SHORELINE MANAGEMENT PLAN for the Roanoke Rapids and Gaston Hydropower Project FERC Project Number 2009

Roanoke Rapids
North Carolina

Dominion Virginia Power
Dominion North Carolina Power

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Dominion Energy®

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ACRONYMS AND ABBREVIATIONS

BOD	biological oxygen demand
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
EA	Environmental Assessment
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
mgd	million gallons per day
MW	megawatts
MWh	megawatt hours
Dominion	Dominion Virginia Power / North Carolina Power
NCSHPO	North Carolina State Historic Preservation Office
NCWRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PCB	polychlorinated biphenyl
SMP	Shoreline Management Plan
UNC	University of North Carolina
VASHPO	Commonwealth of Virginia Department of Historic Resources
VDGIF	Virginia Department of Game and Inland Fisheries
VEPCO	Virginia Electric Power Company

EXECUTIVE SUMMARY

Introduction

The Shoreline Management Plan (SMP) for the Roanoke Rapids and Gaston Project was developed to address several concerns that have resulted from the development of lands adjacent to Dominion Virginia Power / North Carolina Power (Dominion) shoreline project lands, uses of Dominion's shoreline lands by adjacent property owners and increased recreational use of the lakes. The intent of the SMP is to protect and enhance the two lakes' natural resources while encouraging economic development activities that complement or have neutral effects on those natural resources.

The previous shoreline guideline and permit system had been used to manage development of Dominion's shoreline property by adjacent owners. The system was useful as a method to keep records of shoreline facilities constructed on Dominion's property, and insure that the construction of facilities used approved materials and followed established guidelines. Resource agencies, local governments, non-governmental organizations, the local public and Dominion determined that a Shoreline Management Plan (SMP) should be developed to protect the natural resources of the lakes and the qualities of the lakes that were appealing to the public. The SMP addresses issues such as residential shoreline growth, protection of wildlife and fishery habitat, recreational access to the lakes and water quality.

The initial SMP was submitted to the Federal Energy Regulatory Commission (FERC) on April 1, 2005 and approved by the FERC on May 1, 2006. This revision (Rev. 1) is the result of the 5-year SMP review required by license Article 420.

The Project Setting

The Roanoke Rapids and Gaston Project straddles the Virginia/North Carolina border in Brunswick and Mecklenburg counties, Virginia, and in Halifax, Northampton and Warren counties, North Carolina. The project comprises two man-made developments (the Lake Gaston Dam and Roanoke Rapids Dam and facilities) located in the middle portion of the Roanoke River Basin. Both dams are located immediately downstream of the U.S. Army Corps of Engineers (Corps) John H. Kerr Dam and Reservoir. Lake Gaston, Roanoke Rapids Lake and the lower Roanoke River are important regional sources of recreation, and support, among other activities, boating and fishing.

Most of the area surrounding the Roanoke Rapids and Gaston Project is rural and contains agricultural areas, mixed hardwood forests, wetlands and residential areas. The region surrounding the project is sparsely populated, although there are numerous subdivisions and

commercial facilities at Lake Gaston. Roanoke Rapids Lake is less developed than Lake Gaston, having few subdivisions and no significant commercial buildup. Downstream of the project, the Roanoke River floodplain provides valuable habitat for numerous flora and fauna.

Project Facilities and Operations

The Gaston development consists of a combination concrete and earth dam and a lake approximately 34 miles long. The Roanoke Rapids development includes a concrete gravity dam and a lake approximately 8 miles long.

Dominion operates the Roanoke Rapids and Gaston Project in close coordination with the Corps' Kerr Project. Power from the project is used to meet the peak load requirements of Dominion's system, while taking into account limitations imposed by flood control, fisheries, water quality, recreation and other demands such as requests for specific water levels or downstream flows for bridge construction, weed control, etc. During normal operations, Dominion operates Gaston Power Station in a peaking or load-following manner. Through close coordination with Kerr operation, Gaston typically operates with less than one foot fluctuation in the power pool (between elevations 199 to 200 feet) and Roanoke Rapids Lake fluctuates typically about 3 feet and up to 5 feet (between elevations 127 to 132).

FERC Shoreline Management Policies

As a FERC Licensee, Dominion manages the Roanoke Rapids and Gaston Project reservoirs in accordance with the rules and policies of the FERC and the license issued on March 31, 2004 and amended on March 4, 2005. Dominion is responsible for achieving an appropriate balance among various interests in the project reservoirs and their use. As recreational use of the project reservoirs has increased over time and as demand for waterfront development including homes, commercial establishments and recreation facilities has increased, achieving an appropriate balance between development and the preservation of important natural, environmental or cultural features of the project reservoirs has become increasingly difficult. Preparing and implementing a SMP for the Roanoke Rapids and Gaston Project is intended to provide guidance on how best to allow prudent and sustainable development around the project shorelines while at the same time protecting important natural, environmental, recreation, and cultural project values.

Establishment of the Shoreline Management Plan

In June 1997, the SMP Technical Work Group (composed of resource agencies, local counties, non-governmental organizations, the local public and DOMINION), started the process of developing a SMP to more effectively manage Lake Gaston and Roanoke Rapids Lake. To address the shoreline management issues facing Lake Gaston and Roanoke Rapids Lake, the SMP Technical Work Group formed four subcommittees: Recreation and Public Access, Safety and Trash Removal, Land Use Classification and Policies, Permits and Enforcement. The subcommittees met over a three-year period at varying frequencies. The recommendations and findings of the subcommittees were consolidated into the SMP.

Existing Shoreline Conditions and Objectives of the Shoreline Management Plan

The overall objectives of the SMP include maintaining a balance between conservation of natural resources and economic development; improving the quality of lake and shoreline natural resources; creating an attractive and accessible lake and shoreline setting for the public and adjacent landowners; and being consistent with other jurisdictional policies and plans. The following is a summary of the existing condition of each shoreline component (lands, recreation, terrestrial resources and fisheries, water quality and cultural resources) and a summary of the SMP management objectives for each component.

Lands

Dominion owns a continuous strip of land that completely encircles both Lake Gaston and Roanoke Rapids Lake. The strip of project lands between the reservoir shoreline and the project boundary varies in width from approximately 10 feet to 200 feet or more.

Three broad land use categories (developed, agricultural and undeveloped) occur adjacent to the shores of Lake Gaston and Roanoke Rapids Lake. The developed land use type is composed of residential, commercial, recreational, transportation, utility and industrial land uses and is adjacent to approximately 50 percent of Dominion's shoreline area at Lake Gaston and 20 percent at Roanoke Rapids Lake. The undeveloped land use type consists of forests, wetlands, non-pasture grasslands and wildlife management areas and comprises approximately 47 percent of the shoreline at Lake Gaston and 62 percent at Roanoke Rapids Lake. Agricultural lands are adjacent to approximately 3 percent of the shoreline at Lake Gaston and 18 percent at Roanoke Rapids Lake.

Most of the lands that are adjacent to the lakes have been zoned by their respective local jurisdictions for uses that allow future residential development. A strong residential tax base is very important to the local jurisdictions and as a result, the zoning for most of the lands adjacent to the lakes allows for significant future residential development. It is

estimated that there are between 6,000 and 8,000 homes around Lake Gaston and approximately 12,000 property owners. The number of homes being built adjacent to the shores of the lakes will likely continue into the near future and beyond.

Recreation

Lake Gaston and Roanoke Rapids Lake are popular local and regional recreational resources. Most of the existing recreational activities are water oriented and include activities such as fishing, water skiing, general boating, swimming and hunting. Many of the adjacent property owners have direct access (across Dominion shoreline lands) to the lakes from docks and boathouses. Public access to the lakes focuses on providing boat-launching facilities.

Terrestrial Resources and Fisheries

A major objective of the SMP is to protect and enhance wildlife and fisheries habitat in order to maintain existing species, while allowing prudent use of Dominion shoreline property by nearby property owners. State and Federal wildlife agencies have voiced concern regarding the loss of wildlife and fisheries habitat around the shorelines of the lakes as a result of real estate development. Increases in residential development on lands adjacent to the lakes' shorelines have resulted in decreases in upland and shoreline wildlife habitat, travel corridors and fisheries habitat.

Although there are still segments of natural vegetation left in the shoreline zone of some residential areas, in many cases, native vegetation has been removed and replaced with non-native species and lawns. The replacement vegetation has little value to most wildlife and fish species.

One of the main purposes of the SMP is to protect and/or rehabilitate habitat for wildlife and fisheries where practicable. To accomplish this, shoreline habitat was surveyed and sensitive and valuable habitat areas identified. These areas were assigned a shoreline classification of Special Management Area, with a subarea designation of sensitive area (i.e., High Value Ecological Lands) or limited use area. The sensitive areas and limited use areas include fish spawning areas, areas with overhanging vegetation and structures that provide fish habitat, beach areas used by stripped bass, wetlands, shallow areas, water willow beds and upland areas that provide a large buffer between adjacent property owners and the lakes. Depending upon site-specific conditions and shoreline classification, varying levels of development are allowed on Dominion's property.

The SMP has a landscaping, vegetative trimming/removal and revegetation permit requirement to help maintain and restore wildlife and fisheries habitat on Dominion's

shoreline land. In addition to the permit system, the SMP has an education program to inform adjacent landowners about how they can help to improve the wildlife and habitat value of Dominion property.

Water Quality

Lake Gaston and Roanoke Rapids Lake have generally good water quality. Because water quality at the two lakes is most influenced by water entering upstream from Kerr Reservoir, there is a limited amount that Dominion can do to influence water quality. There is however, an interest by Dominion, agencies and many others to maintain or even improve existing water quality.

The SMP can influence water quality by regulating land uses and activities that occur on Dominion property and educating and encouraging neighbors on lands adjacent to Dominion lands to also do so.

Cultural Resources

Important cultural resources are known to exist near and within Dominion shoreline property. The impoundment of Lake Gaston and Roanoke Rapids Lake has resulted in the inundation (or semi-inundation) of all or portions of numerous archaeological sites. To protect cultural resources, areas that have high cultural value have been grouped with areas that have high ecological value. In this way, the sites will be protected without calling attention to them.

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Roanoke Rapids and Gaston Project straddles the Virginia/North Carolina border in Brunswick and Mecklenburg counties, Virginia, and in Halifax, Northampton, and Warren counties, North Carolina. The project comprises two man-made developments (the Lake Gaston Dam and Roanoke Rapids dam and facilities) located in the middle portion of the Roanoke River Basin. Both dams are located immediately downstream of the U.S. Army Corps of Engineers (Corps) John H. Kerr Dam and Reservoir. Kerr Reservoir is the largest impoundment on the Roanoke River (there are six smaller impoundments upstream of Kerr Reservoir) (Table 1-1). The Kerr Project is the primary reservoir responsible for regulating the Roanoke River and providing flood control. It has a power pool and flood control capacity of about 1.6 million acre-feet between elevations 293 and 320 feet.

Table 1-1. Physical Characteristics of Kerr Reservoir, Lake Gaston and Roanoke Rapids Lake

Lake	Elevation at Full Pool (above mean sea level)	Total Volume (acre-feet)	Surface Area (acres)	Retention Time[1/] (days)	Typical Fluctuation (feet)
Kerr[2/]	300	1,472,000	48,900	93	6-9
Gaston	200	450,000	20,300	29	1
Roanoke Rapids	132	77,100	4,600	5	3-5

[1/] Calculation based on using the annual mean flow of 7,951 cfs as measured at Roanoke Rapids, North Carolina for water years 1964 to 1993.

[2/] Flood storage volume of 1,278,000 acre-feet excluded.

The area surrounding the Roanoke Rapids and Gaston Project is rural. It consists of rolling hills, mixed hardwood forests, wetlands and agricultural areas. Downstream of the project, the Roanoke River floodplain provides valuable habitat for numerous flora and fauna. Lake Gaston, Roanoke Rapids Lake and the lower Roanoke River are important regional sources of recreation, which support, among other activities, boating and fishing.

The region surrounding the project is sparsely populated. Roanoke Rapids, Warrenton, and Littleton (North Carolina) and Lawrenceville and South Hill (Virginia) are population centers near the project. There are numerous subdivisions and commercial facilities at Lake Gaston, mostly concentrated around the eastern portion of the lake. Roanoke Rapids Lake is less developed than Lake Gaston, having few subdivisions and no significant commercial buildup. Development around the lakes contributes significantly to the economy of the five surrounding counties. Major manufacturing in the area includes pulp and paper, textiles, plastics and automotive parts.

1.1.1 Project Facilities

The Gaston development consists of a combination concrete and earth dam and a lake approximately 34 miles long. The maximum dam height is approximately 105 feet and the total length of all earth and concrete sections is 3,600 feet. The powerhouse has four generating units with a total rated capacity of about 225 megawatts (MW) (1 Kaplan/3 fixed-blade). The full capacity flow from the units is 44,000 cubic feet per second (cfs). Lake Gaston has a total volume of 450,000 acre-feet and a surface area of 20,300 acres at elevation 200 feet (Table 1-1).

The Roanoke Rapids development includes a concrete gravity dam and a lake approximately 8 miles long. The maximum dam height above the riverbed is about 72 feet. The total length of all dam and powerhouse structures is approximately 3,050 feet. The powerhouse has four Kaplan generating units with a total rated capacity of about 99 MW. The full capacity flow from the units is approximately 20,000 cfs. Roanoke Rapids Lake has a total storage volume of 77,140 acre-feet and a total surface area of 4,600 acres at elevation 132 feet.

1.1.2 Project Operations

Virginia Electric and Power Company (VEPCO) owns and operates both developments under Federal Energy Regulatory Commission (FERC) license No. 2009. VEPCO operates as Dominion North Carolina Power (Dominion) in North Carolina, and Dominion Virginia Power in Virginia. Dominion operates the Roanoke Rapids and Gaston Project in close coordination with the Corps' Kerr Project. Based on river inflow and Kerr Reservoir operating guidelines, the Corps schedules flows on a weekly basis.

Power from the project is used to meet the peak load requirements of the Dominion system, while taking into account limitations imposed by flood control, fisheries, water quality, recreation and other demands such as requests for specific water levels, downstream flows for bridge construction, weed control, etc. During normal operations, Dominion operates Gaston Power Station in a peaking or load-following manner. Through close coordination with Kerr operation, Gaston typically operates with less than one-foot fluctuation in the power pool (i.e., between elevations 199 to 200 feet). No minimum continuous release of water is required from Gaston Dam because it discharges directly into Roanoke Rapids Lake.

The Roanoke Rapids development is different from Gaston in that the Roanoke Rapids units are smaller in size and capacity than the Gaston units, and Roanoke Rapids Lake is smaller in size than Lake Gaston. A minimum continuous flow release is required from the

Roanoke Rapids Dam for maintenance of downstream water quality, as well as fish and wildlife habitat. Based on an agreement among the North Carolina Wildlife Resources Commission (NCWRC), the Corps and Dominion, during the striped bass spawning period (April 1 to June 15) Kerr, Gaston and Roanoke Rapids reservoirs are operated to provide spawning flows recommended by the Roanoke River Water Flow Committee. During this period, the load-following capability at the Roanoke Rapids Power Station is foregone to maintain continuous spawning flow rates. At other times of the year, Dominion operates Roanoke Rapids Power Station in a load-following mode with discharges of between 1,500 and 20,000 cfs on a daily basis. To accomplish the daily load following at Roanoke Rapids Power Station, Roanoke Rapids Lake fluctuates typically about 3 feet and up to 5 feet between elevation 127 feet and elevation 132 feet. On weekends, Roanoke Rapids often releases only the minimum required flow.

The Gaston Power Station generates an average of 306,693-megawatt hours (MWh) annually and the Roanoke Rapids Power Station generates an average of 306,536 MWh.[1]

1.2 FERC SHORELINE MANAGEMENT POLICIES

The project reservoirs are significant resources to south central Virginia and north central North Carolina. Numerous recreational activities occur on and near the reservoirs including boating, fishing and swimming. The reservoirs and adjacent lands also harbor a wide variety of fish and wildlife and in some instances provide unique habitats, which are important to the protection of important fish and wildlife species. The beauty of Roanoke Rapids Lake and Lake Gaston has resulted in the development of year-round and seasonal homes, commercial recreational facilities and other commercial and industrial facilities adjacent to and near the lakes.

As a FERC Licensee, Dominion must manage the Roanoke Rapids and Gaston Project reservoirs in accordance with the rules and policies of FERC. Dominion is responsible for achieving an appropriate balance among various interests in the project reservoirs and their use. As recreational use of the project reservoirs has increased over time and as demand for waterfront development including homes, commercial establishments and recreation facilities has increased, achieving an appropriate balance between development and the preservation of important natural, environmental or cultural features of the project reservoirs has become increasingly difficult. Preparing and implementing a Shoreline Management Plan (SMP) for the Roanoke Rapids and Gaston Project is intended to provide guidance to Dominion and others on how best to allow prudent and sustainable development

[1] Based off 15 years of data, 1995 – 2009.

around the project shorelines while at the same time protecting important natural, environmental, recreation, cultural and aesthetic project values.

Since the early 1980s, FERC has made it a practice to incorporate a standard license article regarding the use of project lands and waters in most FERC licenses. This so called "land use article" delegates to Dominion the authority to grant permission, without prior FERC approval, for certain types of use and occupancy of project lands and waters. The license order issued by FERC on March 31, 2004 and amended March 4, 2005 includes this as *Article 426 Use and Occupancy*.

1.2.1 Uses Dominion Can Authorize without Prior FERC Approval

FERC has authorized Dominion to grant permission, without prior FERC approval, for certain types of use and occupancy of project lands and waters if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational and other environmental values of the project. Uses for which Dominion may grant permission include: (1) landscape plantings; (2) small, noncommercial piers, landings and boat docks; and (3) embankments, bulkheads, retaining walls or similar erosion control structures to protect the existing shoreline.

FERC also allows Dominion to establish a program for issuing licenses for specified uses of project lands and waters, which can include the payment of a reasonable fee to cover the cost of administering the licensing system. Under this designated authority, Dominion has developed a private facility-licensing program for Lake Gaston and Roanoke Rapids Lake. Under this program, Dominion sets forth criteria for the design and installation of private facilities which can be undertaken under license from Dominion but without approval from FERC. FERC has reviewed Dominion's private facility licensing program and has determined that it meets expectations (115 FERC ¶62,111, *Order Modifying and Approving Shoreline Management Plan Pursuant to Article 420*, May 1, 2006). FERC may review the Dominion's private facility licensing program at any time. The current private facility-licensing program is discussed in more detail in Section 5. Dominion has also established a process for reviewing and licensing commercial facilities. This process also is discussed in detail in Section 5.

To further protect and enhance the project's scenic, recreational and environmental values, FERC encourages multiple use and occupancy of facilities for access to project lands and waters. Dominion is also required to ensure that the uses and occupancies for which it grants permission are safe, are maintained in good repair and comply with applicable state and local safety and health requirements. Finally, FERC requires that Dominion take

responsibility for supervising and controlling the use and occupancy of project lands and waters which it may convey through its licensing program. If a licensed use violates any conditions imposed by FERC or any condition imposed by Dominion under its licensing program, or any measures required for the protection and enhancement of the project's scenic, recreational or environmental values, then Dominion may take any lawful action necessary to correct the violation. For a licensed use, such action may include canceling permission to use and occupy project lands or waters, and requiring removal of any non-complying structures and facilities.

1.2.2 Uses Dominion Can Authorize without Prior FERC Approval but Reported Annually

FERC authorizes Dominion to convey easements or rights-of-way across, or leases of project lands and waters for: (1) maintenance and modification of bridges and roads for which all state and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major utility lines; and (8) water intake or pumping facilities of less than 1 million gallons per day (mgd). All such conveyances made within a calendar year must be reported by Dominion to FERC by January 31 of the following year.

1.2.3 Uses Dominion Can Authorize with a 45-day Prior Notice to FERC

FERC authorizes Dominion to convey fee title to easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all Federal and state approvals have been obtained; (2) sewer or effluent lines which discharge to project waters for which all Federal and state approvals have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead transmission lines that require support structures within the project boundary for which all Federal and state approvals have been obtained; (5) private or public marinas that accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other marina; (6) recreation development consistent with a FERC-approved Recreation Plan or Exhibit R; and (7) other uses if (i) the amount of land conveyed is less than 5 acres, (ii) all of the land conveyed is located at least 75 feet (horizontally) from the reservoir, and (iii) no more than 50 total acres of the project land conveyed in any calendar year. At least 45 days prior to granting approval for such uses, Dominion must file a letter with FERC stating its intention to convey the interest and briefly describing the location and use of the lands to be conveyed. Unless FERC, within 45 days

from the date the letter is filed, requires Dominion to file an application for prior approval, Dominion may convey the intended interest at the end of that period.

1.2.4 Uses Dominion Can Authorize Requiring Prior FERC Approval

FERC requires that Dominion obtain prior FERC approval before granting permission or conveying interests in project lands and waters for the construction of any private or commercial facility which is designed to accommodate more than 10 watercraft.

In reviewing proposals for such facilities, FERC requires that Dominion provide evidence of consultation with all state and Federal resource agencies concerning the proposed development and conducts an environmental review as required under the National Environmental Policy Act (NEPA). The environmental review generally takes the form of an environmental assessment (EA); however, a large development project, which would result in a "significant impact" to the environment, might require an environmental impact statement (EIS). If FERC approves the development, it will issue an Order Approving Non-project Use of Project Lands. In some instances FERC may approve the proposed development with conditions. In such instances, Dominion is responsible for assuring that all the conditions of the approval are met. In turn, Dominion requires that the developer comply with all conditions imposed by FERC as part of the approval. Should a developer fail to meet its obligations as set forth in the conditions of the FERC Order, Dominion as the responsible entity has the authority to require that use of the project lands and waters cease, and that project lands and waters be returned to their original state.

1.3 FERC'S POLICIES REGARDING SHORELINE MANAGEMENT

Recognizing the difficulty facing some licensees in identifying and achieving an appropriate balance among project uses, FERC encourages, and in some cases has required, licensees to develop SMPs for their projects. The intent of a SMP is to provide guidance to the licensee and others in the consideration of future uses of the project and to provide guidance in evaluating the appropriateness of shoreline development. A SMP may be formally filed with FERC. If approved by FERC, a project license may be amended to incorporate the SMP. Alternatively, a SMP can be developed and initiated by a licensee without formal approval from FERC. Even SMPs, which are not formally filed with FERC, are used by licensees and FERC to guide decisions regarding the future of the project reservoirs.

1.4 FERC'S POLICIES REGARDING PUBLIC RECREATION AND PUBLIC SAFETY

Under FERC regulations, project licensees have a responsibility to provide public recreation opportunities at every hydropower project. The requirement to provide public recreation opportunities was established in FERC Order No. 313, issued in December 1965. This Order established FERC regulations which require licensees to: (1) acquire lands to assure optimum development of the recreational resources afforded by the project; (2) develop suitable public recreational facilities with adequate public access, considering the needs of physically handicapped persons in the design of facilities and access; (3) coordinate efforts with other agencies in the development of public recreation areas and facilities; (4) provide for planning, operation and maintenance of these facilities; and (5) inform the public of recreational opportunities at the project.

FERC project licensees are responsible for public safety at federally licensed hydropower projects. Because each project is unique and requires site-specific judgments and solutions to resolve safety issues, FERC requires all licensees to prepare a Public Safety Plan detailing the type and location of all project safety features. Projects that have heavily utilized recreation facilities require significant attention to public safety measures and the licensee needs to consider public safety when providing public access to its project.

2. NEED FOR A SHORELINE MANAGEMENT PLAN

Through discussions with FERC, resource agencies, local governments, non-governmental organizations and the local public (Shoreline Management Plan Technical Work Group), it was determined that an updated and expanded shoreline management system was needed in order to address the complexities involved in managing the project. The previous guideline and permit system had been used to control and keep track of the development of Dominion's shoreline property by adjacent owners. The previous system was useful as a method to keep records of shoreline facilities constructed on Dominion property, and insure that the construction of facilities followed established guidelines.

The Shoreline Management Plan Technical Work Group determined that an additional system needed to be devised to protect the qualities of the lakes that were appealing to the public. The new system would address several significant issues such as residential shoreline development; protection of wildlife, fishery habitat and water quality; and recreational use of and access to the lakes.

The following sections briefly describe the major issues that the SMP addresses.

2.1 SHORELINE DEVELOPMENT

Because Lake Gaston and Roanoke Rapids Lake are such appealing places to live or have vacation homes, the number of residences that have been built around the lakes has significantly increased over the years. As the number of residences and other development has increased in recent years, so has the number of shoreline permits issued.

Growth in real estate development has also resulted in increases in tax revenue for local jurisdictions, many of which depend heavily on the taxes derived from residences near the project. In addition to increases in the tax base, real estate development around the lakes has provided employment as a result of construction, and services and goods purchased by people living in the residences.

This increase in the development of real estate adjacent to the lakes' shorelines has resulted in decreases in upland and shoreline wildlife habitat and travel corridors. About half of the shoreline of the two lakes has been developed. This development has also had an effect on fisheries habitat.

The Shoreline Management Technical Work Group determined that prudent real estate growth should continue around the lakes. To accomplish this, the SMP allows varying degrees of water access while protecting wildlife and fisheries habitat along with water quality.

2.2 WILDLIFE AND FISHERIES HABITAT

State and Federal resource agencies are concerned about the loss of wildlife and fisheries habitat around the shorelines of the lakes as a result of real estate development. Shoreline vegetation serves as important habitat and transportation corridors for many species of wildlife. It is especially important in areas where residential development has resulted in the clearing and/or replacement of upland and shoreline native vegetation. The presence of native shoreline and aquatic vegetation is also important for many species of fish. Loss of shoreline and aquatic vegetation has negative consequences for fisheries.

Residential development has occurred along the shoreline of approximately 47 percent of Lake Gaston and 20 percent of Roanoke Rapids Lake (Table 2-1) as of 1998. Although there are still segments of natural vegetation left in developed shoreline areas, in many cases, native vegetation has been removed and replaced with bulkheads, riprap, lawns and non-native species. These types of shoreline treatments are less supportive of a variety of wildlife and fish than is undisturbed shoreline that contains native vegetation.

- **Table 2-1.** Land Uses Adjacent to Project Shorelines—Miles of Shoreline and Percentage of Total Shoreline[1/]

Lake	Undeveloped[2/]	Developed[2/]	Agricultural[2/]	Total
Lake Gaston	164 (264 km) (50%)	155 (249 km) (47%)	10 (16 km) (3%)	329 (529 km) (100%)
Roanoke Rapids Lake	25 (40 km) (62%)	8 (12 km) 20%)	7 (11 km) (18%)	40 (63 km) (100%)
Total	189 (304 km) (51%)	163 (262 km) (44%)	17 (27 km) (5%)	369 (593 km) (100%)

- [1/] This data was gathered from aerial photographs.
- [2/] These three general land use types are each composed of several other land use types as noted below.
- Undeveloped = forest, wetlands, wildlife management areas, non-pasture grasslands
- Developed = residential, recreational, commercial, industrial, transportation, institutional
- Agricultural = crops and orchards, pine plantations, pasture grasslands
- Based on miles of shoreline, not project boundary

2.3 WATER QUALITY

Lake Gaston and Roanoke Rapids Lake generally have good water quality. Water quality at the lakes is most affected by water released from Kerr Reservoir. Although Dominion is significantly limited in what it can do to influence water quality, it can influence water quality to a certain extent. By regulating land uses and activities that occur on Dominion property and educating and encouraging neighbors to also do so, existing water quality can be maintained or even improved.

2.4 PUBLIC RECREATIONAL ACCESS TO THE LAKES

Lake Gaston and Roanoke Rapids Lake are popular regional recreation resources that are used by adjacent property owners, local residents and people in other parts of Virginia and North Carolina. Public access to the lakes is available via nine public facilities with boat ramps and four commercial facilities. Most private access (and access in general) to the lakes occur from licensed private facilities adjacent to the lakes such as docks and piers. There are currently about 8,000 licensed docks, piers, boat shelters and boathouses on Lake Gaston and Roanoke Rapids Lake. Private access to the lakes is also available at private campgrounds and lodges.

During public meetings with the Recreation and SMP Technical Work Groups, the issue of public access was discussed. Most members of the Work Groups agree that it is reasonable to provide a broader range of public access in the future through additional access in areas that may currently be under-served, and by adding more shoreline and adjacent recreational opportunities. The recreation improvements that are planned in the future are included in Section 3.3.

3. EXISTING SHORELINE CONDITIONS

3.1 THE INFLUENCE OF OPERATIONS ON SHORELINE CONDITIONS

The primary effect of Dominion operations on shorelines at Lake Gaston and Roanoke Rapids Lake occurs as a result of daily fluctuations in pool elevations. These daily fluctuations have little effect on the natural resources found within the shoreline area or features built over water, such as docks (Dominion 1999). Pool fluctuations are typically one foot at Lake Gaston and 3 to 5 feet at Roanoke Rapids Lake. There is little difference in the natural resources found in the shoreline areas of the two lakes that can be attributed to pool fluctuation. The differences that do occur can be attributed to factors such as level of shoreline and upland development, shoreline type and exposure to great expanses of water (which can promote erosion), rather than to pool fluctuations.

At Roanoke Rapids Lake, the structures built over water, such as piers, must be designed to accommodate the larger water level fluctuations. Because of the greater pool fluctuation at Roanoke Rapids Lake, there is more shoreline exposed at low pool elevations than at Lake Gaston and boat ramps are longer to accommodate the different water levels.

3.2 LANDS

The Roanoke Rapids and Gaston Project is located in a rural region of south central Virginia and north central North Carolina. Land ownership and use on lands adjacent to and near the project has changed over time since the two lakes were built. Residential and commercial areas have been developed adjacent to the lakes to take advantage of their beauty and recreational opportunities. As residential development has occurred, there has been a decrease in natural and agricultural areas adjacent to the lakes. The following sections describe land ownership, use and regulatory patterns on lands around the lakes.

3.2.1 Land Ownership

Most of the land in the five-county area around Roanoke Rapids Lake and Lake Gaston is privately owned. Dominion owns a continuous strip of land that completely encircles both Roanoke Rapids Lake and Lake Gaston. The strip of project land between the reservoir shoreline and the project boundary varies in width from approximately 10 feet to 200 feet or more. Most of the land adjacent to Dominion's shoreline strip is owned by private individuals and corporations. There are, however, scattered lands that are owned and/or managed by the Federal government and the states of Virginia and North Carolina.

The one tract of Federal land adjacent to the project is located in the uppermost part of Lake Gaston. It is contiguous with the Kerr Reservoir Project and includes the Kerr Dam tailrace and Tailrace Landing Park. The U.S. Army Corps of Engineers manages this tract of land.

There are 12 locations of state-owned or managed lands in or adjacent to the project. Seven tracts are owned or managed by the State of North Carolina, and five by the State of Virginia. The seven tracts in North Carolina are recreation-oriented facilities that are managed by North Carolina Wildlife Resources Commission (NCWRC). The facilities are the Stonehouse Creek Landing, Henrico Landing, Hubquarter Creek Landing and Summit Landing at Lake Gaston and Thelma Landing, Vultare Landing and 5th Street Landing at Roanoke Rapids Lake. The five tracts in Virginia are located at Lake Gaston and are managed by the Virginia Department of Game and Inland Fisheries (VDGIF) for either recreation or wildlife resources. The facilities in Virginia are: the Dick Cross Wildlife Management Area, Steel Bridge Landing, the Waterfowl Hunting Area, Poplar Creek Landing and Pea Hill Creek Landing. Per the Comprehensive Settlement Agreement Article LK4, these state operated areas shall be put into permanent access easements. This action should occur by the end of 2012.

3.2.2 Land Uses

A variety of land uses occur adjacent to the Lake Gaston and Roanoke Rapids Project. Figure 3-1 identifies land uses adjacent to the project that have been grouped into three broad categories or use types. The three land use types are Developed, Undeveloped, and Agricultural. Each of these broad types of land use is composed of additional subcategories, many of which are so small in size that they are not displayed in Figure 3-1.

The developed land use type is adjacent to approximately 47 percent of Lake Gaston's shoreline. It includes residential, commercial, recreational, transportation, utility and industrial land uses. Most of the developed land is residential. It is estimated that there are between 6,000 and 8,000 homes around Lake Gaston and approximately 12,000 property owners, many of whom have not developed their property (personal communication, C. Lassiter, President, Lake Gaston Association, November 12, 1997). Not all of these homes are adjacent to the lake, but a significant number are. The Lake Gaston Association estimates that approximately 35% of the homes around the lake are year-round residences with the remaining portion being vacation or second homes. Lake Gaston is almost fully developed with residential structures on both sides of the shoreline (north and south) from the Lake Gaston Dam to the Eaton's Ferry Bridge. Residential development also occurs along Peahill Creek, Lizard Creek, Stonehouse Creek, and other tributaries. West of Eaton's Ferry Bridge there are many areas of concentrated development, including portions

Figure 3-1. General Land Use Map (PDF file titled "Fig 3-1 General Land Use Map.pdf", also see link: http://www.dom.com/about/stations/hydro/pdf/glum.pdf)

of Lake Gaston and its tributaries (e.g., Songbird Creek, Lyons Creek, Hubquarter Creek, Poplar Creek, and Holly Creek).

The undeveloped land use type is adjacent to approximately 50 percent of the shoreline of Lake Gaston. It consists of the following land uses: forests, wetlands, non-pasture grasslands and wildlife management areas. Undeveloped lands are scattered along the shores of Lake Gaston, but tend to be concentrated in the middle to upper portions of the lake.

Agricultural lands are adjacent to approximately 3 percent of the shoreline at Lake Gaston. These lands tend to be concentrated in the upper portion of the lake.

Roanoke Rapids Lake is less developed than Lake Gaston (Table 2-1). Approximately 62 percent of the shoreline of the lake is adjacent to undeveloped land and 20 percent is adjacent to developed land. The remainder is adjacent to agricultural lands. Most of the developed lands are residential. There are several areas of concentrated residential development at Roanoke Rapids Lake. They include the portion of the south shore of Roanoke Rapids Lake that is within the City of Roanoke Rapids and the entrance to Deep Creek. There is some development along the north east shore of the Roanoke Rapids lake; however this is best described as two very small communities.

Less than 1 percent of the lands adjacent to the shoreline have been developed for non-residential uses such as commercial, industrial, recreational and transportation. Dominion has the greatest amount of land in these categories.

3.2.3 Land Use Regulations (Zoning)

Local jurisdictions adjacent to Lake Gaston and Roanoke Rapids Lake have developed comprehensive land use plans and/or zoning ordinances to guide growth.

All of the jurisdictions adjacent to the two lakes have established zones next to the lakes that permit residential development. Even agricultural zones allow residential development on lands near the lakes, although at a density less that that of areas zoned for residential uses. Residentially zoned areas allow varying degrees of development intensity around the lakes and all of the densely developed areas of the lakes are zoned residential.

However, not all of the areas zoned residential are developed yet. These areas have the potential to be developed in the future, which could result in upland habitat loss and would make the shoreline habitat on Dominion properties more important for wildlife in future years.

The following briefly discusses local zoning and other plans relevant to the SMP. Table 3-1 lists the types of zoning designations assigned by local jurisdictions to lands adjacent to the project shorelines.

Table 3-1. Zoning Designation of Lands Adjacent to Project Shoreline

	Lake Gaston			Roanoke Rapids Lake		
	Miles of Shoreline Adjacent To		% of Shoreline	Miles of Shoreline Adjacent To		% of Shoreline
Brunswick County						
A1	8.6	(13.8 km)	21	-	-	-
R1	31.3	(40.4 km)	76	-	-	-
B1	1.3	(2.1 km)	3	-	-	-
Total	41.2	(66.3 km)	100			
Mecklenburg County						
A	66.9	(107.6 km)	66	-	-	-
R1	14.3	(23.0 km)	14	-	-	-
R2	20.1	(32.3 km)	20	-	-	-
B1	0.3	(0.5 km)	>1	-	-	-
Total	101.6	(163.4 km)	100			
Warren County						
AR	2.3	(3.7 km)	2	-	-	-
R	96.6	(155.4 km)	94	-	-	-
LB	1.5	(2.4 km)	1	-	-	-
GC	1.0	(1.6 km)	1	-	-	-
TC	1.7	(2.7 km)	2			
Total	103.1	(165.8 km)	100			
Halifax County (Includes City of Roanoke Rapids)						
LR	28.0	(45.0 km)	80	0.3	(0.5 km)	2
RA	7.0	(11.3 km)	20	15.8	(25.4 km)	98
Total	35.0	(56.3 km)	100	16.1	(25.9 km)	100
Northampton County						
AR	43.2	(69.5 km)	100	18	(29 km)	100
City of Roanoke Rapids						
R12	-	-	-	0.5	(0.8 km)	19
R15	-	-	-	1.9	(3.1 km)	73
R20	-	-	-	0.1	(0.2 km)	4
H1	-	-	-	0.1	(0.2 km)	4
Total				2.6	(4.3 km)	100

3.2.3.1 Brunswick County, Virginia

Brunswick County has zoned lands near Lake Gaston as Agricultural (A-1), Residential (R-1 and R-2) and Business (B-1). Residentially zoned areas (R-1 and R-2) account for 76 percent of the shoreline in the county and are the most prevalent zone. The A-1 zone accounts for 21 percent of the shoreline and the B-1 zone accounts for 3 percent.

Brunswick County adopted a new comprehensive plan as of December 1998 (personal communication, L. Weddington, Planner, Brunswick County, Lawrenceville, VA, May 3, 1999). The County has no watershed plan. Brunswick building code requires a 25 ft. setback from Dominion property on any new structures or homes.

3.2.3.2 Mecklenburg County, Virginia

Lands in the portion of Lake Gaston located in Mecklenburg County (essentially the western third of the lake) that are adjacent to the lake have been assigned one of four zoning designations, or as they are called in Mecklenburg County, districts. These four districts are Agricultural (A), Residential (R-1 and R-2) and Business (B-1). The majority (66 percent) of the shoreline in Mecklenburg County is adjacent to lands that have been designated A. Between the areas that have been designated A are scattered areas of R-1 (14 percent), R-2 (20 percent) and B-1 (less than 1 percent).

Mecklenburg County, Virginia, completed a new comprehensive plan in 1999. The County has no watershed plan. Mecklenburg building code requires a 15 ft. setback from Dominion property on any new structures or homes. Mecklenburg has no watershed protection plan.

3.2.3.3 Warren County, North Carolina

Warren County has assigned six zoning designations to lands adjacent to Lake Gaston. They are Agricultural-Residential (AR), Residential (R), Lakeside Group Camps (GC), Lakeside Tent or Trailer Camping (TC), Lakeside Business (LB) and Neighborhood Business (NB). Most of the land (94 percent) along the shoreline of Lake Gaston in Warren County is zoned R.

There is currently no watershed plan in Warren County. There is no building set-back requirement in Warren County.

3.2.3.4 Halifax County, North Carolina

Four zoning designations have been assigned to lands in Halifax County that are adjacent to Lake Gaston and Roanoke Rapids Lake. They are Lakeside Residential (LR), Residential Agriculture (RA) and Heavy Industrial (HI). Most (80 percent) of the land adjacent to the shoreline of Lake Gaston in Halifax County is zoned Lakeside Residential (LR). The

remaining 20 percent has been zoned RA. The majority (98 percent) of the southern shore of Roanoke Rapids Lake in the county has also been zoned RA.

Halifax County has a Watershed Protection Ordinance. The North Carolina Environmental Management Commission has designated most of the portion of Lake Gaston that is Halifax County (from approximately Lees Creek west to the county line) as a Watershed Protected Area. It has also designated lands adjacent to the southern shoreline of Lake Gaston and Roanoke Rapids Lake from Lees Creek east to the western boundary of the City of Roanoke Rapids as a Critical Area. These designations require a minimum 30-foot setback for buildings when measured from the high water mark. The 30-foot setback is to remain as an essentially undisturbed buffer. (Personal communication, K. Dobbins, Planner, Halifax County, Halifax, N, March 25, 1998).

3.2.3.5 Northampton County, North Carolina

Northampton County has assigned one zone to lands adjacent to the shores of Lake Gaston and Roanoke Rapids Lake. The zone is Agricultural Residential (AR). All 43 miles of shoreline in Lake Gaston and 18 miles in Roanoke Rapids Lake are adjacent to lands that have been zoned AR.

The Northampton County Watershed Plan has identified all of the shoreline of the portions of Lake Gaston and Roanoke Rapids lakes that are contained within the county as within the Watershed Protection Area. The County does not have a watershed plan. The combination of the AR zone and the Watershed Protection Area encourage a mixture of agriculture and low density development. The Watershed Protection Area designation was given to protect water quality and has no buffer requirements. (Personal communication, W. Fielding, Planner, Northampton County, Jackson, NC, March 17, 1999). Northampton building code requires a 25 ft. setback from Dominion property on any new structures or homes

3.2.3.6 City of Roanoke Rapids

All of the lands adjacent to Roanoke Rapids Lake that are within the planning area of the City of Roanoke Rapids are included in a primary growth boundary. Growth within the primary growth boundary is encouraged because of the presence of public services and/or the ability to provide those services in a cost-effective manner. The City of Roanoke Rapids has zoned lands adjacent to Roanoke Rapids Lake that are contained within the growth boundary into one of four zones. Three of the zones are Residential (R-15, R-12 and R-20) and the fourth is Heavy Industrial (HI). The residential zones are located west and east of Roanoke Rapids Dam. The dam area itself is zoned HI.

All lands adjacent to the shorelines that are within the city's jurisdiction are included in the Watershed Protection overlay district. The areas of shoreline west of the dam facilities that are zoned R-15, R-12 and R-20 are included in the Critical Watershed Protection (CWP) overlay district. Both overlay districts require a 30-foot vegetated buffer (personal communication, C. Rountree, Planner, City of Roanoke Rapids, NC, February 1, 2000). The HI zone near the dam and the R-20 zone immediately east of it are included in the Watershed Protection (WP) overlay.

3.3 RECREATION

Kerr Reservoir, Lake Gaston, Roanoke Rapids Lake and the downstream reaches of the Roanoke River offer a wide variety of freshwater-based recreation activities. Viewed together as a complex, these lakes and river reaches offer an impressive array of outdoor recreation opportunities. Individually, each area has unique characteristics and multiple opportunities for outdoor recreation. This freshwater complex straddles the North Carolina and Virginia borders and is easily accessible (2-hour drive) from major population centers like Richmond, Virginia to the north and Raleigh, North Carolina to the south. The region has been identified by some as the premier inland water playground in Virginia (VDCR, 1989).

3.3.1 Existing Recreation Resources at Lake Gaston

Lake Gaston is a popular regional destination due in part to its easy access to a large population base and excellent recreation resources. However, compared to Kerr Reservoir, public recreational access to Lake Gaston is limited (VDCR, 1996). Despite less public access than Kerr Reservoir, Lake Gaston is popular for freshwater fishing and boating. It also has scattered day use facilities for picnicking, bank fishing and swimming. Most of the recreation facilities at the lake are public and were developed to provide boating access to the lake. Commercial facilities around the lake also provide lake access in addition to offering other recreational resources such as camping, swimming and picnicking.

3.3.1.1Boat Access Areas

Public boat access sites at Lake Gaston are generally small (single and double ramps). Facilities typically consist of a boat ramp (some with docks for launching) and associated parking (Table 3-2). Generally, these sites are developed and managed by the respective states' fish and wildlife agencies. Other recreation activities at the boat launching areas are not encouraged, but do occur, particularly bank fishing and picnicking.

Table 3-2. Public Boat Access Areas at Lake Gaston		
Facility	Size	Managed by
Tailrace Park	Single Lane	Corps
Henrico	Single Lane	NCWRC
Steel Bridge Landing	Single Lane	VDGIF
Poplar Creek Landing	Double Lane	VDGIF
Stonehouse Creek Landing	Double Lane	NCWRC
Pea Hill Creek Landing	Double Lane	VDGIF
Summit Landing	Double Lane	NCWRC
Hawtree Creek Landing	Double Lane	NCWRC

3.3.1.2 Hunting, Fishing and Wildlife Protection Areas

There are four large areas on Lake Gaston managed with specific recreation objectives: the special fishing area, the Dick Cross Wildlife Management Area, the Waterfowl Hunting Area and the Waterfowl Management Area. All are located on the upstream reaches of Lake Gaston, just downstream from Kerr Dam.

The special fishing area is a 1,165-acre area managed by VDGIF. It is a shallow, flat area adjacent to the main river channel where a number of small stumps and trees have been left in place to provide prime fish habitat. Signs in the area limit boating speed to less than 5 mph.

The Dick Cross Wildlife Management Area is approximately 992 acres and is managed by VDGIF. It is a waterfowl refuge and, accordingly, waterfowl hunting is prohibited in this area. However, dove hunting is allowed during certain periods. Activities in this area include hunting, wildlife viewing, fishing, trapping, primitive camping, hiking and dog training. Facilities include an observation blind overlooking a wetland area, parking areas and a dog kennel used by sporting dog groups.

The 420-acre Waterfowl Hunting Area is located east of U.S. Route 1 on the north side of Lake Gaston. It is situated on a peninsula and wetland area, and the primary activities here are waterfowl hunting and fishing.

The 120-acre Waterfowl Management Area is located just west of Route 1 at the VDGIF Steel Bridge boat landing. A water control structure at the inlet to the lake is used to manage the flow of water into the Waterfowl Management Area. The area is wetted in the winter and pumped relatively dry during the summer to enhance its wetland characteristics and provide habitat for migratory waterfowl. The area is open to the public and hunting and fishing is permitted per Virginia wildlife regulations.

Dominion has identified shoreline areas that are appropriate for waterfowl hunting. These areas have been identified as hunting "overlay districts" and are located away from residential areas, commercial developments or Dominion facilities. These areas are identified in Appendix D (they are areas 5, 6 and 9).

These areas are in addition to the Dick Cross Wildlife Management Area and the Waterfowl Hunting Area. (identified in figure 3-2)

3.3.1.3 Lake Gaston Day Use Area

In 2007 Dominion developed the Lake Gaston Day Use area, a general use recreation area open for swimming and bank fishing. Also included is a horseshoe pit and a picnic pavilion.

3.3.1.4 Bank Fishing Areas

Between 2006 and 2007, Dominion developed four bank fishing areas; Gaston Dam Tailrace Fishing Area, North Side of Gaston Dam Tailrace Fishing Area, Stonehouse Creek Bank Fishing Area and Miles Creek Bank Fishing Area. Each of these areas is assessable and open to the public 24 hours per day, 7 days per week.

3.3.1.5 Water to Land Facilities

In 2006 Dominion developed the Nocarva water to land facility. Located approximately mid-lake, the facility includes a boat dock, porta-john and picnic tables.

3.3.1.6 Commercial Recreation Facilities

There are a variety of commercial facilities on Lake Gaston, some of which allow the general public to use their facilities (primarily boat ramps) for a user fee. Most commercial facilities, however, do not allow the general public access to their facilities. Recreation opportunities available at the commercial facilities include camping, cabins, golf, swimming (in Lake Gaston and in swimming pools), boat launching, tennis and other activities. Table 3-3 lists the commercial recreation facilities at Lake Gaston available to the public without restriction.

In addition to these facilities, other commercial developments in the immediate vicinity offer a variety of ancillary services. Supply stores providing fuel, groceries, bait and other goods and services are found in many coves along the Lake Gaston shoreline and in nearby residential subdivisions. There are also several commercial campgrounds near Lake Gaston (Table 3-4).

Figures 3.2 and 3.3. Existing Recreation Sites as of October 2010 (See attached files "Fig 3.2 RR Existing Rec Sites 2010.pdf" and "Fig 3.3 GA Existing Rec Sites.pdf")

3.3.1.7 Private Recreational Facilities

Most of the lake-oriented recreational facilities at Lake Gaston are privately owned. These facilities such as docks, boat ramps and beaches are located adjacent to many private parcels of land. Some of the facilities are used only by the adjacent landowners, while others may be shared by a group of landowners in a cooperative arrangement. In some subdivisions, developers have created facilities that are used by residents of the development. There are currently approximately 6,400 licensed docks, piers, boat shelters and boathouses on Lake Gaston (personal communication, Joseph Peterson, Reservoir Manager, Lake Gaston and Roanoke Rapids Lake, 2010).

Table 3-3. Selected Commercial and Public Recreation Facilities at Lake Gaston and Roanoke Rapids Lake Available to the General Public without Restriction

LAKE GASTON				
Facility/Managed By	**Type**	**Activities**	**Facilities**	**Notes**
Public Facilities				
Tailrace Park/ACOE	day use park, boat launch	picnicking, bank fishing	1-lane boat ramp, restrooms, circular drive, picnic tables (4), gazebo, observation platform, parking	Facilities are in good shape. 25 acres
Liberty Hill Trail/ACOE	historic cemetery, trail	hiking, bank fishing	hiking trail, parking	Trail leads from parking area to riverbank. 1 mile.
Dick Cross Wildlife Area/VDGIF	wildlife mgmt. area	hunting, wildlife viewing, fishing, trapping, primitive camping, hiking, dog training	observation, blind, parking, road, kennel	No boating, swimming, wading or target shooting. Building a resource center. 992 acres
Steel Bridge Landing/ VDGIF	boat launch	boat launching, bank fishing	1-lane ramp, parking (handicap accessible)	Only activities related to boat launching allowed. 1.9 acres
Waterfowl Hunting Area/ VDGIF (leased from /Dominion)	waterfowl hunting, mgmt.	Hunting, fishing	1 unsigned rough road	420 acres
Waterfowl Management Area / Dominion	waterfowl hunting, mgmt.	Hunting, fishing	water control structure to enhance wetlands	115 acres, parking at steel bridge landing
Miles Creek Bank Fishing Area / Dominion	bank fishing	bank fishing	parking area, access trails to lake	Approx. 2 acres, accessible
Interstate 85 Rest Area/VA DOT	rest area	traffic breaks, tourist info.	restrooms, parking, VA tourist info.	Above Smith Creek in Lake Gaston.
Poplar Creek Landing/ VDGIF	boat launch	boat launching, bank fishing	2-lane ramp, launching dock, parking, trash barrels (4)	Uneven gravel approach, non-boating uses not permitted. 1.1 acres owned by state, 1.9 acres leased from DOMINION.
Stonehouse Ck. Landing/ NCWRC / Dominion	boat launch, bank fishing	boat launching, bank fishing	2-lane ramp, launching dock, parking, dock on point for bank fishing	Near 3 homes, accessible.

Table 3-3. Selected Commercial Recreation Facilities at Lake Gaston and Roanoke Rapids Lake Available to the General Public without Restriction

Facility/Managed By	Type	Activities	Facilities	Notes
Pea Hill Creek Landing/ VDGIF	boat launch	boat launching, bank fishing	2-lane ramp, launching dock, trash barrels (4)	Residence next door, lighted area.
Summit Landing/ NCWRC	boat launch	boat launching, bank fishing	2-launch lanes, launching dock	No camping, swimming, picnicking posted.
Nocarva Water to Land area/ Dominion	mid-lake boat rest area	pier for docking boat, picnicking	portable toilet, boat dock, picnic tables	Water only access.
North Side Gaston Dam Bank Fishing Area / Dominion	bank fishing area	bank fishing	Packed gravel fines trail to bank, parking and picnicking	Accessible
Gaston Dam Tailrace Bank Fishing Area/ Dominion	bank fishing area	bank fishing	Parking, packed fines trail to bank	Accessible
Lake Gaston Day Use Area Area/Dominion	day use area	picnicking, bank fishing, horseshoes, beach	picnic shelter, picnic tables , portable toilet, changing area, horseshoe pits	Open Memorial day - labor day, 7 days per week. March 1- to Memorial day and Labor day to November 15, 5 days per week, limited hours.
Commercial Facilities				
Nocarva Marina	marina, boat launching	marina services, boat launching	marina, 15-slip moorage, 1-lane ramp	Closed to public.
Morningstar Marina	marina, boat launch, boat rentals	marina services, boat launching, storage, store, restaurant	marina, slip moorage, slip covered, 2-lane ramp	Open for public use.
Stonehouse Timber Lodge Cabins	lodging, camping, boat launching, boat moorage	lodging, boat launching, fishing, camping	1-lane ramp, cabins, campground	Only guests can use boat ramp.
Lakeside Inn	store, day use	store, picnicking, swimming, fishing, children's play area	2 covered picnic pavilions, over 45 picnic tables, swimming area, docks, play equipment	Public can use area for no fee.
Washburn's Marina	marina, store, gas station	boat moorage	store, 23-slip marina	Open to public use for fee.

Table 3-3. Selected Commercial Recreation Facilities at Lake Gaston and Roanoke Rapids Lake Available to the General Public without Restriction

Private Facilities				
Facility/Managed By	**Type**	**Activities**	**Facilities**	**Notes**
River Ridge Golf and Camping Club	resort	golfing, camping, boat launching, fishing	boat ramp, moorage, slips, other resort facilities	No public use, members only.
Lake Gaston Americamps	camping club	numerous activities found at full-service camping resort	marina, beach	No public use, members only.
Lake Gaston Fishing Lodge	lodge, boat moorage	fishing	boat moorage, cabins	No public use, for lodge guests
Lake Gaston Resort	resort	fishing, picnicking, boat launch, swimming, marina and store	boat moorage, boat ramp, beach,	No public use, for guest only
Lakehouse Restaurant	Restaurant, temp. boat parking while at restaurant			
Outdoor World	campground resort	camping, boating, swimming	marina, ramp, swimming area, kids beach, campsites (205), cabins/trailers	For use by resort guests.
ROANOKE RAPIDS LAKE				
Public Facilities				
Thelma Landing/NCWRC	boat launch, bank fishing	boat launching, bank fishing	1-lane ramp, parking	No camping, picnicking, swimming, posted.
Vultare Landing/NCWRC	boat launch, bank fishing	boat launching, bank fishing	1-lane ramp, launching dock (25' long), parking	
5th Street Landing/ NCWRC	boat launch	boat launching, bank fishing	2-lane ramp, 3 launching docks (60'-65' long) parking, overflow parking on dirt/grass	No camping, picnicking, swimming, posted.
Roanoke Rapids Dam/Dominion	observation area, trailhead	viewing dam, hiking trail, parking	observation area, trailhead for Roanoke Canal Trail	
Roanoke Rapids Day Use Area / Dominion	day use park, boat launch	swimming, picnicking, Frisbee golf, volleyball, horseshoes ,walking trail, bank fishing	Marked 9-hole Frisbee golf course, changing rooms, bathrooms, swim beach, playground equipment, fishing pier, pavilions, horseshoe pits, volleyball court, rock fines 1/2 mile measured walking trail	Open Memorial day - labor day, 7 days per week. March 1- to Memorial day and Labor day to November 15, 5 days per week, limited hours.

Table 3-3. Selected Commercial Recreation Facilities at Lake Gaston and Roanoke Rapids Lake Available to the General Public without Restriction

Facility/Managed By	Type	Activities	Facilities	Notes
LOWER ROANOKE RIVER				
Public Facilities				
State Route 48 Bridge Landing/NCWRC	boat launch	boat launching, bank fishing, informal day use	2-lane ramp, parking	No picnicking, swimming, camping posted for launch area.
Roanoke Canal Trail/ Roanoke Canal Commission	trail	hiking, biking	trail	Limited parking, most on street, dawn to dusk operation.
Roanoke Rapids Dam to Weldon Boat Landing	whitewater paddler	flows regulated to provide whitewater opportunities weekends from June 16 – October 31	Route 48 boat landing to Weldon boat landing	flows controlled between 2,000 cfs and 3,300 cfs when river not in flood control
Weldon Landing/NCWRC	boat launch	boat launching, bank fishing	2-lane ramp (24' wide), portable toilets shared w/soccer field, observation deck, parking	Lights near ramp.
State Route 258 Bridge/ NCWRC	boat launch	boat launching, bank fishing	1-lane ramp, parking area, overflow parking area	

Table 3-4. Commercial Campgrounds near Lake Gaston

Facility	Camping Units
Lake Gaston Americamp	245
Lake Gaston Resort	147
Outdoor World	225
Sherwood Forest	100

3.3.2 Existing Recreational Resources at Roanoke Rapids Lake

Like Lake Gaston, Roanoke Rapids Lake is also easily accessible from federal and state highways in North Carolina. However, because daily water level fluctuations at Roanoke Rapids Lake are greater than at Lake Gaston, there has been less development of boat docks, boat ramps and ancillary facilities at Roanoke Rapids Lake. There are approximately 200 private permitted structures on Roanoke Rapids Lake (Joe Peterson, personal communication 2010). The public recreation development consists of boat ramps, a recently developed day use area and a dam viewpoint.

3.3.2. 1 Roanoke Rapids Dam Viewpoint

Dominion has developed a small public viewing area adjacent to Roanoke Rapids Dam. The facility consists primarily of a paved parking area surrounded by a split-rail fence, and has trash barrels and overhead lighting. The site provides a view to the west over part of Roanoke Rapids Lake. The viewpoint also provides trailhead parking for the western end of the Roanoke Canal Trail.

3.3.2.2 Boat Access Areas

The three boat ramp sites at Roanoke Rapids Lake usable by the public are all publicly owned. They are either single or double ramps and the facilities typically consist of the boat launch itself and associated parking (Table 3-5). The NCWRC developed and manages these sites.

Table 3-5. Public Boat Access Areas at Roanoke Rapids Lake

Facility	Size	Managed by
Thelma Landing	Single Lane	NCWRC
Vultare Landing	Single Lane	NCWRC
5th Street Landing	Double Lane	NCWRC

3.3.2.3 Roanoke Rapids Day Use Area

The Roanoke Rapids Day Use Area is a 14-acre general recreation site developed by Dominion and the City of Roanoke Rapids in 2006. The recreation supported by the site includes picnic shelters, a beach area, public restrooms, a Frisbee golf course, horseshoes, volleyball and a measured walking trail. The site is open from the middle of March – middle of November.

3.3.2.4 Roanoke Rapids Tailrace Bank Fishing Area

This site was developed in stages between 2006 and 2009. The final addition, a tailrace footbridge, was completed in the spring of 2009. The addition of the bridge opens the bypassed reach of the Roanoke River just below the Roanoke Rapids dam to anglers and naturalists to a wild and unique reach of the river.

3.3.3 Future Recreational Facilities

Since the implementation of the new license Recreation Plan, there are only a few recreation enhancements left to complete.

A second water-to-land facility will be built on Goat Island, a small island on the south side of the lake east of the Route 903 Eaton's Ferry Bridge. This facility will be geared towards water-based recreationists accessing it via boats, similar to the Norcarva facility cited above. If by 2015 the Virginia Department of Game and Inland Fisheries finds a suitable water-based recreation area, Dominion will provide a portion of the funding for development. A fishing pier at Thelma boat landing and a bank fishing area on the north side of the Roanoke Rapids dam are to be constructed by 2016. An additional area on the North side of the Roanoke Rapids Lake and one near Kerr dam are to be added for bank fishing access by 2026.

3.4 TERRESTRIAL RESOURCES

This section describes terrestrial vegetation and wildlife found along the shorelines of Lake Gaston and Roanoke Rapids Lake. The shorelines found within the project boundary and the waters of the two lakes contain a variety of vegetation types, which serve as habitat for terrestrial wildlife species. The lakes' shorelines and the lakes themselves provide the only regional expanses of shoreline and open water downstream of Kerr Reservoir. Project shorelines also serve as wildlife corridors by connecting remaining tracts of upland forest (including lands beyond but adjacent to the project boundary) and streamside bottomland forests.

3.4.1 Shoreline Vegetation

There is a wide variety of vegetation along the shores of Lake Gaston and Roanoke Rapids Lake. An inventory of shoreline vegetation was conducted in 1996 and 1997. This was followed up by a NCWRC survey in 1999 to identify important shoreline habitat (both terrestrial and aquatic). Based on the survey, 70 shoreline areas were identified as Special Management Areas (see Section 5).

It became clear during the classification and inventory process that land uses on lands adjacent to the lakes have profoundly affected and influenced vegetative patterns on the shorelines of the lakes. Some of those land uses resulted in the removal and/or alteration of shoreline vegetation. The resulting loss of shoreline habitat is one of the primary reasons the SMP was developed.

There are five broad categories of shoreline vegetation found along the shorelines of the lakes (Table 3-6). They are: Forested (natural), wetlands, agriculture, forest production and developed (residential and other developed). The following subsections describe the various categories.

3.4.1.1 Forested

The forests that at one time covered the hillsides adjacent to the two lakes generally have been converted to other vegetation types due to clearing for agriculture, forestry and residential development. Although there are fragments of original forest left along the shores of the lakes, most of the shoreline vegetation has changed over the years to second-growth forests, residential developments forest production lands and other non-forest cover types.

The mixed oak-pine forest type is the most abundant along the shores of the lake. The mixed oak-pine forest is an upland forest type that is most commonly found in drier soils

and slopes. Shrub layers below the forest canopy are typically sparse, although in lower-lying areas that receive more moisture, the shrub layer can be rather dense.

Bottomland hardwood forests are also considered wetlands and occur along stream drainages. Dominant bottomland hardwood trees include red maple, river birch, sycamore and black willow and often occur in association with sweet gum, elm, green ash and loblolly pine.

At Lake Gaston, the undisturbed forest lands adjacent to project shorelines occur in an area of northeast facing bluffs on the south side of Lake Gaston along Interstate 85. This area, although relatively small, supports a mix of bottomland hardwood and mixed moist and dry oak-pine forest types.

Most of the bottomland hardwood forest found along the shoreline of Lake Gaston is found in the upper, narrow reaches of the lake. These bottomland hardwood forests are generally strips of forest between the lake and adjacent lands. Bottomland hardwood forests are also considered wetlands and are discussed in the wetlands section.

At Roanoke Rapids Lake, bottomland hardwood stands are located along streams feeding into the north shore of the lake. However, there are fewer areas that contain bottomland hardwood forest than at Lake Gaston.

Table 3-6. Lineal Miles and Percent Vegetation Cover Type by Lake

	Lake Gaston		Roanoke Rapids	
Cover Type	Miles	Percent	Miles[1/]	Percent
Forested				
Natural pine	0	0	0	0
Planted Pine	34.5	10	1.9	5
Oak-pine	98.7	30	18	46
Oak-hickory	0.0	0	0.9	2
Bottomland hardwoods	9.6	3	0.7	1
Non-forested				
Emergent Wetlands	6.0	2	1.5	4
Scrub-Shrub Wetlands	7.8	2	7.3	18
Developed				
Agricultural-croplands	4.5	1	0	0
Agricultural-other	0.2	0	0	0
Grassland/pasture	9.0	3	2.0	6
Pine plantation	1.9	1	0.8	1
Developed-residential	150.3	47	5.4	13
Developed-other	1.5	1	1.5	4
TOTAL	324	100	40	100

[1/] Acreage determined from aerial photography, and will differ slightly from measurements based on land surveys or topographic maps.

3.4.1.2 Wetlands

Wetlands are a prominent feature along the shorelines of the two lakes. They are extremely valuable habitat for both terrestrial and aquatic wildlife (and fish) because they supply food, foraging habitat and breeding cover. Depending on type and position in the landscape, they also stabilize sediment, physically dissipate waves and currents, improve water quality and export organic matter.

There are three types of wetlands found along the shores of the two lakes. They are bottom hardwood forest, scrub-shrub and emergent. Scrub-shrub wetlands occur near the mouths of stream drainages (typically located at the backs of coves), along the natural banks of the lakes and in shallow embayment's. Most scrub-shrub wetlands occur as narrow fringes and frequently extend only a few feet inland from the water's edge. These fringe wetlands are generally wider on Roanoke Rapids Lake due to the greater drawdown and availability of exposed sediments for plant colonization.

Emergent wetlands occur as fringe marshes, extensive marshes (mostly managed for waterfowl) and, most commonly, as a mosaic of marsh interspersed with scrub-shrub wetlands.

Suitable substrate and shallow water for wetlands tend to be restricted to coves and mouths of tributary streams, where most wetlands (other than fringe types) occur. While wetlands represent a relatively small percentage of shoreline vegetation, they are a prominent feature of the lake.

Bottomland hardwood forest is the most abundant wetland type at Lake Gaston and typically occupies low lying areas bordering streams that drain into the lake. Several mature and expansive stands occur near the western end of Lake Gaston, in the vicinity of the Dick Cross Wildlife Management Area. Two relatively mature bottomland hardwoods stands are located along Jordan and Lizard creeks (although the upland forest east of Lizard Creek has recently been harvested which will potentially diminish the wildlife habitat value of the remaining bottomland hardwoods near Lizard Creek).

The 3-foot fluctuations in Roanoke Rapids Lake create a larger band of exposed sediments along the shoreline of Roanoke Rapids Lake than Lake Gaston. Wetland plants colonize the exposed substrate and, consequently, wetlands associated with the shoreline of Roanoke Rapids Lake tend to be wider compared to those on Lake Gaston.

Bottomland hardwood forests are only found in a small number of locations at Roanoke Rapids Lake. Scrub-shrub wetlands are the most prominent wetland type found along the shoreline. As with Lake Gaston, scrub-shrub wetlands occur as narrow fringes along the shore or at the back of coves. An extensive scrub-shrub and emergent wetland complex is located at the western end of the lake in a shallow embayment northeast of Gaston Dam. Scrub-shrub wetlands also surround Clements Island located just east of the dam.

3.4.1.3 Agriculture and Forest Production

Agricultural lands are composed of croplands, orchards and grassland/pasture. Forest production lands are composed of pine plantations. Areas classified as forest production include recently logged or planted areas, along with more mature stands of trees waiting for harvest. Some of the project shoreline areas adjacent to agricultural and forestry lands contain narrow, remnant bands of native vegetation, particularly oak-pine forest.

The majority of agricultural land adjacent to the shorelines at Lake Gaston is in the western third of the lake, including the largest block, which is located on the north side of the lake. A strip of bottomland hardwood separates the agricultural area and the lake. Bands of

native vegetation of varying widths remain adjacent to the shoreline at most forested areas that have been harvested.

There are no agricultural lands immediately adjacent to Roanoke Rapids Lake. There are forest production lands near the shoreline, but most are buffered from the lake with bands of native vegetation.

3.4.1.4 Residential and Other Developed Areas (Commercial, Industrial and Transportation)

The residential category includes any area that contains adjacent residential dwellings. Vegetation types in residential areas vary widely and can range from highly altered areas containing large expanses of maintained lawns to wooded areas where the clearing of native vegetation has been minimal.

Recreation, commercial, industrial and transportation land uses are adjacent to less than one percent of the two lake shorelines. Although there are some isolated pockets of native vegetation in these areas, it can be assumed that, in general, these shoreline areas contain little native vegetation of value to wildlife.

Developed areas adjacent to the shoreline of Lake Gaston are primarily located in the eastern two thirds of the lake and are primarily residential. Areas of concentrated residential development include the main body of the lake east of Eaton's Ferry Bridge. The major creeks (e.g., Pea Hill, Lizard, Songbird, Poplar, Sixpound, Holly, Lyons, Hubquarter, Stonehouse, Pretty, Hamlin, etc.) are heavily developed, as well.

The lands adjacent to the shorelines of Roanoke Rapids Lake are less developed than those of Lake Gaston (Table 2-1). Most of the residential areas are along the south shore and are within the City of Roanoke Rapids. The two other areas that have received concentrated development are located in and on either side of the entrance to Deep Creek, and along the north shoreline near Roanoke Rapids Dam. As at Lake Gaston, the treatment of shoreline vegetation in these residential areas varies.

3.4.2 Wildlife

A diversity of wildlife species are found along and near the shorelines of Lake Gaston and Roanoke Rapids Lake (Appendix A). The wide range of wildlife is a result of the variety of habitat found along the project shoreline including forest, wetland, open (grassland/pasture, old field, and agriculture), edge and open water habitats. Species that require large unfragmented blocks of habitat, or which are sensitive to human activities, are generally less abundant than species that use the more plentiful open water or wetland habitats.

3.4.2.1 Reptiles and Amphibians

The two lakes provide habitat for relatively common species of frogs, turtles and water snakes, and possibly some life stages of salamanders and newts. Forty-three species were encountered during the 1996/1997 field investigations that were part of the relicensing efforts. Shoreline wetlands, and the bottomland hardwood forests adjacent to the streams that feed into the project lakes, harbor a greater diversity of reptiles and amphibians compared to lake habitats. Bottomland hardwoods near the shoreline and the dryer slopes above the shoreline which often are a transition between wetlands and upland habitats, also provide good herpetofauna habitat.

At Lake Gaston, the West Bluff Hardwood-Wetland area complex is especially rich in species diversity. Additional productive areas for reptiles and amphibians include: Smith Creek and associated wetlands, Lyons Creek shoreline and headwaters, upper reaches of Hubquarter Creek, and Big Stone House Creek and the associated hardwood forest.

At Roanoke Rapids Lake, a mature stand of bottomland hardwoods associated with Deep Creek is a productive area for reptiles and amphibians.

3.4.2.2 Birds

Ninety-four species of birds were recorded in the vicinity of the project between 1996 and 1997 (Appendix A). Breeding was confirmed for 26 species; 37 additional species are considered probable breeders. Many species use open areas and forest edges common to lands near the shoreline. Forest habitats and wetlands are also important bird habitat. Large blocks of forested land potentially serve as breeding habitat and migration corridors for neotropical migrant songbirds. Forest habitats are of interest because of the recent attention given to declines in migratory songbirds that breed in these forests and winter in tropical and subtropical areas to the south. Although the amount of original forest adjacent to the shoreline of the two lakes is not significant, any forest that can serve as breeding habitat for these birds becomes an increasingly valuable resource because similar forests are fragmented and cleared. The relatively extensive mosaic of oak-pine and oak-hickory forests supports more forest-dependent species. Forest-interior species that are sensitive to forest fragmentation are present in some areas near the project shoreline. In many parts of the east coast these species, especially the neotropical migrant species, are declining in numbers.

Fish and aquatic invertebrates found in project waters also support eagles, kingfishers and various waterfowl. Stumps and snags in swamps that occur where streams enter the project lakes also support bird species that occur relatively uncommonly in the project region.

Bald eagles are found near the lakes and there are five known bald eagle nests (based on 2009 survey) (and a known nest of osprey). Based on a 1997 aerial survey, it was determined that there is a general lack of suitable bald eagle nesting habitat along or near Lake Gaston and Roanoke Rapids Lake. Wintering eagles have been spotted in the vicinity below Kerr Dam and Roanoke Rapids Dam, attracted by fish that are killed or stunned as they pass through the turbines.

Significant wetland habitats for birds along Lake Gaston include the waterfowl hunting area (part of the Dick Cross Wildlife Management Area) east of U.S. Route 1 and south of Route 615, near the mouth of Miles Creek in Mecklenburg County, Virginia, and the area south of Route 712 and east of Interstate 85 along Smith Creek, also in Mecklenburg County. Other wetland habitats of significance include forested wetlands along Lizard Creek and a small area along Jordan Creek.

Because of the relatively smaller size of the area associated with Roanoke Rapids Lake, exceptional resources for birds are less common than at Lake Gaston. Of note is a mature stand of bottomland hardwoods associated with Deep Creek that provide good habitat for a diverse assemblage of birds.

3.4.2.3 Mammals

There are a number of mammal species found in and near the shoreline areas of Lake Gaston and Roanoke Rapids Lake. Species that are characteristic of the oak-pine forest types that dominate the uplands surrounding the lakes and are along much of the shorelines of the lakes are the most common at Lake Gaston and Roanoke Rapids Lake. Almost all of these species use the mix of woodland and open land found near project shorelines. Other species use lakeshore habitat as well as the bottomland hardwoods and streams that drain into Lake Gaston and Roanoke Rapids Lake. Bottomland forests, scrub-shrub and emergent wetlands provide important habitat.

VDGIF's Dick Cross Wildlife Management Area, located along the north bank of the Roanoke River just downstream from Kerr Dam, is managed primarily for doves and other small game species, and serves as a no-hunting refuge for waterfowl.

3.5 FISHERIES

The aquatic habitat and fisheries resources of the entire Roanoke River Basin are diverse, including those found in Lake Gaston and Roanoke Rapids Lake. About 126 species are present in the Roanoke River Basin; about 73 of those are present in the project area waters downstream of Kerr Dam (Appendix B).

3.5.1.1 Lake Gaston

Lake Gaston supports a regionally important warm water fishery. NCWRC manages Lake Gaston, with emphasis on game species such as largemouth bass, striped bass, crappie, catfish and walleye. Increased recreational use puts pressure on the NCWRC to maintain adequate populations of these desired sport species. Several fish species have been introduced and some are stocked primarily to help maintain adequate recreational resources. Annual stocking typically includes both striped bass and walleye.

The habitat of Lake Gaston is varied, as the lake has many arms, bays and shoreline variation. Significant shoreline home and dock development has also contributed to a variety of habitat types. Tributary arms and bays appear to be important nursery areas for many species, and the regions where the shoreline has been augmented with rip rap often has concentrations of sunfish. The dock areas appear to be utilized by largemouth bass as cover in spring.

The resource agencies (primarily NCWRC) manage the lakes to support the recreational fishery with emphasis on maintaining healthy largemouth bass populations and stocking of striped bass and walleye. Recent study efforts have been directed at evaluating prey resources (resident smaller fish and other organisms eaten by sport fish), water quality influences on stocked striped bass, and potential walleye spawning.

Most of the fishing effort in Lake Gaston is for largemouth bass, striped bass and catfish. This region typically attracts fisherman in the spring months as striped bass congregate at the base of the dam.

3.5.1.2 Roanoke Rapids Lake

Roanoke Rapids Lake is similar to Lake Gaston in habitat and species composition. However, it is much smaller in size, and shallower on average. Fishing at Roanoke Rapids Lake focuses primarily on largemouth bass, followed by, striped bass, catfish and crappie.

The Roanoke Rapids Lake habitat differs from Lake Gaston in that there are fewer tributary arms and bays, and less shorefront housing development. Though the number of tributaries is limited compared to Lake Gaston, the tributaries are generally are more heavily used by anglers than the main body of the lake.

3.6 ECOLOGICALLY SENSITIVE AREAS

Dominion and NCWRC biologists surveyed the shorelines of Lake Gaston and Roanoke Rapids Lake to locate areas that had significant ecological value. These areas include fish spawning areas, fish nursery areas, areas with overhanging vegetation and structures that

provide fish habitat, sandy bottom areas for striped bass, wetlands, shallow areas, water willow areas near shore and land areas with large vegetated buffers between the lakes and adjacent property owners. These ecologically sensitive areas were the basis for the shoreline management classifications that were developed for the Shoreline Management Plan as described in Section 5.1. Appendix D lists and briefly describes the Ecologically Sensitive Areas and Figure 5-1 depicts the location of these areas.

3.7 WATER QUALITY

Lake Gaston and Roanoke Rapids Lake have generally good water quality. Water quality of the lakes is affected by the input of chemical constituents from drainages entering the Roanoke River upstream of the lakes, from streams directly entering the lakes, and from runoff from adjacent lands. The water quality of the lakes is most affected by Kerr Reservoir, because it is the primary source of water for the lakes.

Water entering Lake Gaston has a retention time of 29 days (based on a volume of 450,000 acre-feet at full pool), which is similar to many North Carolina reservoirs with hydropower as their primary use. Roanoke Rapids lake has a much shorter retention time (5 days) than Lake Gaston due to its smaller volume (77,100 acre-feet) and operations.

The State of North Carolina has designated Lake Gaston and Roanoke Rapids Lake as protected for water supply and suitable for primary recreation, aquatic life protection and survival, fishing, wildlife and agriculture. The five designations that are used to rate the quality of water are: Fully supporting, support threatened, partially supporting, not supporting and not evaluated. Lake Gaston and Roanoke Rapids Lake are considered partially supporting of their designated uses. This is primarily due to extensive presence of hydrilla, which can impede boat navigation (NCDWQ, 1996). Both chemical treatment and grass carp are used to reduce the amount of hydrilla in Lake Gaston.

The three major areas evaluated by NCDWQ in the Roanoke River Basinwide Plan are for aquatic life, recreation, water supply and fish consumption. All the waters within the Roanoke River Basin are considered impaired for fish consumption (mercury). The two lakes are considered fully supporting for aquatic life and water supply. The reservoirs were not rated for recreation because insufficient data was collected (NCDWQ, 2006). However, the NC Wildlife Resources Commission and Dominion performed a combination creel survey and recreation report required by the Roanoke Rapids and Gaston FERC license in 2008 (Dominion, 2009). Indications are the lakes would likely be rated as fully supporting if these data were part of the basinwide planning process.

Another source of water quality impairment for the entire portion of the Roanoke Rapids system in North Carolina was from non-point sources. Several of the tributaries that flow into the reservoirs were evaluated in the 2006 cycle basinwide plan. Smith Creek, Newman's Creek, and Sixpound Creek were rated impaired due to habitat degradation. A portion of Smith Creek was rated impaired due to low dissolved oxygen. The 2006 basinwide plan indicated that agriculture practices and sedimentation seemed to be the greatest contributors to the impaired ratings (NCDWQ, 2006).

Sediment samples collected for analysis during 1996 from Lake Gaston and Roanoke Rapids Lake did not indicate adverse levels of metals, pesticides or polychlorinated biphenyls (PCBs) (Dominion, 1997a). No pesticides or PCBs exceeded detection levels, and the metals levels were generally low. No standards for these chemicals in sediment currently exist in North Carolina. Based on methods developed by Long et. al., (1995) for assessing likely adverse levels of chemicals in sediment, values that were detected in the samples were not in the adverse range, and lack of detection of some other elements also indicated no chemical concentrations of concern (Dominion, 1997a).

Although less water quality work has been conducted on Roanoke Rapids Lake than for Lake Gaston, it is likely that conditions are similar to those monitored in Lake Gaston. Based on 1996 sampling at Roanoke Rapids Lake, most other water quality parameters were within state standards. Chemical composition of sediment in Roanoke Rapids Lake does not indicate that there are levels of concern.

3.8 CULTURAL RESOURCES

Important cultural resources are known to exist near and within the Dominion shoreline area. Human occupations have been documented archaeologically from as early as 9500 BC, the Paleo-Indian period, through the Archaic, Woodland and protohistoric periods, up to the early 18th century.

The impoundment of Lake Gaston and Roanoke Rapids Lake resulted in the inundation (or semi-inundation) of all or portions of at least 279 archaeological sites that contain components dating to various prehistoric periods (227 sites in Lake Gaston and 52 sites in Roanoke Rapids Lake). Based on reviews of archaeological site files maintained by the North Carolina Archaeology and Historic Preservation Section of the Division of Archives and History (the North Carolina State Historic Preservation Office [NCSHPO]), the University of North Carolina Department of Anthropology at Chapel Hill (UNC), and the Commonwealth of Virginia's Department of Historic Resources (VASHPO), a total of 365 archaeological sites had been previously recorded within the Lake Gaston area and its

immediate vicinity. Of these, 237 were located within North Carolina and 128 were located within Virginia. The majority of sites represent prehistoric period sites. In a couple of instances, the prehistoric sites also contain historic period components. A number of these sites are believed to meet the criteria for eligibility to the National Register of Historic Places (NRHP) as defined in 36 Code of Federal Regulations (CFR) 60.

In 2006, FERC approved Dominion's Historic Resources Management Plan (HPMP). The HPMP requires Dominion to annually survey the documented sites, record current condition and report every 5-years to the NC State Historic Preservation Officer and FERC. If any degradation to the sites is discovered, Dominion is to proceed per the plan to take appropriate measures to protect the sites.

4. ESTABLISHMENT OF THE SHORELINE MANAGEMENT PLAN

In June 1997, the SMP Technical Work Group (composed of resource agency representatives, local counties, local business representatives, concerned citizens, homeowners groups, and Dominion) started the process of developing a SMP to more effectively manage Lake Gaston and Roanoke Rapids Lake. To address the shoreline management issues facing Lake Gaston and Roanoke Rapids Lake, the SMP Technical Work Group formed four subcommittees: Recreation and Public Access, Safety and Trash Removal, Land Use Classification and Policies, Permits and Enforcement.

Although the Shoreline Management Plan is complete, it is a "living document" that will stay flexible enough to change as conditions warrant. The SMP attempts to maintain a balance between the conservation of natural resources and economic development. Among its goals are: Improving the quality of lake and shoreline natural resources, creating an attractive and accessible lake and shoreline setting for the public and adjacent landowners, economic development, and consistency with other jurisdictional policies and plans.

The FERC license issued to Dominion in 2004 contains the Roanoke Rapids and Gaston Comprehensive Settlement Agreement (SA) as Appendix B. Article LK4 of the SA requires a 5-year review of the SMP. The first 5-year review is contained in this version (revision 1) of the SMP. The 5-year review and resultant revision has been developed in consultation with the NC Wildlife Resources Commission, VA Department of Game and Inland Fisheries, the US Fish and Wildlife Service, the Lake Gaston Association, the Regional Partnership of Local Governments, the City of Roanoke Rapids and the Friends of the Roanoke Rapids Lake.

The SMP replaces the previous North Carolina Power Guideline and Permit system, which was in place prior to 1998. The primary focus of the Guideline and Permit system was to control and inventory shoreline development on Dominion property by adjacent landowners. The guidelines and permits were necessary to ensure that shoreline development on Dominion property was not detrimental to the operation of the project, the general public and/or other adjacent property owners. They also helped foster a fair division of shoreline use by adjacent property owners while allowing Dominion to manage the use of its property.

The guidelines and permits included minimum construction specifications (and in some cases construction techniques) and gave Dominion a mechanism for reviewing and approving the design and construction of facilities on Dominion property. Maintaining records of permits also allowed Dominion to maintain a record of shoreline facilities that

had been constructed on Dominion shoreline property. The following were the guidelines and permits that were part of the Guideline and Permit system: Tree Removal and Landscaping; Piers, Docks, Decks, Boathouses and Boatslips; Bulkheads and Riprapping; Dredging; Withdrawal of Water for Fire Protection; Withdrawal of Water; and Satellite Dishes and Antennas.

4.1 DEVELOPMENT OF THE SHORELINE MANAGEMENT PLAN

The previous shoreline permitting process was adequate for several purposes, including monitoring shoreline development. The process was not as effective for protecting natural resources and providing public recreational opportunities for public access to the lakes and shoreline. The SMP attempts to provide these safeguards while at the same time allowing appropriate development on Dominion's shorelines by adjacent property owners.

Dominion and resource agencies determined that a SMP was required to address changing conditions at Lake Gaston and Roanoke Rapids Lake. Increased development of lands adjacent to the two lakes has had effects on shoreline vegetation, wildlife and fisheries. In addition, it was decided that public recreational access to the lakes was somewhat limited. The SMP was developed to better protect shoreline and aquatic habitat, provide additional public access to the lake and to give adjacent property owners predictability in knowing the level and type of facility development that would be permitted in different shoreline classifications.

4.1.1 Goals of the Shoreline Management Plan

The SMP was developed by Dominion, Federal, state and local agencies, local groups, and individuals. Involvement from a range of interests helped create balance while maintaining and improving upon the qualities that make Lake Gaston and Roanoke Rapids Lake special places of regional significance from both an environmental and economic perspective.

The primary goals of the SMP are to: manage the shorelines to make them safe for the public; protect and enhance the natural resources of the lakes and shorelines; provide public recreational access; and maintain water quality while allowing controlled use of Dominion shoreline by nearby property owners. The following discusses the primary goals of the SMP.

4.1.1.1 Management of Shorelines to Make Them Safe for the Public

One of the primary goals of the SMP is to manage project shorelines in such a way as to ensure public safety. Dominion has, and will continue to, prohibit public access to areas where Dominion operations could be dangerous to the public safety. Shoreline areas near

the two project dams that have been off limits to the public in the past will continue to be. Although there will be limited access to areas below the dams near the tailraces for bank fishing, fencing will be used to keep the public away from the most potentially hazardous areas. Dominion will have the option to restrict the public from accessing the areas below the dams near the tailraces during conditions or operations that could increase risk to the public.

During the initial development of the SMP, the Public Safety and Trash Removal Technical Work Group adopted measures to make water recreation on Lake Gaston and Roanoke Rapids Lake safer. Dominion has implemented the safety recommendations it has jurisdiction over as part of the licensing process. One of the recommendations requires adjacent property owners receiving a new license to construct a pier, dock, or boat slip to install reflectors on their docks to reduce the likelihood of nighttime collisions. It has been included in the Lake Gaston and Roanoke Rapids Lake Construction and Use Procedures (Appendix C).

Other safety features are provided by agencies other than Dominion (e.g., The Lake Gaston Water Safety Council and the Brunswick County Water Safety Committee through grants from Boat U.S.). These safety features include signage at public boat ramps, lights on bridges, and markers denoting the state line.

4.1.1.2 Protection and Enhancement of Natural Resources

The shorelines and waters of the lakes are regionally important for wildlife and fisheries. For wildlife, shoreline vegetation can be used for shelter, foraging, and breeding. The shoreline is also used as travel corridors for wildlife species that use shoreline and creek bottoms to travel from area to area of suitable habitat. Development around the lakes and loss of shoreline and aquatic vegetation has resulted in a loss of breeding, shelter and foraging habitat for wildlife and fish.

As discussed in Section 3.6, Dominion and NCWRC biologists identified Ecologically Sensitive Areas located along the shores of Lake Gaston and Roanoke Rapids Lake. These areas help provide breeding, shelter and foraging habitat for wildlife and fish.

The SMP helps preserve existing shoreline habitat in four ways. The first way is through the establishment of a shoreline classification system, the second with Construction and Use Procedures that take into account the ecologically sensitive areas, the third with a public education program and the fourth through an inventorying and tracking system that has been developed.

The shoreline classification system preserves valuable habitat by reducing the amount of disturbance and access permitted in sensitive areas. In the past, Dominion has allowed adjacent property owners obtaining permits to cross Dominion shoreline or build structures, such as docks and piers, to access the water of Lake Gaston and Roanoke Rapids Lake. Dominion will continue to allow adjacent landowners access to the waters of the lakes, but additional measures are being taken to protect shoreline vegetation, wildlife and fisheries resources. By protecting the natural resource attributes that make the lakes desirable from a real estate perspective, the SMP helps to ensure that those attributes are protected and will be enjoyed by future and present adjacent property owners and others.

The SMP has classified shoreline areas (see Section 5) and places some restrictions on shoreline access and development. Through the shoreline classification system, adjacent landowners will be able to anticipate the types and density of shoreline access that will be allowed in the future on Dominions shoreline. This system allows additional shoreline access development in areas that are currently heavily developed and have less wildlife and fisheries habitat value. In shoreline areas that have high wildlife and fisheries value (especially areas that have not been platted), less intensive shoreline access development will be allowed.

The second way the SMP protects habitat is through Construction and Use Procedures. All development activities that occur on Dominion's shoreline property or lake bottom will have to comply with the procedures. As part of the process, an inventory of existing vegetation is required as well as a revegetation plan. The revegetation plan mandates the use of plant materials beneficial to wildlife and fisheries and encourages maintaining existing native vegetation.

The procedures also have provisions such as seasonal construction restrictions to protect wildlife and fisheries. In addition, erosion control, minimization of areas of disturbance and other measures are necessary to protect water quality.

A public education program is the third way the SMP benefits wildlife and fisheries. Dominion has an educational program for adjacent property owners and the public to address revegetation. Adjacent property owners are encouraged to replant Dominion's shoreline property they may have cleared or impacted with plantings beneficial to wildlife. Dominion has re-vegetated a shoreline area at the Roanoke Rapids Day Use Area that the public can view to get ideas on appropriate design and plant materials.

The fourth way that the SMP benefits wildlife and fisheries is through the inventory and tracking process that has been developed for the lakes. Dominion has cataloged existing

shoreline conditions. Shoreline data adjacent to waterfront properties are being recorded in a Geographic Information System (GIS) database. Data includes photographs of existing vegetation and shoreline facilities such as piers and bulkheads. By tracking this type of information, Dominion can evaluate changes over the years and modify the SMP as needed.

4.1.1.3 Provision of Public Recreational Access

Public use and access is focused on designated public facilities such as the public access areas that have been established and managed by VDGIF, NCWRC and Dominion. Although there is currently public access locations scattered around the lakes, the Recreation Technical Work Group determined during the development of the SMP that additional facilities should be provided to offer more public access locations and different types of recreational opportunities at the lakes. As discussed in the Recreation Plan, Dominion developed these new public recreation facilities that allow for additional access to the waters of the lakes and provide land-based recreation. Per License article 423 Recreation Plan, additional recreation areas will be provided as discussed in section 3.3.3 of that plan.

In addition to specific recreation sites, a waterfowl hunting overlay zone has been created along Dominion shorelines at both lakes where hunting will be encouraged (Table 5-1). These hunting areas are removed from residential or commercial areas and are areas where hunting can occur without conflict with other users.

4.1.1.4 Maintenance of Water Quality

Lake Gaston and Roanoke Rapids Lake currently have good water quality. Although the greatest influence on the lake's water quality is from Kerr Reservoir, the SMP helps to maintain or improve water quality. Construction activities and the application of pesticides and fertilizers on Dominion land adjacent to the lake or on land adjacent to creeks that feed into the lakes are regulated through the SMP.

Measures have been implemented through the Construction and Use Procedures to reduce the amount of sediment that can enter the lakes either through construction disturbance, erosion or disturbance of the lake bottoms. Runoff of pesticides and fertilizers from adjacent lands, particularly lawns, should be reduced through the educational program (see section 4.2). In addition, new lawns will be discouraged on Dominion's shoreline, except for public recreation facilities. Native landscaping is encouraged. A list of native plants suitable for shoreline stabilization and wildlife habitat is included with the Construction and Use procedures.

Because the SMP applies only to activities on Dominion's shoreline property, it does not control impacts to water quality that occur on property beyond the project boundary. However, Dominion will facilitate contact with appropriate local, state or Federal agencies when citizens report events outside the project boundary that affect the water quality of the lakes.

4.2 SHORELINE EDUCATION PROGRAM

Dominion implemented an educational program to inform the public on issues regarding shoreline management. This includes annual training for contractors and real estate agents around the lake; face to face meetings with first time perspective developers or property owners; meeting developers on site to help in their understanding of what Dominion may or may not allow to be constructed and meeting with various groups around the lake making presentations and answering questions.

4.2.1 Construction and Use Procedures

Dominion will conduct annually classes for contractors that are interested in doing work for adjacent landowners on Dominion's shoreline lands. These classes will educate contractors regarding the Construction and Use Procedures and will result in a list of contractors that have agreed to abide by the Procedures. Upon request, Dominion will provide this list of contractors to property owners filing applications to do construction on Dominion's shoreline property. Dominion will also conduct classes annually for real estate brokers to ensure requirements of the Construction and Use Procedures are communicated to new property owners adjacent to the project.

4.2.2 Vegetation/Wildlife Habitat

A major focus of the Construction and Use Procedures is to help maintain and improve the condition of native vegetation along project shorelines. One of the primary reasons for this objective is to preserve and enhance wildlife habitat. Dominion will educate the adjacent property owners and the general public on how to minimally impact, maintain and/or reintroduce vegetation that is beneficial to wildlife. Dominion has established vegetation clearing and revegetation requirements in the Construction and Use Procedures. Dominion has also established a demonstration area on a lakeside parcel near the Roanoke Rapids Power Station. The parcel will serve as an educational tool for demonstrating how the vegetative clearing and revegetation requirements are implemented.

Dominion will also provide informational booklets for adjacent homeowners and the general public regarding vegetation management to improve wildlife habitat on Dominion's shoreline lands and adjacent private lands. .

4.2.3 Fisheries Enhancement

To maintain and improve fisheries resources at the project, Dominion works with state agencies and private organizations regarding improving fisheries habitat. Implementation of the Construction and Use Procedures will be beneficial to fisheries. Working with adjacent homeowners to provide better fish habitat and water quality by retaining aquatic vegetation, using rip rap rather than bulkheads, placing brush piles in water and not fertilizing or spraying pesticides near shoreline are encouraged. Dominion also is contributing more than $60,000 annually to the NCWRC and VDGIF for stocking fish in Lake Gaston and Roanoke Rapids Lake.

4.2.4 Recreational Use of the Lakes and Shoreline Parks

Dominion will produce an informational booklet in 2011 called The Recreation Guide to Lake Gaston and Roanoke Rapids Lake. It will include maps of recreational facilities open to the public, descriptions of the facilities, and contact telephone numbers to call for information, etc. In addition, the booklet will discuss safety issues, trash disposal, fishing information from NCWRC and VDGIF (and regulations) and advise the public regarding the use of the Dominion shoreline.

5. IMPLEMENTATION OF THE SHORELINE MANAGEMENT PLAN

5.1 SHORELINE MANAGEMENT CLASSIFICATIONS

The SMP Technical Work Group developed two shoreline classifications for Dominion's shoreline lands that are adjacent to residential (or potentially residential) shorelines: General Development Areas and Special Management Areas. Special Management Area classification was assigned to areas that had been identified as Ecologically Sensitive Areas. These Ecologically Sensitive Areas (and these Special Management Areas) are identified in Figure 5-1 (PDF files "Fig 5-1 Sensitive Habitat Map 1 of 2.pdf" and "Fig 5-1 Sensitive Habitat Map 2 of 2.pdf"). Both General Development Areas and Special Management Areas allow varying degrees of development on Dominion shoreline property. The classifications were developed to protect natural resources while providing for controlled lake access by adjacent landowners. Both classifications allow development and protect environmental resources. The primary differences between the two classifications are the level of development allowed and the degree of environmental protection provided. Dominion maintains maps that identify all General Development Areas and Special Management Areas subclassifications (see Section 5.1.1.2). Appendix D lists the Ecologically Sensitive Areas and the reason for their inclusion.

In addition to guiding the management of Dominion's shoreline property adjacent to residential areas, the SMP guides the management of Dominion's shoreline property adjacent to commercial areas. The Construction and Use Procedures that apply to Dominion's shorelines that are adjacent to residential and commercial areas are discussed below.

5.1.1 Residential Shorelines

Most of the shoreline of the two lakes is adjacent to lands that have the potential to be developed for residential uses or have already been developed for residential use. The following describes the two classifications for shorelines adjacent to residential areas.

5.1.1.1 General Development Areas

General Development Areas comprise 49 percent of the project boundary at Lake Gaston and 47 percent at Roanoke Rapids Lake (Table 5-1). Although shoreline development might be more intense in General Development Areas than in Special Management Areas, the protection of natural resources in all areas is an important part of the permit application review process. Most of the shoreline areas that are already developed and did not have high ecological or cultural value when lake shoreline habitat surveys were conducted from 1996 through 1998 are located in the General Development Areas.

Table 5-1. Shoreline Management Classifications of Lands Adjacent to Project Boundary

	Lake Gaston		Roanoke Rapids	
	Miles	Percent	Miles	Percent
General Development	276.7	60	20.7	47
Special Management Areas				
Limited Use Areas	22.2	5	5.8	13
Sensitive Areas	62.7	14	17.7	40
Undevelopable Areas	102.6	21	0	0
TOTAL	464.2	100	44.2	100

NOTE: shoreline miles noted based on project boundary, not shoreline miles at normal pool.

5.1.1.2 Special Management Areas

Special Management Areas are shorelines that have high ecological or cultural resource values. They comprise 40 percent of the project boundary at Lake Gaston and 69 percent at Roanoke Rapids Lake (Table 5-1). The locations of these Special Management Areas were based upon the Ecologically Sensitive Areas that were identified in the field by Dominion and NCWRC biologists. The Ecologically Sensitive Areas are described in Appendix D and in Section 3.6. The resource values that occur in the Special Management Areas are attributed to the Ecologically Sensitive Areas. The Special Management Areas include fish spawning areas, shoreline with overhanging vegetation, shoreline and underwater (stumps, etc) structures that provide fish habitat, beach areas that are used by striped bass, wetlands, shallow areas, water willow beds, and upland areas that provide large buffers and wildlife habitat between adjacent property owners and the lakes. Shorelines that have high cultural resource values occur on both lakes. They are less common than areas with high ecological values and have not been identified specifically as cultural resource areas in order to protect the resources.

Special Management Areas have been further divided into three sub-classifications, Limited Use Areas, Sensitive Areas and Undevelopable Areas. Limited Use Areas are Special Management Areas that are adjacent to lands that were platted by the surrounding five counties as of May 31, 1998. These shorelines are platted but were identified in the field during 1996 and 1997 as still having high ecological or cultural resource values. Sensitive Areas are located adjacent to upland areas (beyond Dominion shoreline property) that could potentially be developed in the future, but are not currently developed.

Figure 5-1. Ecologically Sensitive Areas See attached files "Fig 5-1 Sensitive Habitat Map 1 of 2. pdf" and "Fig 5-1 Sensitive Habitat Map 2 of 2. Pdf", or see http://www.dom.com/about/stations/hydro/construction-and-use-procedures.jsp, sensitive area maps 1 and 2.

11 x 17

Undevelopable Areas are Sensitive Areas that are located adjacent to upland areas where it is very unlikely development would occur due to factors such as steep topography, shallow water (at the ends of creeks) or conservation-oriented adjacent land uses. It is assumed that in the future there will be little or no demand for shoreline development from upland property owners adjacent to Undevelopable Areas.

Of the 187 miles of project boundary at Lake Gaston that have been classified as Special Management Area, 22 miles (12 percent) have been designated as Limited Use Area, 63 miles (33 percent) as Sensitive Area, and 103 miles (55 percent) as Undevelopable. At Roanoke Rapids Lake, 6 miles (25 percent) of the Special Management Area shoreline (23 miles total) has been identified as Limited Use Area and 18 miles (75 percent) as Sensitive Shoreline Area. No Undevelopable Areas were identified.

Different levels of shoreline development will be allowed in the General Development and Special Management Areas. These differences are discussed in Appendix C.

5.1.2 Commercial Development and Dense Residential Development

The amount of project shoreline that is devoted to commercial (i.e., for profit) recreational developments is small, less than 1 percent of project shoreline. Boat ramps, docks, moorages, and other shoreline facilities proposed as part of multi-lot residential developments are not considered commercial developments. Because commercial developments and private developments with < 10 boatslips have the potential to provide lake and shoreline access to large numbers of people, they can have a greater impact on shoreline and lake resources that other adjacent shoreline uses. Therefore, the licensing process for commercial shoreline stabilization and recreation development is more involved than that for residential developments. Appendix 1 to the Construction and Use Procedures address specific permitting requirements for commercial and dense residential development.

5.1.3 Shoreline Stabilization Measures

Adjacent landowners are encouraged to work with Dominion in restoring shorelines that are actively eroding. The permitting process described below applies to proposed shoreline stabilization measures, as well as to proposed recreational developments. Where shoreline erosion is slight (less than one vertical foot), Dominion recommends that non-structural measures be employed. Non-structural measures include, but are not limited to, regrading and seeding/planting, turf reinforcement mats, fascines, fiber rolls, and live staking. In cases of moderate (one to two vertical feet) to extreme (greater than two vertical feet) erosion, non-structural measures are still encouraged with structural measures. Structural

measures include but are not limited to sheet piling, walls, stone (if placed below the normal water line), vegetated gabions and mattresses, and upslope drainage structures.

5.2 SHORELINE DEVELOPMENT PERMITTING PROCESS

This section applies to all shoreline stabilization, facility construction, or repair activities for Lake Gaston and Roanoke Rapids Lake. All new proposed construction by adjacent landowners or associations on Dominion shoreline property will be required to follow the Construction and Use Procedures (the Procedures) established as part of the SMP. The Procedures will apply to all residential and commercial development or repair work occurring on Dominion property. Appendix C includes the Procedures for all construction activities that will occur on the Dominion shorelines at Lake Gaston and Roanoke Rapids Lake. The Procedures generally involves the following five-step sequence.

5.2.1 Residential Shoreline Stabilization and Development Licensing Process

Step 1: Obtaining the Application Package

Applicants contact Dominion by telephone, mail, e-mail, fax or in person to request a Construction and Use License Agreement package to construct new or modify existing recreational facilities, for removal of any vegetation, or for transfer of an existing permit. After receiving and reviewing the package, the applicant schedules a pre-application meeting (this step can be skipped if the applicant has been through the licensing process and is knowledgeable about what is required).

Step 2: The Pre-Application Meeting

At this meeting, Dominion staff reviews the Construction and Use License Agreement package to ensure consistency with Dominion policies and to help the applicant understand what is required for a permit. Dominion gives the applicant a list of contractors that do work around the two lakes and have agreed to abide by Dominion regulations. The applicant will also be advised as to approvals from other agencies that will likely be required. It is up to each applicant to ensure that they meet all agency requirements and/or subdivision covenants. The applicant will be required to affirm that he/she understands the permit requirements as set forth herein, even if the applicant declined the pre-application meeting.

Step 3: Submitting the Application

The applicant submits the Construction and Use License Agreement to Dominion by mail or in person. The application must include:

A) The original completed and signed Construction and Use License Agreement and two (2) copies.

B) Three (3) copies of the construction plan and drawings for the proposed facilities.

C) Three (3) copies of a replanting plan (including drawings) for replanting shoreline vegetation destroyed or damaged during construction, replanting vegetation due to clearing for lake access, and replanting vegetation due to clearing of underbrush.

D) The application fee and either personal check, certified check or money order, made payable to Dominion North Carolina Power. The application fee is non-refundable once the permit has been approved. If a structure is built, dredging takes place, or any vegetation is removed before getting the proper approval from Dominion, the permit fee will be three (3) times the initial permit fee, if the activity is in compliance with Dominion's Construction and Use Procedures; otherwise the structure will have to be removed from Dominion's property and the area revegetated.

Step 4: Processing the Application for a Construction and Use License Agreement

After receiving the application, Dominion begins the review process. Dominion reviews and approves the design and location of all proposed activities before sending out permit applications to the U.S. Army Corps of Engineers and environmental resources agencies, if required. The applicant is responsible for obtaining all necessary approvals and filing all fees.

Dominion will notify the applicant within 45 days of receipt of the application as to the disposition of the request. If Dominion does not approve the design and location of the proposed activities and the application is denied, Dominion will contact the applicant by mail stating the reason for denial. The applicant may then schedule a meeting with Dominion to show how he/she proposes to remedy the reason for denial. If the applicant makes the corrections, resubmits the application, and the application is approved, the same procedure for the application described in the previous paragraph will apply.

Dominion will also notify the local jurisdiction in whose area the permitted activities will occur. The applicant is responsible for obtaining all local construction permits prior to beginning any construction or modification activities.

The applicant is also required to post within 20 feet of the construction, in plain and clear view, any and all permits required for the proposed activities until all activities are completed and inspected, including a copy of the approved permit for existing structures when doing repairs.

Step 5: Inspection and Approval

After completion of the project, the applicant shall notify Dominion by telephone or letter for final inspection. Dominion then schedules a site visit and visits to insure compliance with the terms and conditions of the permit. If during the site visit it is determined that the applicant has not complied, Dominion will request that the applicant remedy the situation. A second visit will be made to ensure that the corrections have been made. Dominion will bill the property owner to cover the cost of the second visit. If the situation has not been remedied after the second visit, Dominion may revoke the applicant's permit and require the applicant to reimburse Dominion for any and all costs associated with restoring project lands and waters to a natural pre-permit state. If Dominion has not received total reimbursement for all restoration activities within 60 days of completion of such activities, Dominion may seek legal remedies. After final inspection by the Supervisor-Reservoir, Dominion will permanently post a Dominion identification tag on the completed permitted structure. The tag will aid Dominion in inventorying and inspecting permitted structures as part of the shoreline management process.

5.2.2 Grandfathered Improvements

Existing improvements or those permitted prior to adoption of these procedures may remain on Dominion property or over the water for their useful lives, as long as they are in compliance with federal, state, and local regulations and the size requirements and other specifications set forth in the construction procedures in effect at the time the structure was built.

When major repairs are made involving more than 50 percent of the structure, as determined by Dominion, the structure must be repaired so as to be in compliance with the current procedures. If a previously permitted structure is destroyed or damaged by fire, natural disasters or other means, the replacement structure must be in compliance with these procedures. All modifications to existing structures are subject to these procedures so that any preexisting noncompliance is not increased. A revegetation plan will be required for replanting shoreline vegetation destroyed or damaged by construction activity.

5.2.3 Commercial Shoreline Structures

5.2.3.1 Existing Commercial or Multi-slip Shoreline Structures. Proposed repairs or alterations to existing commercial shoreline structures will be evaluated on a case-by-case basis. At a minimum, all must meet the requirements that have been developed for residential shoreline structures that are covered under the Lake Gaston and Roanoke Rapids Construction and Use Procedures. The procedure involves the same five steps as for residential permits. Step 1. Applicants contact Dominion to request a Construction and Use License Agreement package. Step 2. Applicants meet with Dominion staff to help the applicant understand what is required for a license. Step 3. The applicant submits the Construction and Use Agreement to Dominion including an original and two copies. Step 4. Dominion processes the application. Depending upon the complexity of the proposal, the applicant may be required to prepare an environmental assessment. Step 5. Dominion will inspect and approve the project after completion. However, if the footprint of the facility is changed, Dominion may determine that the guidelines in Appendix 1 to the Construction and Use Procedures apply.

No commercial structures will be permitted in sensitive shoreline areas. Commercial shoreline structures that are grandfathered in will be under the same replacement guidelines for residential structures. As with residential requirements, when repairs are made to more than 50 percent of a structure, commercial structures will have to be repaired so that the facility meets the new guidelines.

5.2.4 Commercial and Non-Commercial Multi-slip Development. Proposed development of **any** new commercial or any private structures involving more than 10 boat slips will require the applicant to follow procedures outlined in Appendix 1 to the Construction and Use Procedures. The procedure is the same as noted above in Section 5.2.3.1 except in Step 4 an environmental assessment will be required. This process also requires FERC approval before a permit to construct is issued.

5.3 ENFORCEMENT

The responsibility for enforcing the Construction and Use Procedures of the SMP will fall on more than one party. Insuring that shoreline development and maintenance meets Dominion standards will be the responsibility of Dominion. As part of the Construction and Use Procedures, Dominion personnel will inspect licensed projects as many as several times during the construction process to make sure contractors and owners are following requirements. Dominion will maintain a list of qualified contractors. Contractors that are discovered not following Dominion Construction and Use Procedures will be subject to removal from the approved list and not being allowed to work on projects on Dominion

shorelines. Dominion personnel may also inspect shoreline structures at various times of the year and compare them with detailed information in the Dominion Geographic Information System (GIS) database to make sure the structures are in compliance.

Local county building departments will be responsible for insuring that the construction of structures by adjacent landowners on Dominion property meets county building codes. The counties and Dominion will coordinate information regarding construction activities on Dominion shoreline.

Law enforcement on the lakes will be the responsibility of local police and sheriff department. The NCWRC and VDGIF will have the responsibility of enforcing hunting and fishing regulations.

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APPENDIX A

TERRESTRIAL SPECIES FOUND OR POTENTIALLY FOUND IN THE SHORELINE AREA OF LAKE GASTON AND ROANOKE RAPIDS LAKE

Herpetofauna Distribution

Species	Project Area Abundance	Number of Locations: Lake Gaston	Number of Locations: Roanoke Rapids Lake	Habitat
Salamanders				
Ambystomia maculatum	U*	1	1	UH, P
Ambystomia opacum	U*	1	-	UH, UP
Plethodon chlorobryonis	C*	1	1	MS, BH, S
Eurycea cirrigera	U	-	1	MS
Frogs and Toads				
Bufo americanus	R	1	-	UH, UP
Bufo woodhousii	C	6	8	UH, UP, L
Gastrophyrne carolinensis	C	1	-	UP
Acris crepitans	C	12	1	P, S
Pseudacris crucifer	C	-	2	UH, MS
Pseudacris triseriata	C*	1	3	MS
Hyla chrysoscelis	C	3	3	MS, BH
Hyla femoralis	R	1	1	MS, BH
Rana catesbeiana	C	7	-	L, P
Rana clamitans	C	9	4	S
Rana palustris	C	2	-	L, P, S
Rana utricularia	C	2	2	UH, MS, S
Turtles				
Chelydra serpentina	C	-	1	L, P
Sternotherus odoratus	C	2	-	S
Kinosternon subrubrum	C	1	1	S
Clemmys guttata	R	1	-	BH, S
Terrapene carolina	C	8	5	UH, MS
Trachemys scripta	C	6	1	BH, MS, S
Pseudemys concinna	C	3	3	S
Chrysemys picta	C	8	1	P, L
Lizards				
Sceloporus undulatus	C	2	1	UP
Scinella lateralis	C	2	4	MS
Eumeces fasciatus	C	6	1	UP, UH, MS
Eumeces laticeps	U	1	-	MS, S
Cnemidophorus sexlineatus	U	-	1	UP
Snakes				
Agkistrodon contortix	C	1	1	UH, UP, MS
Agkistrodon piscivorus	U	4	1	BH, S

Herpetofauna Distribution

Species	Project Area Abundance	Number of Locations: Lake Gaston	Number of Locations: Roanoke Rapids Lake	Habitat
Carphophis amoenus	C	2	3	MS, S
Coluber constrictor	C	9	3	UH, UP
Diadophis punctatus	C	1	2	MS
Elaphe obsoleta	C	1	2	UH, UP, MS, BH
Heterodan platirhinos	U	1	-	UP
Lampropeltis getula	U	3	-	UH, UP, MS
Nerodia sipedon	C	6	3	L, P, S
Nerodia taxispilota	C	-	5	L, P, S
Opheodrys aestivus	C	3	-	UH, UP, MS, BH
Regina septemvittata	U	1	-	S
Thamnophis sirtalis	U	-	1	UH
Virginia valeriae	R	-	1	UH
Total Occurences		**109**	**57**	
Number of Species		**36**	**31**	
Average Occurrence		**3**	**2**	

C = Common
R = Rare
U = Uncommon
* = Strongly seasonal in activity

L = Lake
P = Pond
S = Stream
MS = Mesic Slope
UH = Upland Hardware
UP = Upland Pine

Bird Species Recorded from Project Area during 1996 and 1997 Breeding Bird Field Surveys

Common Name	Scientific Name	Evidence
Common loon	*Gavia immer*	observed
Pied-billed grebe	*Podilymbus podiceps*	observed
Double-crested cormorant	*Phalacrocorax auritus*	observed
Great blue heron	*Ardea herodias*	confirmed
Great egret	*Casmerodius alba*	observed
Little blue heron	*Egretta caerulea*	observed
Green heron (green-backed	*Butorides virescens*	possible
Heron in AOU, 1983)	(*B. striatus* in AOU, 1983)	
Canada goose	*Branta canadensis*	confirmed
Wood duck	*Ax sponsa*	confirmed
Mallard	*Anas platyrhynchos*	confirmed
Black vulture	*Coragyps atratus*	observed
Turkey vulture	*Cathartes aura*	observed
Osprey	*Pandion haliaetus*	confirmed
Mississippi kite	*Ictinia mississippiensis*	observed
Bald eagle	*Haliaeetus leucocephalus*	confirmed
Cooper's hawk	*Accipiter cooperii*	possible
Red-shouldered hawk	*Buteo lineatus*	
Broad-winged hawk	*Buteo platypterus*	possible
Red-tailed hawk	*Buteo jamaicensis*	confirmed
Northern bobwhite	*Colinus virginianus*	probable
Killdeer	*Charadrius vociferus*	possible
Ring-billed gull	*Larus delawarensis*	observed
Caspian tern	*Sterna caspia*	observed
Rock dove	*Columba livia*	probable
Mourning dove	*Zenaida macroura*	confirmed
Yellow-billed cuckoo	*Coccyzus americanus*	possible
Barred owl	*Strix varia*	confirmed
Chimney swift	*Chaetura pelagica*	probable
Ruby-throated hummingbird	*Archilochus colubris*	probable
Belted kingfisher	*Ceryle alcyon*	confirmed
Red-headed woodpecker	*Melanerpes erythrocephalus*	possible
Red-bellied woodpecker	*Melanerpes carolinus*	confirmed
Downey woodpecker	*Picoides pubescens*	possible
Hairy woodpecker	*Picoides villosus*	probable
Northern flicker (aka	*Colaptes auratus*	possible
Yellow-shafter flicker)		
Pileated woodpecker	*Dryocopus pileatus*	possible
Eastern wood-pewee	*Contopus virens*	probable
Willow flycatcher	*Empidonax traillii*	possible
Eastern phoebe	*Sayornis phoebe*	confirmed
Great crested flycatcher	*Myiarchus tyrannus*	probable
Eastern kingbird	*Tyrannus tyrannus*	confirmed
Purple martin	*Progne subis*	confirmed

Bird Species Recorded from Project Area during 1996 and 1997 Breeding Bird Field Surveys

Common Name	Scientific Name	Evidence
Northern rough-winged swallow	*Stelgidopteryx serripennis*	confirmed
Cliff swallow	*Hirundo pyrrhonota*	confirmed
Blue jay	*Cyanocitta cristata*	probable
American crow	*Corvus brachyrhynchos*	confirmed
Fish crow	*Corvus ossifragus*	possible
Carolina chickadee	*Parus carolinensis*	probable
Tufted titmouse	*Parus bicolor*	probable
White-breasted nuthatch	*Sitta carolinensis*	probable
Carolina wren	*Thryothorus ludovicianus*	probable
Blue-gray gnatcatcher	*Polioptila caerulea*	confirmed
Eastern bluebird	*Sialia sialis*	confirmed
Wood thrush	*Hylocichla mustelina*	probable
American robin	*Turdus migratorius*	probable
Gray catbird	*Dumetella carolinensis*	probable
Northern mockingbird	*Mimus polyglottos*	possible
Brown thrasher	*Toxostoma rufum*	possible
Cedar waxwing	*Bombycilla cedrorum*	observed/possible
European starling	*Sturnus vulgaris*	confirmed
White-eyed vireo	*Vireo griseus*	confirmed
Yellow-throated vireo	*Vireo flavifrons*	probable
Red-eyed vireo	*Vireo olivaceus*	probable
Northern parula	*Parula americana*	probable
Yellow warbler	*Dendroica petechia*	possible
Yellow-throated warbler	*Dendroica dominica*	probable
Pine warbler	*Dendroica pinus*	probable
Prairie warbler	*Dendroica discolor*	probable
Black-and-white warbler	*Mniotilta varia*	possible
Prothonotary warbler	*Protonotaria citrea*	possible
Ovenbird	*Seiurus aurocapillus*	probable
Louisiana waterthrush	*Seiurus motacilla*	probable
Common yellowthroat	*Geothlypis trichas*	probable
Hooded warbler	*Wilsonia citrina*	probable
Yellow-breasted chat	*Icteria virens*	probable
Summer tanager	*Piranga rubra*	probable
Scarlet tanager	*Piranga olivacea*	possible
Northern cardinal	*Cardinalis cardinalis*	probable
Blue grosbeak	*Guiraca caerulea*	confirmed
Indigo bunting	*Passerina cvanea*	probable
Rufous-sided towhee	*Pipilo erythrophthalmus*	probable
Chipping sparrow	*Spizella passerina*	confirmed
Field sparrow	*Spizella pusilla*	probable
Grasshopper sparrow	*Ammodramus savannarum*	possible
Red-winged blackbird	*Agelaius phoeniceus*	probable
Eastern meadowlark	*Sturnella magna*	possible

Bird Species Recorded from Project Area during 1996 and 1997 Breeding Bird Field Surveys

Common Name	Scientific Name	Evidence
Common grackle	*Quiscalus quiscula*	confirmed
Brown-headed cowbird	*Molothrus ater*	confirmed
Orchard oriole	*Icterus spurius*	probable
House finch	*Carpodacus mexicanus*	probable
American goldfinch	*Carduelis tristis*	possible
House sparrow	*Passer domesticus*	confirmed

Observed – recorded in the study area during field work, but no evidence of breeding

Possible – recorded in appropriate breeding habitat during the breeding season for that species, but no additional evidence for breeding found; or present during the survey and considered a possible breeding species, but was not seen in that breeding habitat

Probable - recorded in appropriate breeding habitat during the breeding season and additional inconclusive evidence of breeding recorded

Confirmed – definite evidence of breeding in the study area

Common Mammals Associated with Habitats Occurring in the Project Area

Common Name	Scientific Name	Abundance	Habitat
Virginia opossum	*Didelphis virginiana*	A	BH, SS
Southeastern shrew	*Sorex longirostris*	LA	BH, EM
Southern short-tailed shrew	*Blarina carolinensis*	C	O/P, EM
Least shrew	*Cryptosis parva*	C	G/P, EM
Eastern mole	*Scalopus aquaticus*	C	G/P, DR
Little brown myotis	*Myotis lucifugus*	LC	DR, O/P
Silver-haired bat	*Lasionycteris noctivagans*	S	O/P, BH
Eastern pipistrelle	*Pipistrellus subflavus*	C	BH, C
Red bat	*Lasiurus borealis*	C	O/P, BH, C
Evening Bat	*Nycticeius humeralis*	LA	O/P
Eastern cottontail	*Sylvilagus floridanus*	C	G/P
Eastern chipmunk	*Tamias striatus*	LA	O/P, BH, FE
Woodchuck	*Marmota monax*	C	FE
Gray squirrel	*Sciurus carolinensis*	A	O/P, BH
Southern flying squirrel	*Glaucomys volans*	C	O/P
Beaver	*Castor canadensis*	LC	BH, OW
Marsh rice rat	*Oryzomys palustris*	LC	SS, EM
White-footed mouse	*Peromyscus leucopus*	A	O/P, BH
Golden mouse	*Ochrotomys nuttalli*	C	BH
Hispid cotton rat	*Sigmodon hispidus*	C	G/P
Meadow vole	*Microtus pennsylvanicus*	LC	G/P
Woodland vole	*Microtus pinetorum*	LC	O/P, G/P
Muskrat	*Ondatra zibethicus*	LC	OW, EM
Norway rat	*Rattus norvegicus*	C	DR
House mouse	*Mus musculus*	A	DR
Red fox	*Vulpes vulpes*	C	G/P, CR, O/P
Gray fox	*Urocyon cinereoargenteus*	C	O/P, PP, G/P, CR
Raccoon	*Procyon lotor*	C	SS, EM
Longtailed weasel	*Mustela fuenata*	C	O/P, G/P, FE
Mink	*Mustela vision*	C	SS, EM, OW
River otter	*Lutra canadensis*	LC	OW
White-tailed deer	*Odocoileus virginianus*	C	O/P, G/P, FE, CR

A = Abundant
C = Common
LA = Locally Abundant
LC = Locally Common

BH = Bottomland Hardwood
C = Caves
CR = Cropland
DR = Developed Residential
EM = Emergent Wetlands
FE = Forest ecotone
G/P = Grassland/Pasture (includes old field)
O/P = Oak-Pine
OW = Open Water (lakes, streams, rivers)
PP = Pine Planatation
SS = Scrub-Shrub Wetlands

APPENDIX B

AQUATIC SPECIES

Documented Fish Species Distribution in the Whole Roanoke River Basin

					Distribution Relative to Kerr Dam [1/]			
Family	Common Name	Lake Gaston	Roanoke Rapids Lake	Roanoke River	Above Only	Below Only	Both	Native [7/]
Gars	Longnose gar	2/		2/			x	x
	Spotted gar			6/		x		
Herrings	Alewife	2/	2/	2/			x	x
	American shad			2/		x		x
	Blueback herring	2/	2/	2/			x	x
	Gizzard shad	2/	2/	2/			x	x
	Hickory shad			2/		x		x
	Threadfin shad			2/			x	
Pikes	Chain pickerel	2/		2/			x	x
	Muskellunge						x	
	Northern pike						x	
	Redfin pickerel			2/			x	x
Minnows	Blacknose dace						x	x
	Bluehead chub	3/					x	x
	Bluntnose minnow				x			
	Bull chub						x	x
	Central stoneroller				x			x
	Comely shiner			2/			x	x
	Common carp	2/	2/	2/			x	
	Common shiner	3/					x	x
	Creek chub						x	x
	Cresent shiner						x	x
	Cutlip minnow				?			x
	Eastern silvery minnow			2/			x	x
	Fallfish				?			
	Flathead minnow				?			
	Golden shiner	2/	2/	2/			x	x
	Goldfish						?	
	Highfin shiner				?			x
	Ironcolor shiner					?		x
	Longnose dace				x			
	Mimic shiner				?			x
	Mountain redbelly dace						?	x
	Redlip shiner				?			x
	Rosefin shiner						x	x
	Rosyside dace						x	x
	Satinfin shiner	2/	2/	2/			x	x
	Spotfin shiner				?			
	Spottail shiner	2/	2/	2/			x	x
	Swallowtail shiner	2/	2/	2/			x	x
	White shiner				x			x
	Whitemouth shiner						x	x
Suckers	Bigeye jumprock				x			x
	Black jumprock				x			x
	Creek chubsucker	2/	2/	2/			x	x
	Golden redhorse	2/		2/			x	x
	Lake chubsucker	3/				?		x
	Northern hogsucker	3/					x	x
	Quillback	3/					?	x
	Roanoke hogsucker				x			x
	Rustyside sucker				x			x
	Shorthead redhorse	2/	2/	2/			x	x
	Silver redhorse	2/		2/			x	x
	Smallmouth buffalo	2/					x	
	Torrent sucker				x			x
	V-lip redhorse	2/		2/			x	x
	White sucker	2/					x	x

Documented Fish Species Distribution in the Whole Roanoke River Basin

Family	Common Name	Lake Gaston	Roanoke Rapids Lake	Roanoke River	Distribution Relative to Kerr Dam [1/]			
					Above Only	Below Only	Both	Native [7/]
Lampreys	Sea lamprey					x		x
Catfishes	Black bullhead	3/					x	
	Blue catfish		2/	2/			x	
	Brown bullhead	2/		2/			x	x
	Channel catfish	2/	2/	2/			x	
	Flat bullhead	2/	2/	2/			x	x
	Flathead catfish						x	
	Margined madtom			2/			x	x
	Orangefin madtom				x			x
	Snail bullhead				x			
	Tadpole madtom					x		x
	White catfish	2/	2/	2/			x	x
	Yellow bullhead	2/		2/			x	x
Temperate Basses	Striped bass	2/	2/	2/			x	x
	White bass	3/					x	x
	White perch	2/	2/	2/			x	x
	Yellow bass	3/				x		
Sunfishes	Banded sunfish	2/	2/	2/			x	x
	Black banded sunfish				?			x
	Black crappie	2/	2/	2/			x	x
	Bluegill	2/	2/	2/			x	
	Bluespotted sunfish	2/	2/	2/			x	x
	Flier			2/			x	x
	Green sunfish	2/	2/	2/			x	
	Largemouth bass	2/	2/	2/			x	
	Longear sunfish	3/				?		
	Mud sunfish	3/					x	x
	Orangespotted sunfish	3/				?		
	Pumpkinseed	2/	2/	2/			x	x
	Redbreast sunfish	2/	2/	2/			x	x
	Redear sunfish	2/	2/	2/			x	x
	Roanoke bass				x			x
	Rockbass				x			
	Smallmouth bass				x			
	Spotted bass				x			
	Warmouth	2/	2/	6/			x	x
	White crappie	3/					x	
Perches	Carolina darter						?	x
	Fantail darter						x	x
	Glassy darter	2/					?	x
	Johnny darter	2/					x	x
	Riverweed darter				x			x
	Roanoke darter			2/			x	x
	Roanoke logperch				x			x
	Sawcheek darter				?			x
	Shield darter			2/			?	x
	Swamp darter						x	x
	Tesellated darter	2/	2/	2/			x	x
	Walleye	2/	2/	2/			x	x
	Yellow perch	2/	2/	2/			x	x
Livebearers	Eastern mosquitofish	2/		2/			x	x
	Western mosquitofish	3/				?		
Freshwater eels	American eel			2/		x		x
Needlefishes	Atlantic needlefish			2/		x		x

Documented Fish Species Distribution in the Whole Roanoke River Basin

					Distribution Relative to Kerr Dam [1/]			
Family	Common Name	Lake Gaston	Roanoke Rapids Lake	Roanoke River	Above Only	Below Only	Both	Native [7/]
Anchovies	Bay anchovy			2/		x		x
Bowfins	Bowfin			2/			?	x
Lefteye flounders	Southern flounder			2/		x		x
Sturgeons	Atlantic sturgeon			4/		x		x
	Shortnose sturgeon			5/				
Mudminnows	Eastern mudminnow	3/		6/			x	x
Pirate perches	Pirate perch	2/		6/			x	x
Salmonidae	Brook trout				x			x
	Brown trout				x			
	Rainbow trout				x			
Cavefishes	Swampfish					x		x
Killifishes	Banded killifish					?		x
	Lined topminnow					x		x
	Speckled killifish				x			x
Sculpin	Mottled sculpin				x			x
Total Number	**126**	**55**	**29**	**14**	**31**	**20**	**75**	**95**

1/ Primary source Jenkins and Burkhead (1993), with judgement of likely current distribution.
2/ NCP 1997b, 1997d.
3/NCWRC unpublished data from Peidmont Fisheries Investigations for 1963 to 1992,
Viginia Department of Game and Inland Fisheries (VDGIF) 1994.
4/ Miscellaneous sources.
5/ Current and historical presence undocumented (NMFS, 1997). One shortnose sturgeon captured in Bachelor Bay during spring 1998 (Johnson, Letter, NCDMR, June 9, 1998).
6/ USFWS comments on fish species presence in lower Roanoke River.
7/ Native to some portion of basin (primary source Jenkins and Burkhead, 1993)

CONSTRUCTION AND USE PROCEDURES (SMP APPENDIX C)

1.0 GENERAL REQUIREMENTS

1.1 Purpose

Virginia Electric and Power Company and its successors, successors in interest or title and assigns ("the Company"), doing business as Dominion North Carolina Power, operates a hydroelectric project ("the Project") pursuant to a license issued by the Federal Energy Regulatory Commission, using Lake Gaston and Roanoke Rapids Lake ("the Lakes") and the surrounding shoreline. The Company owns the land up to the Project's boundary, as provided by the federal license, along the shoreline of the Lakes ("the Company's Property"). The Company has developed a Shoreline Management Plan (SMP) to maintain the Project, to allow public access and enjoyment of the Lakes, and to protect the environmental integrity of the Lakes.

These Construction and Use Procedures ("the Construction and Use Permitting Procedures," "the Construction and Use Procedures" or "the Procedures") have been developed by the Company, representatives from local, state, and federal governmental authorities, and representatives of the communities surrounding the Project. The objectives of the Procedures are to protect environmental resources around the Lakes and to permit use of the Company's Property by the public. While these Procedures are designed to complement and incorporate the requirements of federal and state laws and regulations, they also incorporate the Company's policies in reference to the Company's Property. As such, these Procedures are administered in the sole discretion and authority of the Company.

In regulating the Company's Property, the Company may, in its sole discretion and authority, issue a license ("a license") or a Construction and Use License Agreement to an adjacent property owner ("the Applicant," "the Permittee," or "the Licensee") permitting such Licensee to construct upon or use the Company's Property, provided the Licensee enters into a Construction and Use License Agreement with the Company and complies with these Procedures.

1.2 Allowable Activities

The Procedures cover the following activities:

- **Construction and Use of Piers, Docks, Boatslips and Boathouses**
- **Construction and Use of Bulkheads and Riprap Placement**
- **Dredging and Stump Removal**
- **Vegetation Removal / Trimming and Landscaping**
- **Issuing New License for a Previously Licensed Activity (License Transfer)**

1.3 License Transfer

Anytime ownership of a previously licensed or unlicensed structure changes, the new owner is required to apply for a Construction and Use Agreement Transfer.

1.3.1 Required Information for Construction and Use Agreement Transfer

Proof of ownership, subdivision name and lot number, street address of structures to be transferred (if no address is available then driving directions to the site are required), drawing of existing improvements including square footage, owners contact information including address and telephone number.

1.4 Shoreline Management Classifications

The Lakes' shorelines have been classified into either General Development Areas or Special Management Areas. General Development Areas are areas that were subdivided and platted as such by the surrounding five counties prior to May 31, 1998 or that have been subsequently identified by ecologists as being areas on which certain development activities are compatible with or will have little or no detrimental impact upon the environmental conditions thereon and habitat established thereon. Special Management Areas are shoreline areas that warrant special protection because of their importance for wildlife and fisheries habitat. Special Management Areas are subdivided into Limited Use, Sensitive and Undevelopable Areas, as indicated on the Special Management Area Map located at https://www.dominionenergy.com/lakes-and-recreation/lake-gaston-and-roanoke-rapids-lake-nc/construction-use-and-procedures or at Dominion's Shoreline Management office located at 100 Oakwood Avenue, Roanoke Rapids, NC (see Glossary in Section 8.0 for definitions of each area classification).

The Company *may*, in its sole discretion and authority, issue a license to Applicants permitting them to construct upon or to use the Company's Property within both General Development Areas and Special Management Areas. However, additional requirements apply to Special Management Areas. The additional requirements are noted in Sections 3.0 through 6.0 of these Procedures.

1.5 Prohibited Activities

Fences, walls, utility sheds, garages, swimming pools, sand beaches, (no sand from outside sources to maintain existing beaches), individual boat ramps, animal shelters, TV satellite dishes, septic tanks or fields, structures used for human habitation, and other non-permitted structures shall not be

allowed on the Company's Property. No discharges from any source are allowed into the lake waters.

No vessel, boat, dock, platform, blind, buoy, decoy, water toy or other item may remain moored, anchored, or otherwise attached to Project lands for over 24 hours unless attached to a Dominion licensed structure.

Submersible pumps may not be placed in the Project lakes.

Vegetation removal and construction of walkways or boat docks are prohibited in Special Management Areas designated as sensitive areas.

1.6 Penalties for SMP Violations

The Company will, in its sole discretion and authority, pursue any remedies related to violations of the Shoreline Management Plan for the Lakes project areas.

Remedies may include the assessment of actual damages and all administrative costs associated with the infraction. Administrative costs will include, but are not limited to, staff time, attorney's fees, expert witnesses, and consultants. Minimum administrative fees for violation of the provisions contained in the Shoreline Management Plan shall be $1,000.00.

Damages related to the unauthorized removal of vegetation from Dominion property will be assessed based on the ornamental value or the timber value, whichever is greater.

Additionally, the Company may withhold license approval for structures on those lands where violations have occurred until such time as the Company is satisfied that all violation impacts have been mitigated.

Assessment of these penalties shall be at the Company's sole discretion.

1.7 Location of Activity

To the extent feasible, any structure built by the Licensee upon the Company's Property must be built on that part of the Company's Property adjacent to the Licensee's property and between the imaginary lines created by extending the side lot lines of the Licensee's property into the water ("the Extended Side Lot Lines"). If the Extended Side Lot Lines do not provide the Licensee an adequate construction area The Company has the authority, in its sole discretion, to decide where the structure may be placed, and any such decision shall be final. No structures should be closer than 15 feet to another structure to allow proper navigation.

Notwithstanding any provisions in the Procedures or in any Construction and Use Agreement to the contrary, the use of the Extended Side Lot Line is for reference purposes only and shall give no right or interest in the Company's Property to the Licensee, the Licensee's neighbors, or the respective successors, successors in title or assign of the Licensee or its neighbors. After the location of a structure has been approved or designated by the Company, a Licensee may remove (but not relocate) the structure it has constructed on such location, provided that the Licensee shall remove such structure and restore the Company's Property in a matter and to a condition satisfactory to the Company, in its sole discretion. In no event, however, shall any neighbor of a Licensee, or the respective successors, successors in title or assigns of a Licensee's neighbors have the right to require the relocation or removal of any such structure.

1.8 Allowable Period for Construction

All permitted construction shall be completed within one (1) year of the date the Construction and Use License Agreement is executed by the Company. If construction is not completed within the required time frame, the Company may determine the construction to be out of compliance and may remove or require the Licensee to remove any improvements from its lands at the Licensee's expense.

Completion is defined as all components of a structure are complete including decking and roof, if applicable.

1.9 Cautions

For purposes herein the maximum normal water level ("MNWL") is defined as 200 feet above mean sea level for Lake Gaston and 132 feet above mean sea level for Roanoke Rapids Lake.

The Applicant is cautioned that water levels in the Lakes can fluctuate within the following limits (elevations are in feet above mean sea level, measured at the dams):

Condition	Lake Gaston	Roanoke Rapids Lake
Normal Fluctuation	200.0 High 199.0 Low	132.0 High 127.0 Low
March 1- June 15	201.0 High 199.0 Low	132.0 High 127.0 Low
Abnormal Fluctuation	203.0 High 195.0 Low	132.75 High 127.0 Low
100-Year Flood Event	204 High	134 High

It is possible that structures may be damaged by high water levels or by wavewash from passing vessels. The issuance of a Construction and Use License Agreement does not relieve the Applicant from taking necessary steps to ensure the integrity of the structure and the safety of moored boats.

All structures, especially bulkheads, shall be constructed so as not to adversely affect the shoreline contours or slopes of lands owned by the Company or adjoining lot owners, nor cause excessive diversion of storm water run off onto

adjoining lots. The Company shall make the final judgment as to the configuration, length, height, and location of these structures based on circumstances particular to that location. Top of bulkhead shall not exceed height contour of land behind bulkhead.

1.10 Grandfathered Structures and Landscaping and Nonconforming Structures

It is the intent of these Procedures to regulate and preserve the recreational and natural environmental attributes of the Lakes by allowing Grandfathered Structures and Landscaping and certain Nonconforming Structures, as herein defined, to remain upon the Company's Property subject to these Procedures.

1.10.1 Grandfathered Structures

A "Grandfathered Structure" is a pier, dock, boatslip, boathouse, bulkhead, or riprap that (i) was built upon the Company's Property according to the terms of a license (i.e., Construction and Use Agreement or Construction and Use License Agreement) issued by the Company and (ii) remains or will remain on the Company's Property in its current location according to a license issued to the structure's current owner. Subject to the terms of the license, a Grandfathered Structure may remain upon the Company's Property for its useful life so long as the structure remains in compliance with the size requirements and other building specifications set forth in the construction procedures in effect at the time the structure was built.

1.10.2 Grandfathered Landscaping

"Grandfathered Landscaping" includes any landscaping conducted on the Company's Property with the Company's permission under previous Company regulations. An adjacent property owner may maintain the Company's Property in a manner consistent with the Grandfathered Landscaping as long as no trees or limbs are cut. Tree or limb cutting requires a Construction and Use License Agreement.

1.10.3 Nonconforming Structures

A "Nonconforming Structure" is a pier, dock, boatslip, boathouse, bulkhead or riprap that was built upon the Company's Property (i) without a license issued by the Company, (ii) is not in compliance with the Company's current size requirements or other building specifications, (iii) does not, in the Company's sole discretion, threaten the recreational and environmental attributes of the Lakes, and (iv) remains or will remain upon the Company's Property in its current location pursuant to a Construction and Use License Agreement issued to the structure's current owner. The Company retains the sole right to determine whether any structure is a Nonconforming Structure.

A Licensee of a Nonconforming Structure shall not increase its size or magnitude, nor shall the Licensee move the Nonconforming Structure from one location to another. All Nonconforming Structures may remain on the Company's Property according to the terms of the Construction and Use License Agreement and these Procedures, with the exception of current size requirements and other building specifications.

1.10.4 Repairs of Grandfathered Structures and Nonconforming Structures

A Licensee must maintain, and make ordinary repairs to, all Grandfathered Structures and Nonconforming Structures to prevent dilapidation, unsafe conditions, or unsightliness on the Company's Property. When major repairs become necessary, the Licensee must repair the structure according to the requirements of these Procedures, including size requirements and other building restrictions. A "major repair" is a repair of any Grandfathered Structure or Nonconforming Structure, whether occasioned by dilapidation, casualty, damage, or otherwise, requiring the Licensee to replace more than fifty percent (50%) of the structure, as determined by the Company. If major repairs are required to a bulkhead, the Licensee shall, in addition to the repair of the bulkhead, place riprap along the repaired portion of the bulkhead according to the Procedures.

Regardless of whether the repair is a "major repair" or is part of the ordinary maintenance and repair, the Licensee shall not replace any structure, or part of any structure, with materials prohibited by these Procedures. The Licensee shall contact the Company for guidance prior to making major repairs to any Nonconforming Structure or Grandfathered Structure.

Any changes / repairs / modifications to an existing structure that effect an existing identification tag, the tag shall be replaced after the repair is complete.

1.11 Disputes, Enforcement and Assumption of Risk

1.11.1 Enforcement

The Procedures are enforceable only by the Company, and no Applicant, Permittee, Licensee or other person or entity shall have any standing, right or authority to enforce or to require the Company to enforce any of the Procedures.

1.11.2 Disputes

Notwithstanding any provisions in the Procedures or in any license or Construction and Use License Agreement to the contrary, unless the Company, in its sole discretion and authority, elects to do so, the Company will not become involved in or agree to be a party to any disputes or

agreements between or among any property owners, Licensees, Applicants, Permittees, associations, groups or organizations of property owners or communities or otherwise or any entities or committees of any such associations, groups or organizations or any other persons or entities whatsoever and no Licensee, Applicant or Permittee shall make the Company a party to any dispute or legal proceeding.

2.0 APPLICATION PROCEDURES

2.1 Required Permits and Licensees

Before construction of new or modification to existing recreational facilities and for removal or trimming of any vegetation on the Company's Property, the Applicant is required to apply for and receive an approved Construction and Use License Agreement from the Company. The approval process may take up to 45 days. In addition, permits from some or all of the following agencies may be required:

2.1.1 U.S. Army Corps of Engineers ("USACE"). If the construction or modification exceeds the USACE general permit, the Company will advise. If the construction or modification falls within the USACE general permit, the Company will forward the Applicant's proposed construction plans to the USACE before the Company issues a Construction and Use License Agreement for the construction or modification of recreational facilities. No Construction and Use License Agreement will be issued if the plans are rejected by the USACE.

2.1.2 Local County (i.e., building permit). Subsequent to the Company approvals, the Applicant shall obtain the necessary approvals from local county officials and/or property owner associations.

2.1.3 Other agencies that require permits particular to that location or situation.

2.2 Permitting, Inspection and Approval

The following describes the process that is used to issue and approve a Construction and Use License Agreement for the construction or modification of recreational facilities and for removal of any vegetation. If the Applicant has previously obtained a Construction and Use License Agreement or is familiar and comfortable with the procedure, the Applicant may eliminate Step 2. First-time Applicants should participate in all Steps.

2.2.1 Step 1 - Obtaining Application Package

Applicants may contact the Company by telephone, mail, fax, or in person to request a Construction and Use License Agreement package to construct new or modify existing recreational facilities, to remove vegetation, or to transfer a Construction and Use Agreement to a new property owner. The Company may be reached at:

Dominion Energy North Carolina
100 Oakwood Avenue
Roanoke Rapids, NC 27870
Telephone: 252-535-6161
Fax: 252-535-6164

After receiving and reviewing the Construction and Use License Agreement package, the Applicant may schedule a pre-application meeting with the Company's representative by calling 252-535-6161 Monday through Friday.

2.2.2 Step 2 - Pre-Application Meeting

At the pre-application meeting, the Company reviews the Construction and Use License Agreement application to ensure consistency with the Company's policies and to help the Applicant understand what is required to obtain a Construction and Use License Agreement. The Company gives the Applicant a list of contractors that do work around the Lakes and have agreed to abide by the Company's regulations. The Company will also inform the Applicant of permits from other agencies that will likely be required. It is the Applicant's responsibility to ensure that the Applicant's proposal meets all agency permit requirements and subdivision covenants. The Applicant shall be required to affirm that he/she understands the requirements as set forth herein, regardless of whether the Applicant declined the pre-application meeting.

2.2.3 Step 3 - Submitting the Application

The Applicant submits by mail or in person the completed Construction and Use License Agreement to the Company. The completed Construction and Use License Agreement is also required for transfer of a license to a new owner. In addition, the Applicant submits the appropriate fee. This application must include:

2.2.3.1 The original completed and signed Construction and Use License Agreement and two (2) copies.

2.2.3.2 Three (3) copies of the construction plans and drawings for the proposed facilities. Drawings shall not exceed 8 1/2"x14" in size (use multiple sheets if needed) and shall be drawn to scale. The drawing(s) shall show the size (including the footprint area in square feet) and dimensions of all proposed construction or modification (including the access footpath) and the location in relation to the Applicant's property line, Extended Side Lot Lines, a north arrow, and the MNWL contour line. The distance the proposed structure will extend into the water from the MNWL contour line shall be shown on the drawing(s). The 6-foot access path must also be shown. If the lot is in a cove,

a drawing must show the distance across the cove at the proposed construction location. The plans will also include the name of the lot owner, telephone number, lot number, subdivision, street name, county, state, and names of the adjacent lot owners. Directions to property must also be included.

2.2.3.3 Three (3) copies of a replanting plan (including drawings) for replanting shoreline vegetation destroyed or damaged by construction activities, replanting vegetation due to clearing for lake access, and replanting vegetation due to clearing of underbrush. See Section 6.0 entitled "Specifications for Vegetation Removal / Trimming and Landscaping" and Section 7.0 entitled "Replanting Specifications" in these Procedures for information on what is required in a replanting plan.

2.2.3.4 The application fee, personal check, certified check, or money order, made payable to Dominion North Carolina Power.

2.2.4 Step 4 - Processing the Application for a Construction and Use License Agreement

After receiving the Construction and Use License Agreement application, the Company begins its review process. The Company reviews and approves the configuration and location of all structures before sending out permit applications to the USACE and environmental resource agencies, if required. If the Company does not approve the configuration and location of the proposed activity and the application is denied, the Company will contact the Applicant by mail stating the reason for the denial. The Applicant may then schedule a meeting with the Company to show how he/she proposes to comply.

Once the Company tentatively approves the application (subject to final inspection), the Company then forwards the application to the pertinent agencies. The Company will facilitate the USACE permitting process if the proposed construction falls within the scope of the USACE's general permit. The following steps describe the process for obtaining a Construction and Use License Agreement:

2.2.4.1. The Applicant submits the completed application package to the Company.

2.2.4.2. The Applicant must mark all property lines with high visibility surveyor's tape and permanently mark with metal rods the property line between the Company's Property and the Applicant's property. The lot number must be clearly posted at both the roadside and water's edge.

2.2.4.3. After the application is received, it is assigned an identification/tracking number.

2.2.4.4. The Company reviews application and pre-inspects lot and proposed structure location(s) for approval.

2.2.4.5. Two copies of the application are sent to the USACE with an approved Construction and Use License Agreement if required. The Applicant is responsible for all filing fees associated with the USACE permit, if required.

2.2.4.6. The Applicant submits additional information if required and/or corrects if necessary.

2.2.4.7. USACE issues its permit and sends an approved Construction and Use License Agreement directly to the Applicant if required. The Company will also notify the local jurisdiction in the city or county the permitted activities will occur. The Applicant is responsible for obtaining all local city or county construction permits prior to beginning any construction or modification activities. The Applicant is also required to post within 20 feet of the construction, in plain and clear view, any and all permits required for the proposed activities including vegetation trimming until all activities are completed and inspected including a copy of the Construction and Use License Agreement for existing structures when doing repairs.

2.2.5 Step 5 - Inspection and Approval

Within ten (10) days of completion of the construction activity, the Applicant shall return the Completion of Activity Form to the Company. The Company will conduct a site visit to verify compliance with the terms and conditions of the Construction and Use License Agreement and these Procedures. If the Company finds that the Applicant has not complied, it may require modifications to bring the structures into compliance. Additional inspections may be necessary, and the Applicant shall be charged accordingly.

After final inspection by the Company, the Company will permanently post an identification tag on the completed permitted structure. The identification tag will aid the Company in inspecting and maintaining an inventory of licensed structures.

When replacing old structures or making repairs, the metal ID tag that is on the existing structure shall be removed from the old structure and placed on the new structure or portion thereof. Failure to replace the tag may result in assessment of additional fees.

If the ID number has faded and is no longer legible, contact Dominion at (252) 535-6161, extension 3 and request a new tag. The tag will be sent via USPS.

3.0 SPECIFICATIONS FOR CONSTRUCTION AND USE OF PIERS, DOCKS, BOATSLIPS AND BOATHOUSES

3.1 Specifications

Piers, docks, boatslips and boathouses shall be constructed, located, and maintained according to the following specifications.

3.1.1 Each waterfront parcel or residential lot shall be limited to the construction of only one (1) pier, dock, boatslip and/or boathouse combination structure.

3.1.2 Structures shall not extend further into the water than necessary for ingress/egress of motorized crafts, up to a maximum of ¼ the width of a cove or creek at MNWL. It is the Applicant's or his/her contractor's responsibility to measure the distance across a cove or creek and show on the drawings. Structures shall not interfere with navigation, ingress, or egress by the boating public, or to the adjoining properties, or in any manner present a safety hazard. There must be a 3-to-5-foot offset from the edge of the water. Only 6 feet of the structure should touch land.

3.1.3 Only one walkway leaving the shore shall be permitted per structure. The walkway shall not exceed 6 feet in width, nor be less than 4 feet in width.

3.1.4 Four (4) two-inch minimum diameter white reflectors shall be affixed to each pier or dock. A reflector shall be placed at each of the two end corners of the dock farthest from the shoreline, and a reflector shall be placed along each side of the dock, within one foot from each end corner of the dock.

3.1.5 The Company recommends that handrails be installed on walkway sections of pier structures for safety reasons.

3.1.6 The footprint of an Applicant's structures and boatslip areas (excluding the access pier) shall not exceed 1,250 square feet. The Company reserves the right to limit the size, configuration, or location of any and all structures or not allow construction on the Company's Property. Stairs to upper decks are included in the total square footage if the stairs extend over water outside the upper or lower deck.

3.1.7 The maximum height of any and all structures shall not exceed 16 feet above MNWL elevation 200 for Lake Gaston and elevation 132 for Roanoke Rapids Lake.

3.1.8 Boatslips and boathouses shall not be constructed over native vegetated wetlands or water willow beds. Walkways and stick piers may extend over native vegetated wetlands. Such walkways or piers must extend beyond the outer edge of waterwillow and vegetated wetlands. They shall be elevated sufficiently, a minimum of 4 feet, to prevent total shading of vegetation, substrate, or other elements of the aquatic environment. Boatslips or beaching of boats are not allowed in vegetation beds.

3.1.9 Decking for piers, docks, decks, boatslips and boathouses shall accommodate loads not less than 50 pounds per square foot.

3.1.10 Wood shall be pressure-treated except in areas of boathouses or boat shelters protected from the weather. Metal or pre-cast concrete pilings are acceptable. Creosote timber shall not be used.

3.1.11 Metal pilings or beams shall be supported by material section thickness of at least 3/16 inch.

3.1.12 Enclosed storage areas may be permitted on docks but shall not exceed 100 square feet in size and shall be located no further than 10 feet from the back of the structure as measured from the landward side. The storage area may be enclosed with siding or screening or a combination of both. However, structures, whether located on the Company's Property or over water, shall not be used for human habitation and shall not be equipped with household fixtures such as sinks, showers, flush toilets, etc. The bulk storage of petroleum and chemical products is not permitted on these structures or the Company's Property, nor are sanitary sewer lines or drain fields allowed. Gas cans up to a total of 6 gallons are allowed.

a. An enclosure is any structure that obstructs visibility from the lake through the structure from 202 to 208 msl.

3.1.13 Except for storage areas described in Section 3.1,12, docks and boathouses shall not be enclosed except that sides may extend a maximum of 3 feet down from the top to protect boats from rain and sun.

3.1.14 All floating piers, docks, etc. shall have their flotation units constructed of material and in such a manner that they will not become waterlogged or sink when punctured or exposed to the water for an extended time.

3.1.15 All installation of electrical devices must meet or exceed minimum National Electrical Code Standards for Wet Location, Marinas and Boatyards and the following additional requirements:

3.1.15.1 All wiring must be underground and follow access path;

3.1.15.2 Service poles must have a minimum size of 6 inches square or 6-inch diameter, 12 feet high, anchored 3 feet in the ground, and must be pressure-treated wood;

3.1.15.3 Receptacle height is a minimum of 3 feet above the deck;

3.1.15.4 All receptacles must be ground fault protected;

3.1.15.5 Lighting must be on pressure-treated wooden poles and be at least 12 feet above ground when on land, and at least 8 feet above a dock structure;

3.1.15.6 All fixtures and lights must be approved for wet locations and shall not be mounted to extend beyond the outer perimeter of the boat dock; and g) all lighting must be aimed downward.

3.2 Community Docks

The Company encourages the construction of community docks, rather than individual docks for Limited Use Management Areas. The Company may approve community docks in Special Management Areas on a case-by-case basis, but the number of boatslips cannot exceed the number of waterfront lots which would use the community docks.

Non-waterfront lots. In General Development Areas, a developer will dedicate a waterfront lot adjacent to the Company's Property for lake access by non-waterfront property owners. Such an adjacent property would be entitled to a boat ramp and finger pier or a boat ramp and boat dock. The boat dock must not exceed the 1,250 square-foot size restriction for an individual boat dock specified above. The boat dock must also conform with the Specifications for Construction and Use of Piers, Docks, Boatslips and Boathouses in Section 3.0, Vegetation Clearing for Lake Access set forth in Section 6.0, and Replanting Specifications set forth in Section 7.0. On-site parking may be provided on the adjacent property as long as there is an approved erosion and sediment control plan.

3.3 Commercial Docks and Marinas

Licensing of commercial docks and marinas will be handled on a case-by-case basis. In general, licensing of commercial facilities will be done in a manner consistent with these Construction and Use Procedures. Community docks are not considered commercial development for purposes of these Construction and Use Procedures unless the total number is greater than 10.

4.0 SPECIFICATIONS FOR CONSTRUCTION AND USE OF BULKHEADS AND RIPRAP PLACEMENT

Bulkheads have a negative effect on fisheries; therefore, new bulkheads are not allowed. Riprap placements are preferable to bulkheads. Rip rap is required waterward of any new bulkheads. The Company, in order to prevent, control, or minimize shoreline erosion may allow riprap under some conditions, after review. Applicants are encouraged to use less disruptive shoreline erosion control measures to protect shorelines. The Company can advise Applicants on other techniques that can be used to protect shoreline. riprap shall be constructed, located, and maintained according to the following specifications.

4.1 Bulkheading shall only be allowed in areas classified by the Company, in its sole discretion and authority, as severely eroding (scarp greater than 2 feet). Bulkheading will be permitted only when it is not practical to utilize natural means (e.g., vegetation or riprap) to control erosion.

4.2 Riprap alignments shall not extend farther than an average distance of 2 feet waterward and a maximum distance of 5 feet from the MNWL contour and shall not extend more than necessary to control erosion along the shoreline. If more than 500 feet of bulkheading or riprap is proposed, an USACE individual permit will be required in addition to the Construction and Use License Agreement. Riprap shall be placed at the base of all bulkheads, for the purpose of providing aquatic habitat, and shall extend a maximum of three (3) feet waterward of the bulkhead at a slope no steeper than 2:1.

4.3 The clearing and trimming of vegetation on Company Property is not allowed unless approved by the Company prior to removal. When removal of vegetation is necessary to gain access to the shoreline to install riprap, the applicant is required to submit a plan that clearly delineates vegetation that will be removed. The Applicant is also required to submit a replanting plan which describes what shall be replanted and location of the new vegetation. Both removal and replanting shall be consistent with Section 6.0 of these procedures entitled "Specifications for Vegetation Removal / Trimming and Landscaping". Access across the Company's Property may be gained to the shoreline by clearing up to a 12-foot-wide construction path, along with a revegetation plan to replant 6 feet of the construction path. All trees, shrubs, and ground cover that are requested to be removed, must be marked with surveyor's ribbon prior to initial inspection by the Company's representative. All revegetation activities must be complete prior to the Company's final inspection.

4.4 Bulkheads must be a solid structure constructed of pressure treated wood (creosote timber shall not be used), formed or fabricated sheeting or slabs, or similar materials designed for this application. Structures made of tires, rubble, petroleum-based products, scrap machinery, tree trunks, limbs, cinder blocks, or similar materials are not considered bulkheads and are not allowed on the Company's Property.

4.5 Bulkheads must be structurally tight and driven into the lakebed a depth sufficient to prevent premature under-cutting of the structure. Filter cloth shall be placed at the back of bulkheads to prevent seepage of backfill material through the bulkhead. All nuts, bolts, nails, cables, straps, etc. used to secure and support bulkheads shall be

galvanized or similarly plated to prevent premature corrosion.

4.6 Not more than an average of one cubic yard of fill material per running foot of shoreline shall be placed into the Lakes. Not more than an average of one cubic yard of fill material per running foot of shoreline shall be placed as backfill for riprap.

4.7 All bulkhead and riprap fill material must be obtained from an upland source and confined landward of bulkheads.

4.8 All fill material, including riprap material, discharged into the Lakes must be free from pollutants in toxic amounts. The use of metal products, organic materials, petroleum-based materials or unsightly debris is prohibited.

4.9 Riprap material must consist of clean rock designed for this application, and of sufficient size and shape to withstand wave action unique to that location. Materials such as tires, rubble, petroleum-based products, scrap machinery, tree trunks, limbs, or similar materials are not considered riprap and are not allowed on the Company's Property or in the Lakes.

4.10 Riprap is required to meet the following specifications: a) 5-to-15-inch diameter size riprap shall be used; b) the slope of the riprap shall be no steeper than 2:1; c) the minimum thickness of the riprap layer shall be 2 times the average stone diameter; and d) the riprap shall extend down into the lake at least 1 vertical foot and at least 2 feet (along the slope) below water elevation 199 feet mean sea level for Lake Gaston and 129 feet mean sea level for Roanoke Rapids Lake.

4.11 When riprapping, a filter cloth shall be placed under the riprap and between the riprap and backfill material to prevent seepage of backfill material into the Lakes and premature undercutting of the riprap.

4.12 Excavation activity must not occur during the months of March, April, May, and June because of potential impact to fish spawning areas.

4.13 No excavation is permitted except for that specifically required for installation of a bulkhead wall, riprap, deadmen and connecting cables, and to contain sloughing on steep bank areas. The containment of sloughing areas may be allowed to prevent the collapse of bank areas and may be permitted by the Company on a case-by-case basis.

4.14 All excavated material shall be placed landward of the MNWL contour on high ground and confined by adequate dikes or other retaining structures to prevent erosion and sedimentation into adjacent waters or wetlands.

4.15 Excavation within vegetated wetlands is not permitted.

4.16 If a bulkhead is damaged or otherwise is in danger of collapse or failure (e.g., a bulkhead is leaning because of failing ties), and if immediate repair thereof would benefit water quality by preventing erosion, the Company may allow repairs during March, April, May, or June if in the Company's opinion such repairs should not be delayed until July or later. Such permission shall require protection through sediment and erosion control means. All work must be conducted from the landward side of the bulkhead (i.e., "in-water" work is prohibited).

4.17 Any bulkhead repair requires the installation of rip rap in front of the bulkhead

5.0 SPECIFICATIONS FOR DREDGING AND STUMP REMOVAL

Dredging has a negative impact on aquatic resources, and therefore, is discouraged. The Company may approve dredging under certain conditions after review. Dredging activities that propose to remove more than 4,350 sq feet of material shall require additional environmental review by the USACE. Approved dredging activities shall be conducted according to the following specifications.

5.1 All dredging activities including stump removal require an approved Construction and Use License Agreement from the Company.

5.2 Dredging shall not be conducted in Sensitive Areas. This includes removal of stumps for purposes of installing bulkheading, riprap, or docks. Limited dredging and stump removal may be allowed in Limited Use Areas.

5.3 Dredging shall be conducted only to the extent necessary for the ingress/egress of motorboats to the Applicant's boathouse or pier.

5.4 All dredging shall be conducted between offsets of 15 feet from the Extended Side Lot Lines. By obtaining written consent from an adjoining property owner, dredging may be conducted up to the Extended Side Lot Line.

5.5 Dredging activities shall not adversely affect the shoreline contours or slopes of the Company's Property.

5.6 Dredging shall not be allowed below the following elevations:

Lake Gaston	195.0 feet
Roanoke Rapids Lake	123.0 feet

In the proximity of the shoreline and existing or proposed structures there may be further limitations on the depth and slope of proposed dredging. The Company shall make the final determination based on the circumstances particular to that location.

5.7 All dredged excavation lines shall not have a slope steeper than 1:1.

5.8 Maintenance dredging to previously authorized structures shall be restricted to those areas necessary for ingress/egress and all dredged material shall be disposed of at an upland site off the Company's Property, and proper siltation erosion controls shall be used to prevent sedimentation to any surface waters, wetlands, or the Company's Property.

5.9 Dredging shall not occur during the months of March, April, May, and June because of potential impact to fish spawning areas.

5.10 Dredging shall be limited to channelward of the normal pool elevation. Dredge depths shall not exceed those (depths) of receiving waters channelward of the work and shall be accomplished in a manner that, if the Lakes were drained, water would not be trapped within the dredged area.

5.11 All excavated material shall be contained by an approved erosion and sedimentation control method, shall not be stored on the Company's Property, and shall be placed on high ground and confined by adequate dikes or other retaining structures to prevent erosion and sedimentation into adjacent waters or wetlands. The application shall include a map to spoil storage area.

5.12 Excavation within vegetated wetlands is not authorized.

5.13 The temporary placement or double handling of excavated or fill material waterward of the normal pool elevation is not authorized.

5.14 For construction access a replanting plan is required that meets the standards set forth in Section 6.0 entitled "Specifications for Vegetation Removal/Trimming and Landscaping" and Section 7.0 entitled "Replanting Specifications."

6.0 SPECIFICATIONS FOR VEGETATION REMOVAL / TRIMMING AND LANDSCAPING

Any vegetation proposed to be removed or trimmed shall conform to the following specifications. These specifications have been developed to preserve the natural beauty of the Lakes, and to minimize environmental impacts including water quality degradation, soil erosion, siltation of the Lakes, and loss of wildlife and fisheries habitat. There are three types of activities covered by these Vegetation Removal/Trimming and Landscaping specifications: 1) Vegetation Clearing for Lake Access; 2) Vegetation Management for Aesthetic Purposes; and 3) Clearing of Underbrush. The Applicant must submit three copies of a drawing indicating the Applicant's clearing plan.

6.1 Vegetation Clearing for Lake Access

One of the purposes of the Specifications for Vegetation Removal / Trimming and Landscaping is to protect shoreline vegetation while allowing the clearing of a footpath across the Company's Property by the Applicant to provide access to the shores of the Lakes. These specifications cover both temporary access for the construction of piers, docks, boatslips and boathouses; bulkheads and riprap; and permanent pedestrian access for the Applicant.

The following specifications for Vegetative Clearing for Lake Access apply.

6.1.1 In Sensitive Special Management Areas, no additional clearing of the Company's Property for access shall be permitted on lots that currently have a minimum 6-foot-wide cleared footpath from the Applicant's property across the Company's Property to the Lakes. On lots that have had no vegetation cleared prior to February 1,1998 on the Company's Property, no cleared footpath to the shoreline may be permitted. Within Limited Use Areas, a six-foot wide footpath is permissible. The footpath shall include a meander, if possible. The footpath should avoid wetlands and other sensitive habitats.

6.1.2 For construction activities within General Development Areas, a 12-foot-wide construction access opening may be allowed if necessary and approved by a Company representative. Applicants are encouraged to locate their permanent 6-foot-wide cleared footpath within the construction access opening. The Applicant is required to replant the 6 feet of cleared area beyond the 6-foot-wide permanent footpath. Applicants may choose to replant the entire 12-foot-wide construction access opening. A replanting plan is required to be submitted and conform to Section 7.0 of these procedures entitled "Replanting Specifications." For Sensitive Areas, no vegetation removal shall be permitted.

6.1.3 The 6-foot-wide footpaths that are permitted to be established on the Company's Property shall be located so that they avoid, when possible, removing trees that are greater than 6 inches in diameter (at 5 feet above the base). For each tree greater than 6 inches in diameter (at 5 feet above the base), which is proposed (and permitted by the Company) to be removed to create the footpath, three 15 gallon (or approved balled and burlapped) trees from the approved Company planting list shall be planted within the Company's Property (or near it on the Applicant's property if space is limited on the Company's Property) to replace each removed tree.

6.1.4 In a general development area the 6-foot-wide walkway may be composed of porous materials such as wood, gravel, paving stones, concrete pavers. Paving stones and concrete pavers shall be placed in a manner to allow

water to run off and be absorbed into the ground. Wood walkways may be permitted and will be approved on a case-by-case basis. Wooden walkways, if approved, (a) must be at least two (2) feet above ground elevation (a) constructed so that no more than a 6-foot-wide area is cleared to allow for construction (b) post-construction requires re-establishment of a permeable, stabilizing ground cover under the walkway (i.e., pine straw) and (c) once the walkway is completed the only trimming allowed around the walkway is to keep vegetation off of the walkway, poured concrete paths are not permitted.

6.2 Vegetation Management for Aesthetic Purposes

The following specifications for the removal or trimming of vegetation and landscaping apply to protect shoreline vegetation. Any clearing permitted by the Procedures is subject to a requirement that density of trees and/or canopy cover comparable to that existing prior to clearing must be maintained.

6.2.1 In Sensitive areas, no vegetation shall be trimmed or removed for aesthetic purposes.

6.2.2 For Limited Use Areas, (if approved by a Company representative), trimming may be allowed within a 100-foot-wide zone on Company Property where the depth of Company Property is less than 150 feet. No trimming shall be allowed within 6 feet from MNWL. No shrub or tree removal shall be allowed for aesthetic purposes in Limited Use Areas

6.2.3 In General Development Areas, an area of between 2½ feet and 20 feet above the ground may be partially cleared of vegetation, including tree limbs ("the Cleared Area"). The purpose is to maintain ground cover and low growing shrubs (for erosion control and wildlife habitat) and tree canopy.

6.2.4 In a general development area, if pre-approved by the company some undesirable underbrush such as briars and poison ivy may be removed. Only with specific pre-approval will the company allow removal of mast producing vegetation above 1' in diameter measured 2 feet above the ground. (Mast producing vegetation is vegetation that produces acorns and nuts used by wildlife for food.)

6.2.5 Any vegetation to be removed within the Cleared Area shall be flagged with high visibility surveyors/engineers tape. Prior to removal of any flagged vegetation the Company will inspect and photograph the site to assure only the approved vegetation was removed when Company conducts its final inspection.

6.2.6 In General Development and Limited Use Areas, when partially clearing or maintaining the Cleared Area, chain saws, bushes, and brush saws may be used. No disturbance of the natural leaf bed, burning of debris or herbicide treatment shall be allowed on the Company's Property. Any use of equipment, other than hand-held tools, must be approved by a Company representative

6.2.7 In all areas, no trees may be removed from the Company's Property without the consent of the Company. The removal of trees is generally approved only in cases where the trees are dead, damaged, or diseased or present a safety or property hazard.

6.3 Use of Heavy Equipment

Use of heavy equipment on company property is strongly discouraged. Use of heavy equipment will be considered when safety is at issue and will not be considered when in a Sensitive or Limited Use area.

6.3.1 Any use of heavy equipment on company property must be approved by a Company representative.

6.3.2 Use of any heavy equipment on Company property shall gain access to the shoreline area where work is to be performed by a single access point. This access point shall be within the 12-foot-wide construction access opening. All guidelines set out in Section 6.0 *Vegetation Clearing for Lake Access* and Section 7.0 *Replanting Specifications* must be followed.

6.3.3 If approved by a Company representative, matting must be placed anywhere track equipment will be used. Matting may be required where other types of heavy equipment are used.

6.4.4 When heavy equipment use is requested, the applicant shall supply an additional drawing that clearly delineates the areas where the matting will be placed and the heavy equipment used.

6.5 Clearing of Underbrush

The purpose of this category is to assure that the clearing of "undesirable" underbrush or understory plants (such as poison ivy and briers) on the Company's Property by Applicants is compatible with the shoreline management responsibility established by the Company for the Lakes. The Company has a responsibility to protect water quality, wildlife and fisheries resources and the habitats they require.

The following specifications apply to the clearing of underbrush in General Development Areas. No underbrush shall be cleared in Special Management Areas.

6.5.1 The clearing of any underbrush vegetation must be approved by the Company prior to removal.

6.5.2 Plants that are removed (except in the Cleared Area described above) must be replaced by replanting plants from the Company's approved plant list.

6.5.3 All replanting must conform to Section 7.0 of these Procedures entitled "Replanting Specifications."

7.0 REPLANTING SPECIFICATIONS

7.1 General

The purpose of these Replanting Specifications is to provide Applicants with requirements for replanting areas of the Company's Property that are altered by the Applicant. Typically, these activities specifications would include:

7.1.1 Replanting areas of shoreline property that were cleared/damaged in providing access to or during the construction of bulkheads and riprap; piers, docks, boatslips and boathouses; or dredging activities.

7.1.2 Replanting areas of the Company's Property that had certain types of undesirable plants removed by the Applicant.

7.1.3 Replanting of the Company's Property by Applicants in order to improve the aesthetic appearance of the shoreline and Lakes.

7.1.4 Replanting of the Company's Property by Applicants to enhance environmental conditions such as improving or providing wildlife habitat and reducing runoff and pollution into the Lakes.

The goal of the Replanting Specifications is to reestablish a natural shoreline condition. This is achieved in several ways. The first way is by using plant species that are native to the general region. The second way is by permitting the use of appropriate non-native plant species that provide value such as wildlife habitat, erosion control, or filtering runoff into the lakes. The third way is by encouraging the replication of the plant spacing patterns currently found near the site when replanting. For example, if winterberry is currently found near the site in large groupings, replanting with winterberry in large groupings would be encouraged. Finally, and most importantly, the goal of replanting is to provide a diversity of plants with high value to wildlife.

7.2 Plant Standards

Suggested plant species are included in the enclosed Plant List for Planting on the Company's Property at the Lakes (Appendix 2). The list contains plants that are approved for use on the Company's Property and includes characteristics and benefits of the approved plants.

7.3 Survival Rates

Applicants that are required to replant the Company's Property are responsible for a plant survival rate for trees and medium to large shrubs (shrubs that will eventually grow to 10 feet in height or taller as defined in the enclosed list) of 100 percent at the second-year anniversary of the initial planting. If trees and large shrubs do not survive to the second-year anniversary, they must be replaced. A survival rate of 90 percent is required for ground covers and medium to small shrubs (shrubs that will ultimately grow less than 10 feet in height as defined in the enclosed list). The Company will periodically check shoreline plantings for survival during annual inspections and may require replanting if new plants have died.

Replanting Plan

There are three primary purposes for the Replanting Plan. The first purpose is to assist the Company in reviewing the Applicant's proposal during the approval process. An easy-to-understand planting plan makes the approval process more efficient. The second reason is to assist the Company during field inspection that the plan was followed. The final reason is so that the Company will have an accurate record (along with photographs) for future inspections of the Company's Property.

Applicants submitting the Replanting Plan for approval must include three (3) copies of the Plan. The Replanting Plan must be legible, easy to read and must include the following items (see Figures 1 and 2 for examples). Drawings shall not exceed 8 1/2" x 14" in size (use multiple sheets if needed).

- MNWL contour line.
- Property line.
- North arrow.
- Scale of 1 inch = 10 feet or larger scale.
- Existing vegetation to remain – common name, specific location and size of trees greater than 6" in diameter measured 5 feet above the base, and common name and general location of shrubs to remain.
- Common name of proposed plants.
- Specific location of proposed plants.
- Size of proposed plants.
- Numbers of proposed plants to be planted.

7.4 Replanting Along Bulkheads

To construct bulkheads, it is usually necessary to clear vegetation as far back as 15 feet from the shoreline. In addition, access across the Company's Property from upland areas is required for construction equipment to reach the shoreline. Replanting these areas within one month of completion is required in order to help reduce erosion into the Lakes (unless the Company approves a later planting time). Erosion control measures required by the USACE must also be followed. Plant species and patterns that were

found along the shoreline prior to clearing should be replanted to the extent possible.

7.5 Replanting Along Cleared Construction Access Paths

Access paths to the shoreline for any type of shoreline construction (piers, docks, bulkheads) may be entirely replanted or used for siting the footpath access. This will minimize clearing natural vegetation on the Company's Property.

Most construction operations will require clearing a path wider than 6 feet in order to get equipment to the shoreline. The Company may allow construction paths up to 12 feet in width in General Development Areas. Upon completion of construction activities, portions of the construction path not used for the construction access path must be replanted. The footpath access may be located anywhere within the boundaries of the wider construction access.

Plants selected from the approved list are to be used for replanting the construction access. Replanting must occur within one month of the completion of construction operations unless the Company approves a later planting time.

7.6 Shoreline Understory Replanting

Removal of "undesirable" native/naturalized plants (brambles, poison ivy, etc.) within the Company's Property by the Applicant may be approved as described in Section 6.0 of these Procedures entitled "Specifications for Vegetation Removal / Trimming and Landscaping." In general, removal of shoreline vegetation is discouraged in order to protect wildlife habitat and to provide erosion/runoff control. When "undesirable" plants are removed, they are to be replaced with an equal number of comparable plants. In areas of the Lakes where there has been development and there are only remnants of native vegetation left on the Company's Property, it may be possible to clear some existing native/naturalized vegetation. In these areas, replanting using plants from the enclosed list must occur within one-month of removing vegetation.

8.0 GLOSSARY OF TERMS

This Glossary of Terms is intended to provide a general guide to understanding some of the terms used in the Construction and Use Procedures. This Glossary of Terms shall not restrict or modify, in any way, the meaning of any term used in the Construction and Use Procedures or the Construction and Use License Agreement.

8.1 Access Pier means that portion of a pier extending from land over water to one's dock, boatslip, or boathouse.

8.2 Construction and Use Agreement or **Construction and Use License Agreement** means the agreement between the Company and the owner of a structure that gives the owner permission to construct and/or use a structure located upon the Company's Property during the owner's period of ownership of the structure.

8.3 Construction and Use Permitting Procedures or Construction and Use Procedures or Procedures means the set of regulations, established by the Company and updated from time to time, that govern construction upon or use of the Company's Property.

8.4 Extended Side Lot Lines mean the imaginary lines created by extending the side lot lines of the Licensee's property into the water. The Extended Side Lot Lines are used only for reference purposes in allowing construction upon the Company's Property.

8.5 Federal Energy Regulatory Commission or FERC means the agency of the federal government that issued a license to the Company to operate a hydroelectric facility upon the Lakes and that regulates the Company's operation of the facility.

8.6 General Development Area means an area of the Company's Property, as designated by the Company and regulatory authorities, in which the reasonable construction of certain structures, or the performance of certain activities, is compatible with or will have little or no detrimental impact upon the current environmental conditions and habitat established within the area.

8.7 Grandfathered Landscaping means any landscaping conducted on the Company's Property with the Company's permission under previous Company regulations

8.8 Grandfathered Structure means a structure built upon the Company's Property with the Company's permission under previous Company regulations. Such a structure will be allowed to remain for the natural life of the structure, subject to the terms and provisions of the Procedures and the Construction and Use Agreement.

8.9 Licensee, Applicant, or Permittee means the individual to whom the Company has given permission to construct or use a structure upon a portion of the Company's Property.

8.10 Nonconforming Structure means a pier, dock, boatslip, boathouse, bulkhead or riprap that was built upon the Company's Property (i) without a license issued by the Company, (ii) is not in compliance with the Company's current size requirements or other building specifications, (iii) does not, in the Company's sole discretion, threaten the recreational and environmental attributes of the Lakes, and (iv) remains or will remain upon the Company's Property in

its current location pursuant to a Construction and Use License Agreement issued to the structure's current owner.

8.11 Nonconforming Vegetation Removal, Landscaping and Plantings refers to any such activity conducted upon the Company's Property without the Company's permission

8.12 Limited Use Area means an area of the Company's Property, as designated by the Company and regulatory authorities, that warrants special protection because of the importance of the area to wildlife and fisheries habitat. Construction in a Limited Use Area is subject to more strict regulation than exists in a General Development Area and less strict regulation than exists in a Sensitive Area.

8.13 Sensitive Area means an area of the Company's Property, as designated by the Company and regulatory authorities, that is incompatible with future development because of the adverse effects of such development upon the wildlife and fisheries habitat existing in these areas. Construction in a Sensitive Area is not allowed. Any place where the Company's Property is 150' deep or more will be treated as a sensitive area.

8.14 Special Management Area means an area of the Company's Property warranting special protection because of the importance of the protection of wildlife and fisheries habitat in that area. All Special Management Areas are either Limited Use Areas, in which some development is discouraged, or Sensitive Areas, in which development is prohibited.

8.15 Undevelopable Area means an area of the Company's Property warranting special protection because it has been or likely would be determined to be a wetlands area; located in or near an area with special historical or archeological features; is near a public recreation area; or the area has been specifically protected per agreement with FERC or another regulatory authority.

8.16 U. S. Army Corps of Engineers or USACE means the agency of the federal government that regulates navigability of the Lakes.

ROANOKE RAPIDS AND GASTON CONSTRUCTION AND USE PROCEDURES - APPENDIX 1 GUIDELINES FOR PREPARING AN APPLICATION FOR COMMERCIAL OR PRIVATE MULTI-SLIP DEVELOPMENT

December 3, 2010

I. OVERVIEW

A. Purpose

The objectives of the *Construction and Use Procedures* (Procedures) are to protect environmental resources around Lake Gaston and Roanoke Rapids Lake and to permit use of Dominion's Property by the public. While these Procedures are designed to complement and incorporate the requirements of federal and state laws and regulations, they also incorporate Dominion's policies in reference to its property. As such, these Procedures are administered in the sole discretion and authority of Dominion.

B. FERC REQUIREMENTS

The Federal Energy Regulatory Commission (FERC) requires that Dominion obtain prior FERC approval before granting permission or conveying interests in project lands and waters for the construction of any commercial facility or any non-commercial facility that is designed to accommodate more than 10 watercraft (Roanoke Rapids and Gaston FERC License Article 26 Use and Occupancy). Dominion will apply the same standards for any private marina designed to accommodate 10 or more watercraft at one time as it does for commercial facilities.

In reviewing proposals for such facilities, FERC requires that Dominion provide evidence of consultation with all state and Federal resource agencies concerning the proposed development and conducts an environmental review as required under the National Environmental Policy Act (NEPA). The environmental review generally takes the form of an environmental assessment (EA); however, a large development project, which would result in a "significant impact" to the environment, might require an environmental impact statement (EIS). If FERC approves the development, it will issue an Order Approving Non-project Use of Project Lands. In some instances FERC may approve the proposed development with conditions. In such instances, Dominion is responsible for assuring that all the conditions of the approval are met. In turn, Dominion requires that the developer comply with all conditions imposed by FERC as part of the approval. Should a developer fail to meet its obligations as set forth in the conditions of the FERC Order, Dominion as the responsible entity has the authority to require that use of the project lands and waters cease, and that project lands and waters be returned to their pre-developed state.

C. US ARMY CORPS OF ENGINEERS REQUIREMENTS

The US Army Corps of Engineers (USACE) has final jurisdiction over in-water structures that may affect navigation or safety in Lake Gaston or Roanoke Rapids Lake. All boat docks, piers

and similar structures that protrude into navigable water must be approved by the USACE (see Construction and Use Procedures Section II Paragraph 1, Section II Step 4,). In addition, the USACE has an extensive requirement for commercial marinas and boat slips designed for 10 or more boats. It is suggested that applicants for these type facilities work concurrently with Dominion and the USACE to avoid duplication of work and to ensure compliance with all Dominion and federal agency requirements.

D. REFERENCES FROM SHORELINE MANAGEMENT PLAN

1. Section 1.2.3 *Uses Dominion Can Authorize with a 45-day Prior Notice to FERC*
FERC authorizes Dominion to convey fee title to easements or rights-of-way across, or leases of project lands for: (5) private or public marinas that accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other marina.

At least 45 days prior to granting approval for such uses, Dominion must file a letter with FERC stating its intention to convey the interest and briefly describing the location and use of the lands to be conveyed. Unless FERC, within 45 days from the date the letter is filed, requires Dominion to file an application for prior approval, Dominion may convey the intended interest at the end of that period.

2. From Section 1.2.4 *Uses Dominion Can Authorize Requiring Prior FERC Approval.* FERC requires that Dominion obtain prior FERC approval before granting permission or conveying interests in project lands and waters for the construction of any commercial facility or any private facility that is designed to accommodate more than 10 watercraft.

3. From Section 5.1.2 *Commercial Development and Dense Recreational Development*
The amount of project shoreline that is devoted to commercial (i.e., for profit) recreational developments is small, less than 1 percent of project shoreline. Boat ramps, docks, moorages, and other shoreline facilities proposed as part of multi-lot residential developments are not considered commercial developments. Because commercial developments and private developments with < 10 boatslips have the potential to provide lake and shoreline access to large numbers of people, they can have a greater impact on shoreline and lake resources that other adjacent shoreline uses. Therefore, the licensing process for commercial shoreline stabilization and recreation development is more involved than that for residential developments. Appendix 1 to the Construction and Use Procedures address specific permitting requirements for commercial and dense residential development

4. Section 5.2.3 *Commercial Shoreline Structures*
Proposed repairs or alterations to existing commercial shoreline structures will be evaluated on a case-by-case basis. At a minimum, all must meet the requirements that have been developed for residential shoreline structures that are covered under the Lake Gaston and Roanoke Rapids Construction and Use Procedures. The procedure involves the same five steps as for residential permits. Step 1. Applicants contact Dominion to request a Construction and Use License Agreement package. Step 2. Applicants meet with Dominion staff to help the applicant understand what is required for a license. (At this time Dominion will determine a "preliminary approval". Since the development of the application involves significant expenditures for the applicant, Dominion makes a good faith determination that if all requirements are met, if the proposed development is "likely" to be approved by Dominion.

This preliminary approval is in no way final, nor is it an attempt by Dominion to predict FERC's final determination. Step 3. The applicant submits the Construction and Use Agreement to Dominion including an original and ten copies. Step 4. Dominion processes the application. Depending upon the complexity of the proposal, the applicant may be required to prepare an environmental assessment. Step 5. Dominion will inspect and approve the project after completion.

No commercial structures will be permitted in sensitive shoreline areas. Commercial shoreline structures that are grandfathered in will be under the same replacement guidelines for residential structures. As with residential requirements, when repairs are made to more than 50 percent of a structure, commercial structures will have to be repaired so that the facility meets the new guidelines.

E. APPLICABILTY TO EXISTING DEVELOPMENTS

1. Marinas Previously Approved by FERC

In the case of an existing public or private marina that has been previously approved by FERC as a *non-project use of project lands,* if the applicant is applying for a permit to expand the marina, the requirements of these guidelines shall apply if the expansion is for 10 or more boat slips. If the expansion is for less than 10 boat slips, it shall also apply if any of the conditions below are met within a 10-year period:

a. The expansion will enlarge the affected development's footprint by 10% or more,
b. The expansion will be for six or more boat slips.
c. In either case a or b above, if Dominion approves the project, FERC will be given the 45 day notification described in section C. 1. above.

If the expansion is for less than 10 boat slips and the criteria above is not met and Dominion does not require an Environmental Assessment as discussed below, if the marina is not in compliance with the Shoreline Management Procedures, Dominion may require the development to be brought into compliance with the existing Shoreline Management Procedures as a condition of issuing the requested permit.

2. Marinas Not Previously Approved by FERC

Any marina, public or private, applying for a permit to expand or make changes to the marina requiring a Construction and Use Permit, if not previously approved by FERC as a *non-project use of project lands,* may be required to follow the guidelines listed below. However, any request to expand the facility will require the applicant to implement these guidelines.

II. GUIDELINES

A. GENERAL

Licensing of commercial docks, marinas and private marinas will be handled on a case-by-case basis. In general, licensing of commercial facilities will be done in a manner consistent with the Construction and Use Procedures. A private marina for the purpose of this guideline is any private boat slip development of 10 or more boat slips.

B. UTILIZATION OF CONSTRUCTION AND USE PROCEDURES

Where applicable, the Licensee shall follow all the requirements of the Roanoke Rapids and Gaston Construction and Use Procedures. This includes specifically:

1. Section II, Application Procedures,
2. Section IV, Specifications for Construction and Use of Bulkheads and Riprap Placement,
3. Section V, Specifications for Dredging and Stump Removal,
4. Section VI, Specifications for Vegetation Removal / Trimming and Landscaping,
5. Section VII, Replanting Specifications.

C. OPERATIONS PLAN

In addition to the requirements for ensuring compliance with construction, the licensee shall provide an operations plan. The operations plan shall address at a minimum the following:

1. Management of daily activities,
2. Management of the facility during the off-peak season,
3. Maintenance of the facility to ensure continued compliance with the Construction and Use Procedures,
4. Ongoing management activities needed to ensure mitigation measures as a result of the Environmental Assessment below are continued for the life of the project.

D. DRAFT ENVIRONMENTAL ASSESSMENT

Dominion requires that the Licensee prepare an Environmental Assessment (EA) for the proposed development to accompany the permit application. Elements of the Draft EA shall include but not be limited to:

1. Impacts to Water Quality

Discuss potential impacts to water quality of the applicable reservoir. Elements to be addressed should include but not be limited to:

a. Erosion and sedimentation as a result of the project construction (including development of properties adjacent to Dominion's land)
b. Erosion, sedimentation and other pollutants as a result of project operation
c. Erosion and sedimentation control plan for:
   - Project development on Dominion's property
   - Project development on Licensee's or private property including utilization of Best Management Practices (BMP)
d. Shoreline impacts as a result of additional watercraft in the general area of the proposed project.
e. Mitigation measures proposed for any project Water Quality impacts
   NOTE: Dominion encourages development of buffer zones between proposed construction areas and Dominion's property line.

2. Fish and Wildlife Impact Analysis.
   The EA shall address potential impacts on each of the following:

a. Fish and other aquatic life
b. Terrestrial wildlife
c. Terrestrial biota
d. Mitigation measures proposed for any project Fish and Wildlife impacts

3. Cultural Resources
   a. Phase 1B analysis
   b. If phase 1B analysis indicates the area proposed for development is considered potentially significant, consult with Dominion to determine appropriate next-step requirements.
   c. If required, mitigation measures

4. Recreation Impacts
   a. Safety
   b. Analysis for the need of commercial or private marina
   c. Analysis of additional loading to the reservoir
   d. Analysis of local impacts to additional loading
   e. Analysis of affect on local public marinas and / or boat ramps
   f. If required, mitigation measures

5. Potential Impacts to Adjacent Property Owners

The Licensee shall consult with adjacent property owners, and if reasonable, property owners in the area close to the proposed project. The Licensee is encouraged to obtain written concurrence to the project from the adjacent property owners and if practical, owners in close proximity to the proposed project. If written concurrence is not obtainable, Licensee shall state date and time consultation occurred and reasons given by the adjacent property owners (and others as applicable) why concurrence was not obtained.

6. For commercial development, a list of any water-to-land commercial facilities within a ½ mile of the proposed development.

7. All the drawing requirements for the permit must be included in the EA, including vegetation removal and replanting plans, if applicable.

E. FINAL ENVIRONMENTAL ASSESSMENT

In order to allow Dominion and FERC to appropriately analyze environmental impacts of the proposed project on the environment, the Licensee must address public and appropriate resource agency concerns. The Licensee shall utilize the Draft EA for presentation to the resource agencies and the public.

1. Public Meeting

The Licensee shall have at least one public meeting in the general area of the proposed project. The Licensee shall advertise the public meeting at least 30 days prior to the meeting date in at least three (3) local newspapers. At the meeting the Licensee shall present the proposed plan and environmental impacts as determined in section II, D, 1 – 5 above. The Licensee shall provide as part of the Final EA:

a. Copies of the newspaper notices
b. List of attendees
c. Minutes from the meeting
d. Specific comments from the meeting
e. Licensee's plans for addressing the comments

2. County Approvals

The Licensee shall provide Dominion with documentation that the project is consistent with local zoning and building requirements and any other local governmental ordinances.

3. State Agencies

The Licensee shall consult with the state and federal agencies listed below. In the consultation the Licensee shall provide project plans, the Draft EA and the documentation from the Public Meeting required above. Any comments received from the agencies shall be incorporated into the Final EA or provide a discussion as to why the comments were not incorporated. The Licensee shall allow a minimum of 45 days for the agencies to comment and shall make reasonable accommodation to extend the comment period when requested by the agencies.

a. US Fish and Wildlife Service
b. US Army Corps of Engineers
c. VA Department of Environmental Quality (if in VA)
d. NC Department of Environment and Natural Resources. Division of Water Quality (if in NC)
e. VA Department of Game and Inland Fisheries (if in VA)
f. NC Wildlife Resources Commission (if in NC)
g. State Historic Preservation Office (in VA or NC, where appropriate)

III SUBMISSION OF PLANS FOR APPROVAL

A. DOMINION APPROVAL

Prior to submittal of the proposed project to FERC for approval, Dominion must approve the project. Dominion will submit the project to FERC only if it determines that the plans are in accordance with the Construction and User Procedures; any determined environmental impacts have appropriate mitigation plans; local zoning plans and ordinances allow the project to be constructed; and comments raised by the public and resource agencies have been appropriately addressed. The Licensee must provide Dominion with an original and 10 copies of the EA and all project plans.

B. FERC APPROVAL

FERC will review the proposed project and determine if it approves the project. FERC may develop its own EA; FERC will notice the application for public comment. If FERC approves the project, it will notify Dominion.

C. FINAL APPROVAL

Dominion will notify the applicant once FERC notifies Dominion of its final decision. If FERC does not approve the proposed development, the applicant has the right to request a rehearing with FERC within 30 days of FERC's denial.

IV FEES AND PROJECT DEVELOPMENT

A. APPLICATION FEE

Dominion charges an application fee for commercial and multi-slip docks per its current fee schedule. The fee is due at time the application is submitted to Dominion for review.

B. CONSTRUCTION AND DEVELOPMENT

1. Phased Schedule

If the applicant determines that full development of the proposed project will take more than one year, a construction schedule shall be provided to Dominion. The construction may use a phased approach. Each phase must be completed within one year of the scheduled start date. The initial phase must be completed within one year of the issuance by Dominion of the final approved permit. A letter must be sent to notify Dominion of completion at the end of each phase. The entire development must be complete within five years permit issuance.

2. Construction fee.

Prior to starting any phase of construction, the applicant must provide a construction fee to Dominion. The fee is on a per slip basis to be constructed during the current phase per Dominion's current fee schedule. The first phase construction fee must be paid prior to Dominion issuing the final permit.

C. OPERATIONS FEE

An annual operations fee will be accessed on a per-slip basis. The fee is due to Dominion annually by January 31 and is per the current fee schedule.

D. SUMMARY OF PROCESS

1. Applicant contacts Dominion for a Construction and Use Package
2. Applicant meets with Dominion to ensure they understand what is required to obtain a permit
3. Applicant provides Dominion with a tentative development plan and Dominion determines if "preliminary" approval is appropriate
4. Applicant provides a Draft EA to Dominion and agencies and public.
5. Applicant incorporates Dominion, agency and public comments (or discussion delineating why comments were not included) and appropriate proposed mitigation to agency / public concerns in final EA.
6. Applicant provides completed application which includes final EA and all application required drawings to Dominion.
7. If Dominion approves application, application submitted by Dominion to FERC
8. If FERC approves, Dominion issues approved permit to Applicant.

APPENDIX D

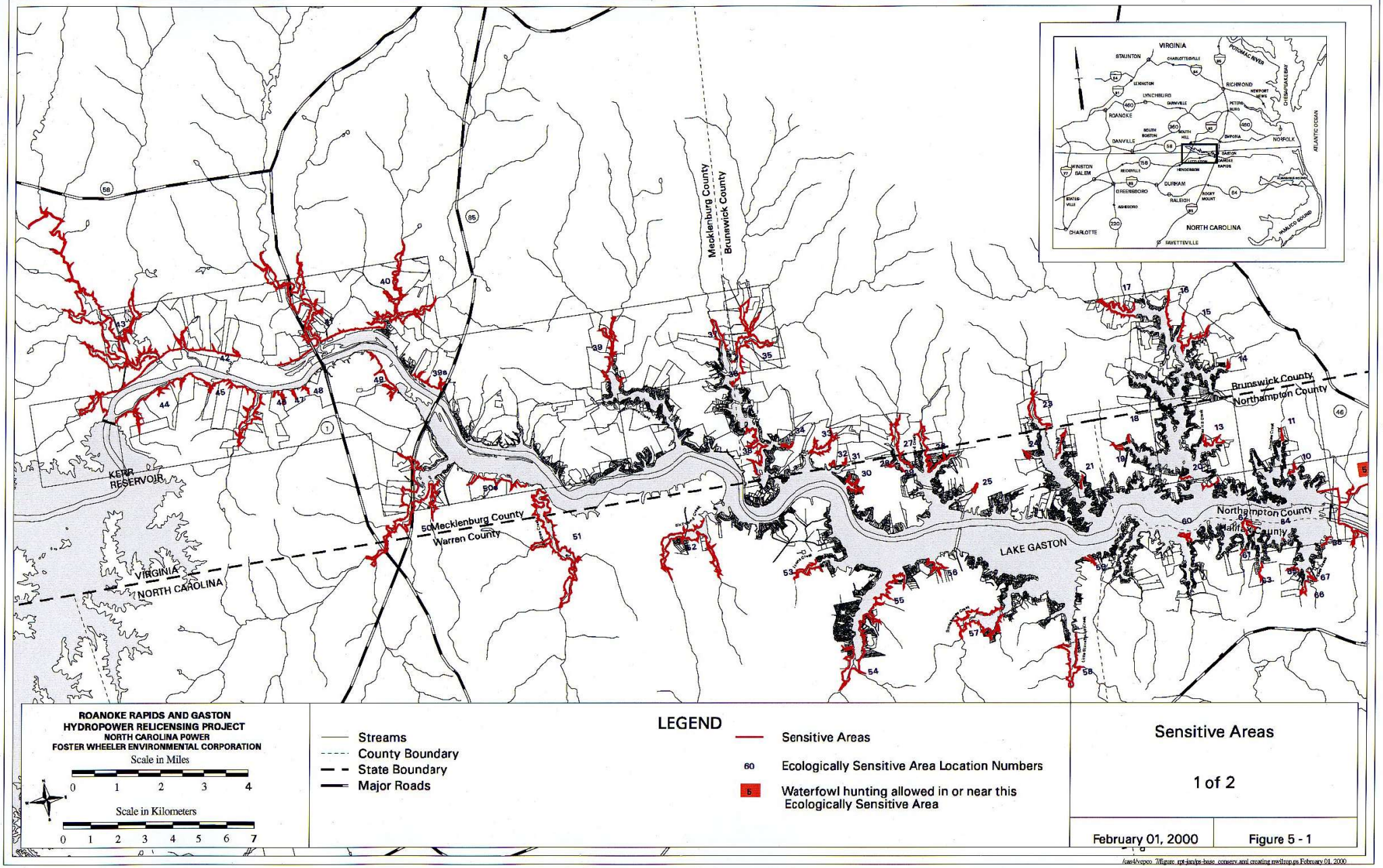
ECOLOGICALLY SENSITIVE AREAS

ECOLOGICALLY SENSITIVE AREAS

SITE	LOCATION	DESCRIPTION
1	*RRL-East side of tributary on northeastern part of lake.*	*Fingering striper habitat, overhanging vegetation. View clearing ok. Existing structures grandfathered.*
2	*RRL-Both sides of tributary on north side of lake.*	*Good fishing cove.*
3	*RRL-Large NCP tract on north side approximately mid-lake.*	*Large land area for terrestrial habitat.*
4	*RRL-North shoreline on western portion of lake between developments.*	*Fairly shallow area with stumps, good amphibious habitat, good bass fishing, stripers – no place for piers.*
5	*RRL-Northwestern portion of lake, including island downstream of Gaston Dam.*	*Proposed waterfowl hunting area, description similar to Site 4 above.*
6	*RRL and bypass area.*	*RRL day use area and proposed waterfowl hunting area in bypass reach.*
7	*RRL-Upper end of Deep Creek upstream of developed area.*	*Wetlands, shallow area, stumpy, nursery habitat, overhanging vegetation.*
8	*RRL-South side of lake adjacent to NCP transmission line.*	*Larger buffer, area not suitable for development because of t-line.*
9	*RRL-South side of lake from Site 8 to LG Dam.*	*Submerged stumps off bank, good bass fishing, larger area of NCP property. Narrow channel. Part of proposed waterfowl hunting area.*
10	*LG-Northwestern portion of Northpoint Cove.*	*Good spawning habitat, water willow, shallow, tagalter.*
11	*LG-Northern most tip of Jimmies Creek upstream of developed area.*	*Shallow, good fishing habitat, wetlands.*
12	*LG-Eastern shore of Pea Hill Creek south of River Road bridge to Pinewood Acres.*	*Sandy beach section, stripper fingerling feeding area. Area has a community dock.*
13	*LG-Sherwood Forest Campground area.*	*Last water willow area in Pea Hill Creek, shallow, bass habitat, emergent vegetation. Last remnant of developed land.*
14	*LG-Uppermost end of small creek north of Kennon House Restaurant.*	*Wetland area.*
15	*LG-Shoreline between Pea Hill Estates and Colony Club.*	*Shallow area, probably not developable without major dredging.*
16	*LG-Shoreline north of Pea Hill Estates to Pea Hill Shores.*	*Similar to Site 15. One of last areas developed.*
17	*LG-Area upstream from Hammock Road Bridge and to developed area on north east side of bridge.*	*Similar description as Site 16.*
18	*LG-Upper end of Cold Spring Branch, east of Clydes Retreat.*	*Back end of cove, water willow, habitat for small fish.*
19	*LG-Upper end of Cold Spring Branch, south of Clydes Retreat.*	*Same as for Site 18.*
20	*LG-South side of cove, north of River Road bridge over Pea Hill Creek on west side of Pea Hill Creek.*	*Met high value ecological criteria.*
21	*LG-West side of cove immediately south and east of Lizard Road bridge.*	*Shallow, stumpy, emergent vegetation with water Willow, and spawning habitat.*
22	*LG-West side of cove adjacent to Lizard Creek Drive.*	*Same as Site 21 plus wetlands at upper end of cove.*
23	*LG-Upper end of Lizard Creek north of NC/VA line.*	*Extremely shallow, wetlands.*
24	*LG-Upper end of cove near Dove Manor Road.*	*Wetlands.*
25	*LG-Upper end of cove immediately north and west of Eaton Ferry bridge.*	*Wetlands.*

26	*LG-North side of Mill Creek cove and east side of Songbird Creek.*	*Nursery area, tagalter, good habitat. Only few Houses now. Development would entail massive dredging.*
27	*LG-East side of PigeonroostCreek upstream to project boundary.*	*Same as Site 26.*
28	*LG-Cove area in vicinity of Songbird View.*	*Same as Site 26.*
29	*LG-Pigeonroost Creek, shoreline near Timber Lane.*	*Same as Site 26.*
30	*LG-Tri-cove area at Lazy Point.*	*Bass spawning, water willow, emergent vegetation Few homes in area. Small wetlands, water willow, stumps.*
31	*LG-Upper end of cove near Gaston Heights.*	*Small wetlands, water willow, stumps.*
32	*LG-Cove north of Site 31.*	*Same as Site 31.*
33	*LG-Upper end of cove east of Poplar Creek.*	*Same as Site 31.*
34	*LG-Upper end of cove upstream of Siouan Shores.*	*Wetlands.*
35	*LG-Upper end of Poplar Creek from Point north to Tanglewood Shores.*	*Primarily wetlands and shallow.*
36	*LG-Point south of Tanglewood Shores.*	*Large NCP land holding.*
37	*LG-Upper end of Miles Creek north of Tanglewood Shores.*	*Wetlands.*
38	*LG-East side of Poplar Creek north of NC/VA line to Joyceville.*	*Hot fishing spot, shallow and stumpy at back end of coves. Fairly narrow area.*
39	*LG-Upper end of Holly Grove Creek, primarily on west side.*	*Wetlands and tagalter. Likely undevelopable upstream of bridge.*
39a	*LG-North shoreline west of I-85.*	*Wetlands and aquatic vegetation, stumps. Good bass habitat.*
40	*LG-Flat Creek, upstream of Hwy 903 and on west side of Creek.*	*Shallow. From bridge upstream not developable.*
41	*LG-Shoreline west of Flat Creek to Miles Creek and cove area west of Route 1.*	*Shallow area.*
42	*LG-Stream on north side of lake, west of Route 1 bridge.*	*Wetlands.*
43	*LG-Buggs Island.*	*ACOE owned.*
44	*LG-South shoreline of lake from Kerr Dam downstream to small tributary downstream of Buggs Island.*	*Striper run, walleye spawning, good fishing.*
45	*LG-Site 44 downstream to and including tributary.*	*Good terrestrial habitat. Wide buffer and wetlands.*
46	*LG-Small cove on south side, downstream from Site 45.*	*Bass and sunfish spawning, important wetland Areas.*
47	*LG-Small cove downstream from Site 46.*	*Same as Site 46.*
48	*LG-Small cove downstream from Site 47 and upstream of Route 1 bridge.*	*Same as Site 46.*
49	*LG-Large wetlands area north of I-85 and island areas south of I-85.*	*Wetlands and specially designated area.*
50	*LG-Upper end of Smith Creek.*	*Wetlands and nursery area.*
50a	*LG-South shoreline west of Hawtree Creek.*	*Aquatic vegetation and stumps. Good bass habitat. Wetlands.*
51	*LG-Entire area of Hawtree Creek.*	*Overhanging vegetation. Environmentally sensitive area from bridge out.*
52	*LG-Upper end of Sixpound Creek.*	*Walleye nursery and spawning area, good substrate, good bass fishing.*
53	*LG-Upper end of Lyons Creek.*	*Wetlands.*
54	*LG-Upper end of Hubquarter Creek from development on west side upstream, Around shoreline to power line.*	*Shallow, back end of cove provides fisheries habitat. Some structures.*

55	*LG-East shore of Hubquarter Creek from power line to west shore of cove west of Happy Valley Road.*	*Large, undeveloped land area owned by NCP.*
56	*LG-West side of cove west of Eatons Ferry Campground.*	*Good fish habitat.*
57	*LG-Upper end of Big Stonehouse Creek upstream of Route 903 bridge.*	*Wetlands, bass spawning and feeding area.*
58	*LG-Lower end of Little Stonehouse Creek south of development on west side to power line on east side.*	*Shallow area with wetlands/emergent vegetation.*
59	*LG-Small cove north of Sunny Acres Road.*	*No description given.*
60	*LG-Peninsula east of Poe Creek.*	*Water willow, wetlands. NCP ownership of a forested area.*
61	*LG-Upper edge of Sledge Creek.*	*Wetlands, water willow.*
62	*LG-Peninsula north of Eastern Shores Road.*	*Terrestrial area with large land area. Fish habitat.*
63	*LG-Upper end of Hamlin Creek, upstream of power line.*	*Shallow and good fish habitat.*
64	*LG-Peninsula north of Myrick Estates.*	*Water willow and bird wading area.*
65	*LG-Cove in vicinity of Summit Wildlife Access.*	*Stumps and water willow, good fish habitat. Terrestrial habitat.*
66	*LG-East side of upper end of Lees Creek.*	*Same as Site 65.*
67	*LG-East side of Lees Creek downstream of Site 66.*	*Same as Site 65.*
68	*LG-Day use area near dam.*	*Water willow and day use area.*



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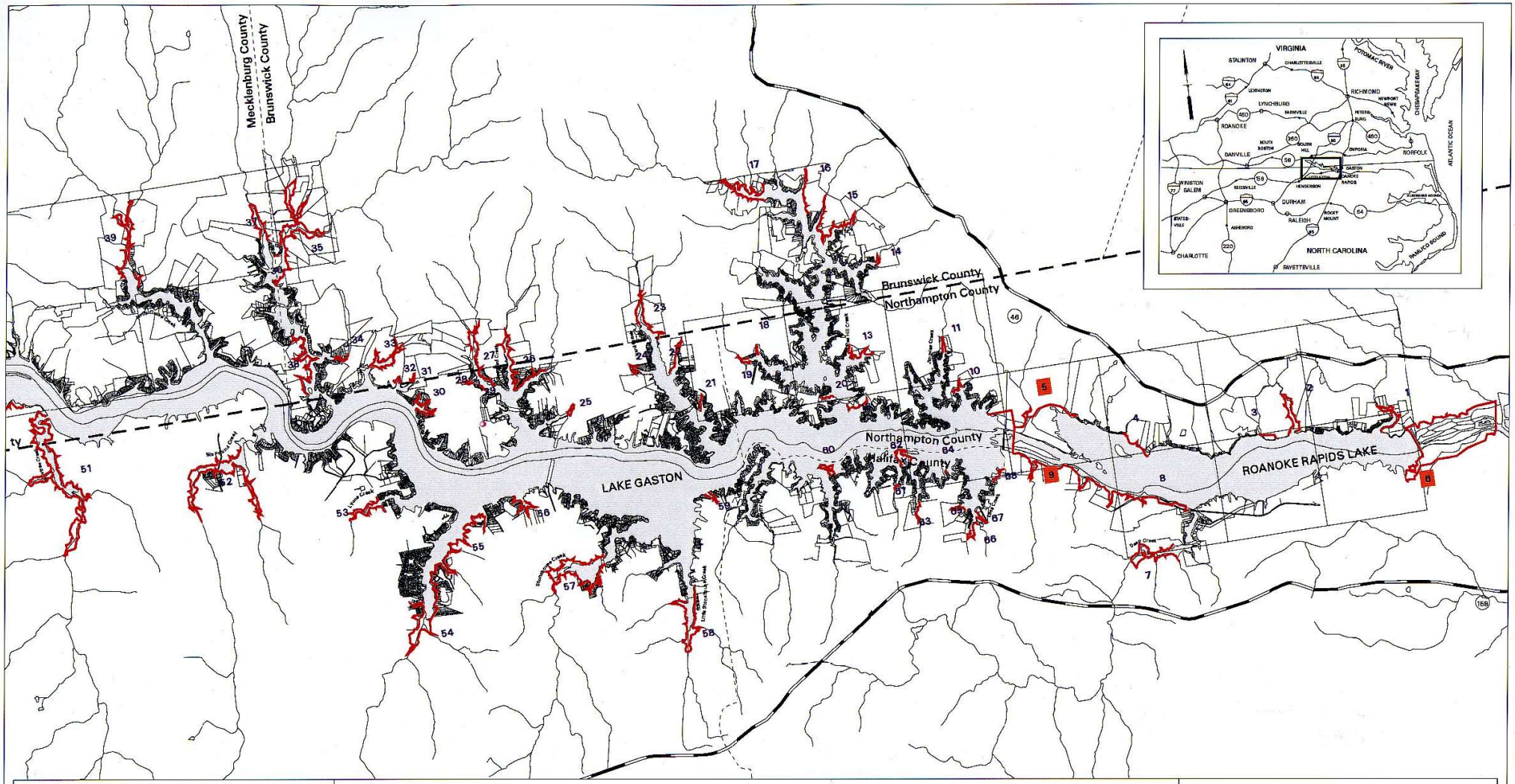

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APPENDIX E

AQUATIC WEED CONTROL

Revision 6

2021

APPENDIX E

AQUATIC WEED CONTROL

Revision 6

2021

ROANOKE RAPIDS AND GASTON SHORELINE MANAGEMENT PLAN APPENDIX E – AQUATIC WEED CONTROL October 2021

1.0 Overview

The accidental introduction of exotic vegetation has resulted in the proliferation of several nuisance aquatic weeds in Lake Gaston and Roanoke Rapids Lake. Although there are some ancillary aquatic habitat benefits to these species, over-abundance of the weeds can result in significant reduction in the recreational quality of some portions of the lakes. Of greatest concern are the areas in and around public and private swimming areas, docks, boat landings and channels that provide ingress and egress to these structures.

2.0 State Regulation

Since portions of Lake Gaston fall within the boundaries of both North Carolina and Virginia, the regulations of both states for application of aquatic herbicides have been reviewed. The following are conclusions of the regulations:

2.1 In both states, the water in the lakes is considered to be "state property" by the state. As a result, the states are responsible for ensuring water quality and co-managing the fishery.

2.2 The bottom of the lake and the shoreline within the project boundary are owned by Dominion. Dominion is responsible to FERC to ensure proper management of aquatic and terrestrial resources within the project boundary.

2.3 Neither state allows for herbicide treatment in its waters unless the treatment is performed by a licensed applicator.

3.0 Lake Gaston Weed Control Council

In 1985 the Lake Gaston Weed Control Council was formed for the primary purposes of research, education, control and/or eradication of undesirable aquatic weeds in Lake Gaston. The Council is comprised of 3 persons from each of the 5 counties surrounding the lake. Funding for the council comes from both the public and private sectors. The Weed Control Council is responsible for contracting and overseeing aquatic weed herbicide applications and various other methods of weed control in the Lake. Typically, the Weed Control Council will contract an applicator from one to five-year contracts to treat nuisance aquatic vegetation.

4.0 Guidelines for Private Weed Control Application

4.1 Only registered and licensed individuals may apply aquatic weed control chemicals within the Lake Gaston or Roanoke Rapids Lake project boundaries.

4.2 Any individual applying aquatic weed control chemicals within the Lake Gaston or Roanoke Rapids Lake project boundaries shall submit an annual report of any applications to Dominion Energy. The report shall provide the following; latitude/longitude of area treated, acreage of treated area, chemical applied and species treated. Such report shall be submitted no later than January 30th of the following year.

5.0 Native Aquatic Vegetation Control

5.1 Background

Native plants provide many benefits to the Lake Gaston ecosystem and surrounding areas. They protect shorelines from erosion, stabilize deposited sediments, clean and clear lake water, provide valuable fish and wildlife habitat, and deter excessive growth of algae and weedy, non-native plants such as hydrilla. While these benefits are important, certain aggressive native species can occasionally grow to excess in Lake Gaston, causing concerns for boaters, swimmers, and lake front users. There may be instances where a property owner might wish to control the growth of these aggressive native plants.

5.2 Limits, non-fee removal of native species.

While efforts should be made to protect native aquatic, wetland, and riparian plant species, it is recognized that adjacent property owners require access to the open waters of Lake Gaston. In this regard, property owners are allowed, to clear plants that could obstruct access to the lake from a 10-ft wide boat lane without mitigation.

Table 1: List of native aquatic, wetland, and riparian plant species that can be removed from Dominion shoreline property and on and within the waters of Lake Gaston.

Species Name	Common Name	Growth habit	Replace with
Typha spp.	Cattails	Emergent	Emergent
Nelumbo lutea	American lotus	Floating-leaved / emergent	Submersed
Nuphar lutea	Yellow water-lily	Floating-leaved	Submersed
Nymphaea odorata	American waterlily	Floating-leaved	Submersed
Zizaniopsis miliacea	Giant cutgrass	Emergent	Emergent
Brasenia schreberi	Watershield	Floating-leaved	Submersed

NOTE: Removal of water willow is not allowed.

Table 2 lists native aquatic, wetland and riparian plant species approved for planting on Dominion shoreline property or within or on the waters of Lake Gaston. These plants represent common species that are native to North Carolina/Virginia and provide important, often vital benefits to the lake ecosystem.

Table 2: Beneficial native aquatic, wetland, and riparian plant species approved for restoration programs on Dominion shoreline property and on and within the waters of Lake Gaston.

Common name	**Scientific name**	**Growth habit**
American bur-reed	*Sparganium americanum*	Emergent/submersed
American frog's-bit	*Limnobium spongia*	Floating
American pondweed	*Potamogeton nodosus*	Floating-leaved/submersed
Arrow arum	*Peltandra virginica*	Emergent
Arrowhead	*Sagittaria latifolia*	Emergent
Blue waterhyssop	*Bacopa caroliniana*	Emergent
Common spikerush	*Eleocharis palustris*	Emergent
Coontail	*Ceratophyllum demersum*	Submersed
Creeping burhead	*Echinodorus cordifolius*	Emergent
Crimsoneyed rosemallow	*Hibiscus moscheutos*	Emergent
Delta arrowhead	*Sagittaria platyphylla*	Emergent/submersed
Illinois pondweed	*Potamogeton illinoensis*	Submersed
Leafy pondweed	*Potamogeton foliosus*	Submersed
Lizard's tail	*Saururus cernuus*	Emergent
Pickerelweed	*Pontederia cordata*	Emergent
Sago pondweed	*Stuckenia pectinatus*	Submersed
Scouringrush horsetail	*Equisetum hyemale*	Emergent
Small pondweed	*Potamogeton pusillus*	Submersed
Soft rush	*Juncus effusus*	Emergent
Softstem bulrush	*Schoenoplectus tabernaemontani*	Emergent
Southern naiad	*Najas guadalupensis*	Submersed
Squarestem spikerush	*Eleocharis quadrangulata*	Emergent
Swamp smartweed	*Polygonum hydropiperiodes*	Emergent
Water willow	*Justicia americana*	Emergent
Waterthread pondweed	*Potamogeton diversifolius*	Submersed/floating-leaved
Wild celery	*Vallisneria americana*	Submersed