UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 1 1985

OFFICE OF
EXTERNAL AFFAIRS

Mr. Robert Dawson
Acting Secretary of the Army
for Civil Works
Pentagon - Room 2E570
Washington, D.C. 20310

Dear Mr. Dawson:

On September 4, 1985 Colonel Claude Boyd, District Engineer, Norfolk District sent the Environmental Protection Agency (EPA), Region III, a Notice of Intent to issue a Section 404 permit to the County of Gloucester to construct a water supply impoundment at Beaverdam Swamp. By copy of this letter, I am requesting elevation of the Beaverdam Swamp impoundment proposal to higher authority within the Department of the Army. This letter and accompanying documentation are in accordance with the procedures set forth in the July 6, 1982, EPA-Army 404(q) Memorandum of Agreement (MOA).

I base my request for elevation on all three criteria set forth in the MOA. The most significant is the lack of coordination exhibited by the Corps in refusing to delay their permit decision so wetland impacts and alternatives could be analyzed more comprehensively. Secondly, significant new developments in an existing technology went unheeded. Lastly, this project will be followed by many similar projects and should alternate technology prove economically and environmentally preferable, a tremendous impact to wetland resources will have been avoided in Virginia, the Chesapeake Bay and in other parts of the country. Because of the importance of Chesapeake Bay resources, and in recognition of the broad interest in Bay clean-up/preservation issues, I believe that decisions relative to Bay wetland resources are of national importance.

LACK OF COORDINATION

Our concern lies in the lack of coordination on the part of the Norfolk District Corps of Engineers in refusing to fully evaluate significant project alternatives, or to delay permit issuance long enough so that EPA could conduct its own study. Specifically, the Corps has refused to adequately examine the feasibility of reverse osmosis technology to address Gloucester County's drinking water situation. When EPA requested that the Corps file a supplement

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to the Final Environmental Impact Statement (EIS) as required by the Council on Environmental Quality's Regulations Implementing NEPA Section 1502.9(c)(1)(ii), the Corps dismissed the need by contending that EPA suggested the alternative too late in the review process. On the contrary, since February of 1983, EPA has consistently requested that the Corps study alternate technologies, including desalinization and/or sites to produce the same results. Region III staff investigated the possibility of reverse osmosis for Gloucester County in hope of uncovering an alternative to the extensive wetland destruction that would occur should the dam be constructed. Prior to issuance of the Final EIS, the investigation proved positive after learning that reverse osmosis has achieved economic and technological feasibility in the past several years and is used quite extensively (94 communities, most of which are located in Florida) in treating municipal water supplies in the United States. It was and is our opinion that through EPA's efforts the NEPA process was well served. The process inspired EPA's rigorous review of alternatives, led to several attempts by this Agency to share its important information with the District before the Final EIS was published, and was leading toward the possible technical resolution of an important regional water supply issue. Unfortunately, all of EPA's work was given only cursory attention by the Norfolk District, causing undue delays in decision making.

The lack of coordination exhibited by the Corps was reflected several months prior to their refusal to file a supplemental or enhanced EIS to investigate the reverse osmosis alternative. For example, on March 5, 1985, EPA staff met with the Norfolk District Corps of Engineers and the U.S. Fish and Wildlife Service staff to discuss wetland evaluation methodology. EPA and the U.S. Fish and Wildlife Service requested that the Corps objectively analyze the wetland resources of the Beaverdam Swamp impoundment site, and the two smaller alternative sites at Harper's and Carver's creeks. At that time, EPA voiced opposition to the Larson method of wetland evaluation due to its emphasis on only the wildlife values of wetlands. EPA also voiced concern over the misuse of the method to develop mitigation, and to predict the quality of the approximately 250 acres of created wetlands proposed in the mitigation plan.

EPA suggested the use of the Adamus and Stockwell (1982) method for a more comprehensive wetland functional assessment. This method evaluates wetlands for nine different functions. The use of this method was dismissed by Corps staff as too time consuming and because it would not yield a numerical result. EPA believes that the time investment would have been comparable, or perhaps significantly less, and would have resulted in a more comprehensive view of the existing wetland

functions and values at Beaverdam Swamp and the alternative sites. We consider the Corps dismissal of EPA's concerns relative to wetland assessment methodology a critical failure in coordination as it reflects a recurring theme in recent Norfolk District project evaluation which appears driven by efforts to meet deadlines and timetables rather than efforts to come to grips with significant environmental issues.

SIGNIFICANT NEW INFORMATION

As noted above, information regarding advances in reverse osmosis technology and its growing use in the United States became available to my staff in April of 1985. The Norfolk Corps District was contacted in May of 1985 and Corps staff attended meetings that described development of the low pressure polyamide membrane module for reverse osmosis technology. The low pressure module, developed within the past two years may have opened the way for municipalities to implement the technology on a large scale in an economically and environmentally feasible way. This new development was ignored in the Final EIS, and though desalinization was mentioned briefly, it was dismissed as not economically feasible.

We believe that the U. S. Army Corps of Engineers is obligated to give full consideration to any promising water supply alternative that would meet the needs of Gloucester County. We believe that this is especially true in southeast Virginia where a regional solution to water supply problems is sorely needed and where a clear picture of increased pressures upon valuable Chesapeake Bay resources can be painted should a non-impoundment solution not be achieved.

ENVIRONMENTAL ISSUES OF NATIONAL IMPORTANCE

Construction of a dam and impoundment in Beaverdam Swamp clearly undermines efforts to clean up and preserve Chesapeake Bay resources. The action will damage and destroy at least 350 acres of wetland habitat by flooding the site, and adversely affect an unknown but significant area of wetlands downstream of the dam by both reducing the flow of water by 41% on the average and disrupting water movement. The action will destroy wetland vegetation and eliminate nutrient exchange by reducing the system's productivity and altering current patterns and flushing downstream. This may have far-reaching and cumulative effects on the Ware River estuary, a sub-estuary of the Chesapeake Bay. The action would have a significant yet undetermined effect on the filtration function of wetlands by flooding and destroying the 350 acres of vegetation that plays the predominant role in

performing this function. This is likely to cause degradation of the water quality within the impoundment. The discharge and its secondary impacts will change wetland wildlife values for indigenous species by destroying hundreds of acres of their habitat and changing it to a deep water lake, and by dewatering wetlands downstream. Disruption in flow and circulation patterns which provide detrital pulses and fresh water to downstream wetlands is also likely to cause significant degradation in the Chesapeake Bay.

This project will also serve as a precedent to a number of other impoundment proposals on tributaries to the Chesapeake Bay. Freshwater supplies in southeastern Virginia are dwindling due to overdevelopment of watersheds, a rising population, degradation of surface waters and salt water intrusion into groundwater. The decision of whether to issue a permit to Gloucester County may begin a chain reaction of permit issuances. Large impoundments may be useful for water supply in the short term (15 to 50 years), but in light of a growing population and increased demands, destruction of natural resources for relatively short term solutions must be avoided. Ideally, a regional solution must be sought to resolve southeastern Virginia water supply problems. In lieu of a regional solution, or as a stop-gap measure during development of such a solution, only environmentally sound alternatives for local water supply should be considered.

We reiterate that the District Engineer's decision to issue this permit should be elevated to higher Corps of Engineers decision-making authority in order to avoid the possibility of an EPA Section 404(c) action. We also recommend that EPA and the Corps of Engineers work closely to develop a feasible study that would address two important issues; the development and/or implementation of a regional water supply solution, and the investigation of reverse osmosis as a means to deliver local/regional water supply.

Sincerely,

Richard E. Sanderson
Acting Assistant Administrator
for External Affairs

Attachments

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EPA Region III Responses To Issues Raised During the NEPA Process
Gloucester County Water Supply Impoundment

Comment Subject: Wetland Acreage Affected

EPA will accept the Corps revised estimate of 350 acres of wetlands being impacted within the pool area.

We want to clearly state, however, that this acreage includes only the direct effects of the impoundment site alone, and does not consider impacts to wetlands downstream. This lack of valid data determining the downstream impacts was an oversite by the Corps. The discussion of what "type" of wetland will exist downstream 50 years after dam construction is really moot to the determination of the total impacted acreage.

Comment Subject: Wetland Evaluation

Unfortunately COE staff did not adequately consider the content and significance of our March 28, 1985, letter concerning wetland evaluation techniques. The Larson (1976) method of wetland evaluation was probably "state of the art" 10 years ago when it was edited. However, EPA's concern was that it was one-sided in its evaluation and that it was never meant to be used as a predictive model. The model proposed devised by for application to this project has never been substantiated, nor has it undergone peer review. It would have been far more preferable for the Corps to relay specific instances where hundreds of acres of high quality wetlands had developed in other constructed impoundments, and present the specific reasons why the topography/soils/hydrology, etc. of the Beaverdam site was similar enough to reasonably expect the same results.

We contend that the Larson (1976) methodology was meant to evaluate existing wildlife habitat. Section 404 of the Clean Water Act requires evaluation of other values besides waterfowl, those being water quality, fisheries, and shellfish beds. Other well-known values of wetlands include flood buffering, nutrient retention, and sediment trapping to name just a few. Our letter was meant to stimulate the Corps to take a broader view of the function of wetlands and their value to the public so that these values could be considered and replaced. The Federal Highway Administration Method (FHWA Method or Adamus Method) attempts

to do this as well as evaluate wildlife habitat. We were not opposed to using the Larson (1976) method. However, using it alone and as a predictive model is inappropriate and inadequate.

Comment Subject: Detrital Export

EPA did not criticize the Corps' determination of what impact would occur with the cessation of detrital export after construction of the proposed Beaverdam Swamp impoundment structure. We do, however, question whether there was any methodology used in predicting the stated lack of this downstream impact. If there was, we do not know why the Corps did not provide us with the specific methodology. It was clearly stated at the scoping meeting and included in our written scoping letter that secondary environmental impacts (including offsite impacts) be included. However, even though we have consistently voiced this concern throughout the review process, it has been largely ignored.

We believe that the impacts to detrital export, along with the decrease in freshwater inflow to the Ware River to be highly negative and in opposition to the Chesapeake Bay initiatives that have been, and continue to be a coordination objective of our agencies.

Comment Subject: Induced Wetland Development

It is argued that seasonal drawdown is a commonly used waterfowl management technique in wildlife refuges and preserves. This is a true statement, however, it is an incomplete representation. Central New York's Montezuma National Wildlife Refuge is this type of management area. It is currently plagued with nuisance growth of purple loose-trife, one of the less desirable plants mentioned in our comments to the FEIS. Flooding and burning has not relieved the problems to the extent desired. It is a constant battle to continue to provide food for waterfowl and suitable habitat for other wildlife. Mud flats resulting from lowered water levels have been conducive to bacterial growth that has killed hundreds of ducks. If this method of management was in mind when theorizing wetland success, it was speculative at best.

If the county is not dedicated to full time investment of staff and resources to managing the water levels to guarantee wetland success, the hopes for success of any type of mitigation is slim. In addition, there is little indication that in-kind replacement ever happens in large scale wetland creation (Ben Venute, 1984 personal communications).

In our comments to the FEIS we requested photographs of emergent wetland species growing on inundated stumps. The Corps supplied us with pictures of cut cypress trees with either sucker growth or another type of woody species growing atop the stump that was able to withstand the rigors of exposure to the elements. That is not what was requested, but information that justified the determination that emergent wetland plants will establish on tree stumps.

Lastly, in addition to not being provided with enough documented evidence that the methodology used could accurately predict the type or ease of wetland regrowth, we believe that trying to force the regrowth by leaving dead standing timber could exacerbate and enhance eutrophication.

Comment Subject: Reduced flow to the Chesapeake Bay

The Corps argument is well taken, however, the statement that there will be no significant adverse impact to the Chesapeake Bay is not consistent with studies cited in the comments to the FEIS that the Corps has itself conducted. In the 30 years of data presented in Table 16 of the FEIS, the free-flowing stream through Beaverdam Swamp discharged less than 1.5 cfs on a monthly average of only 12 times out of the 360 monthly data points. With the dam installed, the average monthly flow release of 1.5 cfs would occur 185 times. This greatly reduced average monthly flow will result in detrimental effects downstream, but the impacts only begin here. The water that normally would flow and dilute the incoming sewage treatment discharge will no longer be available in the expected volumes needed to limit impacts to the Bay due to entrance of pollutant-rich point source discharges. The Corps continues to ignore the analysis and consideration of secondary impacts consistently requested by various agencies, including EPA.

Comment Subject: Trophic Status of Lake

The Corps finds that EPA "continually" criticizes "the models" but never suggests the use of alternate predictive methodology. According to personal communication, all impoundments in southeastern Virginia are eutrophic. Yet the model mentioned in the EIS suggested that the proposed impoundment would be oligotrophic at best and mesotrophic at worst. Models are meant to work for us as a tool in the decisionmaking process. We are not enslaved to the factors that result from their use, especially when common intelligence alludes towards their unsuitability in some situations. This is an example where it appears obvious that the tool is unsuitable.

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If the Corps has information based in fact and in existence, like examples of reservoirs in Virginia that are oligotrophic or mesotrophic "at worst", we would consider it as an argument that the proposed Beaverdam Swamp impoundment will be of adequate quality.

Comment Subject: Reverse Osmosis

EPA believes strongly that Gloucester County's drinking water supply concerns should be fully addressed. We are prepared to invest a considerable amount of time, people, and funding to meet this end. However, this effort cannot be achieved as effectively unless the review process is consistently applied and carried out, and unless all agencies work together.

We have repeatedly made it clear to the Corps and the county from our letters and comments that we believe permitting an impoundment in Beaverdam Swamp is inconsistent with the 404(b)(1) Guidelines, the Executive Order for Protection of Wetlands, and the National Environmental Policy Act. Rather than take a fully negative stance, my staff reached for every possible alternative to minimize impacts to the environment while providing a quality water supply to Gloucester County.

Reverse Osmosis was viewed very cautiously at first, due to the findings contained in the DEIS and because of the common, yet now known to be uninformed belief that reverse osmosis technologd was too expensive to apply at the municipal level. The fact is that thi. technology is available for use and could provide even better and longer term quality water to Gloucester County with no significant environmental impacts. This was an important new finding that was relevant to environmental concerns. According to the Council on Environmental Quality's Regulations implementing NEPA, when information of this type becomes available before, during, or after the FEIS, supplemental statements will be prepared. Norfolk District continues to state timeliness of our request as an excuse to not consider reverse osmosis, which has no relevance to this requirement of the regulation. As stated before, we are willing to expend considerable resources to determine whether in fact reverse osmosis could become Gloucester County's long term water supply solution.