

JLOW Stakeholder Reintroduction Meeting

February 22nd, 2024 1-4pm virtual

Discussion Topic 1 – Stakeholder Process and Purpose

Ellie Rauh, DSC, and DWR Nonpoint Source Planning

Key Points

- Jordan Lake (JL) is within the Haw River basin, not the Jordan watershed
- Goals
 - o Inform stakeholders about readoption process
 - o Reorient stakeholders to current Jordan Lake reduction goals
 - o Solicit information on desired load reduction targets
 - o Discuss challenges and alternatives
- Jordan Lake history
 - o 1997 – required Environmental Management Commission (EMC) to develop plans for reducing nutrient loads to sensitive waters
 - o 2017 – JLOW started
 - o 2023 – new model completed
- EMC requires certain state-level criteria to be met
 - o Tells state what waters may be impaired
 - In NC, EMC’s focus is on Chlorophyll-A (ChIA)
 - o EMC nutrient rules are carrying out Jordan TMDL
- Starting now on stakeholder engagement process
 - o We will take feedback and ideas to EMC to incorporate into the new rules
- Want to develop feasible rule concepts in the first step of the process
- This is the second stakeholder meeting, but Technical Advisory Groups (TAGs) are coming up
 - o TAGs help inform rule content and language to take to EMC
 - o TAG members should:
 - Make an effort to attend all meetings
 - Share all ideas
 - Listen to other participants
 - Have knowledge about the topic they are focusing on in the group
- Quick timeline in 2024 to get information for the new rules
 - o Keeping subject matter closer on the timeline
- DSC – community group out of Carrboro, NC to facilitate and mediate and support stakeholders

- Ensure equitable participation and all voices are heard
- TAGs are in the poll before and after the event if you would like to sign up for one (link provided at the end of the meeting, area of interest, and email so we can connect you with more information)
- Q&A
 - Trevor Clements – would you be willing to add a Tag for integrated approach?
 - Yes that would be very interesting and valuable to add

Points and Themes Summarized

- We are at the beginning of the readoption process, so we are soliciting input from key stakeholders to inform the new rules
- We are at the beginning of the readoption process
- The 2003 model informed the 2009 rules, so we anticipate the 2023 model will inform the next readoption process
- TAGs will allow more in depth conversations on key topics and will be held throughout the year (topics will be grouped together), with a relatively quick turn around
- Looking for participant in TAGs, so please consider joining one if you have knowledge in one or more areas that will inform the new rules
- DSC will be facilitating and mediating the stakeholder process to support the TAGs

Discussion Topic 2 – 2023 Jordan Lake Model Results

Jim Bowen

Key Points

- Same as Nov 23 presentation with addition slide showing model fitness to the lake using normalized root mean square error to all variables
- Used a 3D model to material balance nutrients in the lake
 - Lake is divided into cells and layers and use meteorological information to estimate heat and light, then uses estimates to calculate nutrient outputs
 - Two models made for Collaboratory model (started in 2019)
- Lake has two arms
 - Haw
 - Most of watershed is in this arm
 - Most of the water in the lake comes from the Haw and only a small fraction makes its way into the New Hope arm

- Two arms act very differently from one another
 - New Hope
 - Where most of the lake is (80%+ surface area)
 - Two causeways that severely restrict circulation
 - Length of time that water stays in the lake (residence time) is very long
- Large fluctuations in water volume
 - Managed by Army Corp of Engineers
 - Lake catches flood waters and changes surface water
 - 6m fluctuation from low to high in the study (January 2014 to February 2016 – most representative)
- Lake is divided into 407 cells
 - Layered vertically and a max of 25 vertical layers (~0.4 m vertical)
 - Deepest part of the lake is near the dam
 - Channel in both arms, then progressively shallower as you go upstream
- Data available dating back to 1980's
 - Temp, nutrients, ChlA, and DO data
- Finalizing report, should be available from DWR in the coming months
- 40 ug/L is the metric for ChlA
 - 90th percentile at 72.0, and if you wanted to reduce to get to 40 ChlA, you'd have to reduce by 44%
 - This is telling us the type of reduction you are looking at to get to reduction in the entire lake that is linearly related to nutrients in the entire lake
- Significant reduction to N and less reduction to P to get ChlA values below 10%
 - More sensitive to N loading reductions to P loading reductions overall
- Haw arm is more sensitive to P reductions and New Hope is more sensitive to N reductions (and significantly more sensitive)
 - Two arms operate differently
- At all stations, need 60-70% reduction in N and 10-40% P, but just in the Haw arm, need significantly smaller N (0%-30%) reduction and larger P reduction (40%-70%)
- Q&A
 - Presentation will be available
 - JV Loperfido – Does model domain include wildlife impoundment areas around I-40 and does it reflect seasonal flooding?
 - Model cell that included any part of water shed that got wet, and doesn't know where that is but model domain should include it
 - Jamie Smedsmo – Is there a reason for the different sensitivity?
 - The two parts of the lake differ a lot in load ratios and did not get a chance to hypothesize as to why, but to guess it had to do with N vs. P

nutrient loading and the amount / ratio of nutrients arriving is different in the arms (if more N is coming in it is not going to make as much of a difference in limiting). Generally, lakes are P limited, but many instances where they are N limited. Haw arm is operation more as a run of the river reservoir with relatively short residence times and New Hope is shallow with long residence time that is closer to its watershed

- William Frazer – In most simple terms, what is mean residence time of water level in the Haw?
 - Information in project report in the two arms, but you can think of it being the flow. Could be as short as a couple of days when the flow is high, but it is often a few weeks to a month in the Haw and many months in the New Hope

Points and Themes Summarized

- Most of the water is in the Haw arm of the lake, but most of the watershed is in the New Hope arm
- Significantly longer residence times in the New Hope may mean higher reductions are needed
- Haw arm is more sensitive to P than N, but will need to see reductions in both to get to the 90th percentile requirement
- New Hope arm is significantly more sensitive to N reductions and will need to see a 60-70% reduction to meet the 90th percentile requirement

Discussion Topic 3 – Haw River Basin Review

Nora Deamer

Key Points

- River Basin Planning Report going to be published soon on DEQ's website (late spring / early summer)
- Basin planning is watershed planning approach that looks at activities across the basin to support management decisions, education, and water quality
- Not rules, but they are for planning purposes
- Should be done every ten years
- Chapters
 - Characteristics

- Monitoring data and water quality access
- Permitted and registered activities
- Local water quality issues and funding
- Water use availability
- Watershed chapters
 - Specific recommendations and information
- PFAS chapter (in Cape Fear plan to look at potential areas of contamination)
- Haw basin is divided into 7 sub watersheds
- Population increase of 17% (150,000 people in the Haw River subbasin)
 - Accounts for 7% of total Cape Fear basin
 - Accounts for 61% of growth in Cape Fear basin
 - 54.7% of growth in Haw river subbasin in the New Hope and JL watershed
 - Substantial growth throughout though
 - 3.3% increase in development – Greensboro, Durham, Cary, Apex
 - 3% decreases in forest
 - 2% decrease in agriculture
 - 1.5% decrease in grassland
 - Highest % of development in new hope
 - Highest concentration of forest closer to the lake
- JL has been classified as eutrophic and classified as nutrient sensitive in 1983
 - Exceeding state standards in ChlA, pH and turbidity
- Exceedances throughout the subbasin
- Haw river subbasin has highest impairments in biological communities
- Haw river has highest N concentrations across cape fear basin
- Subbasin watershed plans are put together by local governments that can help them plan for water resources in their communities and follow EPA guidelines
- Q&A
 - Donna Myers – Could you talk a little more about funding bad stakeholder group opportunities?
 - We reach out and talk to stakeholder groups. Keep a running list of funding opportunities. Also keep a pulse check on TMDLs and compile them
 - Emily Sutton – major decrease in nutrient loading from Reddy Fork, so will those updates be reflected in this data set?
 - Big reductions made in 2022 and 2023, so they will not be reflected in data set on these slides, but these numbers are going down. This report was written on the 2022 data.
 - Emily Sutton – Which parameter was the highest in the Cape Fear River basin?
 - The turbidity and TTS are the highest, and these are reflected on the first slide

- Trevor Clements - Have you done a source mass balance from the internal and external to the watershed?
 - Discussed at the November meeting
- Douglas Dowden – Will the presentation be available after the workshop?
 - Yes

Points and Themes Summarized

- River Basin Planning Reports will be out in late spring / early summer 2024, so be sure to check [DEQ's website for updates](#)
- Haw subbasin in the larger Cape Fear River basin has seen substantial growth in the past 10 years
 - As a result, Haw subbasin has seen considerable exceedances and impairments
- There has been improvements put into place in Greensboro and other communities, which will likely not be reflected in the 2022 data, but they are making a difference currently
- Subbasin watershed plans are put together by local governments that can help them plan for water resources in their communities and follow EPA guidelines

Discussion Topic 4 – Load Reduction Goals

Ellie Rauh and Rich Gannon

Key Points

- Some interested in heavy metals, PFAS, and additional contaminants in the watershed
 - The rules have a significant impact on SW and water quality regulations in communities in the watershed
- 8% N and 5% P in Haw
- Upper NH – 35% and 5% P
- Nothing in Lower New Hope arm
- Significant reduction in the new model
- 2003 lake model informed 2009 rules
 - Wwtp load allocations
 - Subwater shed goals for ag
 - New development
 - Local governments
- How do we want to set these new rules?

- Want to combine upper and lower into one section
 - o More streamlined, but will need to combine project goals into more municipalities
- Rule specific load reduction goals
 - o Incentivize funding for certain practices
 - o Make more or better progress or support training
- Staged implementation goals
 - o Currently have single stage compliance deadlines
 - o Could stage these out to make goals more plausible and attainable since significantly larger reductions are needed
 - o Similar to Falls watershed
- Q&A
 - o Eric Green – Wake county environmental services; deal a lot with Falls lake regulations and seeing similar things with Jordan. Staging. How realistic are goals to set from an individual contributor? Even when you're in the same category as someone else, the goals are not realistic for everyone. A lot of talk that the regulations were not applied equally and more heavily focused on the end of the watershed where it was more loaded instead of keeping it more consistently clean throughout the watershed. Good to identify the largest problems to bring everyone into compliance
 - o Joey Hester – Staged implementation targets. Group members were stakeholders in local government, and there is an important psychological component to making things feel achievable, which could make this feel doable. In Falls, the stakeholders took it upon themselves to give themselves their own checkboxes to show people that they are moving forward. There is a need now to make sure everyone is sharing. The burden. Consistent interpretation that work needs to be done and setting ourselves up to be able to consistently achieve goals sets us up for success.
 - o Judy Stalder – individual reduction goals may be unrealistic for individual partners and larger groups
 - o Sandi Wilbur – people who have made the strides to make reductions should be given credit

Points and Themes Summarized

- DEQ is considering some new additions to the rules
 - o Combine Upper New Hope and Lower New Hope into one section, which would require reduction goals to be applied across the whole section
 - o Rule specific reduction goals for individual contributors

- This idea seemed to be difficult to implement because 1) WWTP improvements for marginal reductions can be expensive and 2) contributors that have already made improvements may want to be recognized and not need to make additional costly reductions
 - Staged implementation goals to show and track progress
 - This seemed to be received well because staged progress could make reductions seem more achievable
- Additional information can be found on individual group sheets

Discussion Topic 5 – Jordan Rules Overview, Challenges, and Alternatives Q&A

Ellie Rauh and Rich Gannon

Key Points

- Riparian buffer (RB) protection
 - Protects riparian zones across all land uses
 - Concerns
 - Local implementation can be challenging
 - Not consistent with more recently passed
 - Questions and alternatives
 - Make DWR implementation the default and local governments can elect to implement themselves
 - Bring Jordan RB protection rule language to the same standard rule currently implemented Randleman RB Protection rule
 - Q&A
 - Randlee Haven-O'Donnell – if local governments choose to elect, there could be significant disparities? Could they reduce state standards?
 - This has been done in another watershed (Neuse and Tar). They cannot reduce the state standards since this would be a delegated program. Local cannot be less restrictive
 - Betsy Perce - do the local govts need their own buffer ordinance? Wake County had issues in the first year
 - Betsy Perce - how do we handle requests from other LG who are also delegated to do their buffer calls on land that will be developed in that LG
 - Can do local implementation if they have elected to do so

- Jordan rules are delegated to local governments. Need to direct people to the government
 - Sue Homewood - To be clear, the current Buffer Rules are already delegated to local governments
 - Allison Schwartz Weakly - I agree Jordan buffer rules should be closer to Randleman rules, where there is more clarity about administration and also considers streams not only shown on USGS topo or soil survey maps.
 - Anne Coan - What exactly are the differences between current rules and Randleman?
- Agriculture
 - Collective N and P reduction targets
 - Oversight committee to oversee implementation and accounting
 - Agriculture is a large contributor
 - Seeing N upswing across several watersheds that is non-point source driven
 - 30% of ag fields are unbuffered across streams
 - Met and achieved goals in all parts of the watershed
 - Challenges and alternatives
 - Resource intensive and challenging to get all the data, so have not been able to do full accounting for the past few years (only every five years going forward)
 - No meaningful enforcement authority
 - Maybe thinking of shifting everything to qualitative indications and regulating on key issues
 - Q&A
 - Anne Coan – Collective compliance has been successful and concerned about abandoning that approach for the sake of efficiency and looking for other ways? Not a lot of ag in upper and lower new hope, and don't want farmers to be penalized for taking biosolids in these areas because we don't know what they will do with it if it's not put on the land?
 - Collective compliance may change, but it would be a different kind of compliance if it did change. Biosolids are not considered agriculture, but non-dedicated is considered ag. Not looking to penalize farmers, but looking at where the soil tests are showing high P, and this may be a place where compliance could come in
 - Terri Buckner - How are biosolids counted? to farmer or wastewater?
 - Keith Larick - My question - can be addressed later. A lot of info is coming out recently about the role of sediment loss from streambanks themselves due to increased streamflows. Does the model account for this and how are those loads assigned? May be a P issue more than N

- Randee Haven-O'Donnell - This has wider range implications beyond the immediate question I am posing here. The presence of PFAS/PFOA in Cane Creek reservoir is connected to the use of biosolids in the watershed. How is this being monitored, regulated and being remediated?
- Wastewater
 - Use water that is treated and discharged into waters
 - Have an NPDES permit or group permits (10 major facilities in the Haw)
 - Concerns
 - They have measurable, sustained positive impacts, but more stringent limits would be expensive
 - Are there sources of funding for upgrades?
 - Could there be an exchange of knowledge between Jordan wastewater utilities?
 - Q&A
 - William Frazer - ...as we discuss NPDES permit upgrades and costs let's not forget a very transparent discussion with experiences of those operating major BNR process and their success rates at achieving 100% compliance.
- Stormwater
 - New rules were delayed and barred from implementation in 2016 session law
 - SW may or may not be treated before it runs off
 - There are still rules that may treat water (MS4, WSW rules for new development)
 - Set loading rate targets in the watershed
 - Challenges
 - Nutrient calculations are involved, technical, and slow
 - Current requirements are not designed to protect receiving streams from hydrologic impacts from new development
 - Onsite control requirements are set separately from the overall load requirements
 - Can onsite control requirements be set presumptively satisfy nutrient objectives?
 - Can control requirements include a hydrological component to protect receiving streams?
 - Q&A
 - Terri Buckner - Definitely support adding flow/volume component, but not just to receiving streams. Needs to apply to surrounding development.
- Existing development
 - Challenges

- Quantitative load target setting and compliance are technically challenging
 - DWR resources are insufficient to expand approved nutrient practices as desired
 - Local legal authorities limited, development retrofit sites limited, costly
 - Alternatives
 - Provide a standard load-based approach
 - How to set equitable investment levels?
 - Q&A
 - Allison Schwartz Wealky - ED Stage 1 projects likely won't be implemented unless they're required and there's funding available. Limited amount of in-town property that we can implement these projects on and land prices are going up (the longer we wait, the worse it's going to be)
 - There have not been any set, so agreed. Identified great projects every year but they will likely not be implemented unless they are required and have funding
 - Good idea to think about changing funding opportunities (look for grants) so municipalities can implement these projects
 - Sandi Wilbur - Without assurance that it will count toward this set of rules it makes it harder to implement just for Jordan. We have implemented some in watersheds that have TMDLs.
- Nutrient Crediting
 - Don't see a need to keep this rule right now
 - Can provide trading options to the .0703 offset rule
 - Q&A
 - Allie Dinwiddie - Lots of questions about IAIA, nutrient crediting, etc. implementation on ag land to hash out in the TAGs. I think there's interest in being collaborative, but if each sector must meet separate targets it sets up competition between sectors. Hopefully we can identify an approach forward that can minimize competition between sectors
 - Lots of interest from stakeholders, so we want to deliver. These are the beginning of our concepts and we are providing some background on the new rules. We will get into the specifics in the TAGs
 - Sandi Wilbur - Would like an update on High Rock and their TAGs?
 - Joey Hester - Sandi we're currently finalizing the Steering Committee's final report, and hope to have it published in the next few weeks.
 - Anne Coan - How do you sign up for TAGs?

- https://docs.google.com/forms/d/e/1FAIpQLSd5ksoP1NkCXsVODqtELBadNuVKK-TCSHER_rKg6VtlgctGFg/viewform?usp=sf_link
 - Should be able to use the above link to sign up for a TAG. We will reach out to you with more information
- Allie Dwiniddie - Can individuals sign up for multiple TAGs?
 - Yes you can sign up for more than one, but we want to make sure that people who are signing up have some knowledge in the area they are signing up for
- Rich Gannon – Would like to see the feasibility of having an integrated TAG
 - There is a lot of value in having subject matter experts talk to us about these specific topics. Context is an important aspect of sustainability issues, and it would be nice if we could do another workshop about that. We welcome any additional comments about an integrated TAG
- Can send additional information to Ellie and find more info on the JL strategy site (can subscribe to listserv)
 - This is where presentations and notes will be

Points and Themes Summarized

- Riparian buffer
 - Implement RB rules for all municipalities
 - Municipalities could not elect to reduce the state standards, but local governments still have the choice whether to elect or not
- Agriculture
 - Currently meeting and achieving goals, but cannot deny that agriculture is a large contributor
 - Current accounting process takes a very long time, but still want to meet current reduction metrics
 - 30% of agriculture fields are unbuffered across streams
 - Biosolids would not be counting to agriculture contributions
- Wastewater
 - Could water reuse be a possibility?
 - Is there funding to make additional upgrades?
 - No substantial discussion after this rule
- Stormwater
 - 2016 rules did not pass, so stormwater may or may not be treated before it is discharged

- Want to know if control requirements be set to meet current nutrient and hydrological requirements
 - No substantial discussion after this rule
- Existing development
 - DWR has had challenges setting load targets in this area, so would it be feasible to provide a standard, load-based approach?
 - There are lots of great ideas and projects, but there is a lack of funding, and they cannot be feasibly implemented unless there is reasonable need, space, and funding
 - Need this to count towards Jordan rules to make it feasible
- Nutrient crediting
 - DWR does not see a need to keep this rule right now because it is already being met without additional oversight
 - Want to minimize competition between sectors to encourage collaboration
- Additional unanswered questions are listed without an answer bullet point