferior both in effort and coverage to studies recently conducted by Mathew D. Rudikoff Associates (MDRA) for a smaller property on Depot Hill in Amenia. Data on the sites' various vernal pool resources were poorly organized and hard to understand, and the assessment of the vernal pools did not use any established, recognized methodologies (e.g., Calhoun and Klemens, 2002).

The bog turtle Phase 1 assessment (Appendix 8.2) was completely inadequate for the purposes of SEQRA or for compliance with the USFWS Recovery Plan (2001). As the compiler of the plan for the USFWS I can attest that three pages contained in Appendix 8.2, of which there *is only one paragraph specific to a single on-site wetland*, fails to meet either the spirit or substance of a Phase 1 assessment. Many of the wetlands that were illustrated in Appendix 8.5 (Wetlands Delineation) have the potential to be considered bog turtle wetlands under a comprehensive Phase 1 assessment that evaluates and describes each wetland in detail using the three principle parameters: canopy closure and vegetation structure, hydrology, and muck depth. Recent discovery of a bog turtle population in Milan adds further urgency that this aspect of the SEQRA review be fully explored and documented. In contrast to the cursory treatment of Appendix 8.2 (Bog Turtle), I recommend that the Planning Board examine the comprehensive nature of the assessment following Federal protocols conducted by Sterns and Wheeler for the other ESA-listed species that potentially occurs on the site, (Indiana Bat: Appendix 8.15).

Some data collected in 2007 were not included. Despite the date of the DEIS being December 2007 (as stated on the cover sheet of the DEIS) a least one vernal pool location for the state-listed Jefferson salamander discovered on my April 23<sup>rd</sup> site visit with MDRA immediately off of Hicks Hill Road was not included. Also, a red-bellied snake that was collected on the site in April 2007 is not included in the report---the species is still listed as not having been reported in this study though previously reported near the site by Kiviak (contained in DEIS comments).

### **B: Adequacy and Quality of Data Interpretation versus the Ecological Constraints of the Site**

Various locations for rare species have been identified throughout the site, including some exemplary clusters of rare species associated with wetland complexes and their associated upland habitats, including dry exposed upland sites. In order to attempt to explain the "correctness" of the proposed action in the context of the site's abundant biodiversity, the DEIS contains references that downplay the importance of the ecology of the site. For example, many of the studies that are contained in the Appendices are prefaced with the statement that these are types of studies not normally part of a DEIS review of natural resources. The fact that this is the largest development site in Dutchess County, and the fact that the potential for significant biodiversity exists, mandates a hard look. The types of studies that have been done on the site *should be* part of this SEQRA review. Merely because they are infrequently requested as part of a SEQRA review does

not make the fact that they are included here extraordinary in any sense. Likewise, statements indicating that certain of the regionally-rare birds listed by Hudsonia are also game species (various rails and gallinules), does not negate the importance of the occurrence of these regionally-rare species on the site. This is an attempt to disguise and downplay the importance of understanding regionally-rare species in the context of this SEQRA review and to “explain away” the biodiversity values of the site.

For planning purposes, the amphibians and reptiles, exhibiting landscape sensitivity at the 1000-2000 acre landscape scale (LaBruna and Klemens, 2007; LaBruna *et al.* 2006; Gruner *et al.* 2006; Miller *et al.* 2005; Miller and Klemens, 2002; 2004) are an ideal lens to look through when planning for the ecological resiliency of the site. Under the current development plan, every location where rare amphibians and reptiles occur (as documented in the DEIS) will be eliminated unless sufficient upland habitat remains around wetland complexes, the migratory routes between uplands and wetlands are respected as well as those routes that connect individual wetlands on the landscape through uplands.

The way to ensure protection is by ecologically-informed site planning that constructs an ecological constraints map of the site as the very first step. By constructing an ecological constraints map it becomes readily apparent that an ecologically-informed process was not used; the development was laid upon the landscape in a cookie-cutter fashion without consideration for the rich diversity of species documented by MDRA and others over several years of field work on the site (Daly and Klemens, 2005; Johnson and Klemens, 2005a+b; Klemens and Johnson, 2005; Miller and Klemens, 2005). The ecological constraints map that I constructed (Map 5) was built in a stepwise, additive process (Maps 1-4), layering in the various ecological constraints as follows:

#### **STEP 1**

All wetlands were mapped and a 100-foot buffer placed around them. I considered all wetlands to be of importance, not just those regulated by DEC and ACOE. Therefore this map differs from the wetland maps contained in the DEIS as the Applicant did not propose to buffer all wetlands.

#### **STEP 2**

All vernal pools containing the State-listed Jefferson salamander were surrounded by a 750-foot area of critical upland habitat as per Calhoun and Klemens (2002) best development practices manual. The premise of this protection is that 95% of the Jefferson salamander population that breeds within the vernal pool will be found within forested terrestrial habitat within 750 feet of the pool's high water mark.

#### **STEP 3**

All locations where State-listed spotted and box turtles were located (total of five sites) were surrounded by a polygon of ¼ mile (1320 feet). While not protecting the outer limit of the movements of these species, it does provide a significant level of protection to these species as they move between wetland habitats and upland areas (Klemens 2000;

Mitchell and Klemens, 2000). In addition, as these polygons are embedded within larger protected matrices, it does additively confer a higher level of protection for these species.

Both box and spotted turtles are near the edge of their native range limit at this site (Klemens, 1993). This makes their protection especially important as they are the best genetically-adapted representatives of their species to colonize farther northward as the climate begins to warm due to climate change. Another important issue in the conservation of these species is that they have become very scarce and extirpated farther south in New York because of sprawl and over-development.

#### **STEP 4**

Portions of Ham Brook where wood turtles were found were also encircled with a quarter mile polygon. Although wood turtles may wander as much as a mile from their stream and river habitat, they generally are found within 1000 feet of the floodplain corridor (Klemens, 1993). The wood turtle habitat was also buffered by being imbedded in other ecologically-constrained habitat.

#### **STEP 5**

Habitat connectivity with the adjacent Lafayetteville Multiple Use Area was strengthened by the incorporation of some unconstrained areas that severed most of the ecological connections between the site and Lafayetteville and the overall Stissing Mountain ecosystem.

*The results of my analysis are that 1444 acres are ecologically constrained, and an additional 143 acres are constrained to provide meaningful off-site connectivity for a site total of 1587 acres. This is the acreage that should not be developed. This represents about 75% of the site which is consistent with the goal published by Calhoun and Klemens (2002) and Klemens et al (2006) that conservation planning optimally requires about 75% of a site being left undeveloped, including both undevelopable land such as wetlands, and developable land that connects ecosystems to one another.*

#### **C: Adequacy of the Proposed Dedicated Open Space Plan versus the Ecological Constraints on the Site**

One of the glaring deficiencies (or better stated, mis-representations) of the DEIS is the table on page 8-103 that lists the amount of each habitat type that will be left post-development. On page 8-100 it is stated that 24% of the site will be disturbed (534 acres). However, what is not discussed is the size of habitat fragments that would be left. In order to understand the acreage, parcel size, and configuration of the habitat that is be designated as open space, I conducted an analysis of the open space parcel shown in the DEIS.

The Applicant has stated that 76% of the site is in open space; however their submission makes no reference as to how that figure was derived, nor any analysis of the functional ecological integrity of that open space. An analysis of the Applicant's submission (Map 6) indicates that there are 30 areas of dedicated open space, many of these being wetland corridors totaling 446 acres (about 20%) of the site. I can only guess the 76% figure may have been derived from double-counting many of the undeveloped portions of the house-lots as "open space".

I analyzed the fragment size of these 30 open space parcels and found that they ranged in size from just over half an acre to 62 acres. 50% (n=15) of these parcels were less than 10 acres, and seven parcels were between 10-20 acres, two parcels between 20-30 acres, four parcels between 30-40 acres, one parcel of 52 acres, and one parcel of 62 acres.

None of these fragments is sufficient to maintain ecological connectivity, nor the continued survival of viable populations of the State listed amphibians and reptiles reported from the site. As these species have the lowest thresholds of landscape connectivity, around 1,000 acres, one can only extrapolate that impacts to the avifauna, which generally require several thousand acres of intact habitat, will also be as severe. Post-development one could reasonably anticipate that the bountiful wildlife of the site would be replaced almost exclusively by those species able to survive in human dominated landscapes (i.e., development-associated species) *sensu* Miller and Klemens (2002).

***Ecological function and integrity are not synonymous with the protection of fragments of undeveloped open space.*** These fragments include thirty parcels of dedicated open space as well as undesignated open space, the latter including back yards of homes, lawns and golf courses, and the edges of roads. While providing some aesthetic amenity, these fragments have greatly reduced ecological function and integrity, and will serve as a staging ground for large increases in disturbance-associated species. Disturbance-associated species could reasonably be expected to increase dramatically on the post-development site, flourish at the expense of and to the detriment of disturbance-sensitive species.

## **Conclusions**

The dedicated open space on the site is highly fragmented. The ecosystems of the overall site would be so fragmented as to virtually ensure the elimination through mortality of all the extant populations of State-listed amphibians and reptiles on the site.

Other forms of area-sensitive biodiversity will be lost and replaced by those species able to survive in edge habitats dominated by humans.

This unacceptable loss of significant native biodiversity is a result of the lack of any biodiversity informed pre-planning conservation analysis to guide the proposed development.

This entire project needs to be re-thought with stewardship of the natural environment being the foundational guiding principle of the site planning and design. Scenic Hudson would welcome the opportunity to begin a dialogue with the Pine Plains Planning Board and the Applicant to create a true conservation development on the Carvel property.

Sincerely,

Michael W. Klemens, PhD  
Director of Conservation Science  
Scenic Hudson

Attachments (7)  
CV  
Maps No. 1-6

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