# High Rock Lake Nutrient Rules Process

## *Wastewater TAG, meeting 3*

**March 15, 2023** / 9 - 11 am / *via Zoom*

## Meeting Goals

1. Share updates on action items since the second meeting
2. Review and discuss the TAG report
3. Develop group recommendations on % Phosphorus, % Nitrogen strategy reduction goals
4. Characterize Phosphorus and Nitrogen implementation timeframes
5. Begin discussing challenges anticipate in meeting these goals and timeframes

## Participants

TAG Members: Bill Brewer, James Brown, Bill Kreutzberger, Doug Lassiter, Grace Messinger, Matthew Nevills, and Andy Smith

DWR Representatives: Joey Hester, Michael Montebello, Matthew Nevills & Sylvia Chen

DSC Facilitation Team: Maggie Chotas and Laura Swartz

## Meeting Summary

### Agenda Overview

- Updates from the 2nd meeting
- Wastewater TAG Report to the Steering Committee
- Where to from here?
- Next steps
- Closing

### What's Next / Action Items from the meeting

1. This group will meet again, virtually, from 10 – Noon on Thursday, May 4, 2023.
2. Everyone is invited to the virtual All Stakeholders meeting on March 29, 2023 from 4 – 5:30pm.
3. Joey will send annual loading graphs to Bill Kreutzberger. Bill will then take those graphs and update the information based on new technology imports. Joey will also send the transport factors, by table, and send to Bill. Joey will ask Pam about that.
4. Joey Hester and Bill Kreutzberger will exchange information and work on answering the following questions:
    a. What End-of-Pipe (EOP) concentration will achieve a 40% Phosphorus reduction at current flow?
    b. What End-of-Pipe concentration will achieve a 40% Phosphorus reduction at current flow + 10%?
    c. What End-of-Pipe concentration will achieve a 40% Phosphorus reduction at permitted flow?
    d. What about the same for Nitrogen reductions?

### Key Links

- Wastewater TAG Report to the Steering Committee, for February 15 deadline

- TAG Charge document
- Division of Water Resources PPT for this meeting, from Joey Hester
- Facilitation PPT for this meeting
- Video recording of meeting

## Details on Discussion Topics

### **Wastewater Report to the Steering Committee,** updates from Joey

**Key Points**

- Review of the TAG Charge from the Steering Committee
- Key points from the Wastewater TAG Report to the Steering Committee
    1. Regulatory landscape has changed significantly for septic systems
    2. Total Phosphorus loading per day has fallen by 20%
    3. Total Nitrogen loading per day has increased slightly
    4. Loss of industrial flow across multiple discharger jurisdictions
    5. Some increased residential flow
- Andy Smith noted that Statesville is working on a major upgrade
    1. ***FLAG for Joey - be sure to include this information in data moving forward***
- Bill Brewer added a comment wondering how many utilities have added corrosion control, which would lead to an increase in Phosphorus.
- Graph of Annual Phosphorus loading by facility
    1. There are different ways to report loading. Sometimes, it is total annual loading in pounds, by facility, over time.
- Graph of Annual Nitrogen loading by facility
    1. Trends are very different than Phosphorus
    2. Numbers out of Muddy Creek are very, very high
- Lake Nutrient Response Curve
    1. The curve tells us that we need to remember Nitrogen as we move forward.
    2. 2006 is the most representative year, so we are trying to get back to the 2006 baseline year numbers.
    3. The model cannot predict results accurately from exclusive focus on *one* nutrient and not the other.
        - **DWR suggests a combination of Nitrogen & Phosphorus reduction goals may be preferable for the High Rock Lake nutrient rules.**
            - We may end up with mixed goals, by sector, because of differences in sectors and cost differences.
- Principles of Waste Load Allocation

1. Limits are key part of strategy and are based on allocations
2. The entire WLA is divided among the existing discharges
3. Goal is “fair and equitable” distribution
4. Equivalent concentrations can vary by facility type and size
5. All nutrient-bearing discharges are assigned allocations
6. Nutrient discharge limits are based on annual mass limits
7. Effective dates are typically 5 years for both Nitrogen & Phosphorus

- Transport Considerations
    1. Each facility will be assigned a transport factor
    2. Fate and transport can be factor in larger watersheds
        - Discharge TN (or TP) x TF (transport factor) = Delivered TN (or TP)
    3. **Starting points for setting nutrient limits is delivered loads**
- Other provisions of Strategies
    1. New and expanding discharges
    2. Regionalization incentive
    3. Group compliance option
    4. Trading options
        - This trading world is the “wild, wild west right now”

**Key Questions**

- Grace Messinger asked, when you say the entire waste load allocation is divided among the existing dischargers, with no reserve for growth - is that based on the permitted allocation of those dischargers, with the expectation that many of the permitted groups have built in reserves in their MGD per day?
    - Joey explained that when they calculate the discharges, they are at a particular flow regime.
    - Bill Kreutzberger explained that Grace is right - it’s a ratio.
    - “No reserve for growth” means that if someone has to increase their facility, they would have to improve their treatment. Small facilities would become a special case.
    - Grace Messinger suggested that the language be changed, because “no reserve for growth” could be confusing for the development community.
        - Bill Kreutzberger suggested phrasing it as “growth would have to come at higher levels of treatment” instead of “no reserve for growth.”
        - Joey Hester agreed that this information can be presented differently in the future.
    - Michael Montebello added that the transport factors come into play when it is delivered, and Joey agreed. Trading is a whole different situation.

        - Trading issue will need to be discussed more at a later point. It is too early to discuss trading at this point in the process.
- Bill Brewer asked how the delivered load is calculated? Does it come from a model?
    - The transport factors come from the model that Tetra Tech developed.
    - How do the transport factors get determined in the model?
        - Bill Kreutzberger explained that it depends on the model. The transport factors are the same for non-point as they are for point sources.
- Michael Montebello asked Joey, for the facilities that won't have requirements, will those be born by everyone else? Will the larger facilities numbers have to be lower because of the smaller facilities?
    - Joey does not know the answer to this but added that he and Rich Gannon have had related discussions around this. DWR may have to do a data dive to figure out.
    - Joey added that he doesn't think larger groups will have to carry the loads of smaller groups, but he is not positive.
- Other provisions of strategies:
    - Groups can sell off permitted flow that is not needed, at a later point.
    - In the other watersheds, there is a group compliance level. Each facility is required for meeting that limit. That option could be applied here.
    - Trading options could be included.

## Where to from here?

**Description:** What are the next steps for making a proposal and getting information to the Steering Committee? DWR wants to highlight these major points:

**Key Points**

- Preliminary reduction "curve" suggests roughly 37% Phosphorus reduction OR 50% Nitrogen reduction OR some combination thereof is needed to reduce chlorophyll-a production.
    1. These percentages could change depending on how the uncontrollable loads are redistributed.
- Fair, equitable application of overall % Total Phosphorus reduction goal to individual facilities uses a basic "equivalent concentration" method.
- DWR sees a need to focus on P reductions early and aggressively.
- DWR sees a need to address some level of N reduction, even if incremental.
    1. Nitrogen reduction limits could be phased.
- N reduction can be phased via adaptive management.

**Key Next Steps**

- Joey will send annual loading graphs to Bill Kreutzberger. Bill will then take those graphs and update the information based on new technology imports. Joey will also send the transport factors, by table, and send to Bill. Joey will ask Pam about that.

**Key Questions**

- Andy Smith asked, if you reduce Phosphorus, does the Nitrogen automatically come down as well?
    - Bill Kreutzberger said that would depend on the technology.
    - Bill added Nitrogen removal is more expensive at the high levels of treatment, but with more moderate reduction goals, you can achieve reductions in both Nitrogen and Phosphorus. Nitrogen removal can be more cost effective with biological attempts to remove.
- Bill Brewer asked if we are talking about Nitrogen at the current levels that are there now?
    - Joey answered that Nitrogen levels are currently elevated from the baseline. At a minimum, we would get back down to baseline and then lower.
- Bill Brewer asked what "early" means in terms of the number of years? Based on the regulatory timeline, what does "early" mean?

    - Joey explained that once the new rules are in place (in 2025/ 2026) the new limits will then apply at the next renewal date after the rules go into effect. The new permit may have a schedule by which to meet the new limits. Joey also noted that there is a 10-year readoption rule on every rule on the books. This means that if the rules go into effect in 2025, in 2035, DWR would have to open public comments and review the rule again at that point.
    - Bill Brewer added that his group is going through re-permitting now. Bill Kreutzberger added that given the timeline for the new rules, and assuming an adoption year of 2025, Bill Brewer's facilities would likely need to be in compliance by roughly 2030 (or 2028 – 2032).
    - Bill Brewer added that Winston Salem is completing a collection and expansion plan right now. He is thinking of these rules in the context of when other upgrades are going to happen.
    - Joey Hester said that past 2035, someone will come back and assess what has been implemented and what changes (if any) need to be made. If the group compliance is woven into the rules and you are below the limit, you might have some wiggle room.
    - Michael Montebello added that there are no compliance schedules for treatment plant expansions. So, if you are proposing to expand your wastewater facility and we have new numbers, then the new numbers go into effect whenever the facility goes into effect. The only discussion of compliance schedules is for the existing permits that are out there.
    - Bill Brewer added that they tend to overshoot what their compliance numbers will be. There is some conservative thought built in there. Even if we know we need a plant expansion in 2035, realistically we know that might be further out into the future.
- Doug Lassiter was in attendance from the North Carolina Septic Tank Association. He was pleased to hear that there will be no permits or allocation limits for septic tanks. The Steering Committee started to talk about septic tanks briefly. Other strategies have taken a hands-off approach to septic tanks. We don't know if that approach will continue. Septic tanks are already heavily regulated, and adding more regulations may not be worth it. Joey will report back to Doug once the Steering Committee has a chance to weigh in on septic tanks.
    - Grace Messinger added, "don't run away too far, Doug!" She explained that from the growth mindset of One Water, it is important to consider how septic tanks and development play into this conversation. Continual education will be important for the community that has septic tanks.

    - Doug agreed that continual education is important to the Septic Tank Association.
    - Joey Hester added that stakeholders love to talk about septic systems, so it is important that Doug stays involved.
- James Brown, from Tyson, added that his facility is a pre-treatment facility in Wilkesboro. James has no serious objections to the DWR proposals, at this time.
- Andy Smith added that their biggest concern right now is their collection system. The Nitrogen numbers are great during normal circumstances, but large rain effects really change that. Eventually they will need a plan upgrade. Community leaders are finally listening to Andy and his team. If Statesville is going to grow, we have to address these infrastructure issues. Andy has been in the position of having to pick up the pieces and put it back together.

## TAG Needs

**Description: Joey Hester outlined key questions for this TAG to consider given that nutrient limits are applied at permitted flow. DWR is trying to understand what this translates to in current flow.**

**Key Points**

- TAG Needs
    1. What End-of-Pipe (EOP) concentration will achieve a 40% Phosphorus reduction at current flow?
    2. What End-of-Pipe concentration will achieve a 40% Phosphorus reduction at current flow + 10%?
    3. What End-of-Pipe concentration will achieve a 40% Phosphorus reduction at permitted flow?
    4. What about the same for Nitrogen reductions?
    5. What questions do you have for the permitting branch?
- Bill Kreutzberger clarified how to calculate annual loads. Joey and Bill will follow up with an exchange of information, especially relating to questions number 1 - 4 above.