### **CLA Engineers**, Inc.

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June 4, 2025

Douglas K. Brush, Chair Inland Wetlands Commission Town of Montville 310 Norwich-New London Turnpike Uncasville, CT 06382 (860) 848-1349 x753

Re: Town of Montville 62&66 Beechwood Rd Oakdale, CT 06370 CLA-6767J

Dear Mr. Brush:

On behalf of the applicant, CLA Engineers has performed a delineation and functional evaluation of the inland wetlands at the referenced site and assessed the site to provide a basis for determining the potential for impacts. The inland wetland boundary was delineated by Robert Russo, CSS and Molly Ahern, MESM between 2023 and September 9, 2024. The wetland boundary and proposed development are shown on the plans prepared by CLA Engineers 5/23/25. These data were augmented with additional online information from CTDEEP, USFWS, USGS, and the Town of Montville.

#### Site Setting

The site is comprised of a 0.39-acre parcel (62 Beechwood Rd) and a 0.44-acre parcel (66 Beechwood Rd) located on the southeast side of Beechwood Rd in Oakdale. Currently, the two parcels are developed for single-family residential use. The southern and eastern edges of the site are forested. An unnamed stream flows westward across the site and later joins Bogue Brook, part of the Niantic River system. The wetland lacks a natural buffer and does not appear to support significant finfish habitat in its current state.

The surrounding neighborhood is zoned residential (R-20 and R-45) per the most recent update of the Town of Montville Zoning Regulations and is currently developed for medium-density single-family residential use.

#### <u>Soils</u>

The upland soils mapped by NRCS are listed in the table below. No wetland (hydric) soils are mapped on the property. Additional descriptive details are provided in Appendix A.

Soil Series	Parent Material	<u>Drainage</u> <u>Class</u>	Texture/Characteristics
Canton and Charlton	Coarse-loamy melt- out till	Well drained	Fine sandy loam to gravelly fine sandy loam

Table 1 - Soil Types and Properties at the Beechwood Rd Site

The upland soil unit mapped in the study area consists of Canton and Charlton soils. The Charlton series consists of very deep, well drained soils formed in loamy melt-out till. They are nearly level to very steep soils on moraines, hills, and ridges. The Canton series consists of very deep, well drained soils formed in a loamy mantle underlain by sandy till. They are on nearly level to very steep moraines, hills, and ridges.

#### **Wetland Characteristics**

#### Classification

The National Wetlands Inventory (NWI https://fwsprimary.wim.usgs.gov/ wetlands/apps/wetlands-mapper/) shows the onsite wetland as a R5UBH, a perennial riverine system. The description of that classification is provided below.

#### **Classification code: R5UBH**

System **Riverine** (**R**) : The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing oceanderived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

Subsystem **Unknown Perennial (5)** : This Subsystem designation was created specifically for use when the distinction between lower perennial, upper perennial, and tidal cannot be made from aerial photography and no data is available.

Class **Unconsolidated Bottom (UB)** : Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

Water Regime **Permanently Flooded (H)**: Water covers the substrate throughout the year in all years.

CLA's field investigation indicates that the stream has a consolidated bottom of gravel through boulder sized substrate. The stream has been locally channelized where it enters and exits the culvert under Beechwood Rd.

#### Wetland hydrology

The wetland is fed largely from its upstream watershed of approximately 0.34 sq. mi. and by stormwater away from impervious areas in the surrounding medium-density residential

neighborhood. The wetland therefore experiences a highly variable water table and high water velocities. We observed several amphibian users of the wetland during site visits on September 9-10, 2024. The wetland vegetation along the stream is quite narrow, and the stream is well incised. The water eventually flows into Bogue Brook (part of the Niantic River system). Notably, the Bogue Reservoir is downstream of this wetland, indicating that water quality in the wetland is important. Evidence of erosion is present on the side slopes of the stream at 62 Beechwood Rd.

#### Factors important to functional assessment

The following observations are important to the functional assessment and are listed here to provide context to the later discussion of functions and values.

- 1. Connecticut protected species are not known to be present on the site per the June 2024 update of the CTDEEP NDDB. Full NDDB map is included as Appendix B.
- 2. The wetland is associated with a watercourse, which is tributary to the Bogue Brook system.
- 3. The local zoning is residential (R-20, R-45) per the Town GIS, and the surrounding parcels appear to be used for single-family residences.
- 4. The wetland has coarse-loamy melt-out till soils within per available online mapping.
- 5. The wetland is part of a larger watercourse system.
- 6. The wetland is fed by stormwater runoff from surrounding roads and lawns.

#### **Principal functions**

The functional assessment was conducted using the USCAE Highway Methodology (https://www.nae.usace.army.mil/Portals/74/docs/regulatory/Forms/HighwaySupplement6Apr20 15.pdf). The assessment is included as Appendix C and it revealed that the wetland has the following principal functions:

- 1. Floodflow alteration
- 2. Production export
- 3. Wildlife habitat

We also determined that the wetland has the potential to perform sediment and shoreline stabilization functions. However, as evidenced by the erosion present upslope of the wetland, the wetland appears to be underperforming at this function.

#### **Potential for Impacts**

As shown on the project plans, the following activities are proposed within the wetland, disturbing a total of 3460 sq. ft. acres of wetland habitat:

- 1. Extension of the concrete pipe further into the wetland to reduce erosion impacts on neighboring properties.
- 2. Installation of a pre-formed plunge pool
- 3. Construction of a low flow natural channel.

The proposed activities outlined above may impact the wetland's principal functions in the following ways:

- 1. Floodflow alteration: no changes are being proposed to the overall floodflow regime of the existing housing development; it is unlikely that the proposed activity will impact this function.
- 2. Production export: because wildlife food sources and flowering herbs are abundant upstream in this wetland's watershed, we anticipate no loss of production export functionality.
- 3. Wildlife habitat: the flow regime of the wetland is currently poor for finfish and the changes to the stream channel are designed to improve habitat in the reach of stream being altered. Moreover, because the observed amphibians in the wetland do not require abundant open space to thrive, it is unlikely that wetland disturbance will negatively impact their habitat.
- 4. Sediment and shoreline stabilization: currently, this function is severely degraded, putting neighboring properties at risk of severe erosion. The proposed actions will restore the stream's shoreline stabilization function by strengthening the shoreline, restoring the land and improving this function.

#### Alternatives

There is an existing, ongoing erosion problem at the site. The erosion at 62 Beechwood Rd, as shown by the attached photographs, has eroded the neighbor's yard and presents an ongoing hazard. Taking no action would leave this hazardous situation in place and is not acceptable. Another alternative, simply armoring the stream channel in place would leave the outlet at a location where future flood events would endanger the house at 62 Beechwood Rd. This is also not an acceptable solution. The chosen design, moving the outlet downstream so that it discharges downhill of the house is the best alternative for preserving the safety of the residents and minimizing the erosive forces of the stream.

#### Description of the activity including location and square footage of disturbance.

The overall project consists of drainage repairs and augmentation of the existing stormwater system in Beechwood Rd. The work will be accessed from Beechwood Rd., lots 62 and 66 in Montville. The proposed development includes installing a new drainage pipe, a rip rap plunge pool and a natural stream channel using native stone. The regulated activity includes filling in a portion of the stream channel and restoring additional stream channel. The new drainage system is shown on the project plans. This work will be done only after meeting with town staff and installation of the proper erosion and sediment control measures. The work will be done with excavators, bulldozers and dump trucks.

#### Sediment and Erosion control

As shown on the site plan, the following best management practices will be employed:

- 1. A dewatering set up with a dirt bag will be employed
- 2. Large natural boulders will be placed at the lower limit of the project

#### Machinery to be used

Machinery will be used, and it will include typical heavy construction machines such as excavators, bulldozers, and dump trucks.

#### **Summary**

In short, the proposed activities will result in a disturbance of 3460 sq. ft. of which 670 sq. ft. is permanent fill. We do not anticipate any impacts to the wetland's floodflow production export, or wildlife habitat functions. We expect the project to improve the wetland's sediment and shoreline stabilization function.

Sincerely,

Robert C Russo

Robert C Russo CSS, CLA Engineers

# Appendix A: Soil Maps From USGS Web Soil Survey



USDA Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey



USDA

### Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	0.5	100.0%
Totals for Area of Interest		0.5	100.0%



## Appendix B: Natural Diversity Data Base Map



NOTE: This map shows known locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a variety of data sources. Exact locations of species have been buffered to produce the generalized locations.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas If the project is within a hatched area there may be a potential conflict with a listed species. For more information, use DEEP ezFile https://filings.deep.ct.gov/DEEPPortal/ to submit a Request for Natural Diversity Data Base State Listed Species Review or Site Assessment. More detailed instructions are provided along with the request form on our website.

https://portal.ct.gov/deep-nddbrequest

Use the CTECO Interactive Map Viewers at http://cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP) 79 Elm St, Hartford, CT 06106 email: deep.nddbrequest@ct.gov Phone: (860) 424-3011



Connecticut Department of Energy & Environmental Protection



### Appendix C: Wetland Functional Assessment From U.S. Army Corps of Engineers Highway Methodology

, and the	Wet	land Function-Val	lue Evaluation Form	
Total area of wetland $O.4$ $\alpha c$ Human made? $\overline{\mathcal{A}}$	Is weth	and part of a wildlife corridor $?~\overline{\mathcal{M}}$	$0$ or a "habitat island"? $\mathcal{M}$	Wetland I.D. 6 167-J Latitude 41449 Longitude 72,204
Adiacent land use residuation / forcs	ted	Distance to nearest roadv	vay or other development $O^{1} \rightarrow Rd$	Prepared by: MA Date 9/16/24
Dominant wetland systems present PEM1	\L	Contiguous undeveloped	d buffer zone present WirMad	Wetland Impact: Type PEM1E Area
Is the wetland a separate hydraulic system? $\frac{1}{100}$	Ifn	ot, where does the wetland lie in t	the drainage basin? Wigh	Evaluation based on:
How many tributaries contribute to the wetland?	4	Wildlife & vegetation diversity/a	bundance (see attached list)	Office V Field V Corps manual wetland delineation
Function/Value	Suitabilit Y / N	y Rationale P1 (Reference #)* F1	rincipal inction(s)/Value(s) Co	completed? Y N
Tree Groundwater Recharge/Discharge	Z		Flow likely too fast	- For GW recharge
Floodflow Alteration	٢	2,4,7,8,9,16	V constructed for flood	voter mant.
Fish and Shellfish Habitat	Ν		litely unsuitable for f	ish/shellfish
Sediment/Toxicant Retention	N		high worker velocity	g, short retention times
AAA Nutrient Removal	N	-	sedimentation wid	ent. We undergerforming
Production Export	٢	1,4,5,10,12	V I. capensis domin	ant in herb. Stratum
Sediment/Shoreline Stabilization	٢	1,2,3,6,8,9,14	underperforming a	d this function
Wildlife Habitat	4	12'01'11'11'10'11'10'	1 annphibian /auran 1	lise evident in WL
🛒 Recreation	2		private leund	-
Educational/Scientific Value	N		private, inaccessible	
💥 Uniqueness/Heritage	2		small, lacting hist	mical significance
と描述 Visual Quality/Aesthetics	Z		Small, hard to see	tram street
ES Endangered Species Habitat	2		ino CT state listra	species present
Other				
Notes:			* Refer to bac	kup list of numbered considerations.

Appendix D: Photographs



Photograph 1, This view is looking south at the culvert outlet.



Photograph 2, This view is looking north towards Beechwood Rd at the culvert outlet.



Photograph 3, This view is looking south at the erosion at 62 Beechwood Rd