



Albert Frick Associates, Inc

Environmental Consultants

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June 25, 2021

Mr. Travis Lettelier, P.E.
Northeast Civil Solutions, Inc.
381 Payne Road
Scarborough, ME 04074

RE: Opinion on proposed impacts: Deep Brook Road, Cape Elizabeth.

Dear Travis:

Per your request, I am providing a statement with respect to affects of proposed impacts to Wetlands A, B, C and D. This is not intended to provide a complete functional assessment of the wetlands but is a rapid assessment based on documentation from previous site visits including the delineation.

Wetland A:

Wetland A is contained within an area of Made Land evident by the presence of manufactured soil including broken glass and concrete. As previously mentioned in my wetland report, I observed the presence of non-native, invasive plant species such as Barberry, Multiflora Rose and Phragmites. The presence of fill material or evidence of alteration to the soil and by the presence of invasives, greatly reduces the value of a wetland. Although the entire wetland is proposed for impact, the wetland is of low value in my opinion and is the better option than adversely impacting Wetland B.

Wetland B:

A portion of this wetland was likely altered during past filling similar to Wetland A. However, Wetland B contains seasonal surface water and more diversity of plant species as a result. Evidence of past alteration is illustrated in the presence of invasive multiflora rose. Other than providing some flood storage function, this wetland is also of low value. The project makes an effort to minimize impact to this wetland by locating the access at the edge of the wetland rather than bisecting it; it is my opinion that by minimizing impact to this wetland as proposed, that its flood storage potential will not be affected adversely.

Wetland C:

This is a forested wetland with subsurface wetland hydrology (groundwater). The project proposes a very minor impact to the edge of the wetland for the access road. It also appears that the surrounding area will be avoided as its is proposed as Open Space. Due to this factor and the minor amount of impact, I do not see this wetland being adversely affected by the project.

Wetland D:

Wetland D is a small forested wetland. The forested wetland drains towards the off-site stream to the south. A portion of Wetland D contains seasonal flooding near the interior of the wetland. The project proposes impact to the exterior of the wetland in four (4) locations (Impact D, E, F and G). The project minimizes impact by locating the alterations near the edge of the wetland in those locations. Further, a portion of its upland buffer will be maintained to the southern property line. Provided drainage is maintained to the wetland, I don't foresee an adverse impact to the wetland from the proposed project.

Sincerely,

A handwritten signature in cursive script, reading "Christopher J. Coppi".

Christopher J. Coppi LSS, LSE, CWS
Independent Wetland and Soil Scientist



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Northeast Civil Solutions, Inc.
381 Payne Road
Scarborough, ME 04074

RE: Opinion on classification of Wetland D per Cape Elizabeth Zoning Ordinance: Deep Brook Road, Cape Elizabeth.

Dear Travis:

Per your request, I am providing an opinion on the classification of Wetland D in accordance with Cape's Zoning Ordinance. The wetland is classified as an RP-2 wetland according to the web zoning map. In order for Wetland D to be classified as an RP-1 wetland, the following standards must be met as follows: (Wetlands not meeting the standards of an RP-1 wetland are considered RP-2 wetlands)

Resource Protection 1 – Critical Wetland District (RP1-CW) Areas that deserve the highest protection from filling, draining and other adverse activities due to their particular environmental or hydrological importance, sensitivity to alterations or special characteristics are designated Resource Protection 1 – Critical Wetland District (RP1-CW).

I. Any area that, upon field verification, is determined to have one (1) or more of the following characteristics shall be included in the RP1-CW District:

a. is at least one (1) acre in size and the substrate is predominantly hydric soils categorized as very poorly drained organic or mineral soils as defined (see Sec. 19-1-3, hydric soil definition);

(Standard not met)

b. is at least one (1) acre in size and contains, at least periodically, predominantly "Obligate" wetland vegetation, as defined in Sec. 19-1-3, Definitions – Wetland Vegetation; or c. is a coastal dune, as defined herein.

(Standard not met)

Based on survey data compiled by Northeast Civil Solutions, the size of Wetland D is approximately 40,674 SF which is below the required 1 acre (43,560 SF) size requirement. However, below are my findings with respect to 1a and 1b.

1a.

During my soil mapping effort on 6/10/21, I determined that Wetland D to be mapped predominately as *Brayton Soils*, which are poorly drained mineral soils. As a result, Wetland D DOES NOT meet 1a as soils are NOT predominately very poorly drained soils per Cape's Very Poorly Drained soil series as listed in Section 19-1-3 of the Ordinance.

1b.

On June 10th, 2021, I reviewed the plant community of Wetland D and determined the following dominant plant species. (**Indicator status** and scientific name in parenthesis).

Manna Grass (*Glyceria striata*-**OBL**)

Cinnamon fern (*Osmundastrum cinnamomeum*- **FACW**)

Red Maple (*Acer rubrum*- **FAC**)

Jewelweed (*Impatiens capensis*- **FACW**)

Green Ash (*Fraxinus pennsylvanica*- **FACW**)

White Ash (*Fraxinus americana*- **FACU**)

Poison Ivy (*Toxicodendron radicans*-**FAC**)

Interrupted fern (*Osmunda clayoniana*- **FAC**)

Tall Meadow Rue (*Thalictrum thalictroides*- **FACW**)

Balsam Fir (*Abies balsamea*- **FAC**)

Lady Fern (*Athyrium angustum*- **FAC**)

Skunk Cabbage (*Symplocarpus foetidus*- **OBL**)

Royal Fern (*Osmunda spectabilis*- **OBL**)

Total Species: 13

Total OBL Species: 3

Total Non-Obligate Species: 10

% Obligate species (OBL): **23% (3/13)**

% Non-Obligate species (FACU, FAC, FACW): **77%**

The dominant species composition reveals that approximately 23% of the dominants are of Obligate status. Therefore, the community is NOT dominated by Obligate species as required to be a RP-1 wetland per the Zoning Ordinance. Based on site observations of soils and plants in Wetland D, it is my opinion that this wetland does not meet the requirements to be an RP-1 wetland per the ordinance as explained above.

Sincerely,



Christopher J. Coppi LSS, LSE, CWS
Independent Wetland and Soil Scientist



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RE: Statement on effect of dry conditions during delineation: Deep Brook Road, Cape Elizabeth.

Dear Travis:

Per your request, I am providing a statement with respect to dry conditions affecting the extent of the delineated wetlands that were completed during September, 2019. As you may know, determination of the depth of the water table is a primary indicator of wetland hydrology. A water table observed within 12" of the soil surface is indicative of wetland hydrology. However, during the summer months, a water table may drop to depths below 12", and therefore, not satisfy the primary indicator. This is common in forested wetlands.

This aspect of hydrology is taken into consideration when delineating wetlands during dry conditions. As such, if the area in question satisfies the other two wetland criteria (dominance of wetland plants and hydric soils), then the area is delineated as wetland. Therefore, under normal circumstances, wetland scientists may confirm the existence of wetlands using plants and soils as the determining factors when wetland hydrology is absent due to dry conditions.

Furthermore, even during dry conditions, evidence of hydrology in the upper part (12") can still be estimated by looking at soil morphology in the soil profile. A hydric soil is determined when evidence of prolonged saturation from water is exhibited by the presence of redoximorphic features which are areas of iron concentrations or depletions in the soil matrix caused by anerobic (depleted O₂) conditions. These redoximorphic features mimic the shallowest depth at which water saturates the soil during the wet part of the growing season (seasonal high-water table). Hence, not only can hydric soil be determined from this method, but estimation of wetland hydrology can be made during dry conditions.

Sincerely,

Christopher J. Coppi LSS, LSE, CWS
Independent Wetland and Soil Scientist