

MEMORANDUM FOR RECORD

SUBJECT: Savannah Harbor Expansion Project;
 Summary of 18 June Interagency Meeting on Evaluation of Impacts to
 Water Quality

1. Attendees:

USGS	Paul Conrads
GA DNR-EPD:	Roy Burke III
	Paul Lamarre
SC DHEC	Wade Cantrell
ATM/GPA:	Danny Mendelsohn, Steve Peene & Bo Ellis
LGE/GPA:	Larry Keegan
COE:	Doug Plachy
	Bill Bailey
EPA	William Melville

2. The meeting was held to allow ATM to provide a status report on their calibration efforts on the D.O. Model.

3. I opened the meeting by stating that we would handle issues recently raised by Jim Greenfield (EPA) about vertical mixing and Richardson Number after the presentation by ATM. I felt we needed to first allow ATM to tell us what they wanted; secondly, to provide an opportunity for the agencies to give ATM any guidance on items that may come up; and lastly address Jim's concerns, if possible, that day. We agreed that Steve Peene would contact Jim Greenfield directly to work out acceptable wording for a letter on access to the calibrated models, then provide that letter to the Corps.

4. Danny began by discussing a **comparison of salinity movement in the BFHYDRO and BFWASP models**. The peaks show BFWASP to be about 1 ppt higher in the Front River. The peaks and troughs were <1 ppt lower in BFWASP in the Back River. USGS requested ATM display this information for the full length (70 days) of model runs.

5. Danny then discussed the **Upstream Boundary**. He used the EPA-RIV1 output as input to the Hydro Model. Results for Ammonia, Phosphate, D.O. and Organic Phosphate looked OK. (There was no field data to compare computed values of Organic Phosphate.) For Nitrate, the data showed values of about 0.2 mg/L, while the model predicted values of about 0.4 mg/L. ATM is concerned that the EPA model is too high for this parameter. For CBOD, the predictions appear to match the data, but ATM thinks the EPA model is too high.

Roy Burke expressed that the RIV1 Model was developed in a data-poor environment. It was based on 1990/1991 data and a calibration performed at that time. He believes that model captures the trends well, but may not match absolute values well. For Nitrate and CBOD, he felt it would be OK to use either the RIV1 model results or the observed data. ATM should explain the rationale for their choice. USGS recommended giving priority to the collected data rather than relying on the RIV1 predictions.

6. Danny then discussed **loadings**. The marshes are the largest factor in Nitrate and BOD. Point sources and the downstream boundary are small factors.
7. Danny then reviewed the **point source loads**. No particular issues were raised.
8. Danny then discussed **vertical mixing**. Danny and Steve stated that information on this issue had been discussed before and they thought we had reached resolution. Danny stated that vertical mixing was calculated within the Hydro Model. It uses the amount of tidal energy. Only the non-linear momentum term is turned off in the model. ATM had evaluated that issue previously and concluded this parameter did not affect the model results other than the time step. Danny stated this had been described in a paper that had received peer review. After the meeting he provided the paper to USGS, who distributed it to the rest of the Federal agencies. We requested ATM provide their explanation of what the model did for both vertical mixing and the Richardson number to Jim Greenfield prior to completing the Hydro Model Calibration Report, and then include that information in the Calibration Report. The explanation should state why ATM believes the model will function accurately when changes in bathymetry are considered.
9. Concerning model results, ATM is rethinking the marsh boundary condition. They proposed a population limiting approach. An alternate is the Area Flux Method. The group did not recommend one approach over the other. They just requested ATM describe what they selected and provide a rationale for their choice.
10. We concluded by briefly discussing the multiple CBOD decay rates. I stated that based on the recent letters from GADNR-EPD and SCDHEC, ATM was to proceed with the original plan – which was to attempt to calibrate using a single CBOD decay rate. If they were unsuccessful in obtaining good calibration, ATM would then use two decay rates. ATM has already built into the model the capability to use a second CBOD decay rate.
11. The next meeting will be on August 20th to review the Draft D.O. Calibration Report. That report is to be provided to the agencies on August 1st.

William Bailey
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