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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
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October 27, 2024

Stacy Radford
Zoning & Wetland Officer – Dept. of Land Use & Development
Town of Montville
310 Norwich-New London Tpke., Uncasville, CT 06382

Regarding: Response to Review Comments provided by CLA Engineers, Inc.
Inland Wetland Application 24 IWC 9
2268-2284 Route 32 – Horizon View
CLA-7873

Dear Stacy:

RJ O'Connell & Associates, Inc. is in receipt of the peer review comments by CLA Engineers, Inc. dated October 17, 2024 for the above referenced project. We have reviewed the comments listed below in italics with the associated responses. As part of the responses, we have attached three copies of the updated Stormwater Report and Plans Dated October 25, 2024.

1. *Final plans should be signed by a representative of Lucas Environmental.*

Response (Lucas Environmental): Noted. The Applicant will provide an updated survey plan which will be signed by a representative of Lucas Environmental, LLC.

2. *During the site walk CLA noted the presence of wetland vegetation (Phragmites australis) south of the inland wetland boundary on the site plans. The Soil Scientist should address the presence of this vegetation and confirm the inland wetland boundary.*

Response (Lucas Environmental): LE concurs there is common reed (*Phragmites australis*) occurring outside the delineated wetland boundary. Common reed grows in marshes, but it also grows along the wetland-upland interface and can be found in upland areas. Common reed spreads not only by seeds but it also spreads rapidly with rhizomes that generate roots and stalks. Rhizomes may exceed 60 feet in length and grow more than six feet per year. This allows the plant to reach low-lying groundwater and tolerate a variety of conditions, including dry upland sites[1]. It is not uncommon for common reed to grow outside a delineated wetland resource area.

In order to determine the wetland boundary on this particular site, soils were relied upon heavily as a wetland indicator given the aggressive and invasive nature of the common reed present. Soils were examined in accordance with the 1987 "Corps of Engineers Wetlands Delineation Manual" (Department of the Army, Technical Report Y-87-1), the Northeast and Northcentral Regional Supplement v. 2.0 (2012), and the Field Indicators for Identifying Hydric Soils in New England (Version 4). If upland soils were encountered in areas infested

[1] Avers, Barbara, et. al. A Guide to the Control and Management of Invasive Phragmites. Undated.

with common reed, it was not included within the wetland boundary, even though common reed is a wetland indicator species.

3. *Page 5 of the Wetland Impact Assessment prepared by Lucas Environmental identifies groundwater recharge as a principal function of the wetland, but later notes that the wetland "does not appear to significantly contribute to surface and underground water". These statements appear to conflict with each other; Please explain and/or provide more detailed information.*

Response (Lucas Environmental): LE prepared a wetland impact assessment for the proposed project, and this report was submitted to the Commission as an attachment to the Inland Wetlands Application. As noted, groundwater recharge was determined to be the "principal" function, though this was relative to the other 12 functions and values described in the U.S. Army Corps of Engineers (USACE) Highway Methodology Workbook (USACE, 1993), and the Highway Methodology Workbook Supplement (USACE, 1999). As described in the report, it is LE's opinion that this function is not significant (emphasis added) because recharge should relate to the potential for the wetland to contribute water to an aquifer. The site does not fall within a drinking water aquifer. In addition, the volume of water being recharged is limited to the amount of stormwater being discharged on the site. For these reasons LE believes that, although groundwater recharge is the principal function, this function is not significant.

4. *An alternatives analysis should be provided describing alternative options to achieve project goals and explain why these alternatives were not selected.*

Response (RJOC): The wetland in question has been created from the discharge of the off-site roadway and neighborhood drainage system located to the north of the property along Cedar Lane. Over the years, a large degree of accumulated sediment has built up in this wetland system (see photos attached). Given this, the existing sediment accumulation is proposed to be removed as part of the development program. A catch basin/sediment trap will be utilized to collect the future sediment that would otherwise be deposited in this area. The offsite stormwater will be conveyed around the proposed development utilizing a headwall to collect, divert and attenuate the off-site runoff.

The location of the headwall presents the ability to allow vehicle circulation around the property, including emergency vehicle and truck access. The vehicle circulation provides an increased level of safety and convenience for the future residence of the property, as well as providing the amount of parking spaces to satisfy the zoning code. Alternative designs were considered to further minimize direct impact to the onsite wetland area, but were ruled out as they failed to allow for the proper collection and diversion of the off-site runoff around the development or otherwise interfered with necessary traffic circulation around the building or the required parking for the project.

5. *Soil profile logs or data should be provided for all test pits or borings performed on the site. There appear to be additional test pits or boring located on the site plan than included in the Whitestone records provided.*

Response (RJOC): We have added Appendix E and F to the Updated Stormwater Report Dated October 25, 2024. Appendix F contains the testing information for all the borings and test pits on the project taken from the Report of Geotechnical Investigation by Whitestone

Associates, Inc. dated August 12, 2024. Appendix F contains the previously approved projects soil testing performed by JGI Eastern, Inc. Dated December 20, 2007, including percolation tests that generally indicate a range of between .9 and 1.2 minutes per inch.

6. *A detail for the catch basin/sediment trap inlet structure should be provided.*

Response (RJOC): A detail for the catch basin/sediment trap with beehive frame and grate inlet structure has been provided on sheet C-7 of the plan set.

7. *The detention basin and infiltration system designs utilize an existing permeability rate based on soil gradations. CLA would recommend using half this rate for design purposes in accordance with the Stormwater Quality Manual.*

Response (RJOC): At the request of CLA, RJOC decreased the infiltration rate from 1.02 inches per hour to 0.51 inches per hour. This change caused the subsurface infiltration system to exceed the allowed peak flows, volumes, and recovery time of 48 hours. To bring the design back into compliance with the CT Stormwater Management Standards, the footprint of the infiltration system was increased without generally changing the volume. This resulted in a stormwater system that decreases peak flows and volumes for all storm events as well as recovery time of less than the required 48-hours. Please see the updated plans and stormwater report for details.

Pre- and Post-Development Peak Rates of Runoff in Cubic Feet per Second (cfs)

Point of Analysis 1				
Storm Frequency	**Existing Flow Rate (cfs)**	**Proposed Flow Rate (cfs)**	**Change (cfs)**	**% Reduction**
2-Year	1.47	1.17	-0.30	20%
10-Year	7.53	7.27	-0.26	3%
25-Year	13.08	12.02	-1.06	8%
100-Year	23.15	16.51	-6.64	29%

Pre- and Post-Development Volume of Runoff in Acre-Feet (af)

Point of Analysis 1				
Storm Frequency	**Existing Volume (ac-ft)**	**Proposed Volume (ac-ft)**	**Change (ac-ft)**	**% Reduction**
2-Year	0.527	0.379	-0.148	28%
10-Year	1.659	1.488	-0.171	10%
25-Year	2.576	2.456	-0.120	5%
100-Year	4.206	4.132	-0.074	2%

Please call me if you have any questions at 781-279-0180.

Sincerely,

RJ O'CONNELL & ASSOCIATES

Roy Smith
Vice President

Mark Pricer
Senior Engineer and Associate

cc: Steve Caprio
William Sweeney
Thomas Liddy

Photo #1

Catch basin on Cedar Lane

Photo #2

Catch basins on Cedar lane

Photo #3

Culvert from Catch bason from Cedar Lane

Photo #4

Culvert from Catch bason from Cedar Lane

Photo #5

Downstream Cedar Lane Culvert accumulated sediment in Wetland at the northern property line.

Photo #6

Downstream Cedar Lane Culvert accumulated sediment in Wetland at the northern property line.

Photo #7

CMP pipe

Photo #8

CMP pipe