



Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting • Forestry

October 28, 2020

Mr. Clifford Thier, Chair
Inland Wetlands and Watercourses Commission
Town of Avon
Avon Park South
Avon, CT 06001

**RE: Application
Blue Fox Run Golf Course**

Dear Mr. Thier and Commissioners:

I am writing in response to public comment you have received as part of the public hearing on the wetland boundary amendment at the referenced site. In the material that follows, the various comments or questions will be noted in **bold face type**; my response follows in *italic type*.

UNDATED REVIEW OF INLAND WETLAND AND WATERCOURSE DELINEATION REPORTS
Prepared on behalf of Nod Road Preservation, Inc. by Timothy Welling, Soil Scientist

These soils were originally mapped by state soils scientists and published in the county survey subsequently and they have been incorporated into the USDA NRCS Web Soil Survey. To begin with, these soil series boundaries were mapped prior to the development of the Blue Fox Run Golf Course. Thus, it would be difficult to disagree with the Town's current mapping since the on-site soils have been disturbed by the installation of the golf course and infrastructure.

The soil series limits were sketched onto small scale aerial photographs, which were then transferred by cartographers, not soil scientists, to create the maps in the Hartford County Soil Survey. They reflect field conditions in the 1950s, 60-70 years ago. They do not reflect the presence of such major features as the Blue Fox Run Golf Course, the interstate highways, the Farmington Valley Mall, West Farms Mall, or the recent construction of the Avon Center area.

This is codified in the Town of Avon's wetland regulation in several places. For example, Section 2.1x states:

*Wetlands and watercourses are **generally** shown on a map entitled Inland Wetlands and Watercourses, Town of Avon, Connecticut, which map is on file in the office of the Town Clerk. In each instance, however, **the precise location of wetlands and watercourses***

shall be determined by the Inland Wetlands Commission or its duly authorized agent based upon the actual type of soil or character of the area.[emphasis added].

Section 15.5c. on map amendments requires the following information:

Documentation by a soil scientist of the distribution of wetland soils on the subject land. Such documentation shall at a minimum include the report of the soil scientist documenting the location of wetland soils on the land and a map of the land indicating the flag locations set by the soil scientist and defining the boundaries of wetland soil types;

*Given the dramatic alterations in the landscape and the requirements of the Town regulations, it would be more accurate to say that it would be difficult to **agree** with the Town's current mapping.*

My major concern is that the information submitted by the applicant has not given any clear evidence that the Town of Avon Wetland Map based on original soils is inaccurate and needs to be changed.

Apparently Mr. Welling did not review the results of the dozens of test pits attached to the application, or compare the current aerial photography to the 1952 aerial photography published in Hartford County Soil Survey, which formed the basis for the Inland Wetlands and Watercourses Town of Avon, CT map. The test pits logs show that none of soils outside of the proposed wetland boundary are poorly drained, very poorly drained, floodplain or alluvial soils. The aerial photographs reflect significant changes in landscape, including re-routing of streams, excavation of ponds, construction of new roads, and development of commercial facilities on or immediately adjacent to the site.

The [NCCD] report stated that "some flags delineating the wetland boundaries had been re-established just prior to our visit." Which flags? How many? How do we know that these flags are the ones shown on the submitted map? Without this information we do not know what wetland boundary was reviewed by the applicant's soil scientists with NCCD soils scientists.

F.A. Hesketh and Associates, the registered land surveyors who located the CLA flagging, re-established wetland flags at regular intervals, from the co-ordinates from their survey. This was done to assist the Town's review consultants and is standard practice in Avon and throughout the state, when a significant time interval has occurred between the soil scientist's flagging and any regulatory review.

In the NCCD Observations section of their report, they stated that alluvial soils (which are wetland soils) were noted outside the wetland boundary that had been delineated on the preliminary map. This is a significant concern to me. Exactly, where and how much alluvial soils were noted by NCCD soil scientists. This leads to questions about the accuracy of the submitted wetlands boundary map.

As noted above, the preliminary mapping was revised to include these areas.

The presence of sand and gravel does not automatically signify the presence of outwash soils". This reflects an issue that the NCCD soils scientists had with the applicant's soil scientists over the basic classification of alluvial (wetland) soils. This needs to be completely explained and agreed to by these soil scientists, since it calls into question the validity of this submission map.

The town's soil scientists clearly stated that they agreed with the final map:

The wetland delineation shown on the "Blue Fox Run Golf Course - Wetland Map Amendment, 8/7/20 Submission" accurately and optimally represents wetland boundaries and soil conditions observed during the field inspection and follows recommendations, professional judgment, and conclusions reached in the virtual meeting.

The NCCD and the applicant's soils scientists came to an agreement that they could not agree on a wetland soils boundary for the alluvial and floodplain soils, thus, they agreed to use a non-soil criteria -- the 100 year flood plain elevation. I would like an explanation of why soils criteria were abandoned and why the 100-year FEMA flood elevation was agreed to.

This is incorrect. As noted in their respective reports, the applicant's (CLA and DE) and the town's (NCCD) soil scientists agreed on the boundary of the alluvial and floodplain soils. They also agreed that elevation is a criterion for identifying alluvial and floodplain soils. To quote NCCD:

*On this highly disturbed site, the District recommended use of the most current FEMA flood elevations to provide a reasonable practical delineation of a regulated wetland boundary that would encompass the alluvial soils on the site. This boundary was utilized in combination with the mapped hydric/wetland soils and watercourses to create the delineation presented in the 8/7/20 Wetlands Submission. **The District concurs with this delineation** [emphasis added].*

The report states "That work confirmed that there were no alluvial or floodplain soils outside of the area defined by the 100-years flood elevation" however, the NCCD report appears to contradict this by stating that alluvial soils (which are wetland soils) were noted outside the wetland boundary that had been delineated on the preliminary map. Please clarify this.

There is no contradiction. The wetland boundary shown on the preliminary map, which NCCD reviewed in the field, was the subject of our "virtual meeting". The preliminary map was revised to reflect the consensus we reached in that meeting. The DE report clearly states that the conclusions reached were based on the August 7, 2020 map which was submitted with this application.

The report [sic] they recommended the 100 year return frequency flood as a conservative representation of the limit of the floodplain and alluvial soils at the site. I would like an explanation of why soils criteria were abandoned and why the 100-year FEMA flood elevation was agreed to. Along with which soils criteria agreed with the 100-year flood elevation and not the 500-year FEMA flood elevation.

Soil criteria were not “abandoned”. In our report, we explained at length why soil morphology could not be the sole determinant of the limit of alluvial soils at this site. In essence, the long history of soil altering activities at the site, such as excavating ponds, re-routing watercourses, sand and gravel mining, and construction of tees, greens, sand traps, and other golf course features, meant that soil morphology could not be the only criterion used.

*Specifically with respect to alluvial soils, an irregular distribution of organic matter with depth, as evidenced in the field by buried A horizons, was not a reliable criterion. In the judgment of four highly experienced soil scientists, (including two retained by the Town to review our work), due to the extensive history of soil disturbance dating back at least 85 years, such an approach would have substantially **under-represented** the extent of wetland (alluvial) soils. It is standard practice to use secondary criteria for wetland mapping on such highly disturbed sites.*

BRUCE BADNER EMAIL 10.6.20

Wetlands likely mitigate climate change by capturing atmospheric carbon and transforming it into organic material,

The wetland function of sequestering organic carbon occurs in hydric (aka poorly and very-poorly drained) soils. The wetlands in the area of the proposed boundary amendment are not hydric. They are predominately well to excessively-drained and are only classified as wetlands due to a quirk in CT law that includes all alluvial soils regardless of whether or not they are hydric. For example, under the generally more expansive federal wetlands definition, which includes hydric soils, the area regulated as wetlands is dramatically reduced from that shown on the Town map and the proposed map amendment.

DR. MICHAEL KLEMENS

The Commission should adopt the 500 year flood elevation as the wetland limit, consistent with the practices of the CT Siting Council.

This is not correct, as confirmed by Melanie Bachman, Executive Director of the CT Siting Council “In reviewing plans, the Siting Council applies the state statutory and US Army Corps definition of wetlands.” (see attached email correspondence). Davison Environmental personnel have participated in numerous dockets before the Siting Council, representing municipalities, applicants and intervenors. In no case was the 500 year flood limit used as the wetlands limit.

I have also reviewed approximately 10-15 applications pending at the Siting Council; none of them defined wetlands in that way. All of the reports defined wetlands as poorly drained, very poorly drained, floodplain and alluvial soils, as required under the state enabling statute (and the town regulations).

There is no public benefit to the proposed map change.

While there is no requirement for such a benefit, I would merely note that it is always to the public's benefit to have accurate, updated information available, particularly when it has been vetted and confirmed by peer reviewers.

It is poor practice for wetlands to be flagged and surveyed without an accompanying development application.

*While Dr. Klemens is not a soil scientist, I can assure the Commission that obtaining detailed information on all potential constraints is standard practice when considering potential uses for a property. In fact, in many cases, it is the first information requested by land planners and engineers. In Connecticut, the accurate location of wetlands and watercourses is one of the most significant factors guiding any development application. In some municipalities, a map amendment based on a flagged and surveyed wetland boundary is **required** prior to considering a land use application. Right now, I have in my field work backlog, four properties for which no development plans have been prepared.*

In order to account for future changes in climate, the wetland boundary should be set at the elevation of the 500 year return frequency storm.

There is agreement among soil scientists that soils that are flooded (on average) less frequently than once every 100 years will not develop alluvial soil characteristics. In fact, using the 100 year return frequency elevation on disturbed sites such as this, likely overestimates the extent of alluvial soils.

Thank you for the opportunity to address these questions. I will be available at the continued public hearing to clarify these responses as may be necessary.

Yours truly,

A handwritten signature in blue ink, appearing to read 'MS Klein', is positioned above the typed name.

Michael S. Klein, Principal
Professional Soil Scientist
Professional Wetland Scientist

cc: Atty. Janet Brooks
Ms. Lisa Wilson-Foley
Mr. John McCahill
Mr. Robert Russo
M. Michael Cegan

Michael S. Klein

From: Bachman, Melanie <Melanie.Bachman@ct.gov>
Sent: Wednesday, October 28, 2020 11:05 AM
To: Michael
Subject: Re: CT Siting Council practices

Good morning, Mr. Klein.

Thank you for your e-mail.

Your understanding is correct. In reviewing plans, the Siting Council applies the state statutory and US Army Corps definition of wetlands. Where applicable, and depending on the type of jurisdictional facility proposed, the Siting Council applies the 500 year flood limit with respect to public safety and protection of critical infrastructure. The 500 year flood limit is not applied to determine wetland limits or assess any impacts to wetland resources. For your convenience, below is a link to a memo from the Siting Council to the Energy and Telecommunications Industries regarding design considerations relative to the 500 year flood limit for the purposes of infrastructure protection and consistency with the state Climate Change Preparedness Plan.

I hope this is responsive to your inquiry. Should you have any further questions, please feel free to contact me at your convenience.

Thanks. Have a great day.

Melanie

<https://portal.ct.gov/-/media/CSC/Guides/2017guides/FEMAFloodandRFMappingMemo51614pdf.pdf>

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From: Michael <michael@davisonenvironmental.com>
Sent: Wednesday, October 28, 2020 10:30 AM
To: Bachman, Melanie <Melanie.Bachman@ct.gov>
Subject: CT Siting Council practices

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Ms. Bachman

It is my understanding that, in reviewing plans before the Siting Council, your agency applies the CT statutory definition of wetlands, and where relevant, the US Army Corps definition. It is also my understanding that the 500 year return frequency flood limit is used to assess safety of proposed infrastructure, and its vulnerability to damage by flood waters, not to determine wetland limits or assess impacts to wetland resources.

Please confirm or correct my understanding, as appropriate. Thank you for your assistance in this matter.

Michael S. Klein
Professional Soil Scientist
Professional Wetland Scientist
Davison Environmental, LLC
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