

**NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION**

WATER ALLOCATION COMMITTEE MEETING MINUTES

**512 N. Salisbury Street
Archdale Building
Raleigh, NC
Ground Floor Hearing Room**

**10:00 AM – 11:00 AM
Wednesday, July 9, 2014**

Executive Order No. One mandates that the Chair inquire as to whether any member knows of any conflict of interest or appearance of conflict with respect to matters before the Commission. If any member knows of a conflict of interest or appearance of conflict, please so state at this time.

Tommy Craven, Chairman, Presiding

I. Preliminary Matters

1. Call to Order
 2. Approval of minutes from the November meeting
 - The November minutes were not approved. Will seek approval at the September meeting along with the July meeting minutes.
 3. Revisions or additions to the agenda
 - Chairman Hutson introduced the new Chair of the Water Allocation Committee, Tommy Craven.

II. Informational Items

- ## 1. Roanoke, Tar, and Cape Fear/Neuse Hydrologic Model Updates Tom Fransen

- Now that DWR and DWQ have merged, the division will integrate water supply planning into the basin models. This may clear up the confusion surrounding the Ecological Flows piece.
- Questions within S.L. 2010-143 that the model must answer:
 - Does the model include the required information in Section (3)a & (3)d?
 - Can the model answer the three questions required in Section (3)b?
 - Locations the yield may be inadequate to meet all needs.
 - Locations the yield may be inadequate meet all essential water uses.
 - Locations ecological flows are adversely impacted.
 - Does the model produce an adequate flow record to answer the three questions?
- DWR goes through both quantitative and qualitative statistical analyses, such as visually comparing graphs.
- Tar Goodness of Fit model-It calibrates well except for the Cedar Creek gage. Overall, the model is a good representation.
- Roanoke Goodness of Fit model-Models operations exactly to the letter.
- Cape Fear/Neuse Goodness of Fit model-Since the basins are combined there are far more nodes. Most gages are coming out with a good fit with the exception of the nodes downstream of reservoir projects. Not surprising that the numbers are off a little.
- **Tar Comments:** One from the city of Raleigh. Will review in detail in later slides.
- **Roanoke Comments:**
 1. Virginia Canals & Navigations Society
 - Use the river mileage system in the Roanoke/Staunton River Atlas.
 - DWR response, the division planners are geo-referencing the model as a GIS layer.
 - Craven: Any attempt to sync the stations up with the FEMA stations?
 - Syncing it up with the standard way we reference water quality data.
 - Craven: We need to make it consistent so that users can tell where they are on the stream.
 2. Duke Energy
 - Provided updated projections for their steam stations.
 - DWR response, the updated withdrawals will be included.
 - Craven: Did DWR make the changes suggested by Duke? It's unclear in the background statement.
 - Changes were made to future model scenarios, not the computer language.
 - Craven: Need to be more specific with the semantics. Did Duke's model match up with what we've got?
 - Duke did review our Broad model to make sure the results were consistent between the two models. We're running OASIS for these three basins.
- **Cape Fear/Neuse Comments:**

1. Town of Cary

Cary appreciated the time and effort taken to develop the models, and being included as stakeholders in the model development.

2. CH2M Hill

CH2M Hill reviewed the current iteration of the Cape Fear – Neuse model and believes it will be a useful tool for water resources planning. The previous models were useful as planning tools and the revised model is an improvement over the previous Cape Fear and Neuse models.

3. City of Raleigh: Will review in detail in later slides.

- The city of Raleigh has three basic objections to the Tar and Cape Fear/Neuse models:

1. The models do not contain information or processes sufficient to analyze adverse impacts to ecological flows.

2. The models failed to include set-asides for ecological flows.

3. The flow-by approach is a rule and therefore violates State law.

- What's a reasonable minimum release to protect the flows but still have a viable project?
We rely on site specific studies.

- Craven: I hear that the more detailed definition of ecological flows will always prevail over the simpler definition of 85 percent of flow. But where are the reassurances that the simpler conditions won't become the default regulatory definition? *Because we would have to go through rule-making. The statute says we can't modify existing regulations.*

- Tedder: Not sure in Session Law 2010-143 that is the case. How is it not part of the model? Why are you ignoring what's in the Session Law? *Ecoflows and instreamflow requirements are part of the model as an input.*

- Hutson: Ecological flow has to be part of the model per the Session Law. *We include it when it is part an operations plan or a permit.*

- Hutson: That's not what the Session Law says. If you didn't include it, couldn't someone sue over not putting it in the model? *Goes back to this comment: "The models fail to include set-asides for ecological flows." We interpreted the statute the only way we can to have the ability to predict where there will be adverse impacts. We felt we were meeting the requirements of the statute.*

- Hutson: What is the standard for defining an adverse impact at a particular location?
Whether you violate a permitted location. If there isn't a permit, we use the 85 percent flow-by requirement.

- Hutson: So when you develop a model and it says you have to take into account ecological flow if there is not a permitted point in there, then the 85 percent flow would be the standard to measure ecological flow? *That's what we're using as a measure for planning studies.*

- Hutson: Will the further planning studies be used to determine what planning needs to be done to maintain the 85 percent to protect ecological flows. *The further planning studies could be used to see whether there's a problem or not.*

- Hutson: So the 85 percent flow-by is just a trigger to determine whether we need more ecological flow studies? *Yes. That's what we've always said and that's how we've always written it.*

- Hutson: I don't remember seeing that statement clearly written.

- Craven: I would agree and haven't seen the statement written anywhere.

- Common Issue: The model does not contain information or processes sufficient to analyze adverse impacts to ecological flows. The methodology does not take into account prevailing ecological conditions, nor the anthropogenic water uses. *The flow-by approach does take into account prevailing ecological conditions and anthropogenic water uses. Since the session law was passed in 2010, DWR decided to define prevailing conditions as 2010 operations. We've developed a model scenario that is representative of 2010 operational conditions for the model period of record to use as the ecological flow baseline. We have information from the 2010 Water Shortage Response Plans that we use as a baseline.*
- Common Issue: The model does not contain information or processes sufficient to analyze adverse impacts to ecological flows. Not basin specific, based on generic scientific conditions. *DWR disagrees with the conclusion that a flow-by approach is not basin specific. This analysis is based on streamflow conditions unique to each node of the model. The city's comments reference 7Q10 water quality flow standard. Flow-by and 7Q10 are similar in that both are a streamflow statistic calculated at specific location. This approach does meet the requirement to predict the places, times, frequencies, and intervals that ecological flow maybe adversely affected.*
- Common Issue: The model does not contain information or processes sufficient to analyze adverse impacts to ecological flows. Does not allow for temporary flow disruptions when needed to install new withdrawal projects. *Raleigh has misinterpreted the meaning of temporary flow disruptions. In a modeling context you do not want to include streamflow records that are temporary anomalies caused by construction. When the model inflow records are created these time periods have been adjusted appropriately.*
- Common Issue: The model does not contain information or processes sufficient to analyze adverse impacts to ecological flows. Cannot analyze the impacts of new withdrawals. *It is not clear why Raleigh's comments included the concern the model cannot analyze the impacts of new withdrawals. The approach to analyze impacts of either new or a change in operations is to develop a new model scenario and compare the results a baseline scenario. This is the approach Raleigh and others having been using for years. To assist users, DWR's modeling and planning staffs develop and make available current and future scenarios, based on local water supply plans, in 10 year intervals out to a 50-year planning horizon.*
- Common Issue: The model does not contain information or processes sufficient to analyze adverse impacts to ecological flows. The methodology is not provided in the model. *It is not clear what Raleigh means by the methodology is not provided in the Model. It appears that this comment assumes a model is not adequate if the analysis cannot be done within the model's interface. The model interface does not include a direct link to an ecological flow analysis. However, the statute does not require this direct link. It only requires the model to be designed to simulate flows and to predict the times, frequencies, and intervals ecological flows maybe adversely affected. DWR has demonstrated the models do a good job of simulating flows and has developed tools to analyze ecological flows based on the models' simulated flows.*
- Common Issue: The models fail to include set-asides for ecological flows. *The concerns in this section include: DWR failed to include presumptive set-asides for ecological flows in the model; changing the standard of retaining 80 percent of the 7Q10 to protect water quality and aquatic life; and based on natural, unaltered flows.*

- Common Issue: DWR failed to include presumptive set-asides for ecological flows in the model. *Raleigh is correct DWR does not include presumptive set-asides for ecological flows in the model. The statute does not require ecological flows to be included only the ability to predict adverse affected, which we can do. DWR only includes ecological flows that are part of a permit requirement or operational plan of a federal project.*
- Common Issue: DWR is changing the standard of retaining 80 percent of the 7Q10 to protect water quality and aquatic life. *Raleigh has misrepresented the meaning of requiring an environmental assessment for proposed withdrawals greater than 20 percent of the 7Q10. Twenty percent of the 7Q10 is a trigger for requiring additional site specific studies. This requirement does not mean retaining 80 percent of the 7Q10 protects water quality and aquatic life. The 20 percent of the 7Q10 applies to low and high flows just like the proposed flow-by requirement does. Using the flow-by approach provides more flexibility to account for stream size and flow variations. In contrast, the 20 percent of the 7Q10 is constant for the full flow range from low to high flows.*
- Common Issue: The models are based on natural, unaltered flows. *As stated in an earlier slide, the flow-by approach does take into account prevailing ecological conditions and anthropogenic water uses. Since the session law was passed in 2010, DWR decided to define prevailing conditions as 2010 operations. We've developed a model scenario that is representative of 2010 operational conditions for the model period of record to use as the ecological flow baseline.*
- Common Issue: The flow-by approach is a rule and therefore violates State law. *Raleigh states the flow-by approach is not a science based criteria unique to each basin therefore the APA would define the approach as a rule. The flow-by approach is based on flow data specific to each river basin; therefore the approach is unique to each basin. In G.S. 143-355(o)(6)d clearly states hydrologic models are not a rule and G.S. 143-355(o)(8) states nothing in this subsection will change or impose no new regulatory requirements. DWR is not violating state law because the statute exempts models from the APA.*
- Hutson: Please send the committee the language because it's not in Session Law 143. *Tom Fransen pointed out the part in SL-2010-143.*
- Hutson: It's not on the General Assembly's version on their website.
- Craven: Cary asked if these models could be used for planning purposes, even though they haven't made it through the EMC.
- Tedder: There are several interpretations of what the Session Law says. The statutes say thou shalt include Ecological Flows. Maybe there wouldn't be a problem moving forward with these three if Ecological Flows applies after these are approved. The problem is how Ecological Flows fits into the process. Can these three be approved without Ecological Flows?
- There is a bill in the legislature that says the EMC can approve the models without the Ecological Flows piece. Until the committee sees what happens with the bill, the committee shouldn't approve any models.

III. Concluding Remarks

- Adjournment
- Chairman Craven adjourned the meeting at 11:02 a.m.