



Tompkins County Water Resources Council

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December 17, 2012

Ms. Teresa Diehsner
NYSDEC
625 Broadway
Albany, NY 12233-1750

Dear Ms. Diehsner,

The Water Resources Council (WRC) is an advisory board of the Tompkins County Legislature. The WRC approved a Joint Statement (attached) detailing the collaborative partnership between the WRC and Cornell University in 2007. The Joint Statement supports a more holistic monitoring approach and community involvement in decision making processes involving Cayuga Lake.

The WRC generally supports the proposed modified SPDES permit for Cornell University's Lake Source Cooling facility because the suggested monitoring is more comprehensive than the point samples that are currently collected and because of the express engagement of stakeholders in the process. We hope that public participation will not be limited to periodic meetings or progress reports but will provide meaningful and appropriate engagement of stakeholders in parts of the permit that address Cayuga Lake's health and future management.

We recognize that renewal of SPDES permits is routinely accomplished with little public input and does not usually require active participation from the DEC in a public dialogue. However, concerns about the state of the south end of Cayuga Lake have been long standing. We request the DEC take an active leadership role in this community discussion and provide a lead contact person to address questions/concerns and attend local meetings. The WRC would like to extend an invitation to said DEC contact person to attend one of our regularly scheduled meetings as part of this community discussion.

Specific comments/questions/criticisms related to the proposed permit are attached in list form to this letter. The WRC requests a response to our comments.

The Water Resources Council will provide comments on the topic of a Total Maximum Daily Load in a separate letter to both the DEC and EPA.

Cordially,



Frank P. Proto
Chairman, Water Resources Council

cc: Joe Martens, Commissioner, Department of Environmental Conservation
Encl.

COMMENTS OF THE TOMPKINS COUNTY WATER RESOURCES COUNCIL ON THE PROPOSED PERMIT FOR CORNELL'S LAKE SOURCE COOLING FACILITY

Entrainment Study

- The current focus of the entrainment study appears to be on equipment/process optimization. We would like to see the study modified to capture information on aquatic organisms from a foodweb perspective. If this cannot easily be done within the confines of the permit, we request that DEC perform such a study in advance of development of any new lake or watershed regulation.

Nutrient Model Development – Total Maximum Daily Load (TMDL)

- We request the DEC clarify its goals in developing a lake-wide nutrient model.
- We request the DEC meet with the community and explain the possible impacts of a TMDL
- The WRC will provide more detailed comments regarding a TMDL in a separate letter.

Nutrient Model Sampling

- Sampling for the nutrient model development should capture soluble reactive phosphorus (SRP) dynamics in the hypolimnion.
- DEC should be aware that hypolimnetic SRP levels have been rising in other regional water bodies. Data collected in Cayuga Lake should not be analyzed in a vacuum.
- The water-sampling regime should be designed such that it may help determine a cause for the rising hypolimnetic SRP concentrations.
- Zebra and quagga mussel studies should also be designed to capture possible relationships between the organisms and nutrient cycling.
- Sediment inputs are an important component in the determination of a phosphorus impairment for the south end of Cayuga Lake. The WRC recognizes that the Lake Source Cooling discharge does not introduce sediment to the lake. DEC should perform sediment sampling, total phosphorus load estimation and a determination of overall impacts of that loading on the impaired water body prior to developing any new lake or watershed regulations.

General Questions

- How does one develop a Quality Assurance Project Plan (QAPP) for a model?
- Please make publicly available the statistical analysis that resulted in the two phosphorus limits and any raw data necessary to perform the calculations. Please explain the two limits, the rationale for development of them and any changes that may result in phosphorus discharges through the duration of this proposed five year permit.

Community Involvement

- Local entities including but not limited to the Community Science Institute, the Cayuga Lake Watershed Network, the Cayuga Lake Watershed Intermunicipal Organization, the Water Resources Council, and the Tompkins County Environmental Management Council should be the primary contacts for data collection and/or public outreach. Non-local entities (e.g., consultants) should only be engaged when the services cannot be provided locally.

- The WRC requests an opportunity for public, or stakeholder, comment on any plans (and/or QAPP's) before their approval by DEC.
- We request that a separate QAPP, or plan, be developed for Community Involvement.
- DEC should meet with the community early next year to answer questions about the long range goals for Cayuga Lake implied in the permit.
- Stakeholders - and their roles - should be clearly defined. We envision different stakeholders wanting different levels of involvement.
- The general public should have opportunities for meaningful engagement throughout the process.
- DEC should lead stakeholder and community discussions.

Promoting a community-based approach to lake monitoring

Joint statement detailing the collaborative partnership between the Tompkins County Water Resources Council and Cornell University

Project duration: On-going from implementation

Introduction

A healthy Cayuga Lake is one of the cornerstones of our community. It is the most notable icon of Tompkins County, providing fresh water, beautiful vistas, and abundant recreational opportunities. Its value to the community and region cannot be overstated.

One role of the Tompkins County Water Resources Council (WRC) is to protect our precious water resources. To this end the WRC has been supportive of the various ongoing local monitoring efforts in Cayuga Lake, including volunteer groups monitoring tributaries to the lake and Cornell's Lake Source Cooling (LSC) in-lake monitoring.

In 2004, prompted by the University's request to reduce its Department of Environmental Conservation (DEC) permit-required LSC monitoring in the southern end of Cayuga Lake, the WRC began a dialogue with Cornell and with the DEC. In October 2006, the WRC asked Cornell to enter into a partnership to collaborate on issues related to Cayuga Lake. Since then, a committee of the WRC, along with Cornell faculty and staff, has been working in cooperation with other entities to develop a more comprehensive community-based, monitoring program for the southern end of the lake.

Cornell has supported this initiative with both academic and financial resources so that enhanced monitoring can continue to provide the highest-quality information about the lake, while assuring the continuity of the ongoing water-quality data collection. As a result, new relationships have been formed, and the level of collaboration in this partnership is very promising.

This WRC committee along with Cornell faculty has now developed a monitoring plan that includes in-lake water quality monitoring and the redeployment of a Remote Underwater Sampling Station (RUSS), which provides instantaneous and accessible data about water quality and meteorological data via the Internet for all to use. The RUSS also provides important data related to the impact of storm events on the lake.

The WRC and Cornell University support a community-based program that will provide a greater level of understanding of Cayuga Lake and by extension other lakes around the world. We urge regulatory agencies and affected municipalities to support the creation and execution of this plan. In order to implement such a program, the WRC is supportive of Cornell's efforts to simplify its LSC permit requirements.

Scope of the WRC/CU Lake Monitoring Partnership:

1. The Partnership. Members of the WRC, with the help and expertise of relevant Cornell University faculty and staff, have developed a long-term strategic monitoring plan (SMP) for the southern end of Cayuga Lake. Input on this monitoring plan has been solicited from other professionals such as the United States Geological Survey, Upstate Freshwater Institute, the Community Science Institute, and other appropriate entities. The intent of this effort is to more effectively utilize available resources, both financial and intellectual, to foster a better understanding of Cayuga Lake and to assess its environmental health. The SMP will ultimately include physical, chemical, and biological parameters to be measured and assessed.

2. Cornell University's Role. Cornell has pledged to help fund this monitoring plan, while continuing to meet regulatory compliance requirements for its LSC facility. At present the University spends about \$100,000 annually on data collection and analysis. This financial support would be redirected to support the SMP. Testing of the water drawn through the plant will continue to be performed; however Cornell has requested that DEC remove the in-lake water quality monitoring from the permit. If the in-lake monitoring requirements remain as part of LSC's permit, then the financial resources necessary to perform the community-based

program will not be fully available from Cornell and will limit the scope of the SMP. Monitoring activities associated with the new SMP will be undertaken by the RUSS and some combination of City of Ithaca personnel, Cornell faculty and/or students, the Finger Lakes Institute, and DEC. Considerable additional funding from other sources will be necessary to initiate and continue all monitoring activities expected to be included in this plan. In addition, Cornell will continue to discuss with the County, and other appropriate entities, other ways it can support the health and understanding of Cayuga Lake and its watershed.

3. WRC role. The WRC will initiate and conduct communications with the general public, targeted stakeholders and the DEC about the need for a strategic (and more informative) monitoring plan for the southern end of Cayuga Lake, emphasizing that Cornell has offered to help formulate the plan and offset the cost of the associated monitoring.

4. Cayuga Lake Watershed. It is our hope that the Cayuga Lake Watershed Intermunicipal Organization and the Cayuga Lake Watershed Network will partner to build on the scope of the monitoring plan for the southern end of the lake, broadening it to the whole lake and associated watershed areas. Development and implementation of this broader plan will continue throughout 2008 and beyond, in accordance with community priorities, needs and available funding.

5. Oversight. The Partnership will provide oversight of this effort. Cornell will develop and maintain a publicly accessible database and annual graphical summaries of key data collected via this partnership.

Information about Lake Source Cooling and Cornell

As background, LSC cools the buildings on Cornell's campus, replacing a system that relied on fossil-fuel combustion to generate large amounts of electricity to run conventional cooling equipment. Instead, LSC utilizes a renewable resource - the cool deep water of Cayuga Lake - by withdrawing 40-degree water from the lake at a depth of 250 feet through an intake located approximately two miles north of Stewart Park, and returning the 55 to 60-degree temperature water to the lake through a diffuser at a depth of 13 feet near the East Shore Marina. LSC also cools Ithaca High School.

LSC is a significant component of Cornell's efforts to reduce its ecological footprint. It replaced much of Cornell's former cooling system. The benefits are regional and global. Since 2000 the system has prevented the emission of approximately 75,000 tons of carbon dioxide, 300 tons of sulfur dioxide and 100 tons of nitrogen oxides due to the superior efficiency of the system as compared to conventional cooling. In addition, 40,000 pounds of CFC refrigerants were eliminated.

Lake water-quality monitoring conducted since 1994 can be used to add to our understanding of the lake. Although the southern end of Cayuga Lake is not suitable for public swimming because of the sediment that enters from the creeks, and is impaired for boating due to rooted water-plant growth, the scientific consensus to date is that LSC does not contribute to these conditions.

Cornell was recently required to submit an application for the 5-year renewal of the LSC facility's discharge permit. Cornell has again suggested that in-lake water quality monitoring be removed from the permit. If it is, then Cornell expects to redirect that annual cost, in combination with the community's resources, toward analyzing the health of the lake in a more holistic manner. Testing of water drawn through the LSC plant would continue to be performed. DEC has the ultimate authority to determine if and how the University's LSC-required monitoring will be done and controls when that decision will be made.

Cornell will continue to be a strong advocate for promoting the health of Cayuga Lake. For example, Cornell scientists can focus on community concerns about weed abundance or changes in the Cayuga Lake food web - addressing such key organisms as zebra mussels, alewife, *Mysis relicta* (tiny shrimp that live at the bottom of the lake), and other microscopic living organisms. Cornell faculty play a lead role in managing aquatic resources throughout the world, and can provide similar leadership for the local community.