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September 10, 2013

Ms. Cheryl A. Chase
Director, Inland Water Resources Division
c/o Office of Adjudications
CT-DEEP 3rd floor 79 Elm Street
Hartford, CT 06106

Dear Ms. Chase:

I wish to enter the following comments into the public record concerning the proposed University of Connecticut Tech Park (Diversion of Water Application No. DIV-201205385 and Inland Wetlands and Watercourses Application No. IW-201205383). I make these comments solely as a concerned citizen of the State, not representing or receiving compensation from any other agency or interest. My *curriculum vitae* is attached which documents my expertise to speak on the following matters.

For the record I should also state that I am a UConn graduate [BSc (1975) and MSc (1978)], the son of a UConn professor, and have worked in partnership with the University on the Storrs Downtown project. I have tremendous respect for the University and its mission. The transformation of the University into a world class institution is a source of pride to many of us—yet that growth needs to be tempered with respect and consideration for the ecological and human environment that is part of, and surrounds, the Storrs campus.

When I worked with the Leyland Alliance, the University, and the Storrs Downtown Partnership, I focused my studies on the site's vernal pool resources and the streams and springs that flowed from the crest of Rte. 195 to the Fenton River. My goal in that project was to protect the vernal pools on the Storrs Downtown site using the standards that I developed in collaboration with Dr. Aram Calhoun, published in the document: Calhoun, A. J. K. and M. W. Klemens. 2002. Best Development Practices (BDPs) for Conserving Pool-breeding Amphibians in Residential and Commercial Developments. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, NY. Under my guidance, the Storrs Downtown Project was re-designed to protect the vernal pools on site using these standards. In addition, streams and springs were studied on the site and a plan developed to protect, restore, and enhance them was prepared. The driving issue behind the stream studies was the potential for the State-threatened spring salamander to use these waters.

I was dismayed upon reading the Vernal Pool Evaluation of the North Hillside Road Extension prepared by Fuss & O'Neill which extensively cites Calhoun and Klemens (2002) and makes on page 9 incorrect and misleading statements as to the protection of the vernal pools on the

subject parcel *vis a vis* Calhoun and Klemens (2002). As the co-author of the repeatedly-cited (by Fuss & O'Neill) document I wish to clearly state that the current plan for the roadway does not comply with the standards for vernal pool protection within a development context that appear in Calhoun and Klemens (2002).

The proposed roadway runs through the middle of a series of vernal pools which have, by virtue of their landscape arrangement, a meta-population function. In short, this means that because of their geographic proximity to one another, as evidenced by their overlapping 750 foot critical upland habitat zones, there is significant movement and genetic exchange of amphibians between these pools. Placing a road in this manner violates the guidance of Calhoun and Klemens (2002:19) stating that "roads and driveways with projected traffic volumes in excess of 5-10 cars per hour should not be sited with 750 feet of a vernal pool."

Apart from the road cutting through the center of this vernal pool meta-population complex, two of the most highly ranked (Tier 1) vernal pools (1 and 10) are rendered non-compliant. Vernal pool 1 which is the most biodiverse and productive pool on the site based upon the data submitted by Fuss & O'Neill, will lose 2% of its vernal pool envelope (the 0-100 foot zone) which violates Calhoun and Klemens (2002) guidance that unequivocally states that any loss of the vernal pool envelope is not acceptable. Table 7 contradicts the narrative statement made on page 7 of the Fuss & O'Neill report stating that "no loss of habitat will result from the proposed development within the 100-foot vernal pool envelope." Vernal pool 1 will also lose 34% of its critical upland habitat (100-750 foot zone) while Calhoun and Klemens (2002) state that a maximum of 25% loss is permissible. Table 7 in the report is misleading—directing one's attention to the 26% loss increase shown in bold red, however the important figure is **34% total loss**. One has to consider the existing development of 8% **plus** the new development of 26% in arriving at the operative impact figure of 34%.

Vernal pool 1 is also severed ecologically from most of the other pools and wetlands by the entrance road. Attempt to reconnect pools using underpasses are a mis-use of Calhoun and Klemens (2002). Such underpasses do not obviate the prohibition against placing high traffic volume roads within the 750 foot areas around vernal pools. One cannot read the guidance document and cherry pick those items that fit a pre-conceived development agenda. Use of underpasses in this context contravenes the guidance document.

Compliance with Calhoun and Klemens (2002) is especially critical when one considers that this pool may be the source pool for the other pools within the meta-population complex. When one considers the standard of "reasonably likelihood to cause unreasonable harm" one must ask the question why, *the most valuable vernal pool on site is the most impacted? Why is vernal pool 1 the only pool to have its envelope impacted as well as its critical upland habitat zone to a degree considered non-compliant by Calhoun and Klemens (2002)? What other alternatives and designs for this entrance road would better protect this source pool?*

The importance of vernal pool wildlife to wetlands has been established in a series of landmark Connecticut court decisions. While the courts have taken a very strict interpretation of when

wildlife issues can be integrated and considered within a wetlands application context, the River Sound decision affirmed in the case of wood frogs, that their diminishment or loss within a wetland could affect the chemical and nutrient composition of the wetland. Wood frogs are a major component of the vernal pools that will be impacted by the current layout of the project, including vernal pool 1.

Apart from vernal pool issues, I would also request that a comprehensive stream and spring survey be conducted on the site to determine the presence of the State-threatened spring salamander. This was done at the Storrs Downtown site. Spring salamanders were historically reported at Storrs (*see*, Klemens, M. W. 1993: pp.65. The Amphibians and Reptiles of Connecticut and Adjacent Regions. Conn. Geol. Nat. Hist. Surv. Bulletin 112:1-318 + 32 plates. They have been and more recently rediscovered not far from the subject property. Spring salamanders are very sensitive to clearing and landscape disturbance. Their potential presence on the site should be explored prior to any permitting for development activity.

I trust that the DEEP will ensure that these issues are fully addressed so as to protect the public trust in the natural resources of our State. If I can provide any further guidance or input, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael W. Klemens".

Michael W. Klemens, PhD

Attachments (2):

Klemens CV

Calhoun and Klemens (2002)