

**FINAL DETERMINATION OF THE
U.S. ENVIRONMENTAL PROTECTION AGENCY'S
ASSISTANT ADMINISTRATOR FOR WATER
PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT
CONCERNING THE PROPOSED BIG RIVER
WATER SUPPLY IMPOUNDMENT
KENT COUNTY, RHODE ISLAND**

March 1, 1990

I. INTRODUCTION

Section 404(c) of the Clean Water Act (33 U.S.C. Section 1251 et seq.) provides that, if the Administrator of the U.S. Environmental Protection Agency (EPA) determines, after notice and opportunity for public hearing, that unacceptable adverse effects on municipal water supplies, shellfish beds, fishery areas (including spawning and breeding areas), wildlife, or recreational areas will result from the discharge of dredged or fill material, he may exercise his authority to withdraw or prohibit the specification, or deny, restrict or withdraw the use for specification, of any defined area as a disposal site for dredged or fill material. The Section 404(c) regulations state that, before making such a determination, the Administrator must consult with the Chief of the Army Corps of Engineers (Corps), the property owner(s), and the applicant where there has been an application for a Section 404 permit. The procedures for implementation of Section 404(c) are set forth in the Code of Federal Regulations, 40 CFR Part 231.

EPA's regulations for implementing Section 404(c) establish procedures to be followed in exercising the Administrator's authority pursuant to that Section. Three major steps in the process are: 1) the Regional Administrator's proposed decision to withdraw, deny, restrict or prohibit the use of a site (Proposed Determination); 2) the Regional Administrator's recommendation to the Administrator to withdraw, deny, restrict or prohibit the use of a site (Recommended Determination); and 3) the Administrator's final decision to affirm, modify, or rescind the Regional recommendation (Final Determination). The Administrator has delegated the authority to make final decisions under Section 404(c) to the Assistant Administrator for Water, who is EPA's national Clean Water Act Section 404 program manager.

In the instant case, this Final Determination concerns the placement of dredged or fill material for the purpose of creating a water supply impoundment on Big River in Kent County, Rhode Island as proposed by the Corps of Engineers and the State of Rhode Island. The project involves construction of a dam approximately 2300 feet long and 70 feet high to create a 3,400 acre impoundment, with an average depth of 25 feet. The project also involves the construction of an impermeable slurry wall down to bedrock in the Northeast portion of the proposed reservoir. The wall would be necessary to prevent the natural flow of groundwater out of the Big River area. Figure 1 of the Regional Recommended Determination shows the location of the proposed project relative to the South Branch Pawtuxet River Basin and the remainder of the State. Figure 2 shows the project on a regional scale relative to the Pawtuxet River Basin and central Rhode Island. Figure 4 shows the location of the proposed dam with respect to the proposed impoundment area, management area and the Big River watershed.

As stated in the Regional Recommended Determination, the basic purpose of the Big River reservoir is to satisfy future needs for drinking water in the Greater Providence area. The Corps of Engineers evaluated the potential flood control and

recreation benefits of the project in an Environmental Impact Statement completed in 1981 in response to a 1978 request from the State of Rhode Island. However, in its subsequent permit application in 1986, the State of Rhode Island stated that the purpose of the project is to provide municipal water supply.

EPA Region I's Acting Regional Administrator has recommended that EPA prohibit the discharge of dredged or fill material into Big River, Mishnock River and their tributaries and adjacent wetlands for the purpose of constructing the proposed Big River Reservoir and its ancillary facilities. Region I's Acting Regional Administrator based this recommendation upon a conclusion that the project will cause unacceptable adverse effects to wildlife habitat and recreation areas. In reaching this conclusion, the Acting Regional Administrator found that the adverse impacts associated with the proposed impoundment are avoidable and unnecessary.

This Final Determination is based on consideration of the administrative record developed in this case, including public comment submitted in response to the Regional Proposed Determination and comment received at the public hearing. This Final Determination also reflects review and consideration of additional relevant information that subsequently was submitted and made part of the record.

The Section 404(c) regulations authorize the prohibition or other restriction of the discharge of dredged or fill material at sites where it is found that "unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas" would result. The administrative record fully supports the Regional conclusion that construction of the proposed Big River impoundment would result in the destruction and loss of diverse and productive wetland and free flowing stream habitat that provides profound and critical ecological support to wildlife in the Big River watershed and Management Area. Further, the administrative record supports the conclusion that the proposed impoundment could adversely impact aquatic resources and water quality outside of both the impoundment area and the Big River watershed by impairing groundwater movement and reducing the amount of water discharged into the south branch and main stem of the Pawtuxet River. In addition, Regional findings concerning the overall project purpose and need and practicable alternatives to satisfy that need are supported by the administrative record. Accordingly, Section II, PROJECT DESCRIPTION AND HISTORY (pages 3-9), Section III, SITE DESCRIPTION (pages 10-27), Section IV, ADVERSE ENVIRONMENTAL IMPACTS, Sections A-D (pages 29-48), and Section V, ALTERNATIVES (pages 49-64) of the Recommended Determination are hereby adopted as part of this Final Determination.

In consideration of the Recommended Determination, the administrative record and other material information obtained by EPA subsequent to the Recommended Determination, EPA has determined that the discharge of dredged or fill material in

connection with the proposed Big River water supply reservoir would result in unacceptable adverse effects on wildlife habitat and recreation areas. This Final Determination therefore affirms the Regional Recommended Determination and prohibits the designation of Big River, Mishnock River and their tributaries and adjacent wetlands as discharge sites for dredged or fill material for the purpose of creating a reservoir or impoundment as proposed by the Corps of Engineers 1981 Environmental Impact Statement and as proposed by the Rhode Island Water Resources Board.

II. EPA HEADQUARTERS ACTIONS

Pursuant to the Section 404(c) regulations, after considering public comment on the Proposed Determination, EPA Region I submitted the Regional Recommended Determination to EPA Headquarters. The Recommended Determination document was signed October 10, 1989, and the full administrative record was received by EPA Headquarters on October 30, 1989. Pursuant to Section 231.6 of the Section 404(c) regulations, the initial deadline for issuing the Final Determination for the proposed action was December 29, 1989. Due to the magnitude of the record for this case and the importance of the recommended actions under consideration, EPA determined that there was good cause for extending the period for affirming, modifying, or denying the Regional Recommended Determination until March 1, 1990. Notice of the extension of time was published in the *Federal Register* on January 3, 1990 (55 FR 171).

In accordance with the Section 404(c) regulations at Section 231.6, EPA offered final consultation with the Director of Civil Works of the Army Corps of Engineers (Corps) and the Chairman of the Rhode Island Water Resources Board by letters dated November 7, 1989. The letters provided the Corps and the Water Resources Board the opportunity to present information which reflects an intent to take corrective action to prevent unacceptable adverse effects from the subject activities. Further, the letters offered an opportunity to meet with EPA representatives and discuss any issues related to the Section 404(c) action.

The Corps responded in a letter from Brigadier General Patrick Kelly, Director of Civil Works, dated November 29, 1989, which stated that the Corps had no comments on the Recommended Determination at that time. The Rhode Island Water Resources Board responded in a letter dated November 20, 1989, from A. Joseph Mattera, Chairman. Mr. Mattera's letter suggested that because there was no permit application pending on the project (the Board had withdrawn the Section 404 permit application subsequent to EPA Region I's initiation of the Section 404(c) action), and that because the State had commissioned a State-wide water supply analysis due to be completed by mid-1990, final action on the project would be premature and EPA should therefore defer final action on the Recommended Determination; the letter did not indicate a specific timeframe for the deferral. Mr. Mattera's letter also raised

issues concerning EPA's jurisdiction over the proposed Big River project and adequacy of the proposed consultation timeframe. Mr. Mattera's letter did not request a meeting or any other further consultation with EPA regarding the Regional Recommended Determination or final decision.

Mr. Mattera's letter stated that there was no need for EPA Headquarters to proceed with the Final Determination because there is no permit application pending for the project, and the State does not intend to proceed with the application until such time that there is a demonstrable need for additional water supplies. Moreover, Mr. Mattera's letter also indicated that the State would consider construction of the Big River project only if a project could be constructed without unacceptable environmental risk. EPA notes, however, that when this Section 404(c) action was initiated, the Rhode Island Water Resources Board had pending a Section 404 permit application proposing the discharge of dredged or fill material in waters of the United States for the purpose of constructing this project. On April 3, 1987, the Water Resources Board applied for a Section 404 permit for the Big River Reservoir; that application was still pending on August 24, 1988, when EPA Region I initiated the Section 404(c) action. The Section 404 permit application was withdrawn by the Water Resources Board on September 8, 1988. Because specific projects have been proposed in the past, both by the State and the Corps, EPA determined that it would be appropriate to complete this Section 404(c) action rather than leave unresolved the acceptability of the adverse effects of the proposed projects. Moreover, the Clean Water Act does not preclude EPA from completing the Section 404(c) process under these circumstances. In fact, the Section 404(c) regulations explicitly recognize EPA's authority to take actions pursuant to Section 404(c) in advance of and/or in the absence of a permit application (40 CFR §231.1(a)).

Mr. Mattera's response included discussion of an ongoing analysis of water supply issues. The letter stated that the study would focus on the long-range need for the Big River project and that State decisions regarding the proposed impoundment would be assessed in light of the findings of the study. As presented in the administrative record, the water supply analysis mentioned in Mr. Mattera's letter is designed to address State-wide water supply issues and will not specifically address the Big River proposal.

Preliminary review of the information in the Regional administrative record, the draft reports available from the State water supply study at that time (which have been included in the administrative record), and the overall scope of work of that study, led EPA to conclude that a deferral was not necessary and would not provide significantly better information on which to base this Final Determination. EPA further determined that the Agency had a responsibility to review the Regional Recommended Determination and render a final Agency decision in as brief a period as reasonable.

Based on these findings, EPA decided that deferral of final action on the Recommended Determination would be inappropriate.

Therefore, review of Mr. Mattera's letter, in light of preliminary evaluation of the Recommended Determination, convinced EPA Headquarters that the issues raised by Mr. Mattera which were relevant to a Final Determination under Section 404(c) could be adequately addressed during review of the Recommended Determination and administrative record for the Big River project.

The Conservation Law Foundation (CLF), the Audubon Society of Rhode Island (Audubon) and the National Wildlife Federation (NWF) requested a meeting with the Assistant Administrator for Water to discuss their concerns over EPA Headquarters' review of the Regional Recommended Determination. This meeting was held on December 22, 1989. Issues raised by the representatives of NWF, Audubon and CLF included: their support for the Regional Recommended Determination; their support for prompt completion of the Final Determination; their belief in the adequacy of the Recommended Determination and administrative record; their doubt regarding the project's compliance with the Section 404(b)(1) Guidelines; and consideration of the State-wide water supply study.

III. NEW INFORMATION

Subsequent to transmittal of the Regional Recommended Determination to EPA Headquarters, information which EPA believes is relevant to the Final Determination on the Big River project became available to Region I and was forwarded to EPA Headquarters. The information contained in these reports was not available for comment during the public review period for the Proposed Determination. However, as discussed below, this information merely confirms the accuracy of the administrative record supporting the Region's conclusions regarding the environmental impacts of the Big River project, its need and the availability of alternatives. Since the new information is not being relied upon to alter the Agency's determination but is corroborative of other information that was subject to public review and comment during the Regional stages of the Section 404(c) process, EPA determined that additional public input was not necessary. The information includes: interim results of a study reviewing measurements of the safe yield of Scituate Reservoir; new measurements of the total wetland acreage within the area outlined by the proposed Big River impoundment; and draft reports developed in the State's review of water supply. A brief description of the information and its relevance to this Final Determination is presented below.

A. Safe yield of the Scituate Reservoir.

In evaluating the water supply capacity of existing sources in the region of Rhode Island to be served by the proposed Big River Reservoir, previous analyses have incorporated various estimates of the available safe yield of existing supplies in Scituate Reservoir. In reaching particular findings contained in the Recommended Determination, EPA Region I relied upon approximations of safe yield for Scituate Reservoir based on estimates determined by the Providence Water Supply Board (pages 51-53 of the Recommended Determination and pages 7-9 of Appendix III of the Recommended Determination). The safe yield figure for the Scituate Reservoir system used in the Recommended Determination is 89.3 million gallons per day.

Preliminary review and analysis of the safe yield measurements for the Scituate Reservoir prepared by consultants for the Providence Water Supply Board and obtained by EPA Region I since transmittal of the Recommended Determination to EPA Headquarters confirms previous estimates of the Board. While inquiries by EPA Region I found that the contractor's review has not yet been finalized, the preliminary safe yield figure agrees with estimates in the administrative record and supports the relevant sections of the Recommended Determination.

B. Updated information on wetland acreage.

In the preparation of the Recommended Determination, EPA Region I utilized measurement data on general wetland acreage and type within the Big River watershed and proposed impoundment area, concluding that 575 acres of wetlands exist within the proposed impoundment boundaries. The data for this figure are based on evaluation of aerial photography and field checking, both performed at the University of Rhode Island by students under the direction of Dr. Frank Golet, Associate Professor of Natural Resource Science, Department of Forestry and Wildlife. The acreage of wetlands predicted by the University of Rhode Island study to be impacted by the proposed impoundment coincides closely with earlier estimates by the Corps of Engineers of wetlands within the impoundment area. Wetland acreage and type within the subject area are summarized in Figure 5 of the Recommended Determination.

For the purposes of this Final Determination, EPA Headquarters relied upon the acreage of wetland loss used in the Recommended Determination. It should be noted, however, that in January of 1990, EPA Region I received a student report, prepared for a class taught at the University of Rhode Island, which estimates that construction of the proposed Big River impoundment would result in the direct loss of approximately 794 acres of wetlands. Preliminary review by EPA Region I of the data used in this analysis predicted that the wetland loss would be somewhat larger, approximately 820 acres. The baseline acreage data used in the analysis was not available for review in this Final Determination and as such, conclusions regarding the validity of these new

figures would be premature and are not considered applicable for the purposes of this Final Determination.

C. Draft Reports: Water Supply Analysis for the State of Rhode Island.

In addition to reviewing the environmental impacts of the proposed Big River impoundment, EPA Region I examined the avoidability of those impacts based upon the overall project purpose and need, as well as practicable alternatives which satisfy the basic project purpose and need. As noted previously, the project as proposed by the Corps had as one of its purposes construction of an impoundment which could serve as a water supply reservoir. As proposed by the State, the Big River project would have as its sole purpose creation of a water supply for a given region of Rhode Island. In reviewing the avoidability of the project impacts, the Recommended Determination evaluates factors such as legitimate need for water supply based upon population projections and per capita consumption of water for the subject area (pages 50-53 of the Recommended Determination and Appendix III of the Recommended Determination). As noted in the Recommended Determination, EPA Region I concluded that previous predictions of water supply deficits in the area which would be served by the proposed Big River impoundment were imprecise and did not reflect available information.

As noted in the Recommended Determination, the Governor of Rhode Island has formed a special task force known as the Water Resources Coordinating Council (WRCC) and has charged this group with reviewing Rhode Island's State-wide water supply needs and assessing various structural and non-structural alternatives which could satisfy anticipated unmet need. In order to respond to this charge, the task force contracted with Arthur D. Little, Inc., to prepare reports addressing baseline water use, water demand management, water supply and supply management, forecast of water use and unmet needs, and identification and analysis of alternatives. After consideration of these reports the WRCC will prepare recommendations for State actions regarding water supply. Currently, draft reports are publicly available on all topics except alternatives. It should be noted that the reports are in draft and subject to further review and revision. Additionally, the reports are designed to address water supply needs State-wide and therefore do not, at least in their present draft format, specifically consider the proposed Big River impoundment.

Although the available water supply analysis reports are currently in draft form, EPA determined that it would be useful to review the information presented in the reports for consistency with assumptions used in preparing the findings contained in the Recommended Determination. To help accomplish this task, EPA contracted with Dr. John Boland to examine the Arthur D. Little reports and compare them to results of the EPA Regional analysis. Dr. Boland's February 9, 1990, letter concluded that

overall, the draft water supply analyses available as of that date did not contradict EPA Region I analysis or refute conclusions in the Recommended Determination.

EPA Headquarters also reviewed the draft reports independently in preparation of this Final Determination and concluded that the draft water supply analyses were consistent with the bases for findings presented in the Recommended Determination. In many instances, such as population projections and water use projections, the new analysis indicated that the Recommended Determination may have even over-estimated the need for additional water supply.

IV. FINDINGS AND CONCLUSIONS

This Final Determination under Section 404(c) of the Clean Water Act addresses unacceptable adverse effects to wildlife habitat and recreation areas. The Section 404(c) regulations define an unacceptable adverse effect as an impact on an aquatic or wetland ecosystem that is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. Section 231.2(e) of the Section 404(c) regulations states that the evaluation of the unacceptability of such impacts should consider relevant portions of the Section 404(b)(1) Guidelines. The relevant portions of the Guidelines include consideration of practicable alternatives to the proposed project which would have less adverse impact on the aquatic ecosystem (40 CFR §230.10(a)). Based upon the substantial environmental effects of the proposed project and the availability of less damaging practicable alternatives, EPA finds that the project as proposed would result in significant loss of wildlife habitat and recreation areas.

The Recommended Determination and the administrative record form the basis for EPA Headquarters' conclusion that the area which would be directly impacted by completion of the proposed Big River Dam and Reservoir contains exceptional and diverse natural wetland and free flowing aquatic systems. The large, relatively undisturbed area provides habitat for an abundant and complex assemblage of wildlife species. The administrative record supports the findings of the Recommended Determination that the subject area currently supports important habitat for a range of resident and transient species of wildlife which depend upon the area's natural aquatic systems for all or significant portions of their life cycle or which thrive in a natural habitat composed of upland-terrestrial, open water, and emergent, scrub-shrub and forested wetland ecosystems.

In addition to direct loss of wildlife habitat associated with implementation and operation of the proposed impoundment, the administrative record confirms that the proposed project would alter both surface and groundwater flow out of the Big River system. The administrative record supports the conclusion that the Big River water supply impoundment, if operated as proposed, would reduce substantially the quantity

of water that currently flows into the Flat River Reservoir and South Pawtuxet River and thus would adversely impact downstream aquatic habitats. Additionally, proposed placement of a slurry wall in the area of Division Road to prevent groundwater leakage from the proposed reservoir would interrupt normal groundwater flows that contribute to the water levels in Mishnock lake and maintain forested wetlands in Mishnock swamp. While these secondary, indirect impacts would adversely affect aquatic habitats outside of the impoundment site, the effects are predicted to be of similar magnitude to losses within the impoundment area. Finally, it should be noted that changes in downstream flow resulting from implementation of the proposed Big River project would have a clear potential for adversely affecting water quality in downstream areas of Flat River Reservoir and the South Pawtuxet River.

The administrative record indicates that the Big River management area, including the site of the proposed impoundment, is utilized by the public for a range of consumptive recreational activities such as fishing and hunting as well as non-consumptive uses such as hiking, bird watching, swimming and canoeing. Although the area does not experience significant recreational use compared to some areas which actively encourage recreational activities, such as Flat River Reservoir, the area provides relatively unique opportunities for cold water fishing and other activities dependent upon free flowing stream systems as well as activities dependent upon accessible large scale environments. The proposed reservoir's area along with the remainder of the Big River management area comprise a substantial portion of the natural open space in the State of Rhode Island.

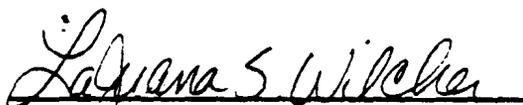
Under both the Corps and State proposals, the primary purpose of the Big River project is potable water supply. Because of current State policies limiting the type of use for water supply facilities, and the restricted access that usually accompanies a water supply reservoir, it is likely that many if not all recreational opportunities currently available in the proposed reservoir area would be prohibited both in the reservoir pool and in areas surrounding the impoundment. Even if restrictions were changed to allow particular recreational activities, as proposed, construction of the Big River Reservoir would significantly alter the present recreational environment in the proposed impoundment area. Because terrestrial and relatively shallow wetland and flowing stream environments would be replaced with deeper, static reservoir waters, recreational activities, such as stream fishing or bird watching, which are carried out on foot, would be lost within the impoundment area. Other recreational activities within the impoundment would be limited to those which can be accomplished from a boat or from the reservoir shore. In addition, loss of the terrestrial and wetland wildlife habitat would destroy or reduce the area's current capacity to support those species which are the object of activities such as bird watching and hunting.

EPA also evaluated the avoidability of impacts associated with the proposed project through examination of the underlying assumptions and rationale on which the project rests. The administrative record indicates that should the need arise for additional water supply in the area which would be served by the Big River proposal, practicable alternatives which are less damaging to the environment are available to satisfy that need. The administrative record suggests that significant potential sources of potable water, from both conventional and non-conventional sources, have not been adequately explored. Alternatives such as improved yield of present surface water supplies and proper use of available groundwater reserves are potential additional sources of potable water supply which could supplement available sources. However, the administrative record supports the conclusion that projected water demand is highly unlikely to exceed supply in the near future and, with reasonable demand management mechanisms, it is unlikely to exceed supply over the long term. As stated previously, this finding is supported by preliminary reports prepared by consultants for the State Water Resources Coordinating Council. The administrative record suggests that population growth has stayed significantly below levels previously predicted and both residential and industrial water consumption have exhibited declines over the recent past. In addition, the administrative record establishes that non-structural alternatives to construction of an impoundment, such as altered pricing policies, long-term water conservation strategies and drought management, hold substantial promise in terms of demand management capable of further reducing the need for large scale impoundment projects.

Review of the Recommended Determination and the administrative record confirms that construction of the proposed water supply dam and reservoir on Big River would result in the direct and significant loss of an area that provides important wildlife habitat and recreational opportunity. Additionally, implementation of the proposed reservoir project would adversely impact valuable aquatic systems associated with surface and groundwater flow from the subject area and could exacerbate water quality problems downstream of the Big River area. Further, the record confirms that these adverse impacts are avoidable. The administrative record supports the finding in the Recommended Determination that there are practicable, less environmentally damaging alternatives that would address projected water supply deficits, if any, for the area which would be served by the proposed Big River Reservoir. The record also demonstrates that the basis for previous estimates of water supply deficit for the region which would be served by the Big River proposal were incorrect and that water supply deficits are not likely to occur over the long term. EPA concludes that the direct and indirect environmental impacts associated with the proposed Big River project would be

profound and are avoidable and constitute unacceptable adverse effects to wildlife habitat and recreation areas within the meaning of Section 404(c).¹

This Section 404(c) Final Determination therefore affirms the Regional Recommended Determination and prohibits the designation of waters of the United States including Big River, Mishnock River and their tributaries and adjacent wetlands as discharge sites for dredged or fill material for the purpose of creating the Big River reservoir as proposed by the Corps of Engineers 1981 Environmental Impact Statement and as proposed by the Rhode Island Water Resources Board. EPA's Section 404(c) action is based upon the adverse impacts associated with construction of the Big River dam and reservoir and the avoidability of those impacts. Accordingly, this Final Determination does not pertain to filling activities for purposes other than the project as proposed, or to proposed filling activities in other waters of the United States within the described area. Other proposals involving the discharge of dredged or fill material in the waters of the United States at issue will be evaluated on their merits within the Section 404 regulatory program.


LaJuana S. Wilcher, Assistant
Administrator for Water

March 1, 1990

¹ EPA Headquarters' conclusion that the adverse impacts of this project are unacceptable rests on consideration of the significance of the impacts in the context of their avoidability. Therefore, this decision need not, and does not, reach the question of whether such impacts would still be unacceptable if there were no other practicable, environmentally less damaging alternatives to meet legitimate public water supply needs.