



Department of
Environmental
Conservation

Cayuga Lake Modeling Project

In Support of
a Phosphorus TMDL



Public Meeting
Ithaca, NY
March 9, 2016

Modeling Study/TMDL Schedule of Activities

- 2013 – Monitoring/Data Collection
- 2014/15 – Model Development
- 2015/16 – Model Evaluation
- 2016/17 – TMDL Development
- May 2017 – Draft TMDL (target date)
- Sep 2017 – Final TMDL (target date)



The Goal of the Cayuga Lake Water Quality Modeling Project

The Goal

A model to provide better understanding of Cayuga Lake water quality under varying conditions in order to develop an effective TMDL Plan.

Realistic Expectations

Project expected to answer some of the questions...
Will the project answer them all?



Meeting Agenda

Project Update

What's Been Learned?

Lake Water Quality

What's It Mean?

The TMDL

What's Next?

Questions & Answers

What's On Your Mind?



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Cayuga Lake Modeling Project

Cayuga Lake
Water Quality

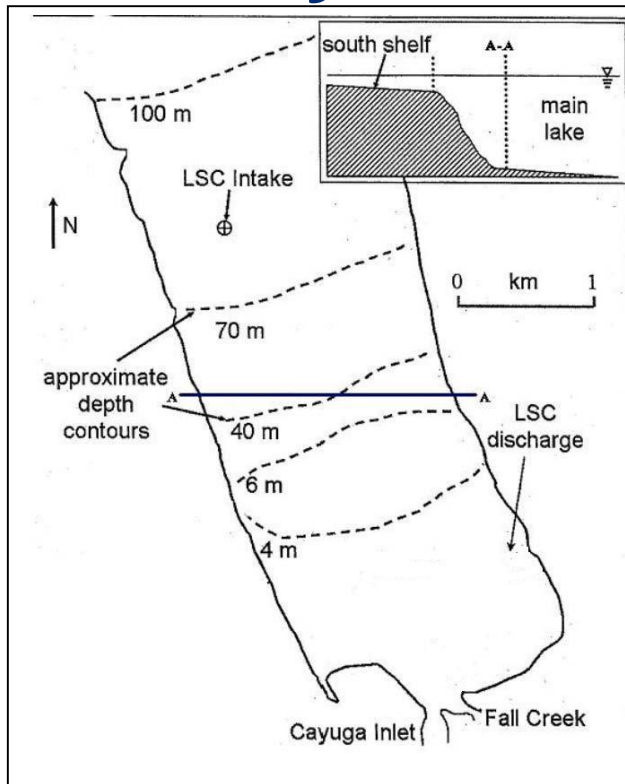


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Cayuga Lake Water Quality

Complexities

- One Lake, Multiple Segs
- Multiple Discharges
 - Ithaca Area WWTP
 - Cayuga Hgts WWTP
 - Cornell LSC
- Tributary Loads
- In-Lake Recycling
- Lake Dynamics
- Changing Lake WQ
- Narrative Phos Standard
- Other
 - Invasives
 - Climate Change



Cayuga Lake Water Quality

Water Quality Standards

- Guidance Value of 20 ug/l Total P for Protection of Aesthetics and Recreation
- Narrative Standard:
No phosphorus in amounts that will result in growths of algae, weeds and slimes that will impair waters for their best usages.



Cayuga Lake Water Quality

Water Quality Impairment

- South End of Lake Listed as Impaired for Phosphorus in 2002
- Basis of Listing was Both the Numeric (20 ug/l) and Narrative Standard
- In 2016, the Listing Issue was Revisited
Conclusions:
 - No Improvement Since 2002
 - Additional W.Q. Concerns



Cayuga Lake Water Quality

Additional Water Quality Concerns

- Algal Blooms, in Cayuga Lake
- Harmful Algal Blooms, in other Finger Lakes
- Water Supply Advisories



NOTICE TO CUSTOMERS OF THE WELLS COLLEGE PUBLIC WATER SUPPLY

Dear Wells College Public Water Supply Customer,

The Wells College Public Water Supply recently violated a drinking water standard set by the New York State Department of Health. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what the College is doing to address this situation.

Wells College's public water supply has levels of trihalomethanes above that specified by the New York State Department of Health. The College is required to sample water for trihalomethanes within the College's distribution system each quarter of the year, and then average the quarterly sample results obtained within the past twelve months. (The College failed to collect samples in the fourth quarter of 2014 and the second quarter of 2015. The running annual average therefore is calculated from the two sample results



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Cayuga Lake Water Quality

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 - **Re TMDL, Protection or Restoration**
Doesn't Really Matter



Cayuga Lake Water Quality

Issues Raised by Modeling Project and Implications for Actions

- Flaws of a Total Phosphorus Criterion
- Increasing Concern Regarding Soluble Reactive (Bioavailable) Phosphorous and Chlorophyll
- Lack of Water Quality Improvement from Reduction of Other Point Sources



Thank You

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