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Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: TransCanada Connecticut River Dams Relicensing
FERC Project No. 1855-045, 1892-026 & 1904-073 Study

Dear Secretary Bose:

I am an abutter to the Bellows Falls Dam impoundment of the above referenced project and represent the Town of Charlestown, New Hampshire, on the Connecticut River Joint Commissions, Mount Ascutney Subcommittee as well as a licensed Professional Engineer in Vermont and New Hampshire. I have serious concerns regarding Studies 1, 2, and 3, that pertain to Riverbank Erosion.

Bank erosion has significant impact on many of the factors related to the re-licensing of the Vernon, Bellows Falls and Wilder Dams. These include but are not limited to: loss of agricultural land, water quality, aquatic habitat, endangered species, fish spawning, aesthetics, cultural and historic resources, infrastructure, etc. It is also an accepted fact that riparian vegetative buffers are extremely important in maintaining water quality. Obviously existing and future bank erosion along the Connecticut River threatens these riparian vegetative buffers as well as impacts on other study issues.

There are substantial areas of significant erosion within the Bellows Falls, Vernon and Wilder impoundments. There are extensive areas of bank erosion in the Bellows Falls impoundment, particularly along the Great Meadows in both New Hampshire and Vermont, as well as in other areas.

Comments related to Studies 1, 2 and 3

- I question the accuracy of determining the historical bank locations from old aerial photography and mapping. I am a licensed land surveyor for almost 40 years and have experience working with aerial photography and aerial mapping. I do not believe the resolution in these photos is sufficient to accurately measure historical rates of erosion using the Study 1 methods.
- The relatively short time period (2 years) of observing erosion at the established transects is insufficient to obtain necessary data to make conclusions as to the extent (rate) of erosion in the study areas. Erosion occurs and continues over years.
- The study claims that boat wakes are a major cause of erosion. I live approximately 4 miles upriver from the Bellows Falls Dam. Even on the hottest days and Holiday periods in the summer, I have never observed more than a half a dozen boats in the area of the Great Meadows erosion areas. It is my opinion that the few number of boats over the relatively short boating season would not have the effect on erosion that the studies represent.
- Although the intent of the studies was to determine the causes of the erosion in the study area and the studies do identify the potential causes but there was no technical data collected, prepared or analyzed to provide any conclusion as to the degree of erosion as it is related to the potential causes.
- None of the studies conducted any geotechnical or hydrogeological studies (analyses) to determine the effects of the operational water elevation fluctuations on the riverbank erosion. This would be the only way to determine the effects of water elevation fluctuation on streambank erosion.
- John Field utilized a ratio method to reach his conclusions on

the causes of riverbank erosion. At the August 25, 2016 public meeting John Field stated that the Ratio Method is **not** an accepted Standard or an accepted Methodology.

- There are accepted modeling methods and procedures for determining bank erosion, i.e. Bank and Toe Erosion Model from the USDA.
- One of the conclusions of the report is that TransCanada's operation and water level fluctuation is not the major cause of the riverbank erosion. I find this hard to believe since boat traffic and ice only occurs over a relatively short period while the water level fluctuation occurs 24/365, i.e. 24 hours a day 365 days a year even under the ice during winter.
- At all of the public meetings that I have attended, which have been many, TransCanada strongly opposed any study that would determine the effects of water level fluctuations. As a matter of fact, riverbank erosion within the water level fluctuation zone provides TransCanada with increased storage volume and it may be in TransCanada's best interest to have increased erosion.

Conclusions:

- **The methodologies utilized to determine the historical erosion limits were not sufficient to accurately determine how much erosion has historically occurred.**
- **Two year observations along with the small number of transects are not sufficient to draw conclusions related to riverbank erosion.**
- **There were no geotechnical, hydrogeological and/or modeling studies conducted to determine the effects of water elevation fluctuations on riverbank erosion.**
- **John Field's conclusions are based on a ratio methodology that he admitted at the August 25, 2016 public meeting that is not an accepted standard or an accepted methodology.**
- **The report's conclusions are based on observations rather than facts and technical analysis.**

Recommendations:

- **In order to fully determine 1) the effects of water level fluctuations and 2) the causes of erosion, I recommend geotechnical, hydrogeological and/or modeling studies be conducted.**
- **Expand the number of erosion study sites, particularly, in the Bellows Falls impoundment to ensure that a full analysis of erosion sites are evaluated and included in the Study Plan.**
- **Include in the license agreement and/or the State Water Quality Certification a condition that 1) provides for continuous monitoring of erosion during the licensing period and 2) collection of additional data to determine the cause of the erosion.**
- **Establish a mitigation fund during the period of the license to remediate erosion and any other impacts caused by TransCanada's operation of the Vernon, Bellows Falls and Wilder Dams.**

I also endorse the erosion peer-review by Princeton Hydro that critiques the erosion studies as well as the CRJC Comments on TransCanada Updated Study Results.

Thank you for your consideration.

Very truly yours,

John Bruno P.E., L.S.

Document Content(s)