Reconnaissance Report

JOHN H. KERR DAM AND RESERVOIR
VIRGINIA AND NORTH CAROLINA
(SECTION 216)

Lower Roanoke River

U.S. Army Corps of Engineers
Wilmington District

March 2001

1. STUDY AUTHORITY.

The review of the John H. Kerr Dam and Reservoir, VA and NC, is authorized under the provisions of Section 216 of Public Law 91-611, the River and Harbor and Flood Control Act of 1970, which states:

"The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significantly changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest."

In July 1996 an Initial Appraisal Report for John H. Kerr Dam and Reservoir was completed by the Wilmington District and the District's recommendation requested authority to initiate a new reconnaissance study under Section 216 authority to address downstream environmental resource concerns in the lower Roanoke River. In November 1996 the South Atlantic Division approved the District's recommendation and directed the District to follow normal budgetary procedures to request funding for a new study start. The District complied with this recommendation. However, funding was not received until fiscal year 2000, when the District received a Congressional add for initiating the reconnaissance study.

2. STUDY PURPOSE.

The purpose of this study is to identify whether there is a Federal interest in modifying the structures or the operation at the John H. Kerr Dam and Reservoir, for the purposes

of improving the quality of the environment in the overall public interest. The study will determine whether to proceed into a feasibility study, based on a preliminary appraisal of the Federal interest and the consistency of potential solutions with current policies and budgetary priorities.

3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICTS.

The dam is located on the Roanoke River, about 178.7 river-miles above the mouth. It is in Mecklenburg County, Virginia, 20.3 miles downstream from Clarksville, Virginia, 18 miles upstream from the Virginia-North Carolina State line, and 80 air-miles southwest of Richmond, Virginia. The area of inundation at the top of the gate elevation for the reservoir, extends upstream on the Roanoke River 56 miles and on the Dan River 34 miles. The project was completed in 1952. Authorized project purposes are flood control, hydroelectric power, recreation, water supply, low flow augmentation, and fish and wildlife.

Kerr Reservoir is a significant regional resource. It provides quality natural resource-based recreation for area residents and a desirable outdoor experience for more than 2 million visitors a year. It provides municipal and industrial water supply, wastewater assimilation, and enhanced farming and forestry opportunities. The lower Roanoke River Basin below John H. Kerr Dam and Reservoir is one of the finest remaining river swamp forest ecosystems within the eastern United States. These bottomland hardwood forests, uplands, and streams provide a high quality habitat for fish, wildlife and waterfowl.

The study area includes the John H. Kerr Dam and Reservoir and the Roanoke River Basin beginning at the dam and proceeding downstream to the Albemarle Sound. The study area is located in the following Virginia Counties: Charlotte; Halifax; Mecklenburg; and Brunswick, and the following North Carolina Counties: Granville; Vance; Warren; Halifax; Northampton; Bertie; Martin; and Washington. Furthermore, if any operational changes are proposed for the Kerr project, then the study area will have to be expanded to include the Philpott Reservoir as both the Kerr and Philpott projects are operated as a single system. The counties in the study area would then also include in Virginia: Patrick, Franklin, Henry, and Pittsylvania and in North Carolina: Rockingham, and Caswell.

The study area is located in the following Congressional Districts: Virginia 4th and 5th and the North Carolina 1st and 3rd.

4. DISCUSSION OF PRIOR STUDIES, REPORTS, AND EXISTING WATER PROJECTS.

a. Corps of Engineers Reports. Prior studies and reports of conditions in the watershed by the Corps of Engineers are discussed below:

(1) Feasibility Report on Investigation of Abandonment of Island Creek Pumping Station. Wilmington District, dated 1967. This feasibility study evaluated the continued operation of the Island Creek Pumping Station. Abandonment and rehabilitation were considered. The study indicated that continued operation of the facility was no longer needed.

(2) Reconnaissance Report on John H. Kerr Dam and Reservoir, Virginia and North Carolina (Section 216, Public Law 91-611). Wilmington District, dated 1985. This reconnaissance study was limited to modification of the structure and the operation of the project. The study recommended that no modifications of the John H. Kerr Dam and Reservoir or its present operating plan for flood control, hydropower or low-flow regulation be undertaken at that time.

(3) Initial Appraisal Report of Island Creek Dam and Pumping Station (Section 216, Public Law 91-611). Wilmington District, dated 1992. This initial appraisal report recommended that a reconnaissance study be conducted to evaluate the abandonment of the Island Creek Pumping Station.

(4) Reconnaissance Report John H. Kerr Dam and Reservoir Virginia and North Carolina - Island Creek Pumping Station (Section 216). Wilmington District, dated April 1997. This reconnaissance report, prepared for the purpose of evaluating the Island Creek Pumping Station, recommended no further study of abandonment of the pumping station. Furthermore, the report recommended a major rehabilitation study to define the need for rehabilitation of the Island Creek Pumping Station.

b. FERC Relicensing Reports. There are a number of reports containing information about the John H. Kerr Dam and Reservoir, the two downstream non-Federal hydropower reservoirs at Lake Gaston and Roanoke Rapids Lake, which are operated by North Carolina Power, and environmental conditions on the lower Roanoke River.

The Wilmington District was requested by the Federal Energy Regulatory Commission (FERC) to participate in the development of an Applicant Prepared Environmental Assessment (APEA) for relicensing Lake Gaston and Roanoke Rapids Lake Hydropower projects. These two projects are operated to help meet daily peak electrical demands. The John H. Kerr Dam and Reservoir, Lake Gaston and Roanoke Rapids Lake projects operate cooperatively generating power, controlling flooding, and ensuring adequate downstream flows. The FERC request was made in recognition that the John H. Kerr Dam and Reservoir is the controlling element for the lower Roanoke River. The FERC relicensing study is being conducted by North Carolina Power, now known as Dominion Generation and is scheduled for completion in 2001. The current FERC license for the project expires on January 31, 2001.

In order to satisfy the relicensing requirements, North Carolina Power, state and Federal agencies and the nature conservancy, implemented a program of studies to evaluate the impact of operational changes on downstream resources. Most of these studies are

directed at the lower Roanoke River and are associated with flow releases from the upstream reservoirs and the effects these releases have, or could have, on aquatic habitat, fisheries, recreation and riparian habitat and water quality. The North Carolina Power study program includes the development of a reservoir operations model, a downstream flow model, water quality sampling, and terrestrial habitat inventories. The North Carolina Power studies are limited to the evaluation of impacts associated with its hydropower peaking process, over which it has control. The North Carolina Power studies are expected to provide valuable data for the feasibility phase of the John H. Kerr Dam and Reservoir study. These studies are comprehensive and should provide much of the baseline data regarding environmental resources downstream of the John H. Kerr Dam and Reservoir. However, major changes in downstream resources can only be achieved through hydrologic modifications, which include possible operational changes for the John H. Kerr Dam and Reservoir and possible reallocation of storage. Some additional baseline studies will be required for John H. Kerr Dam and Reservoir and for downstream areas beyond the influence of the operation of Dominion Generation's two impoundments. Some of the more pertinent reports prepared in preparation for relicensing of the Roanoke Rapids Lake and Lake Gaston Hydropower Projects include:

(1) Relicensing First Stage Consultation Package for Major Project - Roanoke Rapids Lake and Lake Gaston Hydropower Project. FERC Project No. 2009. North Carolina Power. March 1995. Consultation package submitted to FERC for a new license for the Roanoke Rapids Lake and Lake Gaston Hydropower Project.

(2) Relicensing Study Plans for Major Project - Roanoke Rapids Lake and Lake Gaston Hydropower Project. FERC Project No. 2009. North Carolina Power. January 1996. Study plans submitted to FERC for a new license for the Roanoke Rapids Lake and Lake Gaston Hydropower Project.

(3) Roanoke Rapids Lake and Lake Gaston Hydropower Project. Water Quality Year-End Report. North Carolina Power, January 1997. Report prepared to document water quality in Lake Gaston and Roanoke Rapids Lake from 1994 through 1996.

(4) Roanoke Rapids Lake and Lake Gaston Hydropower Project. Terrestrial Resources Year-End Report. North Carolina Power, January 1997. Report prepared to document terrestrial resources around Roanoke Rapids Lake and Lake Gaston.

(5) Roanoke Rapids Lake and Lake Gaston Hydropower Project Recreational Resources Year-End Report. North Carolina Power, January 1997. Report prepared to document recreational resources around Roanoke Rapids Lake and Lake Gaston.

(6) Roanoke Rapids Lake and Lake Gaston Hydropower Project Recreational Resources Year-End Report. North Carolina Power, January 1997. Report prepared to document land management and aesthetic resources around Roanoke Rapids Lake and Lake Gaston.

(7) Aquatic Resources of Lake Gaston and Roanoke Rapids Lake Updated Version of 1996 Year-End Report. Prepared for North Carolina Power, October 1997. Roanoke Rapids Lake and Lake Gaston Hydropower Project, FERC No. 2009. Report prepared to document the results of the studies of aquatic resources in Lake Gaston and Roanoke Rapids Lake.

(8) Draft Application for Licensing for Major Project-Existing Dam Roanoke Rapids Lake and Lake Gaston Hydropower Project. FERC Project No. 2009. North Carolina Power, January 28, 1999. Application package submitted to FERC for a new license for the Roanoke Rapids Lake and Lake Gaston Hydropower Project.

(9) Draft Applicant Prepared Environmental Assessment for Licensing for Major Project-Existing Dam Roanoke Rapids Lake and Lake Gaston Hydropower Project. FERC Project No. 2009. North Carolina Power, January 28, 1999. Draft Environmental Assessment prepared in compliance with the National Environmental Policy Act (NEPA). The draft EA was submitted as part of the application package to FERC for a new license for the Roanoke Rapids Lake and Lake Gaston Hydropower Project.

(10) Appendices to the Draft Applicant Prepared Environmental Assessment for Licensing for Major Project-Existing Dam Roanoke Rapids Lake and Lake Gaston Hydropower Project. FERC Project No. 2009. North Carolina Power, January 28, 1999. Comments and responses on the preliminary draft Environmental Assessment and draft license application prepared as part of the application package to FERC for a new license for the Roanoke Rapids Lake and Lake Gaston Hydropower Project.

c. Other Studies and Reports. Due to the expansive federal and state land holdings in the Roanoke River Basin and the high quality of the natural resources in the area, there is ongoing interest in the environmental conditions in the Roanoke River Basin. These studies and reports provide information about the wildlife, the wetlands, and the hydrology of the area, and will supplement information obtained in the scoping process. Attachment 4 is a preliminary list of known studies that was prepared by the Nature Conservancy. Some of the more pertinent studies and reports are discussed below:

(1) Proceedings of the Roanoke River Wildlife Management Workshop. Dated August 10-12, 1993. Sponsored by: U.S. Fish and Wildlife Service, NC Wildlife Resources Commission, and The Nature Conservancy. Abstracts of papers presented at the workshop indicate an understanding of the Roanoke River system at the landscape level and presented the information on the wildlife, the wetlands, and the hydrology of the area.

(2) A Technical Review of the North Carolina Striped Bass Study. Thomas M. Leahy, III, P.E. Department of Public Utilities, Virginia Beach, Virginia, October 21, 1993. A report prepared in rebuttal of findings contained in the 1991 Roanoke River Water Flow Committee Report (NMFS-SEFC-216).

(3) Evaluation of Roanoke River Betterment Plan to Maintain Adequate DO Levels. Weyerhaeuser Southern Environmental Field Station, New Bern, North Carolina, February 18, 1997. Study designed to characterize dissolved oxygen (DO) and biochemical oxygen demand (BOD) concentrations in the Roanoke River for different release rates at Roanoke Rapids Lake during the transition from flood control to power generation, and to characterize tributary inflows and water quality as river stage recedes. The study was conducted following Hurricane Fran. The study was designed to illustrate the linkage between hydrology and water quality for the lower Roanoke River.

(4) Roanoke River Water Flow Committee Report. National Oceanic and Atmospheric Administration Memorandum NMFS-SEFC-216, February 1989. An interagency committee report recommending a water flow regime for the Roanoke River, North Carolina. The flow regime is designed to benefit anadromous striped bass and other downstream resources and users.

(5) Roanoke River Water Flow Committee. National Oceanic and Atmospheric Administration Memorandum NMFS-SEFC-216, April 1990. An interagency committee report recommending a water flow regime for the Roanoke River, North Carolina. The flow regime is designed to benefit anadromous striped bass and other downstream resources and users.

(6) Roanoke River Water Flow Committee. National Oceanic and Atmospheric Administration Memorandum NMFS-SEFC-216, April 1990. Albemarle-Pamlico Estuarine Study, Raleigh, NC. Project No. APES 93-18. An interagency committee report documenting the water flow regime for the Roanoke River over a four-year period (1989-1992). This report contains information pertaining to habitat use of overwintering songbird and woodpecker communities. It also contains information on aquatic microinvertebrate ecology, hydrology, public lands, heavy metal contaminants, Roanoke River (flow) time travel studies, relative abundance of finfish species other than stripped bass, and susceptibility of larval fishes to entrainment by water withdrawal pipes.

(7) Evaluation of Effects of Fishing on Albemarle/Roanoke Striped Bass Populations. Prepared for the City of Virginia Beach by Richkus and Jacobson, Dec. 1990. This report presents an investigation of the potential role of fishing in the decline of striped bass stock in the Albemarle Sound and the Roanoke River estuarine system using statistical and modeling techniques

(8) An Interim Report on Flows in the lower Roanoke River and Water Quality and Hydrodynamics in Albemarle Sound, North Carolina. U.S. Geological Survey, Open-File Report 92-123, October 1989-April 1991. A three year study to: (1) develop a model for computing flows in the lower 67 miles of the Roanoke River; (2) characterize water quality conditions in Albemarle Sound; and (3) describe the circulation regime in Albemarle Sound.

5. PLAN FORMULATION.

To assist the Corps of Engineers in providing an assessment of water and related land resource problems and opportunities specific to the study area, the State of North Carolina hosted a meeting on January 31, 2000, in Raleigh, NC. The meeting participants included Federal, State, and Local agencies, and private interest groups. This meeting involved a discussion of the study process, the role of Virginia and North Carolina hydropower projects in the study, and provided an opportunity for each participant to identify problems and opportunities specific to the study area. The State requested that a thorough scoping process be developed to obtain input from those individuals and groups affected by the operation of the John H. Kerr Dam and Reservoir thus resulting in the public listening sessions. It was from all of these meetings that comments were received and considered for the development of this report and will be considered for the future John H. Kerr 216 Feasibility Study.

In response to the State of North Carolina request, a scoping letter was prepared and coordinated with the State. The letter was mailed on March 13, 2000, to known parties with an interest in the operational aspects of the John H. Kerr Dam and Reservoir and the lower Roanoke River Basin. The recipients included municipalities, counties, State and Federal agencies, environmental and business organizations, and elected officials. The letter requested written comments to help in the identification of significant water resource issues and concerns relative to John H. Kerr Dam and Reservoir and the lower Roanoke River Basin. The comment period ended April 28, 2000.

In addition to the letter, the State of North Carolina requested that three informational meetings be held at the following locations and dates:

Roanoke Rapids, NC	April 4, 2000
Clarksville, VA	April 5, 2000
Williamston, NC	April 6, 2000

These meetings were open to the public and served as an additional means to gather comments from the public. A wide range of interested parties attended these meetings. Concerns associated with the operation of John H. Kerr Dam and Reservoir were identified based on comments received from the public. These concerns were then grouped into general categories of concern. These categories and the number of individual responses by category are provided below:

Categories Ranked Numerically by Number of Responses:

Category	# of Responses
Flood Control	68
Do Not Remove Dam(s)	61
Lake Levels	61
Environmental (fish, wildlife, forest wetlands)	59
Regional Economy	49
Recreation/Tourism	48
Other	43
Water Supply	36
Hydropower	26
Water Quality	14
John H. Kerr Shoreline Issues	9
John H. Kerr Masterplan	8
Agriculture	7
Drought Management	5
Erosion	4
Forestry	1

Statements Expressed at the Roanoke Rapids, North Carolina, Meeting. Concerns at the Roanoke Rapids meeting included the following: Do not remove the dam; flood control; water supply; hydropower; and regional economy.

Statements Expressed at the Clarksville, Virginia, Meeting. Concerns at the Clarksville meeting included the following: lake levels; John H. Kerr shoreline issues; John H. Kerr Masterplan; regional economy; recreation; tourism; and forestry.

Statements Expressed at the Williamston, North Carolina, Meeting. Concerns at the Williamston meeting included the following: hydrologic changes and fluctuating water levels; flow management; agriculture; flood control; environmental (fish, wildlife, forest, and wetlands); water quality; recreation; tourism; and forestry.

Problem identification is based on the above concerns obtained in the scoping process and the environmental resource concerns identified in the 1996 Initial Appraisal Report. The concerns identified in the Initial Appraisal Report included: (1) water quality; (2) wetlands; (3) endangered and threatened species; (4) cultural and historic resources; (5) aesthetic and scenic amenities; and (6) fish and wildlife habitats. A discussion of the identified problems is presented below:

a. Identified Problems.

(1) Existing Conditions - John H. Kerr Dam and Reservoir operation is predicated on a scheduled and cyclical guide curve. The guide curve elevation is the

targeted lake level at which the water storage in the reservoir best serves the current project purposes. A discussion of existing conditions follows:

(a) Flood Control – The flood control storage is located between elevations 300 and 320 feet mean sea level (msl). During flood conditions, the water control plan dictates a discharge flow regime at Roanoke Rapids Dam dependent on the Kerr Reservoir level. For Kerr Reservoir levels below 300 feet, msl, discharges are typically limited to 8,000 cubic feet per second (cfs) at Roanoke Rapids Dam. However, water releases may be increased up to 13,700 cubic feet per second (cfs) during the spawning of the striped bass in the spring months. For reservoir levels between 300 and 312 feet, msl, water releases may be increased to 20,000 cfs. For reservoir levels between 312 and 315 feet, msl, water releases may be increased to 25,000 cfs. For reservoir levels between 315 and 320 feet, msl, water releases may be increased to 35,000 cfs. Historically, the turbines at John H. Kerr Dam and Reservoir could discharge about 35,000 cfs of water. Currently turbine discharges are limited to a maximum of 30,000 to 31,000 cfs due the age of components of the turbine, shaft and generator assembly. For additional discharges, the tainter gates (no power generation) are sequentially opened to increase the discharge rate. After flooding conditions recede and the lake level drops, a "ramped down" process begins and generally follows the "ramped up" flow regime in the reverse order.

Downstream effects of Flood Operation – Parts of the lower Roanoke River flood plain can typically be characterized as broad and flat. A flow of 8,000 cfs is a typical lower Roanoke River channel capacity. Therefore, flood releases greater than 8,000 cfs halt forestry operations, and adversely affect hunting and fishing and also affect the riparian ecosystem including the vegetative and wildlife communities in the lower Roanoke River Basin. Flood releases greater than 20,000 cfs encroach on farmland and flood some state-maintained farm access roads. Flood releases greater than 35,000 cfs cause minor damage to urban and industrial areas of the cities of Roanoke Rapids and Weldon in addition to increased impacts to crop lands, timber, animal habitat and roadways.

The controlled reduction of natural flooding by Kerr Dam results in longer periods of controlled and lesser flood flows downstream. Problems caused by the lesser flood flows of a long duration can include interruption of economic activities such as forestry and agriculture, and downstream ecosystem problems. Controlled flood releases can also affect the timing of critical annual environmental activities such as breeding.

Upstream effects of Flood Operation – Impacts to roadways begin whenever John H. Kerr Dam and Reservoir rises to or above 303 feet, msl or 3 feet above the flood control pool. With the increasing development at or near lake elevation 320-325 feet, msl, the potential for structural damage exists, including the potential hazards of chemical container damage or displacement, such as septic tanks or propane tanks, caused by high lake levels.

(b) Hydroelectric Power – John H. Kerr Dam and Reservoir has a dependable capacity of 225 megawatts. Hydropower is generated at Kerr Dam in accordance with contracts between the Southeastern Power Administration (SEPA) and Carolina Power and Light and Dominion Generation (Virginia/North Carolina Power Company). The contracts prescribe a minimum amount of hydropower to be generated weekly at Kerr and Philpott Dams and, also how additional power generated is distributed between the power companies. Complicating any water flow or operational issue with Kerr Dam is the Wilmington District's Philpott Project. The Kerr and Philpott projects are operated as a joint system with both projects producing hydropower independently at times and dependently at other times as a joint system during severe events at either project. The SEPA contracts allow the power companies to take additional power (overdraw) or less power (payback) according to their customer power demands within limits at any given time. In summary, determinations of power to be generated are made weekly by the Wilmington District. This determination of power available to be generated is then passed on to the Corps Division office in Atlanta, then to SEPA, then to the power companies and back to the Corps Wilmington office to close the loop. During non-flood and non-striped bass spawn periods, power generation at Kerr, Gaston and Roanoke Rapids Dams is fully determined by the power companies according to their needs as long as the FERC license minimum flows are met downstream of Roanoke Rapids and also as long as power contract overdraw limits are not exceeded. During flood events, the Wilmington District will determine the flows to be released from Roanoke Rapids Dam. However, this typically allows the power companies to continue "peaking" generation at Kerr Dam and Gaston Dam. Controlled flood releases can range from 20,000 cfs from Roanoke Rapids Dam during non-critical floods and up to 100 percent of the inflow coming into Kerr Reservoir during a very severe flood. During the striped bass spawn season, collaboration between the Wilmington District and the North Carolina Division of Inland Fisheries determines what flows are to be released from Roanoke Rapids Dam based upon inflows into Kerr Reservoir and the striped bass storage remaining in Kerr Reservoir. Again as with flooding, this typically allows the power companies to continue "peaking" generation at Kerr Dam and Gaston Dam. Peaking operations may have adverse affects on downstream fisheries resources. Finally, a small part of the power generated at Kerr Dam is used to meet the electric power needs of the Kerr project and the Island Creek Pumping Station. Typically, about 75 cubic feet per second of water is released daily through one of two small turbines (house units) to achieve these power needs.

(c) Recreation - Operation of John H. Kerr Dam and Reservoir for present recreation conditions is maximized without hampering flood control or hydropower operations. The first half of June, the guide curve descends to just below the bottom of the flood control pool or from lake elevation 302.0 to 299.5 feet, msl. Lake level control greatly affects commercial and recreation activities at the project. Currently there are 30 recreation areas on Kerr Reservoir with a total of 1,322 campsites, 228 picnic sites, and 38 boat ramps. The Corps of Engineers manages 12 of these areas and leases land to the State of North Carolina and the Commonwealth of Virginia to manage 15 other areas. There are 3 marina areas managed by private companies. There are also 15 quasi-public recreation areas under lease to various churches, civic, and scout

organizations. Twenty-six (26) wildlife management areas are located around the reservoir, which are used by hunters and nature enthusiasts. Visitors to these recreation sites average 2.9 to 3.5 million visitor days of recreation per year. The most popular recreation activities are fishing, boating, swimming, and camping, with personal water craft (jet skis) and tournament fishing uses significantly increasing and becoming controversial.

(d) Water Supply – Normally, there are no special operations required for water supply withdrawals. Currently, there are five local entities that have agreements for water supply and water storage rights in John H. Kerr Dam and Reservoir as long as storage space is available in the conservation pool between elevation 268 and 300 feet, msl. Currently, the allocated water supply storage in John H. Kerr Dam and Reservoir is 10,823 acre-feet of the available 50,000 acre-feet. The 10,823 acre-feet is further subdivided into: Virginia Beach -10,200 acre-feet, Virginia Department of Corrections - 23 acre-feet, and the Mecklenburg Cogeneration Limited Partnership - 600 acre-feet. The City of Clarksville, Virginia and Burlington Industries in Clarksville, Virginia withdraw a small amount of water annually (total of 3.8 mgd in 1999). Both Clarksville entities withdraw water without allocated storage in Kerr Reservoir in accordance with pre-project agreements. The City of Henderson, North Carolina currently has a water use contract which is in the process of being converted to a water storage agreement. Operation of Kerr Reservoir may influence the location of the salt wedge in the lower river and therefore may indirectly affect downstream water users.

(e) Water Quality – On an overall basis, the water quality of John H. Kerr Reservoir generally exceeds the water quality criteria (Stream Classification Standards) established by the Commonwealth of Virginia and the State of North Carolina. However, operations may affect water quality downstream including temperature, nutrient levels, and dissolved oxygen. During the warmer months, discharge waters may be cooler than the receiving waters. This may delay spawning in some fish species in the spring but also provides a thermal refuge for fish during the heat of the summer. During late summer and early fall, the dissolved oxygen content of generation and normal flood control releases can be low and has dropped below 1 mg/l, due to the combined effects of thermal stratification of the reservoir and turbine penstock intake location where dissolved oxygen is naturally low. These low dissolved oxygen conditions result in the degradation of aquatic habitat in Lake Gaston below John H. Kerr Dam and Reservoir. Limited investigations conducted by North Carolina Power from June through October of 1994 found that approximately 10 miles of upper Lake Gaston exhibited depressed dissolved oxygen levels as a result of generation and normal flood control releases. At John H. Kerr Dam and Reservoir, installation of TVA designed baffles on the runner cone completed in the spring of 2000 is expected to provide a significant improvement in dissolved oxygen conditions.

While John H. Kerr Dam and Reservoir release waters have a large effect on dissolved oxygen in the John H. Kerr Dam and Reservoir tailwater and Lake Gaston, these effects do not pass below Lake Gaston Dam. A low weir is located just upstream of Lake Gaston Dam which permits only the oxygenated surface waters to flow down stream.

Low dissolved oxygen levels have an adverse effect on the aquatic system, most noticeably in fish species. Decreased levels of dissolved oxygen cause fish species to become stressed and, sustained low dissolved oxygen levels can cause fish kills. John H. Kerr Dam and Reservoir tailwater provides a vast habitat for both cool water and warm water fisheries. A resident species, which is particularly susceptible to the effects of low dissolved oxygen and subsequent stress during the summer months, is striped bass.

Federal and State agencies have also expressed concern that there is a probable correlation between fish kills at the end of a flood operation of John H. Kerr Dam and drainage of side channels and back swamps that contain low dissolved oxygen into the main channel of the lower Roanoke River. Fish kills have included striped bass and other fish species and may have occurred as a consequence of flow decreases during the transition from flood releases to normal operation. The flow decreases have been documented to trap fish in isolated pools below the Roanoke Rapids Lake Dam and to cause rapid draining of low dissolved oxygen waters from side channels and back swamps which may result in a sudden and extreme loss in the Roanoke River downstream main stem dissolved oxygen levels. No fish kills have occurred since a modified, more gradual, flow transition between flood releases and normal operation was implemented.

(f) Drought Management - It is difficult to distinguish “normal” dry periods from severe droughts during the early stages. Below average rainfall and inflows over several weeks coupled with a low or falling pool elevation in John H. Kerr Reservoir are the leading indicators for initiation of drought action. When John H. Kerr Reservoir drops below elevation 293 feet, msl, the Drought Management Plan is activated. Steps for drought operation may include a reduction of the project's contractual turbine capacity, reducing the contractual minimum energy requirements and alerting affected individuals or organizations of current and forecast conditions. These actions conserve water in the reservoir and store water for meeting downstream low flow targets. The top of the hydropower penstock intakes are at elevation 268 feet, msl. Below this level which is below the conservation or power pool, all storage allocations are depleted, hydropower is reduced for “in-house” use only or discontinued altogether, and discharges are made through the sluice gates. Drought operations would be maintained until the lake elevation recovers and rises above 293 feet, msl. On 2 September 1999, the reservoir experienced its lowest level (292.44 feet, msl) during the recreation season from May to September under the current guide curve, which has been in use since 1975. This caused several negative effects on the public’s use of the reservoir, which in turn caused the local economy to suffer. Most boat ramps were unusable because they did not extend into the water. As the water level decreased many new navigation hazards were encountered. Private docks also became unusable.

(g) Fish and Wildlife Conservation – In agreement with the North Carolina Wildlife Resources Commission (NCWRC), from the first of April to the end of June, a ‘target flow’ goal was established below Roanoke Rapids Lake during the bass spawning season. The season starts with a ‘target flow’ of near 8,500 cfs and slowly tapers off to near 5,300 cfs by the end of June.

The lower Roanoke River Basin below John H. Kerr Dam and Reservoir is one of the finest remaining river swamp forest ecosystems within the eastern United States. These bottomland hardwood forests, uplands, and streams provide a high quality habitat for fish and wildlife. A significant portion of this habitat is in Federal ownership as USFWS Roanoke River Refuge. Magnitude, frequency and extent of flooding in these habitats are regulated by reservoir operation. These factors may affect associated vegetative and wildlife communities. John H. Kerr Reservoir and the Roanoke River provide a vast habitat for both cool water and warm water fisheries including such species as striped bass, largemouth bass, bluegill, pumpkinseed, green sunfish, yellow perch, and catfish. Non-game species include blueback herring, gizzard shad, carp, and suckers. The present extent of striped bass (and potentially other anadromous fish) spawning habitat is less than the historical extent, since these fish migrated upstream of Kerr Dam prior to construction under high flow conditions. The dam is also an impediment to fish movement between Kerr Reservoir and Lake Gaston downstream. Upstream passage is blocked and the only downstream movement is by way of the turbines, resulting in a high potential for mortality.

The following is a list of threatened (T) and endangered (E) species, that should be considered in the development of any proposed project modifications.

SPECIES	SCIENTIFIC NAME	STATUS
BIRDS		
Bald Eagle	(*Haliaeetus leucocephalis*)	T
Red-cockaded Woodpecker	*(Picoides borealis)*	E
PLANTS		
Smooth Coneflower	(*Echinacea laevigata*)	E
Harperella	(*Ptilimnium nodosum*)	E
FISH		
Roanoke Logperch	(*Percina rex*)	E
Short-nose Sturgeon	*(Acipenser brevirostrum)*	E
CLAMS		
Tar River Spiny Mussel	(*Elliptio steinstansana*)	E
Dwarf Wedge Mussel	(*Alasmidonta heterodon*)	E

The following list of "Candidate" (C2) species are not legally protected under the Act, and are not subject to any of its provisions, until they are formally proposed or listed as threatened and endangered. These species should be considered in the development of any proposed project modifications.

SPECIES	SCIENTIFIC NAME	STATUS
BIRDS		
Migrant Loggerhead Shrike	(*Lanius ludovicianus migrans*)	C2
Bachman's Sparrow	(*Aimophila aestivalis*)	C2
Henslow's Sparrow	(*Ammodramus henslowii*)	C2
CLAMS		
Atlantic Pigtoe	(*Fusconaia masoni*)	C2
Yellow Lampmussel	(*Lampsillis cariosa*)	C2
Green Floater	(*Lasmigona subviridis*)	C2
Yellow Lance (mussel)	(*Elliptio lanceolata*)	C2
PLANTS		
Heller's Trefoil	(*Lotus purshianus var. helleri*)	C2
Large-Flowered Barbara's Buttons	(*Marshallia grandiflora*)	C2
Serpentine Aster	(*Aster depauperatus*)	C2
Tall Larkspur	(*Delphinium exaltatum*)	C2

Other plant and animal species that would also be considered include those that are rare and/or declining, state listed, game and non-game, migratory, invasive and/or exotic, and important native plant and animal associations.

(h) Shoreline Management - Currently the shoreline use permits at John H. Kerr Dam and Reservoir are as follows: 2,221 docks, 693 buoys, 732 walkways, 330 utility lines (electric or water), and 2,056 vegetation modification areas. Approximately 248 miles (31%) of the 800-mile shoreline is zoned “limited development”, which allows shoreline use permits. At present, there have been approximately 180 subdivisions developed adjacent to these areas.

(i) Erosion and Siltation – From October 1951 to June 1997 the average rate of sediment deposition was 1,562 acre-feet per year (or 0.26 acre-feet-per year per square mile of drainage area, or one-half of the design sedimentation rate). Most of the sedimentation has occurred at the confluence of the Dan and Roanoke Rivers, where cross sections at the confluence have filled in with over 20 feet of sediments. Of the two river systems, the Roanoke River has experienced 66% of the total sediment increase or 47,356 acre-feet of sediment. The majority of sedimentation (54%) occurred between impoundment (1952) and the first sedimentation report (1976). Most of the shoreline erosion has been between the elevation of 300 – 320 (feet, msl) below the confluence of the Dan and Roanoke Rivers.

Currently about half (400 miles) of the reservoir shoreline experiences moderate to severe erosion. Most shoreline erosion occurs during flood events, coupled with high winds. Delays in lowering the reservoir level after floods further accelerate erosion. In 50-100 locations around the reservoir, the shoreline erosion has encroached (or almost encroached) on private land. Shoreline erosion has also damaged recreation sites. The

North Carolina Division of Parks and Recreation has spent approximately $2,000,000 in the past two years on erosion control measures in their parks at John H. Kerr Dam and Reservoir. Project operation may also effect downstream sediment dynamics and river bank stability.

(j) Aesthetic and Scenic Amenities - The aesthetic and scenic amenities of John H. Kerr Dam and Reservoir are exceptional especially in non-developed areas due to the natural forest cover. Comments from the public suggest that John H. Kerr Dam and Reservoir is a preferred destination (over Lake Gaston and Smith Mountain Lake) because of its scenic qualities. Development (i.e. boat docks and other permitted activities) and erosion detract from John H. Kerr Dam and Reservoir's scenic appeal.

(k) Cultural Resources - The primary non-recreational effect on cultural resources from project operation is erosion. In the past few years, archaeological sites above and below the dam have been found that have been seriously degraded by operation of the reservoir. These include Cemetery C-56, the Goode Cemetery and the Buggs Island Site.

The Goode Cemetery began operation sometime around 1840 as the burial ground of enslaved African-Americans. It continued in use until sometime around 1911, the year of the only marked burial. This cemetery was recently relocated, with forensic studies accomplished in the field. The cemetery contained 155 graves, and more graves are expected to be found within the general vicinity. It is not known how many graves have been lost to erosion.

The Buggs Island site is a Native American village located below the dam. The rapidly fluctuating lake level and the subsequent releases have taken a great toll on this site. The site is very valuable since it preserves a deeply buried record of village life, and may have been one of the last islands inhabited by Virginia's native people. Salvage excavations began at this site in 1998. To date nearly $350,000 has been expended on testing and initial data recovery of only the most threatened areas.

(2) Expected Future Conditions - A discussion of expected future conditions follows:

(a) Flood Control – One of the more controversial aspects of John H. Kerr Dam and Reservoir operations is flood control. Expected future conditions may very well be a repeat of historic or current conditions such as the 1995 fish kill below Roanoke Rapids Lake Dam, the 1998 El Nino natural disaster, and recent major hurricanes and floods. Questions and concerns from the public have become more frequent about the John H. Kerr Dam and Reservoir operation. A “betterment plan” of operation was informally adopted after the 1995 fish kill. It was noted that if the “betterment plan” had been used for the April 1987 flood, which produced the project record high level, this plan would have caused the lake elevation to rise above 320 feet, msl and flow over the spillway gates producing more aggravated flood conditions downstream. Current flood control operations using the “betterment plan” have not adversely impacted normal flood conditions thus far. However, concerns will arise when

conditions like the April 1987 flood re-occur in the future, as mentioned above. The current flood control operation is becoming more scrutinized by both upstream and downstream interests and questioned as to its effectiveness. Future changes in operations would have to be studied and modeled heavily. Ramifications of "beneficial changes" of one aspect of operation would most likely have adverse effects on another. For example delaying flood releases to accommodate downstream interests compounds upstream flooding conditions and erosion problems. Each alternative plan to be evaluated has benefits identified, but also may have a negative impact in other areas or to other users.

(b) Hydroelectric Power - Expected future conditions for hydroelectric power to include the rehabilitation of the John H. Kerr power units that is currently underway.

(c) Recreation – As crowded conditions at Jordan, Falls, and Gaston Lakes continue to worsen, it is expected that the future visitation at John H. Kerr Dam and Reservoir will increase considerably. Therefore, as the number of visitors increase, additional recreation facilities must be developed to meet the future demand. Plans are presently underway by the Corps of Engineers to develop a large day-use park; add more campsites to an existing park; provide bank fishing access areas; provide additions to some boat ramps; and develop a new marina site.

(d) Water Supply – Currently water supply storage exists in John H. Kerr Dam and Reservoir for re-allocation. The Army Corps of Engineers Division Commander may grant requests for water supply storage re-allocation of 499 acre-feet or less. For water supply requests not greater than 50,000 acre-feet, the Army Corps of Engineers Headquarters Commander has the authority to grant the request. Requests that exceed 50,000 acre-feet would require the approval of the Secretary of Army and/or Congress. There currently is, and will likely continue to be, heated competition for John H. Kerr Dam and Reservoir's water supply storage. Also, riparian rights and interbasin transfer will continue to be issues of concern in the expected future.

(e) Water Quality – Currently North Carolina Power's license with FERC stipulates a minimum water quality release from Roanoke Rapids Lake. Also, North Carolina Power is under a relicensing phase with FERC, which may change the water quality releases from their project. At John H. Kerr Dam and Reservoir, installation of TVA designed baffles on the runner cone completed in the spring of 2000 is expected to provide for a significant improvement in dissolved oxygen conditions. However, in the expected future, dissolved oxygen levels could continue to be below state standards in the John H. Kerr Dam and Reservoir tailwater during the summer months. No fish kills have occurred downstream of Roanoke Rapids Lake since a modified, more gradual flow transition between flood releases and normal operation was implemented. However, there exists a potential for future fish kills associated with extreme events during project operations.

(f) Drought Management – The drought management plan to date for John H. Kerr Dam and Reservoir has not been restudied. It may be beneficial to alert or convene a drought management team earlier in the drought cycle in order to maximize benefits with reduced resources. Updated detailed modeling may be needed to identify those criteria or conditions when drought management actions need to be started.

(g) Fish and Wildlife Conservation – The current agreement with North Carolina Wildlife Resources Commission (NCWRC) seems to be beneficial to the striped bass spawning endeavors. The present fish flow regime will not be altered until NCWRC decides such alterations are needed and a new agreement is developed. Despite future expected development pressures, the lower Roanoke River Basin below John H. Kerr Dam and Reservoir is expected to continue to provide high quality habitat for fish and wildlife. In the future condition, public land holdings are expected to expand and some of the listed threatened or endangered species may be delisted or their status changed. Also candidate species may be proposed for listing or dropped from further consideration.

(h) Shoreline Management - There will be continued pressure for future shoreline development.

(i) Erosion and Siltation – Sedimentation surveys in 1976 and 1997 show that John H. Kerr Dam and Reservoir had less sediment deposition than the predicted sedimentation rate. The design sedimentation rate was 0.50 acre-feet per year per square mile of drainage area. The 1976 and 1997 reports computed a sedimentation rate of 0.24 and 0.26 acre-feet per year per square mile of drainage area, respectively. This rate of sedimentation is expected to continue for future conditions. Also, the future expected deposition of sediment at the confluence of the Dan and Roanoke Rivers is of concern based on historic sediment rates.

(j) Aesthetic and Scenic Amenities - The aesthetic and scenic amenities of John H. Kerr Dam and Reservoir are exceptional, especially in non-developed areas due to the natural forest cover. Comments from the public suggest that John H. Kerr Dam and Reservoir is a preferred destination (over Lake Gaston and Smith Mountain Lake) because of its scenic qualities. Potential future development (i.e. boat docks and other permitted activities) and future erosion will detract from John H. Kerr Dam and Reservoir's scenic appeal. A masterplan update is scheduled for the near future to address these issues.

(k) Cultural Resources - The National Historic Preservation Act and other legislation require the Corps of Engineers to identify sites and mitigate damages attributable to project operations. This includes sites above and below the dam and sites located on or off of federally-owned lands or properties affected by the project. With expected future continued fluctuations of the lake level, the known near-shore sites will continue to be adversely affected by erosion. In addition, other sites, including historic cemeteries, are likely to be affected as erosion continues into the future. In the past year, two historic domestic sites have been found that require data recovery before

all or parts of the sites are washed into the lake. Investigations at these sites await funding. In order to identify sites at risk of erosion, surveys are needed that are aimed specifically at re-evaluating cemeteries and near-shore domestic sites. At those sites found to be at risk, data recovery needs to be implemented.

(3) Problems and Opportunities. Based on the Initial Appraisal Report and the Reconnaissance Phase scoping process, the goals of the 216 study are to evaluate problems and opportunities for possible improvements or enhancements at the John H. Kerr Dam and Reservoir. The improvements and enhancements may be related to: (1) hydropower, (2) hydrologic conditions in the lower Roanoke River basin, (3) flood control, (4) water supply, (5) water quality, (6) ecosystems in the lower Roanoke River basin, (7) recreation, (8) tourism, and (9) recommendations for future downstream land-use.

b. Alternative Plans. Alternative plans will address the concerns identified in the Initial Appraisal Report and the concerns identified in the Reconnaissance Phase scoping process. The alternative plans which may include: (1) operational change alternatives such as: (a) changes in flood control releases; (b) changes in guide curve levels; and (c) changes in hydropower release rates; and (2) re-allocation of storage alternatives such as: (a) re-allocation of storage within the conservation pool and (b) re-allocation of storage within the controlled flood storage pool; will be developed in more detail during the feasibility study. The feasibility study will also address the following items identified in the Initial Appraisal Report:

(1) Operations of John H. Kerr Reservoir and Dam

(a) Low flow augmentation
(b) Aeration/dilution
(c) Erosion/siltation
(d) Flooding
(e) Fish habitat
(f) Pool elevation stability
(g) Hydropower peaking

(2) Land-use

(a) Local zoning and future planning
(b) Urban growth and future development
(c) Topo; drainage ways
(d) Flood plains
(e) Wetlands (hydrologic units, adjacent-isolated, types, etc.)
(f) Vegetation
(g) Environmentally sensitive areas

(3) Hydrologic studies

(a) Hydrologic model
(b) Lag-times
(c) Impervious cover (past, existing, future)

(4) Water quality

(a) Water quality model
(b) Impact of operational changes on water quality

All inventories will be accomplished in the Geographic Information System (GIS). Specifically, all the data collected (inventories) will be organized in a manner suitable for numerical and spatial analysis of the lower Roanoke River flood plain system. This data, once organized on a GIS system, will allow compatible access to and sharing with other State and Federal agencies (NC CGIA), and serve as a long-term data archive.

c. Preliminary Evaluation of Alternatives. At this level of study, a detailed analysis of the benefits and costs of each alternative associated with (1) operational changes and (2) storage re-allocation at John H. Kerr Dam and Reservoir was not performed. As stated above, these alternatives will be evaluated in more detail during the feasibility phase of the study.

Applicable Corps of Engineers planning policies and guidelines will be used to evaluate proposed alternatives. Multi-objective optimization methods will also be used in evaluating proposed alternatives. The Project Management Plan (PMP) for conducting the feasibility study will be based on the identification of potential alternatives and will be coordinated with the non-Federal project sponsors. The feasibility phase will provide detailed evaluations of the alternatives and will result in the selection of a recommended plan. This final plan will be coordinated with all agencies and the public prior to approval.

6. FEDERAL INTEREST.

The John H. Kerr Dam and Reservoir is presently operated as a multi-purpose project which includes flood control, hydroelectric power, recreation, water supply, low flow augmentation, and fish and wildlife. Resource concerns for the lower Roanoke River center on the need for restoration and enhancement of extensive swamp and flood plain forest and fisheries through improvements in the hydrologic regime and water quality. Ecosystem restoration is within the Federal interest and is a high priority budget output. At this level of the study, operational change alternatives and storage re-allocation alternatives at John H. Kerr Dam and Reservoir could result in net environmental benefits downstream for ecosystem restoration. Additional incidental benefits may be derived from recreation and tourism. Based on preliminary reconnaissance analysis, there is a high probability that one or more alternatives will be economically justified. Depending on the scope of the alternatives formulated in the feasibility phase, some of the alternatives may best be pursued under the existing Section 216 General

Investigations study authority. Smaller, site-specific alternatives, may be pursued under the Corps of Engineers Continuing Authorities Program such as Section 206 (Aquatic Ecosystem Restoration) and Section 1135 (Environmental Improvement and Restoration).

7. PRELIMINARY FINANCIAL ANALYSIS.

The North Carolina Department of Environment and Natural Resources has indicated that they intend to sponsor the study and they look forward to working with the Corps of Engineers and all other interested parties. The North Carolina Department of Environment and Natural Resources has the financial ability to cost share in this study and also to cost share in project construction as evidenced by their performance on current and past Corps of Engineers studies and projects within the Wilmington District.

The Commonwealth of Virginia also has an opportunity to participate with the State of North Carolina in the sponsorship of this study if they so desire.

The potential sponsors are aware that they will be responsible for 50% of the costs for feasibility phase studies as described in the Project Management Plan (PMP) and to also share in the costs of construction for any improvements recommended in the feasibility study. Attachment 1 are letters of intent from the sponsors.

8. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS.

The feasibility study assumptions will be used for formulation, evaluation, coordination, and reporting procedures for the feasibility study as described in Corps of Engineers Regulations (ER 1105-2-100 and ER 200-2-2) and related planning phase guidance. There are no anticipated deviations from the normal feasibility study procedures.

9. FEASIBILITY PHASE MILESTONES.

The reconnaissance phase was scheduled for completion in February 2001 upon execution of the Feasibility Cost Sharing Agreement (FCSA) with the sponsor(s) and receipt of the non-Federal share of funds required for FY 2001. The feasibility phase is expected to take approximately 3 years provided budgetary funding is received as scheduled in the PMP. Feasibility phase milestones are as follows:

Initiate Feasibility Scoping (NEPA)	Jun 2001
Feasibility Scoping (Without Project Condition)	Dec 2001
Alternative Formulation Briefing	Oct 2002
Complete Draft Feasibility Report and DEIS	Apr 2003
Complete Final Feasibility Report and EIS	Apr 2004

10. FEASIBILITY PHASE COST ESTIMATE.

The preliminary programmatic cost estimate for the feasibility study is $2,000,000, which is to be shared on a 50-50 basis by Federal and non-Federal interests. Up to one-half of the non-Federal share may be in-kind services. This study estimate will be refined in the PMP and could change considerably based on the requirements for data collection, model studies, and analyses that will be identified for the feasibility study. A summary of the current estimated study cost sharing through the feasibility phase is as follows:

Total Estimated Study Cost	$2,100,000
Reconnaissance Phase (Federal)	$100,000
Feasibility Phase (Federal)	$1,000,000
Feasibility Phase (non-Federal)	$1,000,000

11. RECOMMENDATIONS.

It is recommended that this study continue into a cost-shared feasibility study. This recommendation is based on Army and budgetary policies, the likelihood that the criteria for Federal participation in project implementation will be met, and the sponsors' desire to pursue this initiative.

12. POTENTIAL ISSUES EFFECTING INITIATION OF FEASIBILITY PHASE.

At this time, there are no potential issues, which may affect the initiation of the feasibility phase or project implementation.

13. VIEWS OF OTHER RESOURCE AGENCIES.

The U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and State Agencies have expressed concern that there may be a correlation between environmental issues in the lower Roanoke River basin and the operation of the John H. Kerr Dam and Reservoir. Resource concerns for the lower Roanoke River center on the need for restoration and enhancement of extensive swamp and flood plain forests and fisheries through changes in the hydrologic regime and water quality.

The State of North Carolina strongly supports an in-depth study of the operation of the John H. Kerr Dam and Reservoir. They state that John H. Kerr Dam and Reservoir's water storage capacity creates significant regional economic benefits by providing flood control, hydropower, water supply, and assimilative capacity for wastewater. They also state that the feasibility study should examine the appropriate balance among the distribution of these benefits. In addition, John H. Kerr Dam and Reservoir has developed into a major recreation attraction and the lake creates extensive fishery and wildlife habitat. The study should give careful attention to the economic and environmental benefits of the lake as well as to other outputs of reservoir operation.

The State of North Carolina states that the operation of John H. Kerr Dam and Reservoir regulates flows from all of the drainage area in the Roanoke River Basin upstream of the dam. The hydrology of the Roanoke River downstream of the dam has been significantly altered by the augmentation of low flows, controlled release of flood flows, and peak release of water for hydropower production. The State of North Carolina is interested in examining the effects of this modified hydrology on the downstream aquatic and riparian ecosystem and in developing analytical tools that allow evaluation of alternate operating scenarios.

The State of North Carolina feels that one of the first tasks will be to review the information that has already been compiled as part of the FERC relicensing process for North Carolina Power's hydroelectric projects at Lake Gaston and Roanoke Rapids Lake. The data collected and studies completed for relicensing should be built upon and incorporated into the Section 216 feasibility study where relevant. The State of North Carolina believes the 216 study must encompass the operation of North Carolina Power lakes, whose operation is closely related to John H. Kerr Dam and Reservoir, and make recommendations on how any changes needed at John H. Kerr Dam and Reservoir will be integrated into the system of these lakes.

The State of North Carolina further states that to accomplish its purpose, the Section 216 study of John H. Kerr Dam and Reservoir must review all of the policy constraints and decision-making authorities that bear on the project, including the role of the Southeast Power Administration in power marketing. Additionally, the interplay in operation between both the Kerr and Philpott projects must be reviewed and understood. Changes in the operation of Kerr or Philpott can affect the other project.

The State of North Carolina has recommended that a steering committee of key interested parties be formed to make contributions to the project management plan (PMP) for the cost shared feasibility study. The State wants to work with the Corps of Engineers very closely and actively. The John H. Kerr Dam and Reservoir Section 216 study can address a major challenge and opportunity on how to improve the operation of a major water management project. To accomplish this goal, the State and the Corps of Engineers must work toward a better understanding of the project and of water management issues in the Roanoke River Basin and toward better communications among the various beneficiaries of the project. Furthermore, the State of North Carolina states that the North Carolina Department of Environment and Natural Resources intends to sponsor the study and looks forward to working with the Corps of Engineers and all other interested parties.

The Commonwealth of Virginia expressed concerns and a need to study lake levels, flood control, upstream water supply and water quality, and recreation and tourism.

North Carolina Power expressed a strong interest in addressing impacts of the operation of John H. Kerr Dam and Reservoir on their downstream hydropower

operations and the environment. They also expressed a strong interest in addressing frequent low dissolved oxygen water releases during the summer months.

Local municipalities and the Regional Council of Governments expressed concerns about changes in the operation of the John H. Kerr Dam and Reservoir on local economies and tourism, flood control, water supply, water quality, and agriculture. The municipalities expressed a strong interest in an adaptive management approach to managing the operation of John H. Kerr Dam and Reservoir.

Private, non-profit conservation and preservation groups expressed strong support for studying downstream water quality, environmental restoration, impacts of high flows on downstream floodplains, reductions in flow fluctuations downstream, and an adaptive management approach to managing the operation of John H. Kerr Dam and Reservoir.

14. PROJECT AREA MAPS.

The project maps are contained in Attachments 2 and 3.

Date: _____

_____
JAMES W. DELONY
Colonel, U.S. Army
District Engineer

Attachments

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Date: 03.24.01

PE

JAMES W. DELONY DDE/PM
Colonel, U.S. Army
District Engineer

Attachments

ATTACHMENT 1

LETTER OF INTENT FROM SPONSOR(S)

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

JOHN N. MORRIS
DIRECTOR

October 26, 2000

Colonel James W. DeLony
District Engineer
US Army Corps of Engineers
PO Box 1890
Wilmington, NC 28402

Dear Colonel DeLony:

The Division of Water Resources has reviewed the draft Reconnaissance Report for the John H. Kerr Dam and Reservoir Section 216 Study. We have attached comments outlining some revisions that need to be made to the document. Subject to these revisions being made in the draft Reconnaissance Report, we are prepared to move ahead to the feasibility phase.

The state of North Carolina is prepared to be the sponsor of the Kerr Lake Section 216 Feasibility Study and understands that the estimated cost of the study may require sponsor matching funds of approximately $1 million. We are prepared to negotiate a feasibility study cost sharing agreement with the Wilmington District at the proper time.

The state of North Carolina wishes to be closely involved in the development of the study plan and budget for the feasibility study. We will be working with you to assemble an advisory committee of representatives of various interests in the study area who will be actively involved in developing the study plan, reviewing study products, and developing study recommendations.

We have an opportunity to make a major advance in the management of the Roanoke River through the Kerr Lake 216 Study. Relicensing of the Dominion Generation projects on the Roanoke has greatly increased our knowledge of and communication about river basin issues. Many of the studies done for relicensing have advanced our scientific knowledge about the basin. We now have improved analytical tools and models to use in river basin management. We are eager to work with the Corps of Engineers and with all participants in the management of the Roanoke River Basin to improve the management of this critical natural resource.

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I will be the state's representative on the study management board and Mr. Jim Mead of the Division of Water Resources will be our project coordinator. Please provide us a revised copy of the final Reconnaissance Report as soon as it is available. We are assembling a list of members for the advisory committee and will look forward to arranging a meeting of this group to begin work on the feasibility study plan when you are ready to do so.

Sincerely,

John N. Morris

JNM/km

cc: Mr. Jim Mead
Ms. Sharon Haggott
Mr. Frank McBride
Ms. Linda Pearsall
Mr. Greg Thorpe
Mr. Sam Pearsall
Mr. Tom Brawner
Mr. David Paylor
Mr. Garland Pardue

COMMONWEALTH of VIRGINIA

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482

October 6, 2000

ACTION: PM
CF: DE
DP
DD
DX

Colonel James W. DeLony
U.S. Army Corps of Engineers
Wilmington District
Post Office Box 1890
Wilmington, North Carolina 28402-1890

Dear Colonel DeLony:

We have reviewed the Feasibility (Section 216) Draft Reconnaissance Report for John H. Kerr Dam and Reservoir, Virginia and North Carolina, which was distributed by Sharon Haggett on August 21, 2000. We believe the John H. Kerr Section 216 study may be a valuable contribution toward improving the operation of the Dam and Reservoir and the water quality in the lower Roanoke River basin. We support your continuing work on the reconnaissance study and seeking funding for the feasibility phase.

I will be the Departments lead representative for this feasibility study and may designate other staff members to participate in the study in various ways. I can be reached at (804) 698-4240.

We look forward to working with you on this effort to improve the operations of the John H. Kerr Dam and Reservoir and the water quality in the lower Roanoke River Basin.

Sincerely,

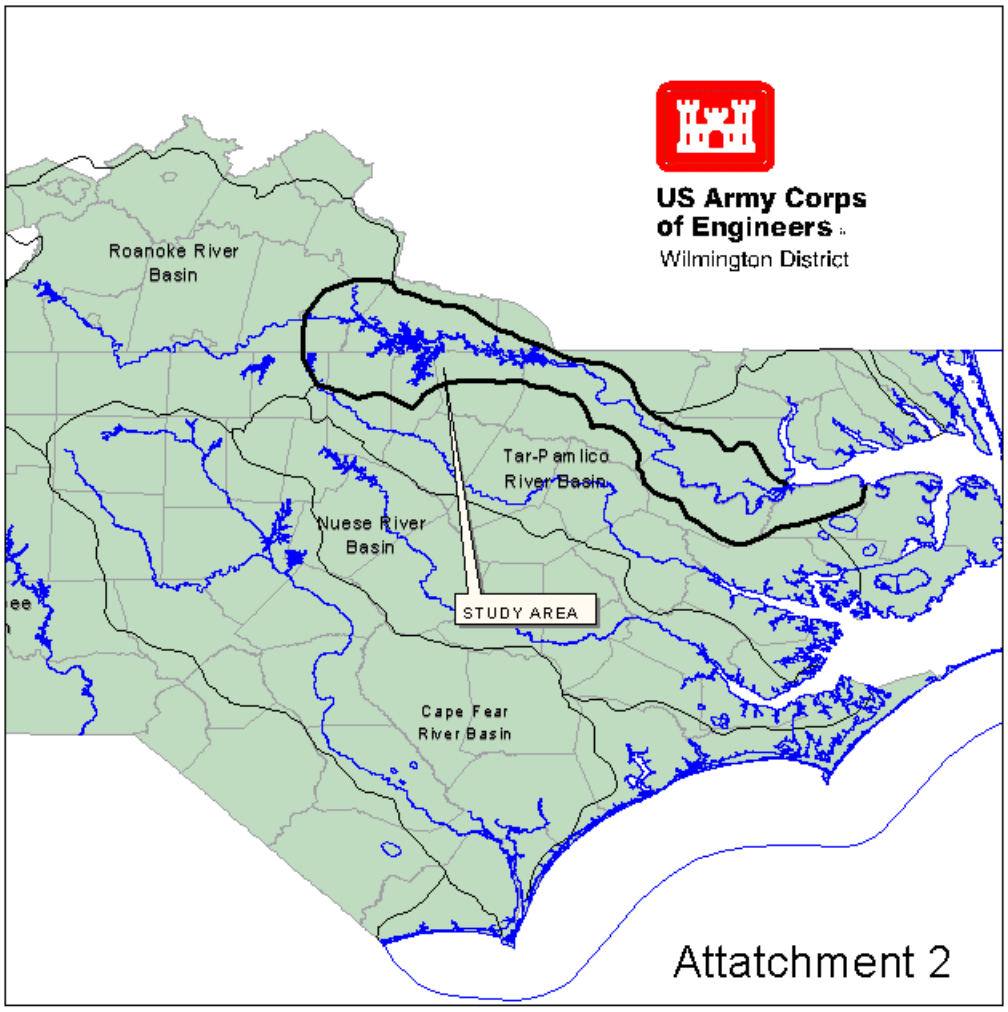
David K. Paylor
Director of Program Coordination

Cc: Dennis H. Treacy, Director

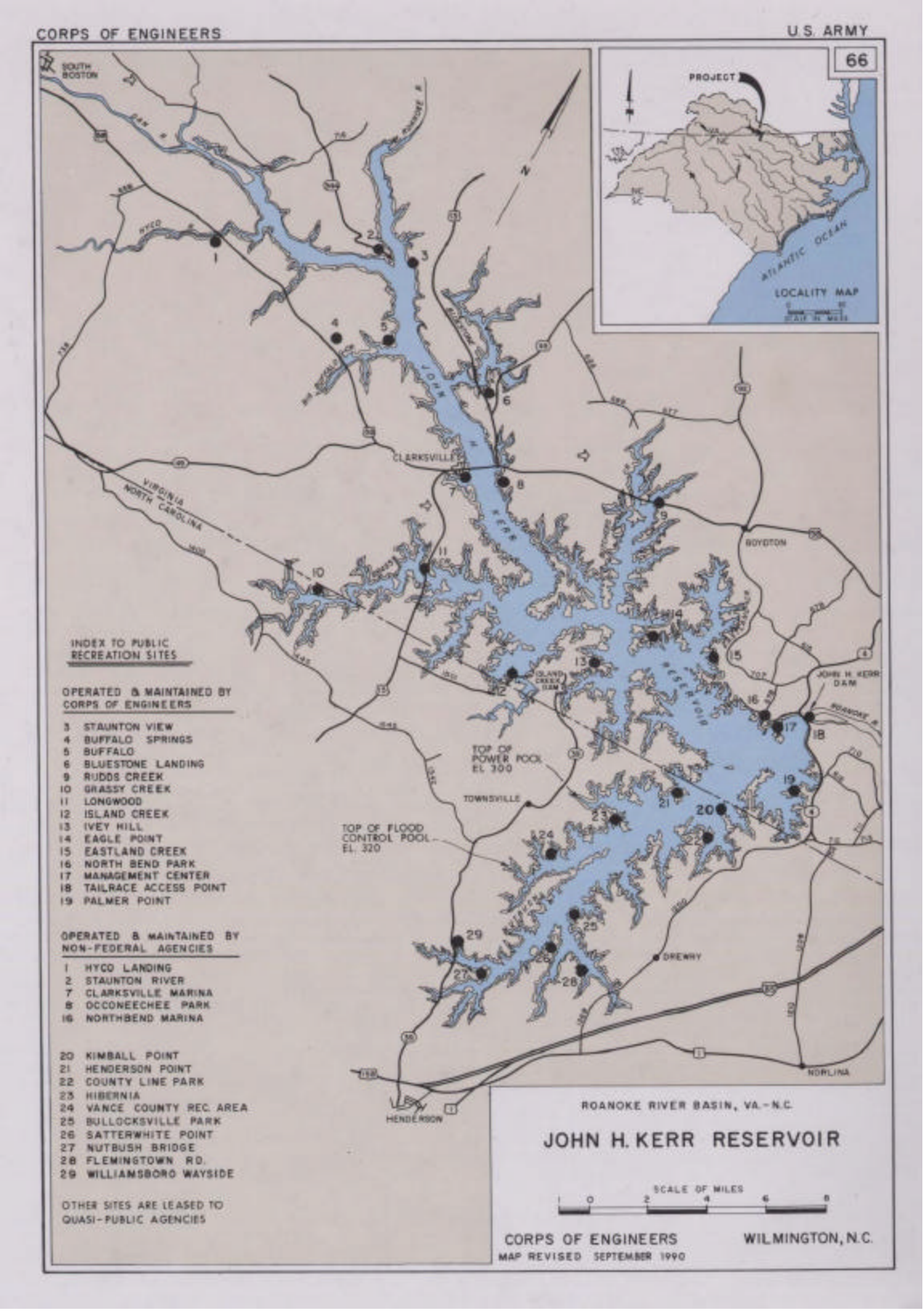
ATTACHMENT 2

PROJECT MAP

JOHN H. KERR DAM AND RESERVOIR (LOWER ROANOKE)
(SECTION 216)
VIRGINIA AND NORTH CAROLINA



ATTACHMENT 3
JOHN H. KERR DAM AND RESERVOIR PROJECT MAP
VIRGINIA AND NORTH CAROLINA



Attachment 4
Preliminary List of Known Studies
(prepared by the Nature Conservancy)

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