



## Tompkins County Water Resources Council

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[www.tompkins-co.org/planning/committees.html](http://www.tompkins-co.org/planning/committees.html)

January 30, 2013

Mr. Jeffrey F. Gratz, Deputy Director  
Clean Water Division, US EPA, Region 2  
290 Broadway  
New York, NY 10007-1866

Mr. Mark Klotz  
Director  
Division of Water  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, NY 12233-3500

Dear Mr. Gratz and Mr. Klotz:

The Water Resources Council (WRC) is an advisory board of the Tompkins County Legislature and serves as this county's Water Quality Strategy Committee (please see attached list of members and affiliations). We have been monitoring the state of the south end of Cayuga Lake for a number of years, both literally and figuratively. Two organizations represented on the WRC, the Ithaca Area Wastewater Treatment Plant and the Community Science Institute, operate NYSDOH-ELAP-certified laboratories and have collected tens of thousands of pieces of water quality data including phosphorus, sediment and pathogens on southern Cayuga Lake and its tributaries over the past ten years. **We have several questions regarding EPA's October 11, 2012, letter to DEC concerning establishment of a Total Maximum Daily Load or other watershed management approach for Cayuga Lake.**

### Overall comments

The WRC agrees with EPA that NYSDEC should assess the available data and more fully understand water quality dynamics in the southern portion of the lake in order to address any concerns. The WRC joins the EPA in requesting from DEC a schedule for establishment of a TMDL or other watershed management approach capable of addressing water quality problems in Cayuga Lake and we strongly support development of meaningful water quality standards that take into account climate, geology, and other relevant factors.

### Impaired use:

The WRC has been given to understand that there is a recreational use impairment in the southern end of Cayuga Lake. Is swimming that impaired use? Swimming did occur at Stewart Park in the past. Available records show that the Tompkins County Health Department issued permits for swimming at Stewart Park beginning in 1957; however, water quality problems were

evident then. The Health Department had to close the swimming area repeatedly in 1962 due to water quality problems (silt, high bacterial counts, turbidity and a sewer break). There was also a drowning in 1961. The Health Department closed the swimming area in 1964 after another drowning (it took 3 days to find the body due to turbid water conditions). No further permits were issued. It is the opinion of the Tompkins County Health Department—and many scientists and resource managers agree—that public swimming is not, and likely never was, an appropriate use of the south end of Cayuga Lake. We agree that swimming is not an appropriate use in the south end of the lake and believe a Use Attainability Analysis is necessary before consideration of any TMDL development based on swimming as an alleged designated use impairment.

If swimming is determined to be the relevant impaired use, how are phosphorus levels related to that use without also considering silt/sediment and pathogens? If swimming is not the recreational use under consideration, we would like more specific information on which use is impaired and what the plans are to restore that use. While data presented at local meetings over the last several years indicate that Cayuga Lake is mesotrophic and healthy, we do not believe that in its natural state the lake's south end will ever be suitable for swimming. The WRC respectfully requests additional information on designated uses, how those designated uses relate to water quality standards, and how water quality data are used to assess impairment and to design improvements in water quality in the south end of Cayuga Lake.

#### Water Quality Standard Exceedences:

It is our understanding that data indicate sediment, total phosphorus and pathogens do not exceed water quality standards outside of storm events. For example, base flow samples from 2007-2012 collected from the Floating Classroom and analyzed by the Community Science Institute's NYSDOH-ELAP-certified laboratory show average E. coli counts of 8 to 49 colonies/100 mL, depending on sampling location.<sup>1</sup> At a control site in the middle of the southern shelf, E. coli averages about 20 colonies/100 mL during the summer, total coliform averages about 500 colonies/100 mL and total phosphorus about 20 ug/L<sup>2</sup> Since available evidence indicates that base-flow concentrations of pathogens, total phosphorus, and sediment are within recognized guidelines for mesotrophic lakes, the question arises: Is stormwater being regulated as a pollutant? If not, what is the basis for the impairment? Specifically, does the south end of Cayuga Lake meet duration, periodicity, and seasonality criteria to be considered impaired?

#### Application of the TP:Trophic-State Relationship:

If TMDLs for phosphorus are chosen as the water quality management tool for the southern end of Cayuga Lake, will they be established based on bioavailable phosphorus or on all the phosphorus entering the lake, whether or not it is bioavailable? We understand that there is a well-established relationship between Total Phosphorus and the Trophic State in mid-lake situations. We have questions about the validity of applying that relationship in shallow, turbid and/or frequently mixed water bodies. Thus, we are concerned with the justification in applying the 20 ug/L guidance value to the southern end of Cayuga Lake under stormwater conditions,

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<sup>1</sup> See graphs of monthly averages at shelf control site at <http://www.communityscience.org/database/monitoringlocations/84> and use drop-down menu to select graphs for various water quality parameters.

<sup>2</sup> See graphs of monthly averages at shelf control site at <http://www.communityscience.org/database/monitoringlocations/84> and use drop-down menu to select graphs for various water quality parameters.

particularly since multiple years of data collected independently by the Community Science Institute (see above) as well as the Ithaca Area Wastewater Treatment Plant document that the guidance value of 20 ug/L total phosphorus is consistently met under base flow conditions. Are there data documenting excessive algae growth in the southern end of the lake?

#### Process for Establishing a Watershed Management Approach

The WRC requests clarification of the process through which establishment of a TMDL or other watershed management approach will be accomplished. Currently, data collection appears to be restricted to phosphorus as the impairment that the Lake Source Cooling (LSC) Facility SPDES may impact. This is clearly inadequate for development of any management approach addressing all listed impairments as it does not cover pathogens or sediment loads. Nor does it include review and incorporation of the extensive existing data on Cayuga Lake. Finally, it does not include review of the extensive data on neighboring Finger Lakes and other regional water bodies that could be valuable in determining what processes are unique to Cayuga Lake and what processes are not.

It is unclear how the LSC Facility permit interfaces with the TMDL process. The WRC requests that these two efforts be clearly defined and separated.

The WRC agrees with EPA that NYSDEC should organize a group of stakeholders to assess available data, identify data gaps, choose hydrodynamic and water quality models and develop a plan to achieve water quality standards in Cayuga Lake. However, this process has not been initiated. We request that the stakeholder group be organized without further delay. We concur with EPA's list of suggested stakeholders and request that others be added: local Publicly Owned Treatment Works, Tompkins County Soil and Water Conservation District, Cornell University, relevant county advisory boards including the WRC and Environmental Management Council, Cayuga Nation, local and regional scientists, Tompkins County Health Department, local governments, the Community Science Institute, the Cayuga Lake Watershed Network and the Cayuga Lake Watershed Intermunicipal Organization.

The WRC is working with NYSDEC to review one component of the LSC draft permit - the proposed Quality Assurance Project Plan for monitoring to support development of a nutrient model for the lake. This review could be seen as a first step in developing a stakeholder role in the process, but there is confusion about how the two efforts are related. The WRC is not generally interested in inserting itself in the middle of a permit process; however, NYSDEC has indicated that future TMDL development will be largely based on this permit-required study. As long as the permit is being used as a vehicle to develop a TMDL, the WRC (and other community members) must insist on inclusion in all facets of the process as we and other local stakeholders are the ones who will be mandated to implement a TMDL.

The ultimate regulatory responsibility for development of a TMDL lies with the NYSDEC. State agencies, rather than third parties, ultimately adopt TMDLs and submit them for approval to EPA. Thus, any elements of a TMDL developed based on the data-gathering requirements of the LSC draft permit must be adopted by the state. NYSDEC should delineate how they will use the products developed by the LSC modeling project of Cayuga Lake. A series of other questions should also be addressed before any TMDL process is initiated:

- 1) Who is making decisions about what data are included/excluded?
- 2) What is NYSDEC's normal role in the development of TMDLs?
- 3) How will other stakeholders (and data) be included?
- 4) Who will coordinate the TMDL process?
- 5) Who makes the ultimate decisions regarding management of the south end of the lake?

#### Other Impairments:

*Sediment.* Exhaustive data sets document that the bulk of the phosphorus in the south end of the lake is delivered via the tributaries<sup>3</sup> Much of the tributary sediment load originates from natural (glacial deposits) and historical (legacy erosion deposits from agricultural practices 100 years past) sources.

A related project, dredging of the Cayuga Inlet, is slated to begin in 2014. As this project will be on-going for a number of years, will require permanent maintenance dredging, and addresses or is the result of the natural/historical sediment load to Cayuga Lake, it should be included in any TMDL or watershed management process. The local USGS office has the capability to measure sediment inputs to the system if funds were available. The WRC requests that NYSDEC pursue sediment modeling concurrently with nutrient modeling.

If swimming is the impaired use, we would like EPA and DEC to discuss how any TMDL or watershed management approach will offset natural and legacy inputs of sediment and phosphorus to the lake in sufficient quantity to meet modern bathing beach standards.

*Pathogens.* The Ithaca Area Waste Water Treatment Facility has been monitoring the south end of the lake for a number of years. Their data show consistently low densities and no strong correlation between storm events and elevated fecal coliform counts. As noted above, data collected by the Community Science Institute since 2007 show that *E. coli* levels at the south end of Cayuga Lake average about 20 colonies/100 mL during the warm season or about an order of magnitude lower than the EPA-recommended limit of 235 colonies/100 mL for swimming. A nearby Finger Lake used DNA sampling to determine that water fowl were the source of fecal coliforms and now use dogs to reduce bird presence on the beaches. The Cayuga Lake Watershed Network and a Cornell University scientist started developing a DNA library so that the sources of coliforms in/around Cayuga Lake could be identified. This, or some other pathogen study, should be completed concurrently with nutrient modeling. The WRC requests that NYSDEC explain the basis for designating the south end of Cayuga Lake as impaired due to pathogens and, pursue pathogen source determination concurrently with sediment and nutrient modeling.

The WRC requests information from NYSDEC on how sediment and pathogens will be addressed in a TMDL development process if these data are not collected as part of the TMDL process and the appropriate models are not developed. If TMDL development is ultimately pursued, all listed pollutants (sediment, nutrients, and pathogens) should be included.

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<sup>3</sup> See, for example, base flow and stormwater data sets for total suspended solids and turbidity at 73 locations in Trumansburg, Taughannock, Enfield, Buttermilk, Six Mile, Cascadilla, Virgil, Fall and Salmon Creeks and the Cayuga Inlet at <http://www.communityscience.org/database/monitoringsets> . Select monitoring set (e.g., tributary stream) of interest; also search the CSI database of over 30,000 certified water quality data items and download selected data sets using the data query interface at <http://www.communityscience.org/database/entries>).

Other Watershed Management Options:

EPA's letter to DEC frequently refers to watershed management approaches other than TMDL development. The WRC requests further explanation from EPA and NYSDEC about what those other options might include. We respectfully request that the 'do nothing' option be given full consideration if existing data support that outcome.

Concluding Remarks:

The WRC supports responsible management of our watersheds and water resources. To that end, we support the thoughtful review of existing data, collection of any missing data, and development of appropriate management programs. Development of an adequate TMDL, or any watershed management plan, will require substantial financial and technical resources. The WRC would like to reiterate that there is an abundance of existing data and a large pool of technically capable individuals available to assist in this process. We look forward to a coordinated local, state, and federal effort to meet the project needs.

Cordially,



Frank P. Proto  
Chairman, Water Resources Council

Encl.

Hard copies to:

NYS Senators Skelos, Kolb, O'Mara, Seward, and Nozzolio  
Speaker Silver  
Assemblywoman Lifton  
Chair of Senate Committee on Environmental Conservation (via Mark Grisanti)  
Chair of Assembly Committee on Environmental Conservation (via Robert Sweeney)  
Chair of Assembly Committee on Water Resources Needs of NYS and Long  
Island (Robert Sweeney)  
U.S. Senators Schumer and Gillibrand  
NYSDEC Commissioner Martens  
Tompkins County Legislature  
Tompkins County Agriculture & Farmland Protection Board  
Kate Hackett

Electronic copies to:

Mike Latham, NYS Ag & Markets  
Cathy Mural, New York Farm Bureau  
Don Pettit, NY Natural Resources Conservation Service  
Cayuga Lake Monitoring Partnership  
Tompkins County Environmental Management Council (EMC)  
Tompkins County Council of Governments (TCCOG)  
Tompkins County Information Officer

## 2013 Tompkins County Water Resources Council Membership

MEMBER NAME	SEAT ON WATER RESOURCES COUNCIL	AFFILIATION
Anderson, Sharon	Cooperative Extension	Environmental Educator, Cooperative Extension
Andersson, John	At-Large	Retired Director of County Environmental Health
Benson, A. Fay	Agriculture	Small Farms Educator, Cooperative Extension
Bugliosi, Ed	US Geological Survey	USGS
Cameron, Liz	Environmental Health	Director of County Environmental Health
Carpenter, Scott	At-Large	State Emergency Management Office
Dwyer, Sarah	Business/Industry	Executive & Operations Associate, Concept Systems Inc.
George, William	Municipal Government	Self Employed Engineer
Goodrich, Barry	Watershed Organization	Town of Caroline Watersheds Committee
Johnston, Roxanna	Water Purveyor	Watershed Coordinator & Technical Director, City of Ithaca Water Plant
Jurkowich, Joan	County Planning Department	Deputy Commissioner, County Planning Dept.
Karig, Daniel	Recreation	Emeritus Professor, Earth & Atmospheric Sciences, Cornell University
Kiefer, Dooley	Associate Member	Tompkins County Legislature
Kiley, Darby	Municipal Government	Town of Ulysses Planner
Leopold, Lynn	Municipal Government	Village of Lansing
Lozano, Jose	Associate Member	Ithaca Area Wastewater Treatment Plant
Manning, Rick	At-Large	Self Employed Landscape Architect
Mawdsley, John	Associate Member	President, Cayuga Lake Watershed Network
McConnell, Gregg	At-Large	Farm Business Consultant & Chair of Fall Creek Watershed Committee
McGarry, Jim	EMC Liaison	Tompkins County Environmental Management Council
Miller, Todd	Associate Member	Retired Hydrologist, US Geological Survey
Penningroth, Steve	Associate Member	Executive Director, Community Science Institute
Proto, Frank	At-Large	Tompkins County Legislature
Quaroni, Elaine	At-Large	Retired Realtor with background in Chemistry
Rinaldo-Lee, Marjory	Environment	Retired Hydrogeologist, former President of Geologic NY, Inc.
Schutt, Craig	Soil & Water Conservation District	District Manager, Tompkins County SWCD
Shelley, Mary	Associate Member	Clinical Social Worker, Artist, Cayuga Lake Property Owner
Vawter, Tom	Associate Member	Professor of Biology & Environmental Studies, Wells College
Wagenet, Linda	Associate Member	Retired Researcher, Cornell University