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Date: September 22, 2020

To: Town of Avon Inland Wetlands Commission
John McCahill, Director of Planning and Community Development, Town of Avon

From: Barbara Kelly, Registered Soil Scientist, SSSSNE, CPESC #2180
Kip Kolesinskas, Consulting Soil Scientist

Re: Wetland Boundary Review, Blue Fox Run Golf Course, Application # 768

District personnel inspected the site on June 10, 2020 in the company of John McCahill and Barry Wilson of Blue Fox Run to review the wetland line shown on sheet 2.0 titled "Field Delineated Wetlands and Watercourses", which was part of the Wetland Map Amendment - 4/9/20 Submission for Blue Fox Run Golf Course (preliminary map). For this report, the District reviewed the August 7, 2020 Wetland Map Amendment Soils Report prepared by CLA Engineers, Inc. and the Davison Environmental Wetland Boundary Map Amendment letter dated August 7, 2020. The "Blue Fox Run Golf Course- Wetland Map Amendment, 8/7/20 Submission" plan sheets titled field delineated wetlands and watercourses, compilation plan-logged soil test locations, and potential golf course modifications/development were reviewed. The "Perimeter Survey prepared for Blue Fox Run Golf Course", prepared by F.A. Hesketh & Associates, Inc. and revised 8/7/20, was also reviewed.

Field/Review Procedure

Field investigations focused on areas where the applicant's soil data and preliminary map differed from soil mapping on the USDA NRCS Web Soil Survey. Some of the flags delineating the wetland boundaries had been re-established just prior to our visit. Soils were inspected with an auger and spade to a depth of 18-40 inches. Soil profiles were also observed in a deep pit that was the result of a large tree throw. Soil colors were compared to the Munsell Color Chart. Color, textural changes, and horizonation were observed.

The District does not re-flag a wetland boundary in the field, but will recommend re-examination of specific areas by the project soil scientist. This avoids conflicts with the soil scientist signing the maps, since that person is ultimately responsible for the boundary shown. In general, we look for significant areas of discrepancy between existing soil conditions and the flagged wetland boundary. We also focus on areas where the municipal wetland map is significantly different than the field delineated wetland. The District will typically not recommend changes if discrepancies do not involve significant areas or resources and fall within generally accepted standards of professional judgment. After the June 10, 2020 site inspection, we discussed observations, recommendations, and professional judgement with Michael S. Klein and Robert Russo in a virtual meeting on June 18, 2020.

Observations

- The site contained a complex pattern of natural soil horizons and, on significant portions of the site, soil horizons that had been disturbed by the historical land uses of agriculture and development of the golf course and infrastructure.

Observations (cont'd)

- The surficial geology, three modified watercourses that transect the parcel, presence of outwash on part of the flood plain, and development of high terraces along high gradient streams provided evidence of a complex pattern of natural soil development.
- The flags marking the boundary of hydric/wetland soils and watercourses appeared accurate.
- Alluvial soils, a portion of which were high terrace alluvial soils, and glacial outwash soils were present.
- Alluvial soils were noted in areas outside the wetland boundary that had been delineated on the preliminary map.

Comment

The District concurs with the delineation presented in the 8/7/20 submission. While not affecting the delineation, some documentation that accompanied this delineation warrants comment, based on our professional interpretation of soil features.

- The current 100-year FEMA flood elevation used in the mapping encompasses significant areas dominated by both natural and disturbed alluvial soils. The elevation line encompasses areas where disturbance has removed obvious alluvial horizons. Inclusions of rarely flooded, high terrace alluvial soil may be found outside the elevation line.
- While prior flood control within the Farmington River watershed may have altered, and possibly reduced, the likelihood of continued alluvial deposition; climate change driven increases in intensity and frequency of storms, development upslope across Nod Road, and modification of the watercourses crossing the site may create backwater situations, and possibly increase alluvial deposition and short-term flooding events along the smaller watercourses.
- Occum Soils and similar alluvial soils on the site typically have lenses of gravel and sand with depth. The presence of sand and gravel does not automatically signify the presence of outwash soils.
- The "Clarification of Wetland Criteria for Human-Altered and Human-Transported Soils in Connecticut" guidance relates to delineation of wetlands driven by hydric conditions, including water table and saturation, and relates only to a portion of the site.
- In mapping alluvial soils with a mixture of undisturbed and disturbed areas, it is standard practice to utilize elevation observations. Utilization of flood elevation is consistent with this practice.

Findings

Given the complexity in pattern of natural and disturbed soils and the similarity of high terrace alluvial soils and glacial outwash soils, an exceptional number of test holes as well as laboratory confirmation of specific soil properties would be required to more precisely define a boundary, far exceeding standard soil mapping procedures and professional practice. 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.

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.

Thank you for the opportunity to comment.