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June 20, 2023

Tracy Babbidge, Deputy Commissioner  
Air Management, Materials Management and Compliance  
Assurance, and Water Protection and Land Reuse  
Department of Energy and Environmental Protection  
79 Elm Street  
Hartford, CT 06109

RE: University of Connecticut, Memorandum of Understanding (MOU) related to the Campus Drainage Masterplan (CDMP) and Campus Flood Management Certificates (FMC)

Dear Ms. Babbidge:

The **Memorandum of Understanding (“MOU”)** between the **Department of Energy and Environmental Protection (“DEEP”)** and **University of Connecticut (“UConn”)** dated March 16, 2020 documents the agreement of the parties regarding UConn’s plans to undertake, improve and construct flood mitigation and water quality enhancements within the Eagleville Brook and Roberts Brook watersheds located at UConn’s main campus in Storrs, Connecticut.

On page 3 of the MOU, item 6 states, *“Roberts Brook Watershed Master Plan will require additional studies to determine necessary mitigation measures for increases in flow rates. Upon conclusion of these additional studies, this MOU may be modified with the recommendations for improvements in this watershed. At that time UConn will submit an FMC application with supporting documentation for projects within the Roberts Brook Watershed.”*

UConn retained an engineering and environmental team led by Salas O’Brien (formerly BVH Integrated Services, Inc.) to perform two follow-up studies for the Roberts Brook Watershed (hereinafter, the “studies”). As noted in the CDMP accepted by the DEEP on June 4, 2019, these studies were necessary to increase the freeboard for Mirror Lake and mitigate potential adverse impacts downstream from an increase in flow rates.

The first of the follow-up studies was a Hydrologic and Hydraulic Study, which focused on alternative analyses for reducing increases in flow rates and which provided recommendations for mitigation of those rates into Mirror Lake and downstream. A subsequent Feasibility Study was then completed to develop the full scope of the project.

Following completion of the studies, a letter *RE: Memorandum of Understanding (MOU) related to the*

*Campus Drainage Master Plan (CDMP) and Campus Flood Management Certification (FMC)*, dated May 9, 2022 (“2022 Letter”), was issued and executed by DEEP and UConn. The letter outlined the benefits of the improvements recommended by the studies, which would meet the requirements of the MOU.

After budgetary review, a second Feasibility Study was requested by UConn to review options to maintain the goals of the MOU, but at a lower cost than what was proposed with the original Feasibility Study. The second Feasibility Study was reviewed by DEEP and the following information details the benefits of the recommended improvements, which will expand the capacity of Mirror Lake and modify the existing spillway to control flow rates downstream:

- Increase storage volume in Mirror Lake by raising the existing dam
- Modify the existing spillway to reduce flows out of Mirror Lake
- Upgrade hydrodynamic sediment separators and add a forebay at the main inlet to Mirror Lake in order to improve water quality and treat additional flows from projects currently under construction

BVH completed an updated hydrologic/hydraulic analysis on the Roberts Brook Watershed with the above recommended improvements constructed and concluded that the flow rates were reduced below the 1993 levels, with the exception of the 2 year storm event out of Mirror Lake and at the UConn Driveway Culvert (less than 1% increase). Furthermore, the improvements will provide the required one foot of freeboard for the 100-year NOAA storm event. Refer to the following tables for that and other storm frequencies analyzed with the planned improvements in place:

**Table 1: Peak Flow Rates**

Roberts Brook Watershed*										
	2 Year		10 Year		25 Year		50 Year		100 Year	
	1993**	2023***	1993**	2023***	1993**	2023***	1993**	2023***	1993**	2023***
Outflow from Mirror Lake	31.09	31.38	94.64	91.13	128.52	122.41	165.47	156.66	211.18	191.24
Into Valentine Meadow (IIA/IIB/IIG/IIC)	48.17	47.29	141.36	135.54	188.30	179.43	253.55	241.04	322.45	302.51
UConn Driveway Culvert	80.50	80.54	273.36	272.26	380.58	378.03	496.61	492.84	619.00	614.16
Roberts Brook to Fenton River	61.36	61.11	219.63	217.17	316.91	312.99	428.60	422.74	555.67	546.96

\* Flow values are calculated using the 2004 CT DEEP rainfall data as noted under the Stormwater Modeling section of this report.

\*\* 1993 Flows are referenced from the UConn Campus Drainage Master Plan dated December 23, 2019.

\*\*\* 2023 values represent all development to date and include the South Campus Residence Hall (under construction) and the South Campus Infrastructure project (planned for construction in 2023/2024).

**Table 2: Freeboard/Water Surface Elevation**

<b>Storm Event</b>	<b>Freeboard* (feet)</b>	<b>Elevation* (feet)</b>
<b>2 Year</b>	5.10	586.00
<b>10 Year</b>	3.97	587.13
<b>25 Year</b>	3.28	587.82
<b>50 Year</b>	2.77	588.33
<b>100 Year</b>	2.29	588.81


\*Freeboard is based on a top of dam elevation of 591.10' using the NOAA Rainfall data.

At this time, UConn is preparing to amend the Roberts Brook FMC application that was approved by CT DEEP on July 12, 2022. The FMC amendment will include the supporting hydrology and hydraulic calculations for the Mirror Lake improvements based on the proposed improvements noted herein. Upon the completion of the final design for the Mirror Lake Improvements project, a Verification Report will be submitted in accordance with item 8 noted on page 4 of the MOU.

The information included within this letter, which supersedes and replaces the 2022 Letter in its entirety, represents the fulfillment of the outstanding items noted in the MOU and therefore completes the activities required under the Campus Drainage Master Plan.

IN WITNESS WHEREOF, this letter has been duly executed by the parties:

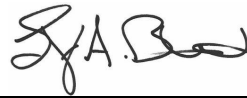
**Department of Energy & Environmental Protection**

By: 

Name: Tracy Babbidge  
Title: Deputy Commissioner  
Air Management, Materials Management & Compliance Assurance, and Water Protection & Land Reuse

Date: June 29, 2023

**University of Connecticut**

By: 

Name: Lloyd A. Blanchard, PhD  
Title: Vice President for Strategic Initiatives and Planning & Chief Strategy Officer

Date: June 20, 2023