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July 3, 2020

Town of Cheshire
Inland Wetlands and Watercourses Commission
164 Main Street
Cheshire, CT 06247

RE: Wetland Application 2020-002; Wetland Analysis prepared for New Single-Family Residence; Timothy & Cheryl McMurray, Jarvis Street, Map#26-Parcel#17, Cheshire, Connecticut.

Dear Commission Members:

On behalf of Timothy McMurray, I completed an on-site walkdown of the project area on June 30, 2020 and I have reviewed the wetland application and subject site plan titled “*Plot Plan, prepared for Timothy & Cheryl McMurray, Map #26, Lot 17, Jarvis Street, Cheshire, Connecticut*” prepared by Harry E. Cole and Son. I offer the following comments relative to assessing impacts to the inland wetlands and watercourses due to the proposed regulated activities.

Project Overview

The applicant is seeking approval from the Town of Cheshire to construct a new single-family residential development on an existing lot of record. In 2002, the town approved a development for the subject lot that was a substantially similar layout.

The proposed home will be serviced by municipal sewer and water connections that will be installed parallel to the driveway. Instillation of the driveway will result in the unavoidable direct wetland disturbance of 611 sq. ft. To minimize direct impacts to the wetlands, the driveway will closely parallel the western property line to cross the wetlands at the narrowest point (Photo 2). This crossing site appears to have been the historic access to the property as suggested by the remains of a cryptic woods cart-path which leads to a foundation and utility conduits (Photo 4), relics, of its past development.

The proposed development is bordered by a forested wetland complex with an irregularly shaped boundary. Due to the needs of the proposed development and the juxtaposition of the wetland resources, the entire development is located within the 100-foot Upland Review Area (URA). To balance between minimization of impact and development potential of the uplands available, two gabion retaining walls will be constructed at the limits of disturbance both north and south sides of the development paralleling the wetland. The 2ft by 3ft retaining wall will define the limits of

disturbance and limit wetland disturbance associated with grading and clearing required to construct the residence.

Wetland Resources

Wetlands encountered along the peripheral of the proposed development are characterized as a palustrine seasonally flooded forested wetland system interconnected by a series of man-made and naturally occurring intermittent watercourses that convey seasonal flow and runoff from the higher elevation and farmland west of the lot, to the low-lying and level forested floodplain wetlands associated with Ten Mile Brook in the east. The wetland the driveway will cross is an example of one of these interconnecting intermittent watercourses that have been channelized by past agricultural practices.

The dominant wetland type on the property is classified as a seasonally flooded palustrine forested wetland (Photo 1) dominated by classic red maple (*Acer rubrum*) swamp vegetation. Red maple makes up the majority of the forest overstory and with other subordinate species such as yellow birch (*Betula alleghaniensis*), and American elm (*Ulmus Americana*) also present in lesser quantities. The thick shrub stratum is dominated by winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), and sweet pepperbush (*Clethra alnifolia*) and spicebush (*Lindera benzoin*). Skunk cabbage (*Symplocarpus foetidus*), Cinnamon fern (*Osmunda cinnamomea*), nettles (*Urtica spp.*) and various wetland sedges carpet the wet forest floor.

The above is not an exhaustive list, but rather a sampling of the vegetation commonly observed throughout the wetland system. I have field verified” and I agree with the wetland boundary recently flagged in February 202 by Davison Environmental. The wetland boundary is well-defined, marked by the toe-of-slope of a relic stream terrace associated with Ten Mile River.



Photo 1: Example of the main body of wetlands, a thickly vegetated forested floodplain



Photo 2: Wetland at Driveway Crossing - 611 SF of wetland impact



Photo 3: Example of Existing Upland Conditions – Proposed Home Location



Photo 4: Remains of Foundation and Utilities from Previous Development

Site Specific Soil Survey

The soils identified on the site are a refinement of the Natural Resources Conservation Service (NRCS) Websoil Survey.

Wetland Soils

Wetlands soils near the proposed activities are mapped and classified as (15) Sacarboro Muck. A typical soil profile along the wetland boundary consist of approximately 5"-0" of intermediately decomposed organic material (Oi), followed by 0"-3" of a thick dark topsoil horizon (A), underlain by 3"-18" of a wet weakly developed grayish subsoil horizon (Bg) with common redoximorphic features (Common medium distinct strong brown mottles, masses) ranging from fine sandy loam to very fine sandy loam. This subsoil is underlain by a saturated sandy loam to fine sandy loam gray substratum (2Cg).

Upland Soils

The forested upland soils are mapped and classified as moderately well-drained (701A) Ninigret very fine silt loam.

Wetland Functions and Values

The subject wetlands provide several wetland functions and values as outlined in the United States Army Corps of Engineers (USACE) Highway Methodology Workbook. From a functional standpoint (based on qualitative wetland characteristics and best professional judgment) the subject wetlands holistically provide the following functions and values:

- The wetlands provide local groundwater recharge/discharge influences and help maintain water levels in the downstream receiving wetland and watercourse system.

- The affected wetlands at the proposed crossing sites are classified and/or associated with drainageways and floodplain forested wetlands. The downstream receiving wetlands are part of a large floodplain complex that can attenuate and/or store large volumes of floodwater.
- The wetlands at the driveway crossing are associated with a watercourse / open channel which reduce the natural capacity for retention of sedimentation / toxicant/pathogen retention. The engineered crossing is specifically designed to maintain the natural capacity of the existing intermittent flow path conditions. The remainder of the vegetated wetlands on the site which will not be directly impacted have a high function for retention of sedimentation / toxicant and pathogen retention.
- The wetland vegetation in the wetlands can remove nutrients during the growing season when all vegetation strata are non-dormant.
- Production export is a function of the wetlands as the local watershed has relatively sizeable drainage area capable of “flushing” of organic materials during high flow periods. Particularly so as a source for detritus for the associated Ten Mile River.
- Due to the lack of open water subject to erosive forces, shoreline stabilization function is not applicable.
- The general wetland attributes and compilation with the surrounding wooded upland habitat provide generalized wildlife habitat capable of supporting common wildlife species found throughout Connecticut’s forested areas. A review of the project site demonstrates that the parcel is located within an area identified by CTDEEP as suitable habitat for state listed special concern species.
- The on-site wetlands are palustrine seasonally flooded forested wetlands and do not have the year-round hydrology to a support fin-fish population.
- The proposed development will not diminish recreational opportunities of the wetlands or degrade the visual aesthetic qualities of the wetlands.

Wetland Functions and Values Summary

The site improvement plans focus on the preservation of wetland functions and values, protection of water quality and minimize direct disturbance to adjacent jurisdictional wetland areas. The proposed plans will enhance some wetland functions and values by creating a formal, stabilized and durable access, while reducing potential sedimentation sources.

Natural Diversity Data Base

The subject lot is located within potential habitat for State-listed species as designated by the Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Data Base (NDDDB). In a review letter from CTDEEP dated January 27, 2020 NDDDB advised that there are extant known populations for 3 State-listed species of special concern on the property or proximal to; *Terrapene c. carolina* (eastern box turtle or EBT), *Glyptemys insculpta* (wood turtle) and *Thamnophis sauritus* (eastern ribbon snake). To mitigate any potential conflicts during construction the proposed Project will adapt the best management practices (BMPs) as recommended by DEEP to ensure the project does not result in an incidental take of a State-listed species. Because these species have the potential to be occasionally found in habitat similar to that in the development envelope, general awareness and avoidance measures will be provided to

contractors to protect State-listed species from being harmed during work activities. The project shall adopt the following global BMP(s) to protect the 3 State-listed species.

- All contractors will be made aware of the species description and possible presence on-site and will receive fact sheets on each species with photo's identifying each species;
- Exclusion fencing (aka – Silt Fencing) will be installed at the limits of disturbance surrounding the work zone;
- The immediate work area will be scanned daily by contractors for these species before starting work using mechanical equipment;
- Any of the State- listed species found will be moved out of the way and placed on the outside of the exclusion fencing. These animals are protected by law and will never be taken off site;
- Work conducted during early morning and evening hours should occur with special care not to harm basking individuals.
- Any confirmed siting of State – listed species will be reported and documented with the NDDDB (nddbrequestdep@ct.gov) on the appropriate special animal form found at (http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641).

Proposed Improvements

The crossing point was selected to minimize wetland disturbance by selecting a naturally occurring narrow point in the wetland. The planned alignment takes advantage of the existing topography which alternative access would increase wetland disturbance and the need for more extensive earth work. Grading at the crossing point is relatively minimal and will not required extensive stream bank stabilization or dewatering to facilitate construction.

To minimize impacts the design incorporates standard best management practices and guidelines for residential driveway crossings. The proposed crossing will utilize 27 linear ft of 18” reinforced concrete pipe (RCP) 2. To maintain stream flow dynamics the pipe alignment and pipe gradient matches the existing stream alignment and grades as closely as possible. Inlet and outlet rip-rap protection will provide scour protection and will deenergize flow and reduce downstream erosion.

A construction sequence is provided on the project plans notes Additional construction notes include details on the proposed earthwork and grading, site stabilization, best management practices (BMPs) for protecting the environment, wetland and watercourse impact avoidance and minimization measures, wetland restoration notes, erosion and sediment controls, and construction inspections. All construction activities will be completed in compliance with the standards and guidelines provided by the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, the 2004 Connecticut Stormwater Quality Manual and the Inland wetland and Watercourses Regulations for the Town of Cheshire. The required E&S control inspections either weekly and/or preceding each rain greater than .25” will further insure continued maintenance of the exclusion fencing / erosion and sediment controls placed at the limit of disturbance until the area is stabilized post development.

Impacts

Potential short-term adverse impacts to the wetland resources will be associated with potential turbidity, erosion and sedimentation that can occur during construction activities. With the implementation of the above measures and routine inspections, no significant adverse impacts to wetlands and water resources are expected.

Short-term impacts during construction will be reduced through measures to control sedimentation and erosion and adherence to NDDB BMPs. These controls will assure that no permanent adverse effects will impact the receiving wetlands or wildlife habitat. These measures will minimize the chance that siltation and sedimentation will encroach into the regulated wetlands and watercourses. Long-term impacts to the wetlands system and to wildlife habitat will be minimal and largely occur within the foot print of past development and usage of this lot. The creation of the driveway crossings will provide a design compliant formal stable crossing point.

Conclusion

The bulk of the development will be protected from encroachment due to the gabion walls that pose a substantial physical barrier between the wetlands and the development.

Alterations within the upland review area will have some minor conversion of a mosaic of secondary growth upland habitat and reclaimed open field and edge / row habitat to maintained residential lawn but the property as a whole will largely continue to favor species more tolerant of human presence that use "edge habitats". The activities in the uplands will not result in any loss of wetland function, value or habitat. Post development the wetlands and watercourse will still have the same ability to perform the existing functions they currently provide.

This property is home to centuries of farming history from colonial agriculture to present day. While work is being proposed within the upland review area, these are lands that have historically been altered, the project largely avoids work within the existing wetlands. Based on my review of the proposed activities and subject site plans it is my professional opinion that the proposed activities and the development will not have a negative or adverse effect on the natural capacity of the wetlands or the functions and services they provide.

Please do not hesitate to contact me at itcole@gmail.com; (860) 514-5642 if you have any questions or need any additional information.

Respectfully Submitted.



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