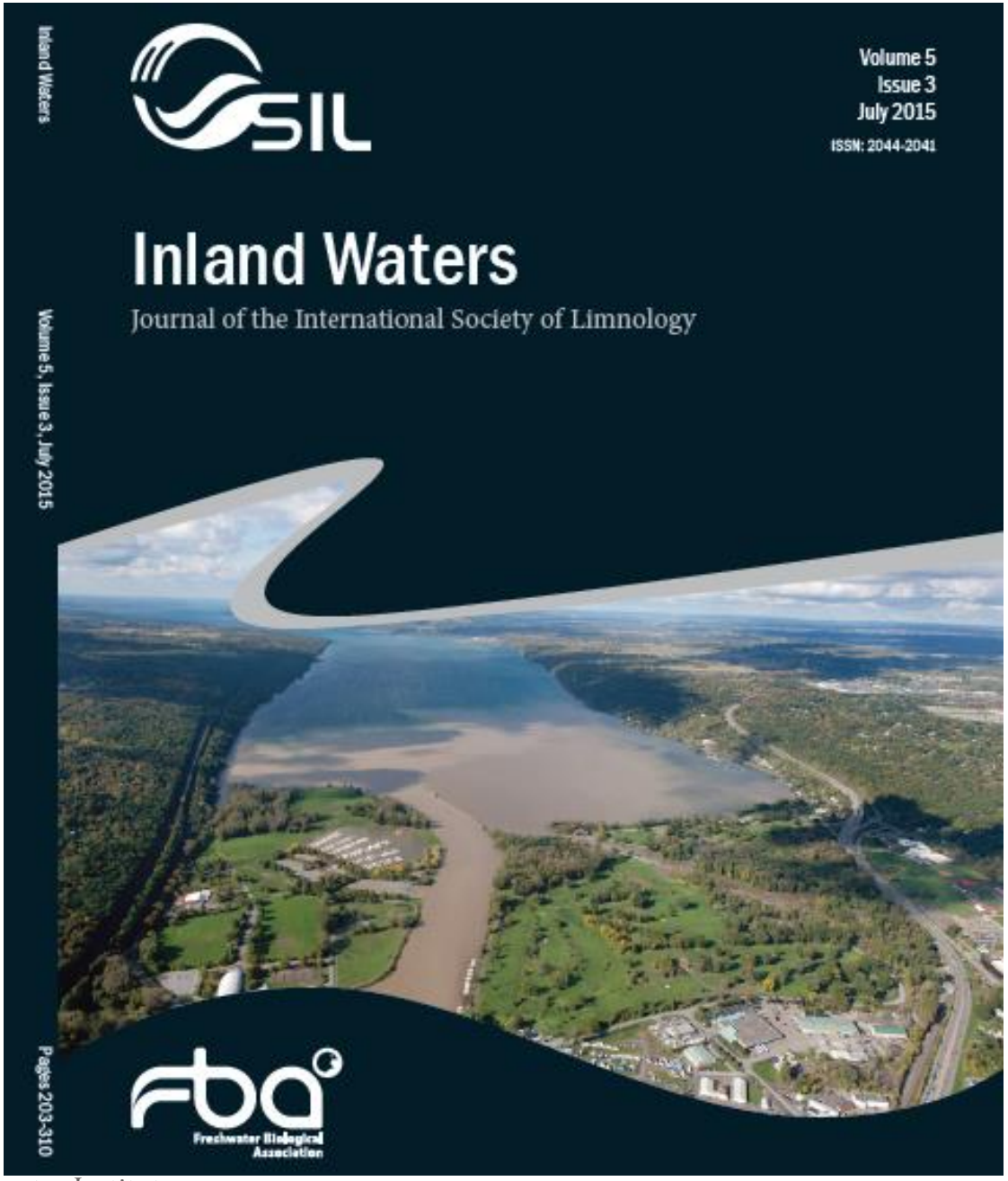
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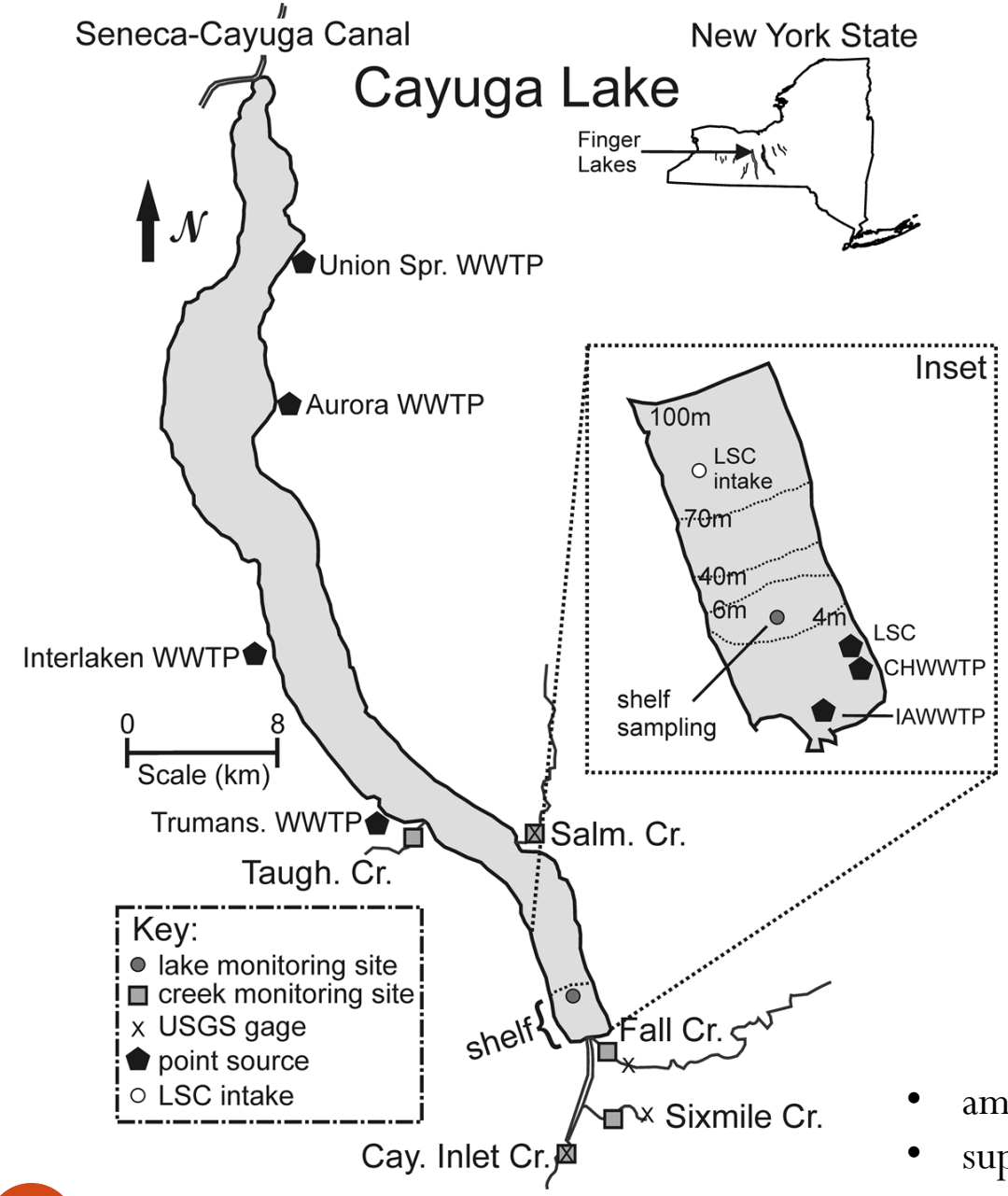
A. Introduction to Meeting

goals, key elements, timely input for management

Goals for October 2015 meeting related to Cayuga Lake

- document key features of progress
- provide timely scientific support for related management deliberations



A key Finger Lake and aquatic resource of New York

- second largest
  - volume = 9.4 x 10^9 m^3
  - surface area = 172 km^2
- City of Ithaca
- "shelf" area of particular interest
  - <5% of total lake surface area
  - receives ~ 40% of inflow
- multiple lake uses/classifications, management focus on shelf, mesotrophic, P-limited system
- substantial program underway to develop P-eutrophication/water quality model

- ambitious 2013 study, tributaries and lake
- support, from other studies

Project work schedule (Phase 2): Phosphorus (P)/eutrophication modeling project, Cayuga Lake

No.	Component Description	2015				2016			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	individual constituent modeling analysis NO_X, DOC, TP, SUP, POC	→	→	→					
2	inlet channel adjustment to loads		→	→					
3	minerogenic particle submodel		→	→	→				
4	optics submodel			→	→				
5	nutrient-phytoplankton submodel development			→	→	→	→		
6	overall water quality model			→	→	→	→	→	
7	land use - lake models linkages					→	→	→	
8	long-term model simulations						→	→	→
9	Phase 2 report							→	→

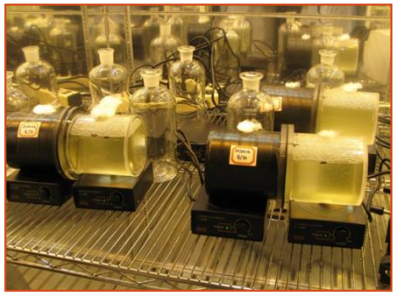
QAPP
p. 36, 2015

- on pace with all identified items
- noteworthy additions
  - simulations of the contributions of minerogenic particles to particulate phosphorus (PP) concentrations - $PP_{m/u}$ model
  - completion of 2015 loading estimates for most constituents
  - submission of certain findings to peer-reviewed journals

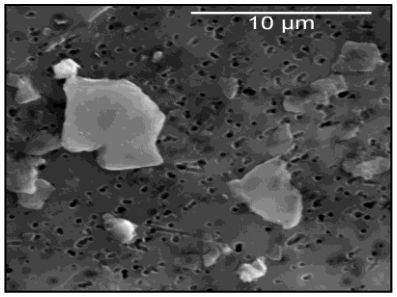
Technologies and approaches adopted by the project science/modeling team

- consistent with the evolution of earlier work in New York (NYSDEC, USEPA)
  - multiple forms of phosphorus (P)
  - bioavailability of forms of P
  - importance of minerogenic particles
  - SAX-PAV$_m$ characterizations of minerogenic particles
  - optical metrics of water quality
  - importance of runoff events
  - two-dimensional hydrothermal transport models
  - multiple particle size class models

    - advanced features adopted in this study program
    - accepted and/or supported by regulatory agencies in New York

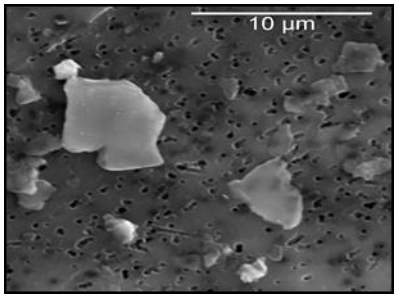


bioavailability assays



minerogenic particles

Focus of the technical presentation of project findings for this meeting



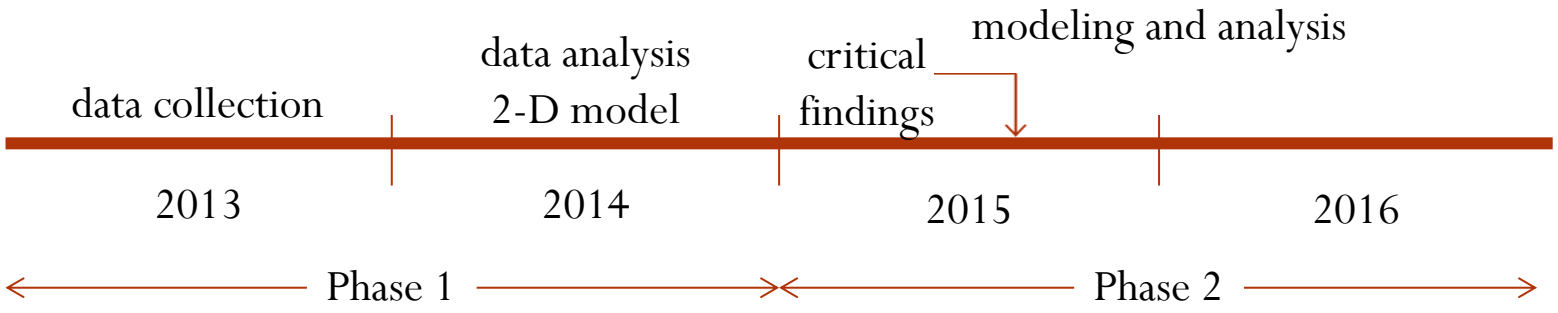
- P-apportionment of bioavailable P loads
- minerogenic particles in the tributaries and lake,

  importance to water quality metrics
- inseparability of minerogenic particles delivered

  to lake and in-lake concentrations of P
- the low bioavailability of P associated with minerogenic particles
- development and testing of a multiple size class minerogenic particle model, and associated water quality
- development and testing of a model for unavailable P associated with minerogenic particles
- *other secondary technical elements – provided as attachments*
  - *loading estimates from Inlet Channel and comparisons to inputs – Inlet Channel analysis*
  - *loading estimates for above 2 models – refer to manuscripts*
  - *optics submodel – refer to manuscripts*
  - *individual diagnostic constituent modeling analyses for selected constituents*

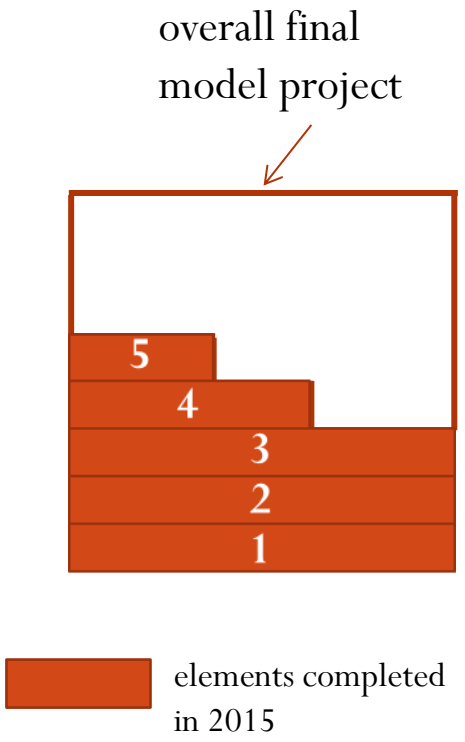
Salient considerations related to timing of delivery of project information

- several of the completed work elements have outputs and findings that will not change
- these outputs are likely critical to the management initiative
- delay in the consideration of this information to the project's overall end would have disadvantages
  - no justification for the delay of key information and related deliberations
  - limits team collaborations
  - promotes potential for dilution of the key "now" findings with the overall project products

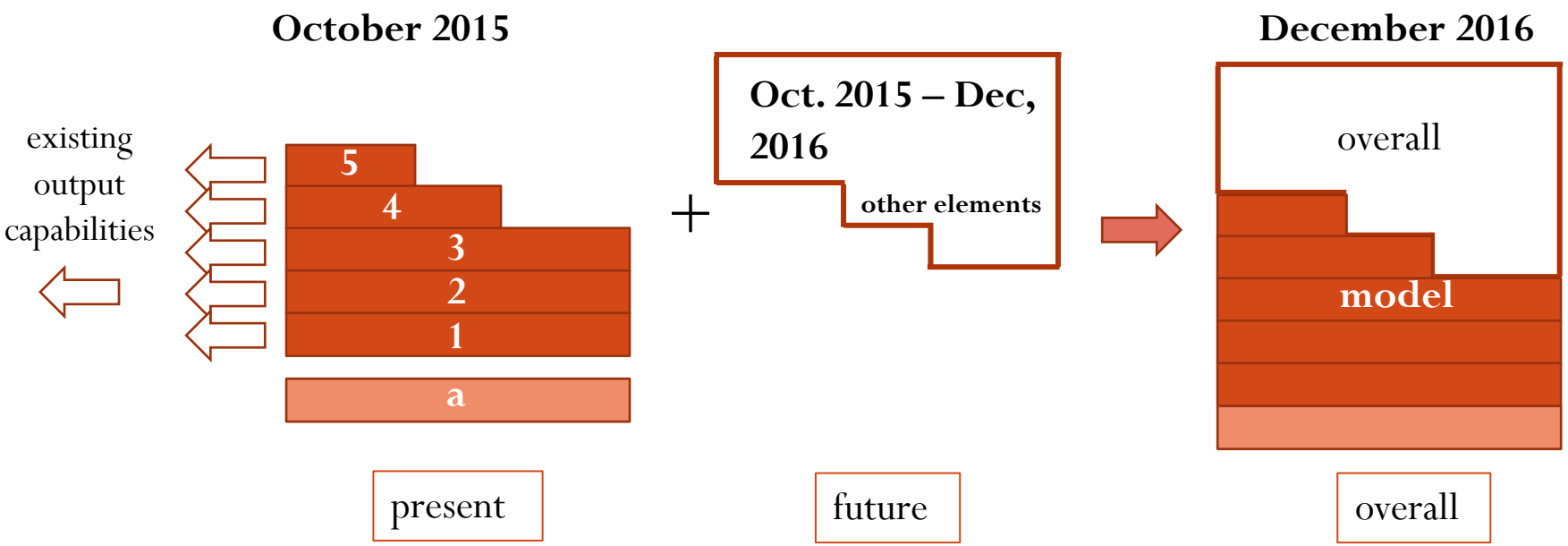


Manuscripts for peer-reviewed journals, for completed work elements, support credibility of findings and non-advocacy of scientific team

- seeking support from independent expert review (Assoc. Editor plus ≥ 2 anonymous reviewers, per paper)
- items/papers – mostly completed in 2015
  1. external P loads – Prestigiacomo et al. 2015,
  2. hydrothermal/transport model – Gelda et al., 2015a,
  3. optics submodel – multiple papers – Effler and Peng 2014, Effler et al. 2014, Peng and Effler 2015, Effler et al. 2015a, 2015b
  4. minerogenic particle patterns, impacts, and submodel – Peng and Effler 2015, Gelda et al. 2015b
  5. minerogenic PP submodel – Gelda et al. 2015c
- credibility of key project "building blocks" established



Certain key recently available information should be considered now



includes the various additional capabilities as described in phase 2 QAPP