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Preliminary Ecological Assessment of the Proposed County Fire Training Facility Site in the Town of Marbletown, Ulster County, New York

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Prepared for [redacted - Stone Ridge resident]

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At the request of [redacted], Hudsonia performed a preliminary ecological assessment of the proposed Ulster County Fire Training Facility site at the campus of SUNY Ulster, Town of Marbletown, Ulster County, New York. Hudsonia is a non-advocacy, nonprofit institute for research and education in the environmental sciences. Hudsonia does not support or oppose land development projects; rather we collect data and observations from field studies, review remote imagery and environmental documents, identify potential impacts on biological resources, and make recommendations for reduction or mitigation of impacts as appropriate.

I spent about 1:40 hours at the site on the morning of 17 July 2018. I also reviewed the Full Environmental Assessment Form Part 1 (“EAF”) and selected maps. The site proposed for intensive development constitutes about 1.5 acres (EAF). The surrounding landscape includes the rest of the SUNY Ulster campus, residences, wetlands, woods, and fields. The EAF is confusing with regard to the actual Fire Training Center (FTC) construction site vs. the larger SUNY Ulster campus; I refer to the “site” as the 1.5 acre FTC location.

Soils

The EAF states that the 1.5 acre site is underlain by Stockbridge Farmington soil 40%, Volusia gravelly silt loam 40%, and Canandaigua silt loam 20%, and that 60% of the site is underlain by “poorly drained” soils. Field observations, however, indicate that the site is on old fill, probably the result of grading land and filling wetland to create a substrate suitable for athletic fields. Thus the soil should be classified as a udorthent (cut and fill material). Old wetland fill such as this may be unstable and lack bearing strength for construction, and could settle differentially causing a building and infrastructure to sink or shift. The applicant should provide current, onsite soils data to explain actual soil conditions and how the building and infrastructure design will take those into account.

It is unclear when the wetland fill was placed. Fill edges roughly two to three feet high are conspicuous around the edges of much of the site, except where it blends into the adjoining mowed area and athletic fields. If grading of the site occurred after the effective date of section 404 of the federal clean water act, the filling could have been a federal wetland violation.

There do not appear to be permanent athletic facilities on most of the site. Was recreational development avoided because of a soil drainage problem, or because of uneven subsidence of the fill material, or for another reason?

The northwestern end of the development site encompasses fifteen square plots, each perhaps 30 feet on a side, that show on 2013 and 2016 Google Earth images. These plots were grown with grass and forbs about two feet tall at the date of my visit. The applicant should explain the origin of these unusual features: were they garden plots, experimental plots, features designed for stormwater infiltration, or something else? Do they indicate any adverse conditions such as poor drainage following storms or snowmelt?

Wetlands

Tree-dominated swamp adjoins the site on the northwest, and probably around most of the northeast and southwest sides as well. EAF E2hii asks if any wetlands adjoin the project site; the answer should be “Yes” (not “No” as currently stated). The wetland appears to be connected to a stream system thus is probably federally regulated.

Construction and operation of the site are very likely to result in pollution of the wetland by silt, nutrients, and petroleum hydrocarbons from soil erosion and parking lot runoff. Dumping of organic materials (grass clippings?) that has already occurred, and potential future organic pollution of wetland around the site edges, could create conditions for breeding of the northern house mosquito (*Culex pipiens*) that is the principal bird-to-human vector of West Nile virus.

How will stormwater be treated and infiltrated to avoid degradation of the wetland? How will sedimentation into the wetland be prevented? It should be noted that standard techniques such as staked bales and filter fabric silt fences do not prevent fine soil particles from escaping a construction site despite statements often made in land use proposals.

Stormwater

EAF D2e asserts that the area of soil disturbance will be less than one acre but a plan of the proposed facilities (including parking) suggests that most of the 1.5 acre site will be disturbed when construction access, equipment turnaround, and materials storage, etc., are accounted for. The applicant needs to present a detailed construction plan to allow determination of the exact area of disturbance.

Wastewater

EAF D2e asserts that no liquid waste will be generated. Won't there be liquid waste from bathrooms in the facilities? Will this waste be routed to a campus sewage treatment system or treated in a separate septic system?

Dumps

I observed several small dumps around the edges of the site, containing metal, concrete, organic matter, and other materials. The dumps should be checked for hazardous materials, cleaned up, and the metals recycled. Dumping of organic matter, and anything else, should be stringently avoided in the wetland edges.

Plants

Diverse native and nonnative plants occur spontaneously around the margins of the site; I observed more than 55 species including several sedges (*Carex* spp.). The scope of my survey did not include identifying all the plants, and there could be species of conservation concern. A thorough survey should be conducted on the site and the adjoining habitats to discover if there is any rare plant in need of conservation.

There are some large trees (up to 24 inches or more in diameter) at the edges or just outside the edges of the site. For example, there is a ca.-24 inch swamp white oak at the old stone wall on the southwestern margin. Trees 12 inches or greater in diameter, and ideally trees of all smaller sizes as well, should be preserved and protected from construction damage for their biodiversity value. The applicant should agree to identify, mark, and protect all such trees, on or off the site. Dead trees, and trees with cavities, of any size should be protected as potential bat roosting and nursery habitat (see below). Only dead or live trees that present a hazard should be removed.

Wildlife

EAF E2o refers to two bat species, endangered and threatened, respectively, Indiana bat and northern long-eared bat. What is the basis for this mention- have these species been detected on or close to the site? Or is the mention based on the presence of these bats at the Rosendale hibernacula nearby? Has a bat survey been conducted at the site?

Northern long-eared bat and Indiana bat hibernate in the Town of Rosendale (e.g., http://www.dec.ny.gov/docs/wildlife_pdf/nlebtowns.pdf). Indiana bat hibernates in the area just north of Rosendale, within 2.5 miles of the Fire Training Center site. Northern long-eared bat hibernates in Rosendale, presumably in the same place as Indiana bat. New York State Department of Environmental Conservation (DEC) guidance requires (<http://www.dec.ny.gov/animals/106090.html>) that all “snag and cavity trees” be left uncut except where cutting is necessary to protect human life and property. Other DEC bat conservation guidance may apply to the proposed project.

Protecting bats requires more than adhering to the guideline for seasonal tree cutting mentioned in the EAF. Construction and operating noise and night lighting, or other effects, could disturb bats at their roost or nursery trees. Trees suitable for bat roosting (e.g., dead trees with loose bark, live trees of certain sizes and species with suitable bark features) should be protected from felling or construction disturbance. Although these two bats roost in many kinds of trees, shagbark hickory may be especially important. The site margins should be surveyed for shagbark of any size, and any shagbarks found should be protected.

During the period of my visit, two male wood thrushes sang strongly close to the site both east and west. This is not a rare bird in our region but it is classified by the DEC as a Species of Greatest Conservation Need because of a declining population (and wood thrush song is an iconic feature of the northeastern forests). The applicant should address potential impacts to the wood thrushes, including maintaining a visual and noise screen between construction and their habitats. Breeding songbirds such as the wood thrush may be sensitive to increased human activity at the site.

Conclusions

Several important environmental issues are not addressed or are incompletely addressed in the EAF, and the information about soils is inaccurate.

-The soils information in the EAF is out of date, and the 1.5 acre site is partly or entirely underlain by old wetland fill. This material could be unstable for construction and may require special engineering for stormwater infiltration.

-Stormwater may carry sediment, nutrients, petroleum hydrocarbons, and other pollutants into the bordering wetland. Soil disturbance onsite likely will exceed one acre, and a stormwater management plan addressing infiltration and wetland protection is needed for local environmental reasons even if not required by the DEC.

-Dumps around the margins of the site should be analyzed for possible hazardous substances, and the dumped materials removed and recycled.

-The plants of the site edges are diverse. A thorough survey should be conducted to determine if there are plant species of conservation concern. Construction will disturb these site margins.

-More information is needed to understand the basis for mention of an endangered and a threatened bat species in the EAF. The trees bordering the site should be managed as potential bat roost and nursery habitat. Other potential impacts to bats should be avoided.