UNRBA Board Meeting January 16, 2019

Location: Butner Town Hall

Time: 9:30 AM to 12 Noon

Sig Hutchinson, Chair

Introductions and Announcements

Roll Call to Confirm Quorum

Identification of any Conflict of Interest Issues

Action Items

Approval of November 14, 2018 Board Meeting Minutes

Action Items (continued):

Treasurer's Report —Ryan Eaves

Upper Neuse River Basin Association, Inc.

Treasurer's Report

1/14/2019

Balance Forward: (per bank statement - 11/27/18)		Checking	$	709,794.79
		Savings		507,144.23
Debits:				
	Barnes & Thornburg (October 18 Inv.)			2,415.46
	MFG Consulting, LLC (Oct. & Nov 18 Invs)			150.00
	Sauber Water Consulting (Oct. & Nov. 18 Invs)			5,530.00
	Bank Fees			1.00
	Total Debits		$	8,096.46
Credits:	Interest (checking)		$	83.89
	Interest (savings)			201.51
	FY 2018-19 Membership Fees			-
Account Balance (per bank statement - 11/27/18)		Checking	$	701,782.22
		Savings		507,345.74
	Total UNRBA Account Balance :		**$**	**1,209,127.96**
Outstanding invoices/deposits in process since the close of bank statement (12/26/18):				
Debits:	McGill Asso. (November 18 Inv)		$	16,618.32
	Brown & Caldwell (MP, FY 19, Nov & Dec, 18 Invs)			69,207.71
	Brown & Caldwell (MRS, FY 19, Nov & Dec, 18 Invs)			34,331.38
	Cardno FY 15 Monitoring Program Closeout			8,305.34
	Sauber Water Consulting (Oct & Nov 18 Invs)			5,530.00
	MFG Consulting, LLC (Dec 18 Inv)			118.95
	HDR, Inc. (November 18 Inv)			3,309.72
	Phthisic Consulting Inc. (Nov 18 Inv)			113.75
	Barnes & Thornburg (Sept 18 Inv)			14,764.32
	Jewell Wiggins (2017 990 Tax Prep)			600.00
Credits:	No credits this period		$	-
	Current Account Balances:	Checking	$	548,882.73
		Savings		507,345.74
	Total UNRBA Account Balance :		**$**	**1,056,228.47**

Action Items (continued):

Officer Elections for 2019: Nominating Committee Recommendations

Bill McKellar

Action Items (continued):

UNRBA Comments on DWR/EMC 303(d) List and Integrated Report

Forrest Westall

The 303(d) Process and Its Impact on the Falls Lake Strategy

- Provides the basis for the Rules
- Measures the efforts of the watershed to meet the goals for the Falls Lake Nutrient Management Strategy
- The 303(d) process is a policy set by DWR and the EMC
- The Members of the UNRBA have an important interest in how the 303(d) process is implemented

UNRBA Comments on NC 2018 CWA 303(d) List and Integrated Report

Comments Due Jan 18,2019

North Carolina Division of Water Resources Requesting public comments and Public Notice of Availability DRAFT 2018 303(d) list and Integrated Report

EMC Listing methodology, data, and additional information are available on the DWR website: https://files.nc.gov/ncdeq/Water%20Quality/Planning/TMDL/303d/2018/303d-review-public-notice-2018.pdf

Unrba

UNRBA Primary Comments on NC 2018 CWA 303(d) List and Integrated Report

#1 Assessment Units (Segmentation)

- Consistent assignment, independent of concentrations, based on limnologic features
- Consistent with the Falls Rules.

#2 Numerical Assessments of Water Quality Standards

- Easier to be placed on impaired list & more difficult to remove from the list
- No longer requires a 90% statistical confidence in determining non-attainment
- Only impair if evaluations support a binomial statistical significance of 90% or greater

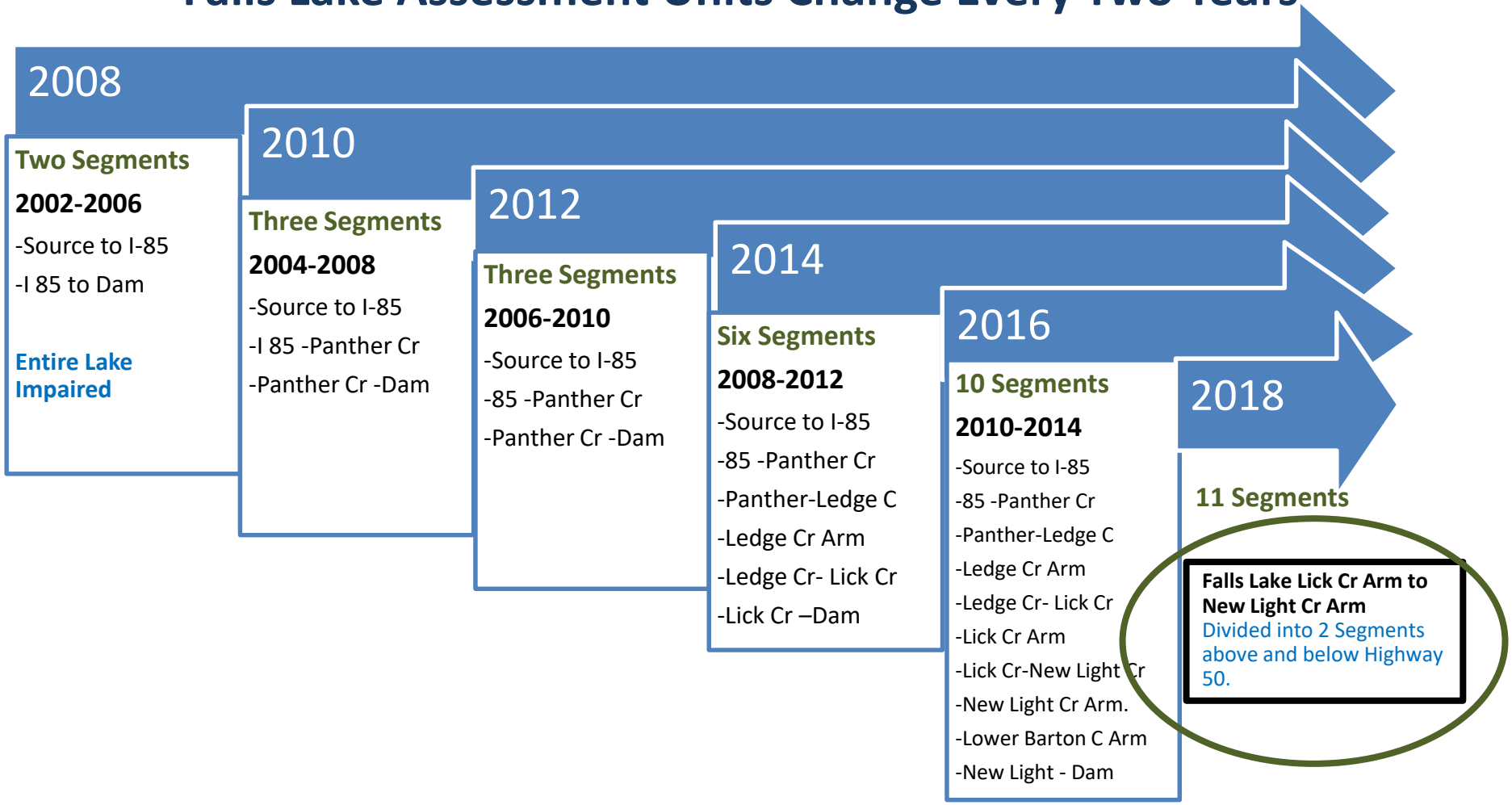
#3 Do Not Expand Small data sets to a Ten Year Period

- Provides potential for listing waters on the basis of outdated data
- Obtain additional new data to supplement any small data sets

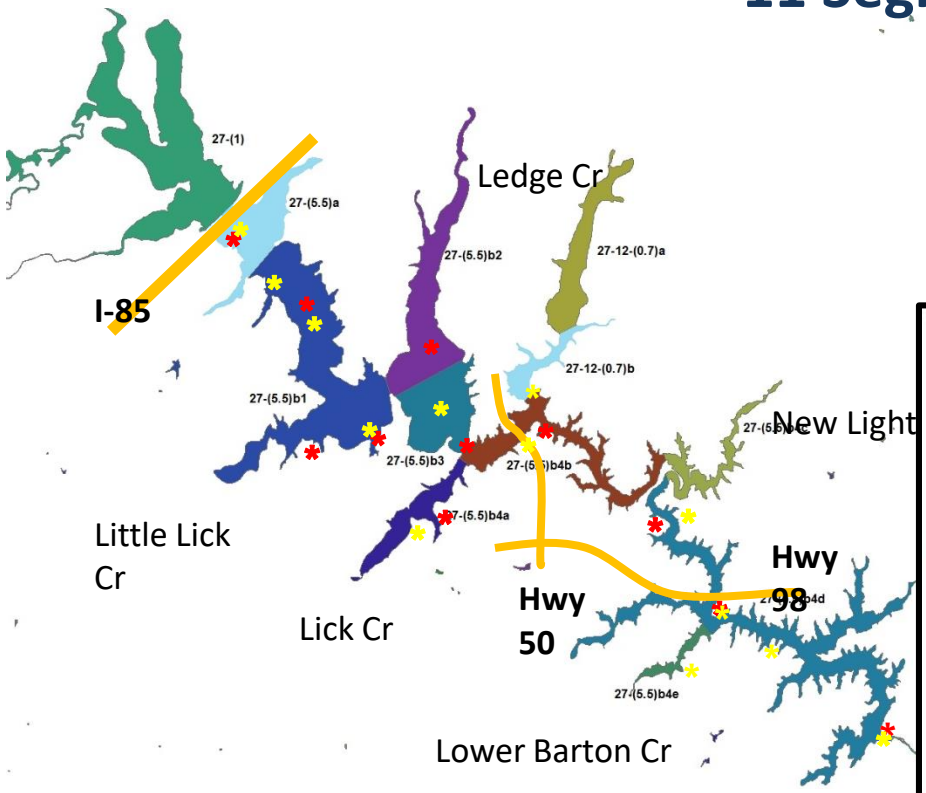
#4 Maintain Current Listing Method (90% Statistical Confidence)

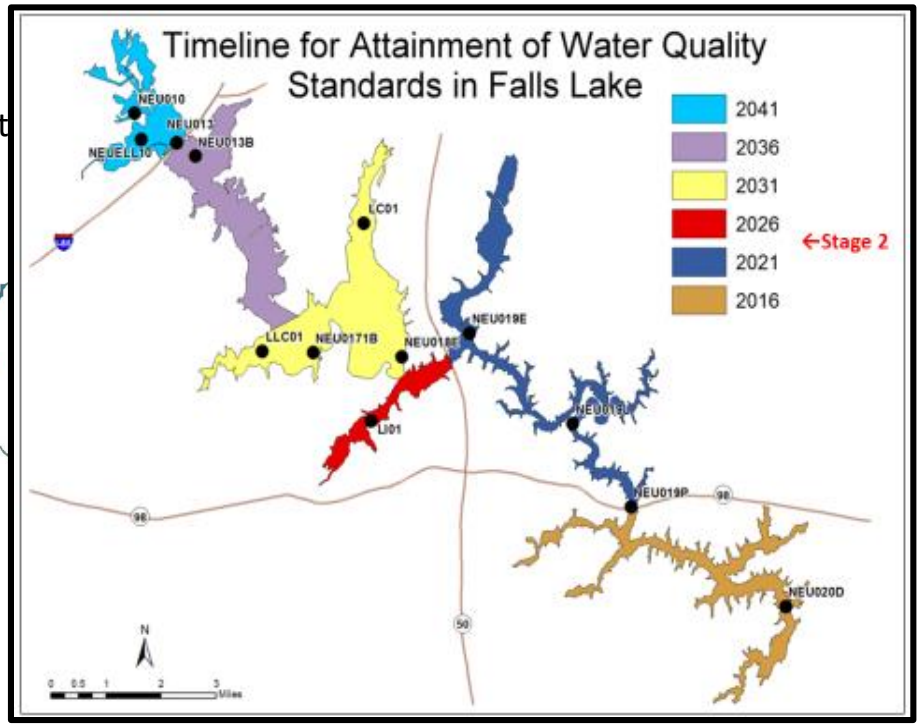
- New Methodology is an unnecessarily complex decision tree
- Reduces the statistical confidence to levels that are not reasonable

Falls Lake Assessment Units Change Every Two Years



2018 Draft Integrated Report – 11 Segments





UNRBA Comments on NC 2018 CWA 303(d) List and Integrated Report

Questions and Board Discussion

Information Items and Reports:

Discussion of Board Meeting Format and Improving Communications Within the UNRBA

Forrest Westall

Discussion Points for Improving Internal UNRBA Communication

- Input needed from Board
- Continue to use the PFC, MRSW, Legal Group and other committees for detailed technical/strategy discussions
- Provide the Board with overviews and access to detailed information
- Focus Board Agenda and Information on decision-making and policy direction
- Improve Board Meeting process and focus—shorten meetings
- Provide support to Board Directors in communication to governing bodies

Update on NC Nutrient Criteria Development Plan Activities and Related Developments

Jay Sauber

Potential Impacts to Falls Lake and the Members of the UNRBA

- Signals the keen interest in nutrient management in NC and the Nation
- Represents the evolution of science in determining how eutrophication issues are measured
- Provides insight in regulatory program shifts that can be expected in the future
- Will influence how the Falls Lake Strategy will be revised

Updates on Potentially Positive Developments

DWR's Nutrient Criteria Development Plan Scientific Advisory Council

EPA Approves Missouri Water Quality Standards for Lakes

SAC Objective and Duties

The objective of the Scientific Advisory Council (SAC):
Provide advice and recommendations to DWR on site-specific nutrient criteria based solely on data and scientific judgments about pollutant concentrations and their effects.

Duties

1. Review currently available nutrient data nationally and regionally.
2. Identify data gaps (scientific and technical) for nutrient criteria development.
3. Recommend additional monitoring.
4. Provide knowledge and technical guidance to aid development of numeric nutrient criteria.
5. Review proposed nutrient criteria, including revised chlorophyll-a criteria for new (not existing) nutrient management strategies.

High Rock Lake **Albemarle Sound** **Middle Cape Fear River**

DWR's Nutrient Criteria Development Plan
Science Advisory Council (SAC)

- May 2015 –SAC First Meeting
- November 2018 and December 2018 most recent meetings
- Deliberations focused on proposals for site specific criteria recommendations for pH and chlorophyll.
- Challenge: Define the specific numeric threshold for protection of designated uses – Water Supply, Recreation, Fish and Wildlife.

Importance to UNRBA

- SAC Recommendations can alter the current chlorophyll-a Standard.
- New Criteria may be more achievable based on central tendency
- Recommendations might have grace or longer assessment period.
- SAC and CIC may consider additional weight to attaining designated uses.

Scientific Advisory Council November and December Deliberations on Chlorophyll-a: Site Specific Proposals for High Rock Lake

Lots of Scientific Literature on Algal Toxins, Nutrients, and Chlorophyll-a

Proposal type A

- Likely more stringent than the current NC criteria of 40 ug/L.
- Supported by those wanting the most protective criteria possible.

Proposal type B

- Chlorophyll range of values
  Upper value 40 ug/L and lower value 25 ug/L.
- Between 25 and 40 ug/L, Uncertain area,
- Narrative based on fish kills, algal toxins, water supply treatment issues, algal community etc.
- Supported by those struggling with the high degree of uncertainty.

Limited Data linking Designated Uses to numerical criteria

Unrba

July 2018 UNRBA Comments on DWR Rule making: Amend Chlorophyll-a Water Quality Standards for Surface Waters

- √ Chlorophyll-a standard based on the central tendency rather than instantaneous measurements.
- √ The current standard (40 ug/L) is difficult to equate to the protection of designated uses.
- √ The standard should explicitly allow the development of site-specific standards related to designated uses.
- √ The standard should have averaging method for chlorophyll-a over the growing season. April through October is reasonable in NC
- Standard should be reviewed based on potential extremes in weather and hydrologic conditions

Status: Hearing Officer's report and recommendations under development.

SAC High Rock Lake Recommendation
site specific chlorophyll a standard

- 35 ug/L chlorophyll-a
- growing season geometric mean
- collected over a complete assessment period (5 years)
- at any mainstream location
- photic zone composite samples
- Growing Season - April 1 through October 31.
- Minimum number of samples ten observations.

December 4, 2018
Consensus Reached
!

Ten of the Eleven SAC Members voted to support.
One Member not attending.
Wording subject to change
Could even be revisited before formal documentation is completed.

New Approach Approved !

EPA Approves Missouri Water Quality Standards for Lakes and Reservoirs

UNRBA Comments February 2018 to Federal Register Notice Water Quality Standards for the State of Missouri's Lakes and Reservoirs

√ 1. Supports numerical screening approach and benefits of combining numeric criteria with designated use impact factors.

2. Recommends that designated use impact factors apply to chlorophyll-a numeric criteria.

√ 3. Does not support Reference condition approach for artificial reservoirs because no "natural" reference condition exists result would generate overly restrictive numerical criteria for chlorophyll-a.

√ 4. Supports Missouri position '' the health of sport fish populations can be interpreted as indicator of ecosystem health and the presence of a 'wide variety' of aquatic biota.''

Unrba

EPA Approves Missouri Water Quality Standards for Lakes and Reservoirs

December 14, 2018 Letter EPA Region VII - Regional Administrator
EPA Letter of Approval for 10 CSR 20-7.031(5)(N)
Water Quality Standards for the State of Missouri's Lakes and Reservoirs

1. Consultation with US F&W Service
   concurred w/ EPA Not likely to adversely affect relative to ESA.
2. "States are not required by the CWA to adopt numeric nutrient criteria, although many states have done so to address nutrient pollution."

Importance to UNRBA

- EPA Approval of this type approach not previously supported.
- US F&W Service did not question adverse affects to ESA fish & wildlife
- First time in nearly 20 years EPA Senior Staff writes:
  "States are not required to adopt numeric nutrient criteria"
- EPA Approval "cracks the door" to a number of new approaches.

EPA Approved Missouri Water Quality Standards for Lakes and Reservoirs

If Exceed Threshold Water Impaired

- **Response Impairment Thresholds**
  -Annual geometric mean
  -Collected May through September
  -Allowable exceedance frequency of one in three years

If Exceed Threshold Water Not Impaired Unless Uses Impaired

- **Nutrient Screening Thresholds**
  - TP, TN, and Chlorophyll-a
  - Annual geometric mean May through September.
  - Exceedance in any one year warrants further evaluation of Response Assessment Endpoints.
- **Response Assessment Endpoints**
  Narrative endpoints that link directly to designated use impairment.

Ecoregion Criteria Thresholds:
Samples must be collected from surface, near outflow of the lake

Missouri Standards for Lakes and Reservoirs

- Impairment annual geometric means (May through September) allowable exceedance frequency of one in three years.
- Screening annual geometric means (May through September) exceedance in any one year warrants review of Response Assessment Endpoints.

	Impairment	Screening		
Lakes without Site-specific criteria.	**Chl-a**	**TP**	**TN**	**Chl-a**
Plains Ecoregion	30 ug/L	49	843	18
Ozark Border Ecoregion	22 ug/L	40	733	13
Ozark Highland Ecoregion	15 ug/L	16	401	6

Response Assessment Endpoints

- Eutrophication-related mortality or morbidity events for fish and other aquatic organisms
- Epilimnetic excursions from dissolved oxygen or pH criteria
- Cyanobacteria counts in excess of 100,000 cells per milliliter
- Shifts in aquatic diversity attributed to eutrophication
- Excessive levels of mineral turbidity that consistently limit algal productivity May 1 – September 30.

DWR's Nutrient Criteria Development Plan
Scientific Advisory Council

EPA Approves Missouri Water Quality Standards for Lakes

Questions and Board Discussion

DWR Status Report

Falls Lake Nutrient Management Strategy Implementation

- Model Program Development
- Buffers in Developed Areas Nutrient Credit
- Land Conservation Credit
- Implementation of Stage I Existing Development
- Release of Final Project Nutrient Accounting Tool, SNAP v4.1

DWR Activities

John Huisman

Update--Preliminary FY 2019-2020 Budget (July 1, 2019 through June 30, 2020)
Will be presented at March Meeting for review and approval

Monitoring Program Status Update—Doug Durbin

Routine Monitoring Status

Date	Sample Collection	Sample Analysis	Data Review	Posted to Database
Aug – Dec 2014	✓	✓	✓	✓
Jan – Dec 2015	✓	✓	✓	✓
Jan – Dec 2016	✓	✓	✓	✓
Jan – Dec 2017	✓	✓	✓	✓
January 2018	✓	✓	✓	✓
February 2018	✓	✓	✓	✓
March 2018	✓	✓	✓	✓
April 2018	✓	✓	✓	✓
May 2018	✓	✓	✓	✓
June 2018	✓	✓	✓	✓
July 2018	✓	✓	✓	✓
August 2018	✓	✓	✓	✓
September 2018	✓	✓	✓	✓
October 2018	✓	✓	✓	✓

The UNRBA has collected Routine Monitoring samples for 51 months.

Routine Monitoring sample collection for the Modeling Program is COMPLETE.

Routine Monitoring - Completeness

- The UNRBA's monitoring efforts have generated a database with more than 28,000 water quality data points for tributaries to Falls Lake

- Almost 95% of the targeted analyses were completed
  - Most of the "missing" data was the result of dry stream conditions or severe weather conditions that precluded sample collection

- The data quality of the UNRBA monitoring results is very high

Transitional Monitoring Now Under Way

- Ongoing UNRBA monitoring effort, but at substantially reduced intensity
  - Allows for more resources to be directed toward analyses and modeling
  - Maintains ongoing data collection for potential future uses

Falls Lake Sediment Evaluations

Falls Lake Sediment Study

Prepared for
Upper Neuse River Basin Association

by
Marc Alperin, Ph.D.
Department of Marine Sciences
University of North Carolina at Chapel Hill

November 30, 2018

A-1

Project ID: 18-0362

Falls Lake Nutrient Exchange & Sediment Oxygen Demand (SOD) Study
Final Project Report

Project Location: Upper Neuse River Basin, Raleigh, NC (Durham and Wake Counties)

Project Date:
June 4-8, 2018

Report Approval Date:
September 7, 2018

Report Revision Date:
October 29, 2018

Project Leader: Morris Flexner
Ecology Section
Field Services Branch
Science & Ecosystem Support Division
USEPA – Region 4
980 College Station Road
Athens, Georgia 30605-2720

The activities depicted in this report are accredited under the US EPA Region 4 Science and Ecosystem Support Division ISO/IEC 17025 accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation AT-1644.

SESD Project ID Number: 18-0362 Final Report Revision 1 Page 1 of 19

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Science & Ecosystem Support Division

SESD

Final Monitoring Report for Modeling Purposes

- Report preparation under way
- Data acquisition from other entities is ongoing
- Final report not only conveys data to Modeling Team, but will stand on its own with results and interpretation
- New types of analyses are being explored
- Coordinating with Executive Director and Subject Matter Experts on report content, and with Modeling Team
- Report delivery is contingent on data acquisition
  - Targeting early spring of 2019

Monitoring Program

Questions and Board Discussion

Modeling and Regulatory Support Update—Alix Matos

Re-examination Project – Why?

- Re-examine the Falls Lake Nutrient Management Strategy
  - Requires very high nutrient load reductions
    - Implemented in two stages (Stage I mostly complete)
    - Stage II is very expensive (greater than $1 billion)
    - Not technologically feasible
    - Does not foster collaboration across sectors
    - Modeling period 2005 to 2007
      - Period of record drought coupled with a large tropical storm
      - 2006 is the measuring stick (baseline)
  - Limited data resulted in uncertain model predictions

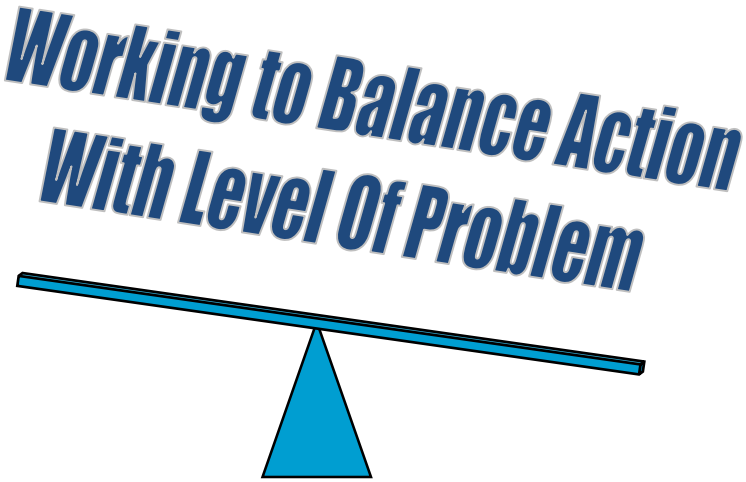
Falls Lake at I-85 in November 2007
Source: Southeast Regional Climate Center

Re-examination Project – How?

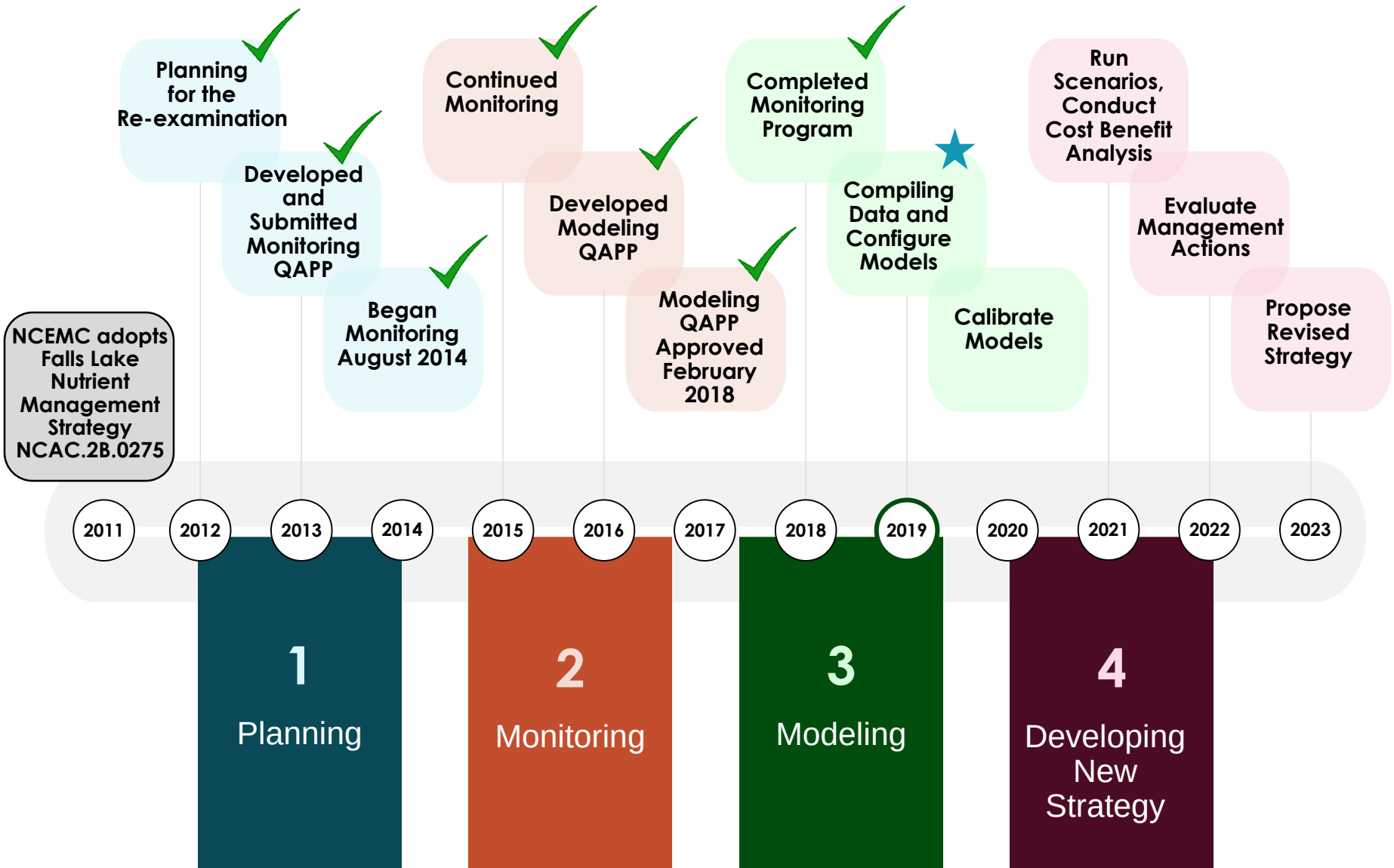
- UNRBA Re-examination relies on science and collaboration to develop an alternative plan incorporating
  - 4 years of the UNRBA Monitoring Program
  - Revised watershed and lake models for two periods
    - 2005 to 2007 to compare to original modeling
    - 2014 to 2018 to incorporate new data
  - Cost benefit/feasibility analyses
  - Stakeholder involvement
    - Regulated communities, including agriculture
    - Environmental groups
    - State and federal agencies
      - Regulated
      - Approvals

Re-examination Project Purpose

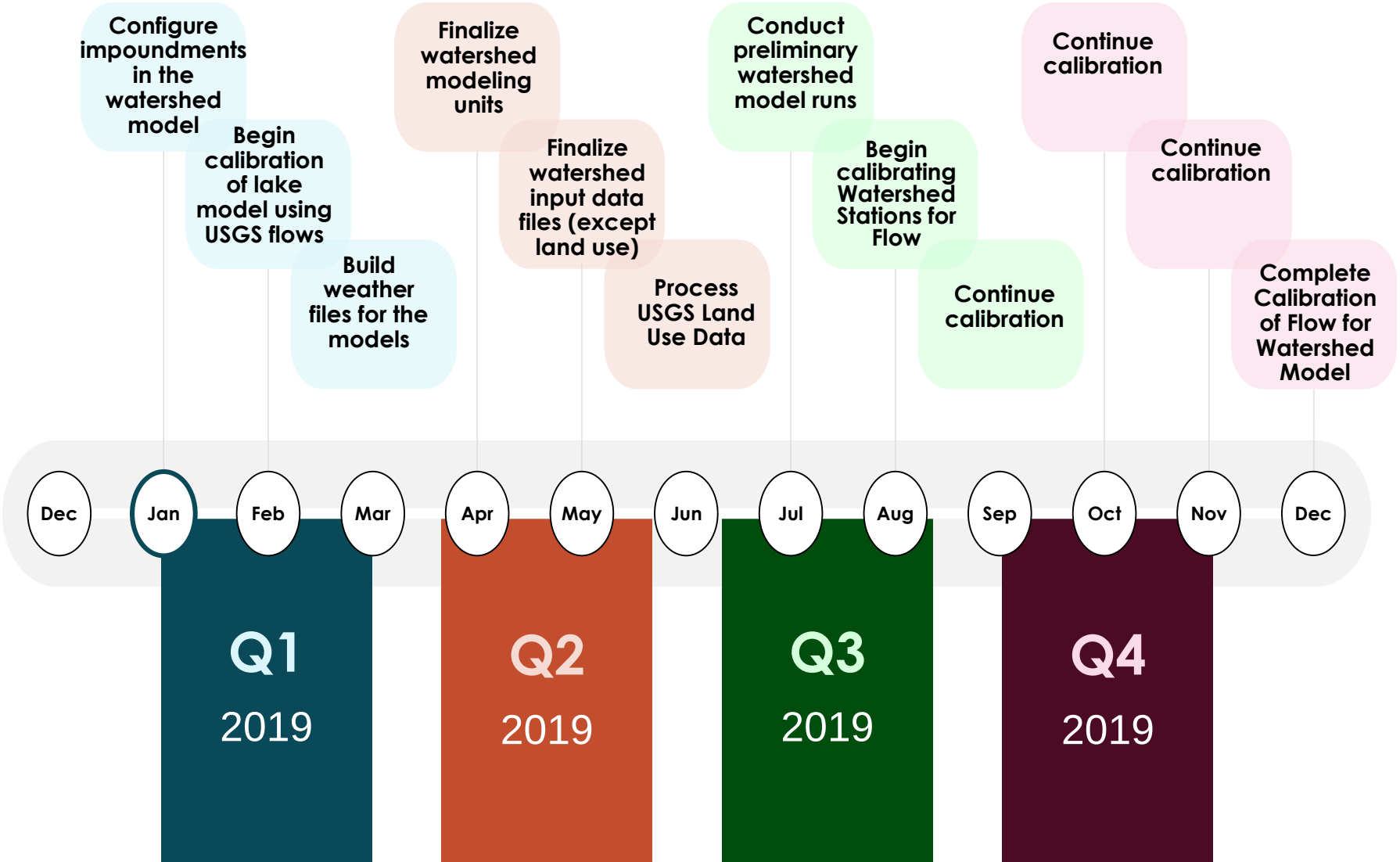
- Ultimate goal is to
  - Develop a workable strategy
    - Feasible
    - Cost effective
    - Collaborative
  - Continue to improve water quality
  - Maintain designated uses
  - Focus resources on effective actions



Multi-year Re-examination Timeline



2019 Milestones



Re-examination Project

Questions and
Board Discussion

PFC Report--Kenny Waldroup and Michelle Woolfolk

Meetings: Upcoming: January 23, 2019 and Modeling and Regulatory Support Workgroup Meeting January 28, 2019

Other Regulatory and Legislative Issues

Don O'Toole

Executive Director Report Items

- Ongoing Discussions of DEQ/UNRBA Memorandum of Agreement
- Legal Support Contract—Conference Call, December 19, 2018
- Collaboratory Meeting January 22, 2019 to Discuss Work on Falls
- Presentation at Upcoming WRRI Annual Conference, March 21-22, 2019
- Keep in Mind Expansion of Stakeholder Process for the Future
- Challenges of Keeping on top of Communication Needs Within the UNRBA--Communications Support FY 2019 Contract
- Meeting with Person County on January 22, 2019
- Meeting with Granville County February 11, 2019

Closing Comments

Next Scheduled Board Meeting: March 20, 2019, Butner Town Hall, Beginning at 9:30 AM