TAB D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 12, 1999

John Meador
U.S. Army Corps of Engineers
4155 Clay Street
Vicksburg, MS 39180-3435

Dear Mr. Meador:

This letter is in regards to the information that you sent via email on 9-23-99 regarding the methodology used for wetlands assessment for the Yazoo Pumps Project. The materials have been reviewed by Bill Ainslie, Jennifer Derby and myself in the Wetlands, Coastal and Nonpoint Source Branch. Overall, the information provided is incomplete for determining how your District is assessing wetland impact and mitigation for the project. Additionally, we are concerned that the methodology used is not appropriate for assessing hydrologic impacts to wetlands, the principal impact anticipated by this project. More specific comments and questions are as follows:

- The information that was sent provides only an outline of the functional assessment method used. No data are provided that would help to support the assumptions made for the methodology, the anticipated wetlands impacts and location of those impacts of the Yazoo Pumps Project, nor the planned mitigation for the Yazoo Pumps Project. The report indicates that the Corps Vicksburg provided data to Waterways Experiment Station (WES) with which to conduct a functional assessment. What data on anticipated impacts were used; how were they determined; how are they being analyzed?

- It is important that the District clearly define the acreage of impact, and the specifics of the compensatory mitigation for the impact, as separate from the restoration component plans being discussed. Through the Levee-Board series of meetings, there has been discussion about a reforestation component for this project. However, criteria for compensatory mitigation should be established separately from a reforestation component to best assure replacement of lost wetland acreage and wetland function. What criteria have been established for the compensatory mitigation?

- In order to conform to the processes and standards that would be required of an applicant in a 404 permit context, the basic elements of a wetland mitigation proposal are needed, including: specification of mitigation sites or banks to be offered for wetland mitigation credit; a detailed development and management plan for the identified mitigation sites; specific plans for assuring against mitigation failure; specific success criteria and monitoring plan for the mitigation plan, etc.

- A GIS was used to determine percentages of forested and farmed wetlands for each study reach. How were the wetland data layers differentiated? Specifically how did CEMVK define a wetland; what criteria were used to determine that a particular area is or is not a wetland.

- The mitigation policies and details being applied to the functional assessment "ranking" should be clearly defined.

-The draft that was sent is greatly lacking in documentation of assumptions involved in the choice of indicators, indices and in the assignment of subindex values (such as, storage index, ponding index, primary productivity index, surface area index, and disturbance index).

-From the information provided, it is unlikely that the methodology used is sensitive to changes in hydrology. Given that the greatest impact of the proposed pumping plant is hydrologic change, it is questionable that this assessment methodology is appropriate. A hydrologic model depicting the change in duration of flooding and ponding may be more appropriate to compare the current duration with the expected extent and time of the change caused by the proposed pumping plant. What is the status and findings of the hydrologic modelling work for this project?

-A more site-specific methodology, such as the Hydrogeomorphic Assessment (HGM) in development by Waterways Experiment Station through an Interagency Agreement with EPA-Region 4, would be appropriate in establishing criteria for site-specific restoration, based on determining the wetland sub-class and designing a restoration to best mitigate impacts to specific sub-classes. Again, however, HGM is not a methodology that is sensitive to hydrologic changes due to the rapid assessment field measures upon which it is based. It is therefore critical that an assessment procedure that will best assess the hydrologic impact of this project and the necessary compensatory mitigation, be used to accurately determine impacts and appropriate mitigation.

-The method implies that it considers reference standard wetlands, however no reference data are given. No information is given on optimum conditions. This is an aggregation of indices that are not based on any actual field data (at least no field data is referred to in this document).

-In the second paragraph, it is stated that project impacts were evaluated using basic principles developed during the initial preparation of a semi-quantitative method which later became HGM. Then it is stated that the "method was modified". What is the link between the basic principles, "the method" and finally the modification. Presumably many assumptions were made to link these principles to the method and then to the modification. As with any modelling effort these assumptions need to be explicit, very clearly stated, to facilitate tracking of model use. As outlined here, it is not explained why indicators were chosen or, more importantly, why certain index values were assigned. In contrast, HGM has a great deal of documented assumptions for each indicator, variable and then function. However, none of that information has been brought to bear with this Corps methodology.

-When a field visit was made, what data were collected to aid in the assessment of wetland functional capacity?

- The method states that "wetlands with a functional capacity index of 1.0 exhibit conditions

similar to reference standard wetlands". This connotes that there are reference standards or that they have somehow been accounted. The methodology assigns a FCI of 1.0 to forested wetlands and farmed wetlands were "less". How much less? How was this determined? Field measurements should be made to determine how much deviation there is from the standard. Because the index is based upon reference, for which there is no apparent data, the methodology is flawed.

- The Corps method given states that mitigation acreage (the ratio) is determined by taking the total FCUs lost divided by the total FCI for the desired mitigation acreage. Is this the projected mitigation target or the endpoint? How do we know that the mitigation will achieve that level of success?

- Based on the aggregations for the functions, if any one of the indicators/variables/subindices goes to zero, then the whole function goes to zero due to the multiplicative nature of the equation. Does this make sense in the context of the project? Would any of these subindices go to zero? Also, if forested wetlands have all been disturbed to the point of receiving a disturbance index of 0.67, then how can a farmed wetland receive a disturbance index of half that of the forested wetland (0.33)? This does not seem to fit, and there is no documentation to provide the basis for this decision. Also, with regards to the "Nutrient and Dissolved Substance Removal" function, the decreased duration of flooding due to the pumps will impact the denitrification aspect of this function, because denitrification is an anaerobic process that occurs when soils are saturated or flooded.

- Are there site-specific data on the level of litter cover?

- What mitigation replacement ratios are planned? Is there an assumed 1:1 correlation between the functional assessment ranking and the replacement ratio? A less than 1:1 mitigation replacement ratio will not achieve a no net loss of wetland acreage. Are there allowances for risk (due to complexities of wetland restoration science) and for the temporal loss of wetlands function?

- For the compensatory mitigation for wetland loss, what form of acquisition criteria have been established- fee title or easement? Mitigating for the loss of wetlands is a compensation for impacts incurred, therefore should clearly be differentiated from landowner incentive programs.

- Also with regards to compensatory mitigation, reforestation should be designed for the replacement of wetlands function based on reference wetlands, rather than reforestation for single function benefits - such as for waterfowl habitat. Functional replacement should include restoration with a suite of species, versus management for limited species for recreational purposes.

- If it is assumed in the Corps methodology that farmed wetlands have been hydrologically altered, what hydrologic modifications are included in the mitigation restoration criteria?

- What schedules have been established for mitigation implementation? What amount of mitigation is scheduled for completion prior to operation of the proposed pumping plant?

- What monitoring plan has been established for assessing that mitigation has been accomplished and has been successful? What are the specifics of the monitoring assessment methodology? What time frames for monitoring mitigation compliance and success are scheduled?

- Operation of proposed pump - what are the plans for pump operation? What forested wetland acreage will be impacted by pump; what public land impacted; what acreage of Wetland Reserve Program and Conservation Reserve Program acreage will be impacted

- Have the maps of structures (residential, commercial, industrial) within the project area been located?

Additional questions that we have include:

- Is the WES "modeled data" that we received from the Corps last winter the same modeled data that they are currently using?

- What is the source of the data on the table entitled "Yazoo Backwater Area Acres from Stage Area Curves"and why is it different from the stage-area curve numbers that were provided in March, 1998? Which of these data are to be used in your analysis of the Yazoo Pumps?

This flood control project is anticipated to result in wetland impacts on a level of many orders of magnitude greater than most individual 404 permit applications. The Corps methodology presented is flawed and incomplete, and therefore the results are questionable. Given the extensive cumulative losses of wetlands in the Yazoo Basin, it is our position that utmost care and scientific rigor should be given in assessing the impacts of this project to yet more wetland acreage in this Basin, and to the plans for an implementable, carefully monitored, and successful compensatory mitigation for all impacts.

As was previously requested (October 13, 1998 letter), we are requesting comprehensive information on all wetlands related work for this proposed project. If necessary, we can schedule a conference call to provide any clarifications needed about these requests for information. Then at a later date, once we are provided with more comprehensive information, and have had the opportunity to review it, we recommend that we meet or hold a conference call to discuss these issues. Due to the complexity of these wetland issues, we strongly recommend that we resolve these in advance of the District releasing a draft EIS on this project.

Thank you for your assistance with this matter. Please feel free to contact me at 404-562-9354 with any questions or clarifications needed.

Sincerely,

Tom Welborn

Tom Welborn, Chief
Wetlands, Coastal, and Nonpoint Source Branch