Cayuga Lake Modeling Project in Support of a Phosphorus TMDL

Public Meeting, Boynton Middle School
June 12, 2013

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Cayuga Lake Modeling Project in Support of a Phosphorus TMDL

- Background on TMDL
- Why a TMDL Approach for Cayuga Lake?
- Goal of the Modeling Project
- Connection to the Cornell LSC Permit
- Brief Recap of Permit Public Comment
- Status of Project
- Schedule and Outreach
Total Maximum Daily Load

• TMDLs are Load Allocation Plans used to set discharge limits for a specific pollutant into a specific waterbody.

• TMDLs are typical for more complex and multiple discharger situations.
Complexities

- One Lake, Multiple Segs
- Multiple Discharges
  - Ithaca Area WWTP
  - Cayuga Hghts WWTP
  - Cornell LSC
- Tributary Loads
- In-Lake Recycling
- Lake Dynamics
- Changing Lake WQ
- Narrative Phos Standard
- Other?
  - Invasives
  - Climate Change
Section 303(d) Listing for Cayuga Lake South End

- Phosphorus
- Silt/Sediment
- Pathogens

The Focus of the TMDL is on Impairment due to Phosphorus
Goal of 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.

The Reality:
Project should answer some of the questions... but not expecting to answer them all.
Connection to the Cornell Lake Source Cooling Permit

...which includes a requirement outlining Cornell's commitment to fund a study of Cayuga Lake to assist NYSDEC with the development of the TMDL for the South End of the Lake.
Reason for DEC’s Approach to the Draft Permit

DEC remains uncertain that focusing solely on the Cornell LSC discharge will resolve the water quality problems in Cayuga Lake.
Reasons for Uncertainty

• Water quality impacts in the Lake predate the Cornell LSC discharge
• Cornell LSC Phosphorus increase is affected by increasing lake concentrations
• Significant reductions of phosphorus from WWTPs to date have not resulted in improved water quality
Reasons for Uncertainty

• Relative contributions of Soluble Reactive Phosphorus (as opposed to Total Phosphorus) from LSC facility and other sources
• Need for greater focus on most critical summer months
• What is fate of SRP in deep lake absent the LSC intake/discharge
Summary of Public Comment
On Cornell LSC Permit and Modeling/TMDL Study

Comments In Support of the Permit cited:
- Environmental benefits of LSC
- Need for more intensive study of the South End of Lake and support of TMDL
- Benefits of a focus on the whole lake and watershed to better address water quality declines in other parts of the lake
Summary of Public Comment
On Cornell LSC Permit and Modeling/TMDL Study

Comments Opposing the Permit cited:
- Decline in lake water quality and timing that suggests LSC discharge is cause
- Adequate study to date indicates LSC discharge should be reduced/eliminated
- Interim discharge limits are too high
Overview/Status of Monitoring Efforts
Modeling Study/TMDL Schedule of Activities

2013 – Monitoring/Data Collection
2014 – Model Development
2015 – Model Evaluation
2016 – TMDL Development
Project Outreach

• Occasional Public Meetings
  Scheduled around Key Project Milestones
• Tompkins Co WRC/Monitoring Partnership
  Regular (Monthly) Communication, Technical
• Technical Advisory Committee (TAC)
  Track/Comment on Monitoring/Model Progress
Project Outreach

Cont'd

Also:

Webpages and List Serves

- DEC Cayuga Lake Watershed Page
- Cornell Cayuga Lake Modeling Project
- Tompkins County Water Resources Council

- NYSDEC “Making Waves”
Questions?