

CORPS RESPONSE TO SHABMAN REPORT

1. As stated on page xi of the Extended Report Summary, opponents of the Yazoo Backwater Pump Project have questioned the justification of a pump and called for nonstructural measures such as expanded crop insurance and removal of agricultural activity and structures from flood-prone areas. Region IV of the Environmental Protection Agency issued a grant to Leonard Shabman and Laura Zepp of the Virginia Tech Department of Agricultural and Applied Economics to adapt existing economic analysis protocols for evaluating nonstructural alternatives, demonstrate the protocol with an evaluation of the Yazoo Backwater Area, and describe an implementation plan providing incentives for landowner adoption of nonstructural actions, hereinafter referred to as "the Shabman Report" or "Shabman."
2. The Shabman Report was forwarded to the U.S. Army Corps of Engineers, Vicksburg District, in February 2000. Although its recommendations were received too late for consideration by the consensus committee, the report offers an alternative to the recommended plan which will be evaluated in this document.
3. It should be noted that the Corps has no statutory or regulatory authority to implement the recommendations of the Shabman Report. Shabman calls for a new study which has not been congressionally authorized or funded, as well as suggesting an agenda for that study. It further suggests changes to existing farm programs or creation of new programs to implement its suggestions. This would also require action by Congress and Federal agencies other than the Corps. Therefore, the analysis of Shabman which follows will be limited to the Corps opinion of the reasonableness of the report's assumptions and the anticipated results of its implementation. Dr. Shabman summarizes his report in Section 6 which is entitled "Findings and Implications." The following 15 comment-response items are the Corps response to these findings and implications.

a. Comment. The nonstructural approach can be justified using NED benefits for carbon sequestration and nutrient reduction¹. (6A1a)

Response. Before the proposed benefit categories can be applied in Federal water resources studies, the supporting methodologies and assumptions must be reviewed and found to be quantifiable and valid. The economic markets for sequestered carbon and nutrient reduction must be found to exist and to be predictable. The benefit analyses would have to be applied equally to the with- and without-project conditions to determine the net benefit. The proposed reforestation must compete successfully in the economic markets with alternative sources of sequestered carbon and nutrient reduction before benefits can be claimed.

Based on other studies, the use of filter strips can reduce the amount of soil particles that are allowed to leave a field to nearly the same level as Dr. Shabman theorizes in his nutrient reduction benefit and this method is significantly less expensive than the approach proposed by Dr. Shabman.

On page 75, Table 4-24, the author uses a nitrogen loading value of 11.17 pounds per acre for soybean land. The author's own tables in Appendix A note that no nitrogen is applied to soybean land, yet the yield off the land is nearly the same as from cropland that receives 150 to 185 pounds of nitrogen per acre. Soybeans do not require nitrogen since they generate their own. Based on available information, a value of 6 to 8 pounds per acre would probably be more reasonable.

The hypoxia problems in the Gulf of Mexico can be attributed in part to the nitrogen loading transported by the Mississippi River. The Yazoo Basin has been estimated to contribute less than 3 percent of this nitrogen. (He makes the assumption that producers have the right to produce a certain quantity of pollutants, and that by reducing their nutrient loads, they would

have pollutant credits to sell to others.) The Yazoo Backwater Area is a subbasin of the Yazoo River and is estimated to contribute less than 1 percent of the nitrogen associated with hypoxia. Therefore, utilizing a nutrient reduction benefit for this study area is in effect inflating the benefits.

The carbon sequestration benefit can only be the excess carbon sequestered over what would be sequestered under existing or expected future conditions. The practice of no-till farming increases the carbon sequestration of cropping. Although the estimates of the carbon sequestered ranged up to 4 tons per acre, the actual benefit is closer to 0.21 tons per acre. Due to Clean Water Act amendments, farmers are switching to no-till methods and the carbon sequestration benefit should be reduced by a factor which would account for some farmers switching to no-till methods each year. A 5 percent change per year for 15 years would be a reasonable rate. Dr. Shabman's report does not appear to reflect this understanding of carbon sequestration, which may result in an inflation of benefits for this category.

b. Comment. The nonstructural approach can be justified using ecosystem restoration guidelines²; i.e., without NED benefits for carbon sequestration and nutrient reduction. Reforestation is a cost-effective means to enhance water quality. (6A1b)

Response. Reforestation is a cost-effective means to enhance some water quality parameters, but Dr. Shabman has not demonstrated this with his report.

Conservation easements with reforestation are legitimate measures to achieve nonstructural flood damage reduction benefits and incidental environmental benefits. However, water quality enhancement is not a budget priority.

c. Comment. NED justification for a pump should be reviewed. There are flaws in the agricultural flood damage reduction benefits. (6A2)

Response. The proposed Yazoo Backwater Reformulation Report is currently under review for compliance with policy, law, and Administration priorities. The reformulation study utilized guidance from P&G.

Based on internal review by the Corps, no flaws were found in our agricultural damage analysis. Similar analyses were utilized on numerous agricultural flood control studies that have undergone countless reviews, and no flaws have been documented.

d. Comment. OMB should review agricultural return calculations. EPA should request an OMB review of the reformulation report. (6B1)

Response. OMB can choose to review any document, and as always, can impact funding decisions.

e. Comment. The Administration should secure revised study authority from the Congress. A Corps-led interagency study would develop a nonstructural plan to be implemented as a Federal responsibility and as a model for the Nation. The effort would refine the analysis tools, set a restoration target for the area, coordinate voluntary reforestation implementation, coordinate farm income assurance with the Federal Crop Insurance Corp and USDA, and coordinate local protection and relocation efforts with FEMA. (6B2)

Response. The Corps has participated in a consensus committee made up of different Federal and state agencies, local government, environmental groups, and other concerns in developing the plans included in the Yazoo Backwater Reformulation Study. Plans advocated by this group include nonstructural, structural, and a combination of features. This is exactly what Dr. Shabman is advocating.

The Corps has sufficient authority under the current authorization to achieve both economic and environmental benefits to the area. However, should the Administration wish to revise the study authority then legislation should be sent to Congress requesting this change. Should this legislation be approved by Congress, then the Corps could institute these changes.

f. Comment. Income assurance options should be developed in the new study. Compensate landowners for future flood losses through contracts with landowners or a subsidy added to the existing crop insurance program. (6B3)

Response. Several of the plans in the final array propose to make lands at certain lower elevations more compatible with the existing flooding regime. This includes compensating those participating landowners who desire to make this change in land use.

None of the plans in the final array will interfere with the USDA in developing and implementing crop insurance subsidies.

g. Comment. Programs to supplement the Wetlands Reserve Program should be developed in the new study. Expand landowner incentives to encourage voluntary reforestation of lands where soybean production is marginally profitable. (6B3)

Response. The USDA Natural Resources Conservation Service administers the Wetlands Reserve Program (WRP) and Conservation Reserve Program (CRP) in consultation with the Farm Service Agency and other Federal agencies. The WRP offers landowners the opportunity to voluntarily protect, restore, and enhance wetlands on their property where CRP allows the landowner the opportunity to protect erodible cropland. Currently, the ceiling for these two programs has been reached in some of the counties in the study area. Raising the ceiling will require input from the local governments in the effective counties. Based on actions taken to date, it does not appear that these ceilings will be raised.

Based on recent congressional actions, future expansion of these programs is not likely.

h. Comment. Designing the WRP Supplemental program. An incentive program could apply to the whole watershed and the Delta. Budget limitations should be recognized. A logical basis is needed for enrolling land in a reforestation program. Landowner payments should not exceed inducements to reforest. (6B41)

Response. The Corps would defer to the Natural Resources Conservation Service for the design and implementation of a WRP Supplemental Program.

Local counties are already concerned about loss of tax revenue when lands are enrolled in WRP and CRP programs. The issue of reduced tax revenue on local counties must be addressed when developing a WRP supplemental payment program.

i. Comment. Government easement payments – A bid-in system. Landowners would bid for lost-income compensation payments. Low bidders who meet reforestation success criteria would receive payment priority. (6B41a)

Response. The Corps would defer the evaluation and implementation of such a program to other agencies.

Several plans evaluated in the final array include easements that would compensate willing landowners for changing land use to one that is more compatible with the existing flooding regime.

j. Comment. Advance the hunting lease markets. Market development could involve (1) technical and financial planning advice services for landowners, (2) a program to match buyers and sellers, and (3) advertising or other programs to increase demand and maintain lease prices. (6B41b)

Response. Benefits from sale of hunting leases are included in the Corps analysis.

Hunting lease markets have already developed in this area.

k. Comment. Advance markets for carbon sequestration. Assess and adapt existing market development activities to develop market sales opportunities in the area. Include certification programs and monitoring. (6B41c)

Response. Developing and managing markets are not within the authorities and missions of the Corps. The Corps would defer development and implementation to others.

Carbon sequestration benefits will incidentally accrue to all plans even though no attempt was made to quantify these benefits or include them in economic justification of the plans in the final array. Reforestation is included in all plans in the final array and would be a cost borne by

the Federal Government. Some of the costs for easements and reforestation are not accounted for in Dr. Shabman's report. The assumption that up to 40,000 additional acres will be placed into existing government programs should not be used as justification to exclude the costs of these lands from the analysis as the Shabman report concluded.

l. Comment. Advance markets for nutrient reduction credit sales. Proposed EPA regulations would require point sources to apply to meet water quality standards when feasible and to buy nonpoint source reductions (offsets) when the standards are not met. Monitor the possibility of securing offset payments for reforestation. (6B41d)

Response. Developing and managing markets are not within the authorities and missions of the Corps. The Corps would defer development and implementation to others.

Nitrogen reduction benefits will incidentally accrue even though it was not included in economic justification of the plans in the final array. Reforestation is included in all plans in the final array and would be a cost borne by the Federal Government.

m. Comment. Contracting systems to seize market opportunities. Encourage private firms and non-governmental organizations to buy timber management rights from the landowners and then sell the carbon sequestration credits and nutrient reduction offsets. (6B41e)

Response. This activity would be beyond the authorities and missions of the Corps. The Corps would defer the action to other agencies.

Landowners who participate with the Corps with conservation easements could benefit more than those who do not due to the fact that an easement would have been purchased and the cost of reforesting the easement land would be borne by the Federal Government.

n. Comment. Budget costs. Features of the watershed action plan would cost less than the proposed pump plant. (6C)

Response. Dr. Shabman's solution does not address the flooding problems over the entire spectrum of flooding elevations. His solution is directed toward the 2-year flood plain only. He has not included the total cost to buy easements and reforest the 88,000 acres because he assumes WRP and CRP will convert 40,000 of the 88,000 acres, and assumes that no costs would be incurred for his plan. However, these costs are borne by the Treasury and must be included as costs to his plan.

Dr. Shabman's plan does nothing to protect those homes, structures, roads, etc., above the 2-year flood event. The cost to flood proof those structures that would continue to flood was not included in his plan. Analyses by the Corps for localized flood protection in this area demonstrated that this proposal was not economically justified. Dr. Shabman's plan calls for an income assurance program for landowners above the 2-year flood frequency, but it is difficult to determine if all costs for this feature are included in his report. This plan would not provide any means for the producers to reduce costs of production or increase the efficiency of their operations.

Several of the plans carried into the final array are economically justified and provide environmental benefits above those required to offset any environmental damage.

o. Comment. Moving forward. This paragraph summarizes the above findings. (6D)

Response. The Corps plans included in the Yazoo Backwater Reformulation Study include a number of the features proposed in Dr. Shabman's report. The Corps has developed a comprehensive watershed plan that addresses flooding problems over the whole range of flooding frequencies. The lowest lying lands would have damages reduced by a change in land use. A conservation easement from willing sellers would allow the open lands to be reforested, thereby reducing the loss from flooding. A structural component would protect those lands at higher elevations on which conservation easements are not secured. The reforestation included in all the plans in the final array would allow carbon sequestration, nitrogen reduction, and improved water quality benefits to accrue to the area.

Conservation easements will compensate willing landowners for a change in land use and would not be an income compensation program.

The Corps plan has identified all the costs and benefits that have been recognized under P&G and several plans are economically and environmentally sustainable.

The plans proposed by the Corps will provide both environmental and economic benefits to the area.

CONCLUSIONS

4. It must be said that purely nonstructural plans are at best an attempt to change the land use patterns of the Delta by compensating landowners for their economic loss from implementing those changes. This land use change is recommended as environmentally beneficial, and if Congress and the Administration choose to alter national policy in this way, they have the means

to do so. However, flooding affects all persons residing and working in the project area, not just landowners. Plans which do no more than compensate landowners for their economic loss for converting from agriculture to silviculture benefit only the landowners and not all the residents of this economically depressed area. The benefits of the Corps recommended plan accrue to all area residents who must live, work, travel, and recreate in the project area. Those benefits are of national significance and are in excess of project costs as demonstrated by Appendix 7.

5. The Administration has mandated that nonstructural plans receive evaluation as a part of project formulation. The Corps has analyzed various plans, including total and partial nonstructural elements. In addition, the Corps has evaluated Shabman's proposals. In the present case, the Corps cannot recommend adoption of a purely nonstructural plan nor can it support Shabman's analysis.

6. The Shabman Report suggests a means of assigning a dollar value to environmental benefits associated with nonstructural flood damage reduction measures in order to economically justify the selection of purely nonstructural measures over either structural measures or a combination of structural and nonstructural measures such as those proposed by the Corps. The report makes an effort to quantify what has previously been unquantifiable, but as the above analysis shows, the effort is flawed. These flaws are of such a magnitude that the Shabman proposal must be rejected as unreasonable.

7. Shabman recommends further study of its proposed plan and a legislative agenda for implementation of its suggestions. This is beyond the authority of the Corps. There is current congressional authority for a flood control project in the Yazoo Backwater. The Reformulation Report recommends a reasonable and cost-effective means of accomplishing the congressional purpose while simultaneously generating substantial environmental benefits. This reformulation report therefore defers further action on Shabman's recommendations to the appropriate parties with the above-noted reservations, observations, and objections.