

112 FERC ¶ 61,026
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeem G. Kelly.

Appalachian Power Company

Project No. 2210-090

ORDER MODIFYING AND APPROVING SHORELINE MANAGEMENT PLAN

(Issued July 5, 2005)

1. On September 2, 2003, Appalachian Power Company (Appalachian), licensee of the Smith Mountain Project No. 2210, filed an application for Commission approval of its Shoreline Management Plan (SMP). We find the proposed SMP, as modified herein, is in the public interest because it provides for a comprehensive plan for managing development along the shoreline within the project boundary, and we will approve it.

Project Description

2. The Smith Mountain Project is located on the Roanoke River in west-central Virginia, about 30 miles southwest of Lynchburg, Virginia. It contains an upper pumped storage development (Smith Mountain), located at river mile 314, and a lower, conventional development (Leesville) at river mile 296. The Smith Mountain development creates a reservoir of approximately 26,000 acres in surface area with approximately 500 miles of shoreline that includes a number of public and private recreational sites and private residences. The reservoir's normal maximum operating level is elevation 795.0 feet National Geodetic Vertical Datum (NGVD). The project boundary for the Smith Mountain development generally follows a contour of elevation 800.0 feet NGVD around the perimeter of the reservoir. At times of high inflow, the reservoir occasionally rises over the 800.0-foot NGVD contour.

3. The Leesville development includes a reservoir of approximately 3,400 acres in surface area with approximately 100 miles of shoreline. During a normal generation/pumpback cycle, the reservoir can fluctuate up to 13 feet in elevation. The normal upper operating level for the Leesville reservoir is 613.0 feet NGVD except in areas defined by survey beyond the referenced contour elevation. The shoreline along the Leesville reservoir is less developed than the Smith Mountain development and consists of some residential development, some boat launching facilities, and two marinas. The project boundary for Leesville Lake is the 620-foot contour NGVD.

Background

4. Under Article 41 of its license, Appalachian has the authority to grant permission for certain types of use and occupancy of project lands and waters without prior Commission approval.¹ However, when activities do not fall within the parameters of paragraphs (b) and (d), Appalachian must request authorization for the activity from the Commission. Approval of the SMP would permit additional development within the project boundary without the need for case-by-case Commission approval.

5. In May 2001, Appalachian formed a steering committee of representatives from various state agencies,² the four counties in which the project is located,³ Smith Mountain Lake Chambers of Commerce, Association of Lake Area Communities, and an individual representing the Campbell County's citizens to work together to develop the SMP. Six additional individuals participated in the steering committee process.⁴ The steering committee met 12 times between May 8, 2001, and August 26, 2003, to review, develop, and discuss the SMP.

6. Additionally, Appalachian provided information and actively solicited public input during the development of the SMP. It held a general meeting in January 2002 to provide information about the SMP process and to solicit input from the public regarding lake resources and issues concerning Smith Mountain and Leesville Lakes. It also provided a questionnaire concerning the lakes, which was also made available to a number of

¹ See *Appalachian Power Co.*, 82 FERC ¶ 62,109 (1998). The Commission amended Appalachian's license to include the standard land conveyance article that had been included in Commission licenses issued since 1980.

² The Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, Virginia Department of Game and Inland Fisheries, Virginia Department of Historic Resources, and Virginia Department of Health.

³ Bedford, Campbell, Franklin, and Pittsylvania.

⁴ The additional participants included five individuals representing Bedford and Franklin Counties and a dock builder representative. See Tables 1.4-1 and 1.4-2 in the Shoreline Management Plan dated August 29, 2003 for a list of all representatives and participants.

groups, the counties, the local paper, and posted on Appalachian's website for the Smith Mountain Project.⁵ Appalachian held a second public meeting in August 2002 to present the preliminary results of the data collected during and after the January meeting and to report on the status of the shoreline management planning process.

7. Appalachian held two public meetings in February 2003 to present draft shoreline classifications, parameters, and preliminary regulations for shoreline development. In July 2003, Appalachian held two additional public meetings to present the draft SMP. On September 3, 2003, Appalachian filed its proposed SMP with the Commission. The Commission issued a public notice of the application on September 10, 2003, requesting comments, recommendations, and motions to intervene. While the closing date for comments was initially October 10, 2003, it was subsequently extended an additional three months to January 10, 2004, to accommodate numerous requests for an extension. Six parties filed motions to intervene and approximately 75 persons filed comments.⁶ On December 22, 2004, the Tri-County AEP Relicensing Committee (County Relicensing Committee) filed a motion to intervene out of time, which was subsequently granted.⁷

8. Approximately 50 of the comments filed expressed support for the proposed SMP and did not offer specific comments. The Virginia Department of Game and Inland Fisheries (Virginia Fisheries) stated that it supports the proposed SMP, that the filed version is a good, balanced plan, and urges the Commission to approve the plan as submitted by Appalachian. The Smith Mountain Lake Association states that it supports the proposed SMP and believes that Appalachian listened to all the concerns of residents, businesses, and builders. It also states that the proposed SMP protects the environment with a fair balance between development and preservation.

9. The Virginia Department of Environmental Quality states that the proposed SMP is a balanced plan. However, it is concerned that there are not restrictions on the number of piers and docks that will be constructed in commercial areas. It also requested additional measures to avoid dredging and avoid impacts on wetlands and surface waters. The U.S. Department of the Interior stated that it strongly supported the proposed SMP

⁵ www.smithmtn.com

⁶ Table 3 in the Environmental Assessment list of all intervenors and comments filed in response to the public notice.

⁷ The County Relicensing Committee consists of representatives of Bedford, Franklin, and Pittsylvania Counties. A Notice Granting Late Interventions was issued by the Commission on March 8, 2005.

and its goals to protect the environment, preserve the scenic qualities, enhance recreation opportunities, and minimize impacts. However, it recommended that the Commission undertake a cumulative effects analysis of the rapid build-out on the Smith Mountain Lake shoreline. The Virginia Department of Historic Resources stated that the proposed SMP does not fully address the impact of shoreline development and other activities concerning cultural resources.

10. Franklin and Bedford counties filed individual motions to intervene. Franklin County contends that the proposed SMP would affect its shoreline development standards and procedures. It states that there are inaccuracies in the shoreline mapping. Both counties state that the SMP should address, among other things, vegetative cover, water level management, debris removal, invasive vegetation control, siltation removal, water quality testing, and navigation safety aids. Bedford County also requests that an economic impact study be completed and it seeks an increase in water withdrawals to five million gallons per day to allow for the increasing demands of development.

11. Commission staff prepared a draft Environmental Assessment (EA) for the proposed SMP. The draft EA analyzed the proposed SMP and addressed the comments filed and issues raised during the comment period. The Commission issued a notice of availability of the draft EA on March 2, 2005. Commission staff held a public meeting in Bedford, Virginia, on April 7, 2005, to solicit additional comments.⁸ A final EA is being issued with this order. Filed comments and comments received on the draft EA at the April 7 meeting are addressed in the attached final EA and below.

12. Appalachian's license for the Smith Mountain Project expires on March 31, 2010. In addition to this proceeding on the SMP, Appalachian is currently using the Commission's Integrated Licensing Process (ILP) to prepare its license application for continued operation of the project, which is due to be filed on or before March 31, 2008. In May 2005, Appalachian held meetings to discuss its proposed study plans for the ILP.⁹ At that meeting, Appalachian formed groups to develop the studies that will be conducted under its ILP.

⁸ Comments on the draft EA are listed in § 4.0 of the final EA.

⁹ On May 12 and 13, 2005, Appalachian held its initial study plan meeting to discuss its proposed study plans, to resolve disagreements with the proposed plans, and to form work groups to explore the parameters of the plans.

Proposed Shoreline Management Plan

13. Appalachian states that the overall goal for the SMP is to develop a management tool that will help provide guidance for fulfilling license responsibilities and obligations for the project, including protecting and enhancing the project's environmental, scenic, and recreational values.

Specific goals of the plan are:

1. Protecting environmental attributes such as wetlands, habitat, and spawning areas;
2. Preserving the natural scenic quality of the shoreline for boaters and shore viewers and preserving specific scenic attributes;
3. Enhancing recreational opportunities by considering boating densities and navigation and maximizing available use of the project waters by the public;
4. Cooperating with multiple governmental entities that surround the project to coordinate adjacent land uses and proposed infrastructure with shoreline uses;
5. Working with the same entities to coordinate permitting efforts;
6. Minimizing impacts among contrasting uses; and
7. Striving for a balance that supports local economic interests yet protects environmental and recreational resources and that allows the public to enjoy these interests and resources.

14. Appalachian states that it used various studies and data collection in its development of the SMP. It explains that the entire shorelines of Smith Mountain and Leesville Lakes were surveyed by boat and land to characterize the shoreline with regard to erosion; recreational facilities were documented; and aquatic habitat types along the shoreline were classified. Additionally, Appalachian states that it contacted the Virginia State Historic Preservation Office (SHPO) to determine the extent of cultural resources within one-quarter mile of the project shorelines.

15. Appalachian explains that it used digital ortho-rectified aerial photography, Global Positioning System units, and digital photography to map the shorelines of Smith Mountain and Leesville Lakes. It states that the shorelines were digitized at a scale of 1:1,000, which yields an accuracy of plus or minus three feet. The SMP states that the classification maps were developed using the information that was collected and the parameters that were developed by the steering committee.

16. Appalachian also states that it obtained zoning and planning regulations and land use policies and goals of the counties surrounding Smith Mountain and Leesville, and used that data in developing shoreline classifications. Finally, Appalachian took aerial photos of the lake on 10 randomly-chosen holidays and weekend days between Memorial Day and Labor Day. It states that it used boat counts to develop average boat densities for each section of the lake.¹⁰ Appalachian also states that it conducted interviews using peak times to determine individual perceptions of crowding and safety on Smith Mountain Lake. Finally, it collected information on watercraft accidents and locations on the lakes and correlated accident information with boat densities and people's perception of crowding.

A. Shoreline Classifications

17. The SMP designates classifications for the shoreline within the project boundary as High-Density Commercial, High-Density Multi-Use, Public Use, Low-Density Use, Conservation/Environmental Zones, and Impact Minimization Zones. The SMP also contains procedures for acquiring variances that allow for additional review of requests to construct facilities generally not allowed in a specific shoreline classification. Further, the SMP includes restrictions and requirements for shoreline stabilization, vegetation, dredging, excavation, flotation materials, and woody debris. The classifications also govern the size, length, height, width, number of slips, and setback of a potential docking facilities.¹¹

¹⁰ Specifically, it states that under the Virginia Statewide Comprehensive Outdoor Recreation Plan the standard for power boating is 12 acres per boat. Based on these standards, the high-density areas in the SMP are areas with less than 12 acres per boat, medium-density contained between 12 to 15 acres per boat, and low-density contained 15 acres or more per boat.

¹¹ See EA, Table 1.

18. The classifications are inclusive from high density down. In other words, an area designated as High-Density Commercial can be used for any other use, but activities designated as High-Density Commercial cannot take place, for example, in Low-Density Use areas. If the proposed development is a more restrictive use than the SMP shoreline classification, the proposed development will determine the shoreline restrictions. For example, if a residential dock is proposed in a High-Density Commercial area, the Low-Density Use regulations will apply.

19. Similarly, if a county's zoning conflicts with the shoreline classification in the SMP, the more restrictive of the two will apply. For example, if the property adjacent to the project boundary is zoned by the county as residential, the Low-Density Use regulations will apply to construction within the project boundary, regardless of the SMP's classification in that area. Conversely, if the county's zoning allows for commercial development for the property adjacent to the project boundary and the SMP's classification is for Low-Density Use, only construction of a Low-Density Use facility will be allowed.

20. The SMP also provides for a revision process that allows for proposed changes to the current classifications. If a shoreline classification is questioned, a property owner/developer may apply to Appalachia for a reclassification. Appalachia will review the maps and make a field inspection, if necessary. If Appalachia determines there is a discrepancy in the classification, (i.e., that the area has been improperly classified) it will make the revision. If it determines there is a potential discrepancy, then the individual must proceed through a variance process, discussed below, for reclassification of the shoreline.

1. High-Density Commercial

21. The High-Density Commercial classification includes project lands and waters where profit-seeking individuals or entities operate facilities as a place of business. This includes facilities where boats can be launched, retrieved, or docked, as well as obtain petroleum. Outside the project boundary, associated facilities could include provisions for food services, convenience retailing, dry storage, and other activities customarily associated with marinas, campgrounds, private recreation areas, or private clubs. Areas

designated as High-Density Commercial includes shoreline with existing commercial marina facilities, all shoreline between Hales Ford Bridge and a point one-half mile from the bridge, or shoreline that was zoned by the counties for commercial use at the time the SMP was filed.¹²

22. Structures constructed in High-Density Commercial areas are subject to various requirements, including, among others: (1) not exceeding a maximum of one-third the width of the cove or 120 feet, whichever is less; (2) a minimum fairway between docks of two times the length of the adjacent slip; (3) a maximum height of 33 feet; (4) white reflectors and reflector tape; and (5) compliance with local, state, and federal requirements, American with Disabilities Act (ADA) and American with Disabilities Act Access Guidelines (ADA Guidelines), and the Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings.¹³

2. High-Density Multi-Use

23. The High-Density Multi-Use classification includes project lands and waters where boats are launched, retrieved, or moored for providing private access to the lake for specific residential properties. These properties include multi-family dwellings and subdivision access lots that serve single-family dwellings that are located within a parcel of land subdivided into individual lots. This classification allows for access to the lake for more than one property owner. The access could be in the form of multi-slip common dock areas and/or an access ramp with a courtesy dock. Areas designated as High-Density Multi-Use include coves and main channel areas with a width of more than 500 feet of shoreline to shoreline, existing watercraft density of less than 15 acres per boat or where the entrance to the cove is less dense than 12 acres per boat, or shoreline with existing multi-use residential facilities.

24. The High-Density Multi-Use classification provides access to the lake under two options, the community dock option or the courtesy pier and ramp option. Under the community dock option, among other things: (1) the dock shall not exceed a maximum of one-third cove width or 120 feet, whichever is less; the dock shall not exceed

¹² Some of the counties have changed their zoning for certain areas since the SMP was filed in August 2003.

¹³ See Shoreline Management Plan dated August 29, 2003, at 13-16 for a detailed list of all High-Density Commercial requirements.

400 square feet per boat slip; (2) the maximum height is 19 feet for a structure with a flat roof and 26 feet for a structure with a pitched roof; (3) there is a maximum of one boat slip per housing unit; (4) a floating dock may be added to the end of each structure for courtesy/guest boat tie-up; and (5) white reflectors and reflector tape are required.¹⁴

25. Courtesy piers, among other things, must meet all local, state, and federal requirements and not exceed a maximum of one-third cove width or 100 feet in length. No roofs are allowed on courtesy piers and white reflectors and reflector tape are required. Ramps, among other things, shall be constructed of reinforced concrete with a minimum thickness of six inches and shall be 16 feet for a single lane or 32 feet for a double lane.¹⁵

3. Public Use

26. The Public Use classification includes project lands and waters where facilities are operated by non-profit organizations, Appalachian, or governmental entities that support various public recreational amenities or areas used for the public good. Areas designated under the Public Use classification include coves and main channel areas with a width of more than 500 feet shoreline to shoreline, existing watercraft density that is less than 15 acres per boat, shoreline currently designated as public recreation, or areas identified for future public use. Public Use areas may include multi-slip docks and/or boat ramps with courtesy docks.

27. Facilities in Public Use areas, among other things, must meet ADA and ADA Guidelines recreation facility requirements and adhere to any applicable laws and regulations. Docks cannot exceed a maximum of one-third cove width or 120 feet in length, whichever is less. Only floating docks or uncovered piers shall be considered for public use areas, with the exception of boathouses and covered docks for storage of government service boats.¹⁶

¹⁴ See *id.* at 17-20 for a detailed list of all High-Density Multi Use requirements.

¹⁵ See *id.* at 20-21 for a detailed list of all Public Use requirements.

¹⁶ *Id.* at 21-24.

4. Low-Density Use

28. The Low-Density Use classification includes four types of development. Single Family-Type Residential include private facilities on project lands and waters that do not provide access for off-water lots. Facilities included within this group include piers, boat docks, and floaters. Low-Density Multi-Use includes facilities on project lands and waters for apartments, townhouses, condominiums, and off-water or common lot access for developments. Low-Density Commercial includes facilities on project lands and waters where profit-seeking individuals or entities operate facilities as a place of business. These facilities generally include areas for boats to dock for short periods of time for access to convenience stores, restaurants, shopping, or private clubs. Low-Density Use includes facilities located on project lands and waters used by non-profit organizations, Appalachian, and government entities. Examples of low-density public use areas include public access areas, state, district, and county parks that adjoin the project boundary, lake clean-up facilities, and other similar public uses.

5. Impact Minimization Zone

29. The Impact Minimization Zones include project lands and waters that have been identified for their importance from an environmental, scenic, cultural, or recreational standpoint. Development within these areas is limited, but possible, based on a review of the related plans, including mitigation for any impacts to resources. Areas within the Impact Minimization Zone include wetlands that span less than 100 feet of linear shoreline, areas classified as large woody debris,¹⁷ areas within 100 feet of a known cultural resource site contained in the Virginia SHPO's files, undeveloped islands, areas adjacent to Smith Mountain Wildlife Management Area, or shoreline adjacent to areas identified as scenic by a majority of questionnaire respondents.

6. Conservation/Environmental Zone

30. The Conservation/Environmental Zone classifications seek to protect recreational opportunities, scenic beauty, water quality, fish and wildlife habitat, and wetlands. Conservation/Environmental Zones include large wetland areas usually associated with streamheads at the back of coves, areas identified by the Virginia Natural Heritage Program as important natural communities, or areas within designated restriction zones

¹⁷ Large woody debris consist of areas of large downed trees with a density of more than 5 trees greater than 10 inches in diameter per 100 linear feet of shoreline.

such as between the boat barriers upstream of the project dams and the dams themselves. Development inside the project boundary in areas designated as Conservation/Environmental Areas is prohibited unless a variance can be obtained.

B. VariANCES/MAPPING REVISIONS

31. Appalachian's SMP proposes four types of variance processes. The company states that it will consider whether a variance is warranted on a case-by-case basis. It also provides for changes to the plan to correct minor inaccuracies associated with its mapping procedures.¹⁸

1. Low-Density Use VariANCES

32. Variances for structures in areas classified as Low-Density Use will be considered when there are no alternatives that would allow the proponent to meet the requirements of the SMP. Variances may be necessary to change, among other things, the length, location, setback, distance between docks, or to extend property lines. For example, a variance may be necessary to expand the maximum length of the dock to reach a minimum water depth. Proponents of a variance must apply to Appalachian for the variance.

2. Agency Review VariANCES

33. An agency review is necessary for variances to structures within the High-Density Commercial, High-Density Multi-Use, and Public Use classifications. Additionally, an agency review is required for variances concerning shoreline stabilization, beaches, ramps in Low-Density areas, boardwalks, and dredging. Under the agency review variance, Appalachian will review the request for a variance and forward it to the resource agencies for comments. Once comments are received from the resource agencies and addressed, Appalachian will determine if the variance is appropriate under the SMP and fits within its license requirements.

¹⁸ See Shoreline Management Plan dated August 29, 2003, at § 3.3 for a detailed discussion of the variance procedures.

3. Impact Minimization Zone Variances

34. As stated, the Impact Minimization Zones include project lands and waters that have been identified for their importance from an environmental, scenic, cultural, or recreational standpoint. Construction in this area may be permitted if specific mitigation requirements are implemented. Appalachian will submit variances for construction in the Impact Minimization Zone to the resource agencies for comment. Once comments are received, Appalachian will determine if the mitigation measure adequately protect the affected resource and if the proposed project is appropriate.

4. Commission Variance

35. Variances for changes in shoreline classification, construction in the Conservation/Environmental classification, dredging activities not covered under the SMP, and alterations to the project boundary must be approved by the Commission. Appalachian will solicit and review comments from the resource agencies and decide whether to forward the request for a variance to the Commission.

5. Mapping Revision Process

36. Appalachian states that if individuals believe that the classification along the shoreline adjacent to their property is inaccurate, they may apply to Appalachian for a revision. Appalachian will then review the SMP maps and make a site field inspection, if necessary, to address any shoreline classification issue.

C. Other Requirements

1. Shoreline Stabilization/Erosion

37. The SMP imposes various restrictions aimed at promoting shoreline stabilization by protecting existing vegetation and encouraging planting of vegetation for erosion control. For example, the construction of bulkheads (vertical walls) is prohibited unless a variance is obtained. Shoreline stabilization must also meet any local, state, and/or federal requirements.¹⁹

¹⁹ See Shoreline Management Plan dated August 29, 2003, at 41-42 for a detailed list of all shoreline stabilization restrictions.

2. Dredging and Excavation

38. Under the SMP, federal and state agencies can impose restrictions and/or require permits for dredging activities within the project boundary. County permits may also be required. Dredging and excavation is prohibited in wetland areas and is prohibited in all areas between March 1 and June 30.²⁰

3. Vegetative Cover

39. The restrictions for the removal of vegetative cover are intended to provide adjacent landowners the opportunity to use property within the project boundary while providing a buffer to protect the aesthetic and environmental characteristics and water quality of the lake. The SMP requires that vegetation within the project boundary be preserved. Vegetation may be removed to: (1) provide for a reasonable view of the water; (2) to construct access paths to the shoreline and/or deck; (3) to construct erosion control measures along the shoreline; and (4) for general maintenance of the vegetated area. However, individuals who remove vegetation without a permit may be required to plant or pay for planting vegetative materials.²¹

40. The proposed SMP states that if an area is already cleared and no vegetation other than grass is present, the property owner may continue to maintain the lawn. However, it encourages that a vegetative buffer be reestablished to protect the water quality of the lake and decrease the amount of runoff from chemicals used on the lawn.

²⁰ *See id.* at 42-43 for a detailed discussion of state and federal agency requirements and other restrictions.

²¹ *See id.* at 43-46 for a detailed discussion of restrictions on the removal of vegetative cover.

4. Woody Debris

41. Woody debris is defined as trees and woody material that extend from the shoreline into the lake. The most common type of woody debris is fallen trees where the roots of the trees are still attached to or resting on the shoreline. Woody debris provides important habitat for fish and wildlife. The SMP restricts removal of submerged woody debris unless the debris constitutes a navigational or public safety hazard. Additionally, applicants for new shoreline construction may be required to mitigate for the removal of woody debris from the lake.²²

5. Cultural Resources

42. If any known or unknown cultural resource materials are discovered during work associated with a permit, the SMP requires that all work must be stopped. Appalachian must be notified and consultation with the Virginia SHPO must be completed before any further work will be allowed.

Discussion

43. Over the years there has been a significant increase in residential and commercial development along the project shorelines. While Appalachian has developed some shoreline management policies, they have not been encompassed in a single, comprehensive plan.²³ The SMP we are approving here is a statement of Appalachian's land use policies, both existing and new, and reflects a balancing of the interests of shoreline development, environmental protection, and Appalachian's hydroelectric operations.

²² The SMP also allows for the removal of floating debris and shoreline litter without prior approval from Appalachian.

²³ For instance, since the license was amended in 1998 to add the Commission's standard land use article (Article 41 of the Smith Mountain Project), the licensee has had a program for permitting the types of use and occupancy of project lands and waters permitted by that article, such as piers, boat ramps, marinas accommodating up to ten boats, bulkheads, and retaining walls.

44. As stated, the Commission staff prepared an EA to analyze Appalachian's proposed SMP. The EA concludes that, with certain revisions that are discussed below, the SMP would not constitute a major federal action significantly affecting the quality of the human environment. We find that the proposed SMP will not interfere with the licensed project purposes, and will be consistent with the statutory standards by which we regulate hydropower projects. Accordingly, we will amend sections (b)(2) and (d)(5) of Article 41 in Appalachian's license to reflect the provisions of the SMP, as modified below.

A. Procedural Matters

45. Several commenters contend that the SMP does not adequately address various issues and is not ready for implementation. Some request that the Commission not approve the SMP at this time, but continue to work on the SMP as part of Appalachian's relicensing proceeding. The County Relicensing Committee opposes certain aspects of the SMP and contends that the only way to resolve these issues is through "a working session where issues are thoroughly aired, misunderstandings cleared up, and acceptable rules to both sides are worked out."²⁴

46. Conversely, the Virginia Fisheries contends that while the SMP may not be perfect for all parties, it represents a two-year process of cooperation and compromise by all the stakeholders and there needs to be an ending point to the process. It reiterates that the SMP represents a document of compromise and that it would be unfair to all the other stakeholders that were at the table during the development process to open it again without allowing all parties to revisit their areas of concern.

47. As discussed above, between May 2001 and August 2003 the steering committee, that included numerous state agencies, chambers of commerce, homeowner groups, individuals, and all the counties that are now members of the County Relicensing Committee,²⁵ met 12 times to work together to develop the SMP. Additionally,

²⁴ County Relicensing Committee's comments at 3.

²⁵ Between official representatives, alternatives, and individual participants, the 4 surrounding counties had 12 individuals participating in the steering committee to develop the proposed SMP. Bedford County had 4, Campbell County had 1, Franklin County had 5, and Pittsylvania County had 2.

Appalachian met with the public in January 2002 to solicit input for the proposed SMP and in August 2002 to present the results of the information it collected as a result of the January 2002 meeting. It met with the public again in February 2003 to present the proposed shoreline classifications and other information about the proposed SMP and in July 2003 to present the draft SMP to the public.

48. After Appalachian filed the proposed SMP on September 2, 2003, Commission staff solicited comments and recommendations on the proposed SMP. The Commission specifically extended the closing date for those comments an additional three months from October 10, 2003, to January 10, 2004, to allow everyone adequate time to thoroughly respond and comment on the proposed SMP. The Commission issued the draft EA for the proposed SMP on March 2, 2005, and allowed 45 days for all interested parties to file comments on the draft EA. Additionally, Commission staff conducted a meeting in Bedford, Virginia, on April 7 to solicit additional comments to the draft EA.

49. We find that the record, including the application and all the comments, contains sufficient information and data for the Commission to make a reasoned decision on the merits of Appalachian's proposed SMP. Interested parties have been given many opportunities to express their views, and we believe there are no issues as to which the record is not complete. Thus, no purpose would be served by convening an additional working session. Moreover, we find that the proposed SMP, as modified below, adequately balances the public interest while protecting all the project resources. Therefore, any further delay in implementing the SMP during the relicensing process is unwarranted. However, should the studies performed during relicensing indicate a need to revisit and modify the SMP, we can do so.

B. Time-of-Year Restriction on In-Water Construction

50. Smith Mountain Lake and Leesville Lake support a variety of warmwater and coolwater fish species including striped bass, largemouth and smallmouth bass, muskellunge, walleye, flathead and channel catfish, and crappie. According to the Virginia Fisheries, the spawning seasons for these species are typically from late February through June. The draft EA concluded that construction activities may disturb sediment that could be deposited in areas used for spawning, thereby decreasing spawning success of game fishes. Therefore, the draft EA recommended that Appalachian revise its SMP to include time-of-year restrictions from February 15 through June 15 to preclude any in-water construction during that period to minimize the impacts on fish species.

51. Many commentors object to the imposition of restrictions on all in-water construction during the fish spawning season between February 15 and June 15. The County Relicensing Committee states that it would interfere with its efforts to maintain navigational aids in the reservoirs. Other commentors are concerned with the economic impact this will have on local dock builders if they are unable to drive piles for docks for four months out of the year.

52. Commission staff has determined that the placement of pilings may have potential adverse impacts on only a portion of the spawning period of certain of the species that are significant for recreational fishing. Some of these species, including walleye, muskellunge, yellow perch, sauger, and northern pike, spawn from approximately February 15 through April 14, but do not build nests. These fish release their eggs randomly across the shallow water areas so that their eggs stick to aquatic vegetation, rocks, and stumps (i.e., elevated above the reservoir bottom where siltation could affect the eggs).²⁶ Thus, pile driving is not likely to affect the eggs of these fish since the impact of pile driving is mainly disturbing the sediments in small, concentrated areas around 8- to 12-inch diameter poles.

53. The period including April 15 through June 15 overlaps the time when largemouth and smallmouth bass, catfish, and white crappie are most likely to build nests and spawn in the shallow water areas near shore.²⁷ Largemouth and smallmouth bass are considered by Virginia Fisheries to be the most sought-after species targeted by anglers. Thus, the species have the most economic importance in terms of fishing and recreation. The Virginia Fisheries' 2004 Fisheries Management Report states that surveys indicate that largemouth bass and smallmouth bass population has been declining for several years. Since these fish build nests to spawn, their eggs could be impacted by pile driving, which could directly destroy a nest or result in disturbed sediments landing on and covering the eggs. These potential impacts are of sufficient concern that we will preclude pile driving from April 15 through June 15. As stated, the relicensing process is ongoing and studies required as part of this process could provide additional information which could lead to future revisions of this restriction, if warranted. Moreover, we believe that, for the safety of the boating community, it is necessary to install and maintain navigational markers in a timely manner, and will not impose any time-of-year restrictions on the installation or maintenance of navigational markers.

²⁶ Robert E. Jenkins & Noel M. Burkhead, *Freshwater Fishes of Virginia*, at 769, 236, 776, and 773 (1993).

²⁷ *Id.* at 727, 734, 536, and 716.

C. Navigation and Safety

54. The draft EA noted that the proposed SMP placed limits on the size of docks in commercial areas but did not place limitations on the number of docks. The draft EA concluded that, if development is permitted in commercial areas without any limitation on the number of docks, there could be impacts to navigation and public safety due to crowding and vision obstruction. Further, the draft EA concluded that unlimited construction could have direct effects elsewhere on the lake by causing excessive noise, congestion, or increased wave action. Therefore, the draft EA required that Appalachian develop and incorporate into the SMP criteria to limit the number of piers, docks, and slips that may be constructed in commercial areas.

55. In responses to the draft EA, the FWS and several property owners commented that there should be additional restrictions on development in commercial areas to address cumulative impacts and navigation concerns. In response to the recommendation in the draft EA, Appalachian stated that there are regulations in place to aid in navigational safety in commercial areas.²⁸ Specifically, Appalachian points out that these regulations require a maximum dock length of 120 feet or one-third of the cove whichever is less, and setbacks between various uses such as commercial docks and residential properties. Additionally, Appalachian states that docks cannot block or obstruct vision between channel markers, and white reflective tape or white reflectors are required. Finally, docks in the area of the largest commercial shoreline classification must be 60 feet landward from the navigational channels. As a result, Appalachian states that the length of available shoreline and the setbacks will limit the number of slips constructed in commercial areas.

56. Appalachian also states that to further promote public safety and address navigation issues, it will consult with the Virginia Fisheries to establish a no wake zone in the vicinity of commercial facilities and require the owners of the commercial facility to purchase, install, and maintain the appropriate buoys. We find that the limitations in the SMP, and the additional measures recommended by Appalachian, will result in appropriate restrictions on piers, slips, and docks constructed in commercial areas.

²⁸ See Appalachian's response letter dated April 12, 2005.

D. Variations

57. As stated, Appalachian proposes four types of variance processes including Low-Density Use Variations, Agency Review Variations, Impact Minimization Zone Variations, and Commission Variations. While the Agency Review Variations and Impact Minimization Zone Variance require resource agency review, the Low-Density Use Variance does not. Additionally, all of the variations, except the Commission variations, are left to Appalachian's sole discretion to grant or deny, regardless of the outcome of the resource agencies review. We find that this is not appropriate. Therefore, we will modify the proposed SMP's variance procedures and require that Appalachian submit all variance requests to the Commission for review and approval.

58. Additionally, we will require that Appalachian file once a year a list of all variations requested, including information concerning when they were received, why they were granted or denied, and when the request was acted on.

E. Cultural Resources

59. During the process of developing the SMP, Appalachian documented known archaeological and architectural sites. A regional database was created for the information in the Virginia SHPO files that included the location of the site and type of site. The SMP requires that all permitted work must stop in the event that cultural resource material is discovered. The draft EA required that Appalachian implement a programmatic agreement (PA) with the Virginia SHPO and Virginia Council on Indians to protect or mitigate impact to cultural resources within and immediately adjacent to the project.

60. On May 19, 2005, the Commission staff sent a letter to the Advisory Council on Historic Preservation in addition to the Virginia SHPO and Virginia Council on Indians, which included a request for participation in consultation and the draft PA. The PA addresses protection of historic properties during the implementation of the SMP prior to the issuance of a new license for the project. The executed PA was issued on June 30, 2005. Execution and subsequent implementation of this PA evidences the Commission's having satisfied its responsibilities under the National Historic Preservation Act.²⁹ The PA will become part of the license for the project.

²⁹ 16 U.S.C. § 470.

F. Dredging

61. The SMP states that federal, state, and county permits may be required for dredging. The FWS and Virginia Fisheries are concerned about the cumulative impacts from the loss of shallow water habitat due to excessive dredging. They also note that Appalachian's compliance and enforcement have been lax on dredging projects, but did not provide any specific examples.

62. Under the SMP, the shoreline was classified specifically to protect areas of significant environmental resources. These areas include the Impact Minimization Zones and Conservation Zones. Dredging will not be permitted in wetland areas and any dredging near wetland areas will require sufficient buffers to ensure no adverse impacts. In addition, no dredging is permitted to a depth greater than 789 feet elevation and only accumulated sediment may be removed.

63. The SMP contains provisions for dredging commensurate with the requirements for a United States Corps of Engineer's dredging permit. In addition, the SMP requires that adjacent property owners notify Appalachian within ten working days prior to commencing any dredging of less than 25 cubic yards. We will also require that Appalachian annually file with the Commission a list of all dredging activities permitted within the project boundary. If the number and scope of these activities indicates that there is a significant loss of shallow water habitat, the Commission reserves the right to require additional restrictions on dredging activities. The Commission expects the licensee to carry out the provision of its license and ensure that activities permitted within the project boundary comply with all permits.

G. Woody Debris/Vegetative Cover/Debris Removal

64. The SMP requires that vegetation within the project boundary be preserved. It also restricts the removal of submerged woody debris unless the debris constitutes a navigational or public safety hazard. FWS and Virginia Fisheries commented about the removal of submerged aquatic vegetation when building piers and/or docks. Virginia Fisheries states that since there is no requirement to leave lap trees in the lake,³⁰ the EA should reflect that removal of lap trees and woody debris will be extensive and thus provide little protection for fisheries in the two lakes. Virginia Fisheries also recommends that shoreline restoration and preservation should include preservation of at least 100 feet in width of undisturbed, vegetated (preferably wooded) buffer.

³⁰ Lap trees are defined as dead or fallen trees in the water along the shoreline. Lap trees provide important habitat for fish and wildlife.

65. Virginia law generally permits landowners of land adjacent to the project boundary to remove certain vegetation provided they follow the guidelines on herbicide use.³¹ However, the SMP is more restrictive. It discourages the removal of vegetation and states that individuals may be required to plant or to pay for planting vegetative materials within the project boundary if vegetation is removed without a permit. The SMP also states if an area is already cleared and no vegetation other than grass is present, the property owner may continue to maintain the lawn. However, the SMP encourages that a vegetative buffer be reestablished by planting native plants in order to protect the water quality and decrease runoff.

66. Given that the SMP restricts the removal of large trees, other woody debris and vegetation, there is no evidence that this will be an ongoing concern. At the same time, we agree that wording in the SMP regarding the removal of vegetation is vague. For example, the SMP allows limited removal of vegetation to provide for a reasonable view of the water. It also provides that removal of woody debris should be minimal when placing and constructing new docks. However, the SMP also requires mitigation measures in both situations.³² Additionally, we will require the licensee to file annually a list of permits issued for modifying the vegetative buffer or for removal of vegetation. The report should also include information concerning the removal of woody debris and any requirements for mitigation. This will give the Commission the opportunity to review Appalachian's application of its policies. If the number and scope of these activities indicates that there is a significant loss of vegetation and woody debris, the Commission reserves the right to require additional restrictions on vegetation modification or removal.

³¹ However, we note that Appalachian's and Leesville project boundary consists of only the land below the 800- and 620-foot contour line around the perimeter of the reservoir, respectively. Accordingly, 100 feet width of shoreline is most likely outside the project boundary and, therefore, presently only subject to the requirements of Virginia law.

³² The SMP requires that if trees and shrubs are removed they must be replaced with other vegetation to maintain the function of a buffer. Additionally, the applicant may be required to mitigate for the removal of woody debris. *See* Shoreline Management Plan dated August 29, 2003, at §§ 2.5.11(1) and 2.5.12.

67. The EA determined that several issues, including debris removal, were outside the scope of the SMP proceeding because the environmental analysis of the SMP only covered the impacts from implementation of the plan including the classification systems, development parameters and limitations, and recreation issues.³³ Several commenters raised issues concerning floating debris and contend that they should be addressed in the SMP proceeding.

68. Appalachian has proposed to study the floating debris issue during relicensing. Appalachian proposes to determine the amounts and types of debris, determine the need to continue the removal of debris, identify the sources of debris, and assess various methods and/or programs for reducing debris accumulation on the lakes. In the recent meeting to discuss the relicensing study plans, a working group was formed to explore the parameters of the debris removal study. Because of the extensive information that will be developed by these studies, the Commission believes that the relicensing process is the proper forum to address this issue. If the Commission determines that modifications to the SMP are necessary as a result of the studies, we will address that issue at that time.

H. Local Zoning and Local Resolution Board

69. The properties adjacent to and surrounding the shorelines of the lakes are within Bedford, Campbell, Franklin, and Pittsylvania counties. Development along the shoreline consists of agriculture, residential, light commercial and business, and sparse industrial. Appalachian states that it used current environmental conditions, as well as county zoning, to develop the shoreline classifications in the SMP. The classifications place fewer restriction on development in areas that could support and sustain such development and greater restrictions on areas of sensitive environmental resources. If development is requested in Impact Minimization Zones, the request could be granted only if the permittee takes specific measures to protect the environment or mitigate the loss. Under the current situations, absent the SMP, there are no areas that are restricted from development and no requirements to mitigate impacts.

70. The County Relicensing Committee states that the SMP shoreline classifications dictate new land use classifications that conflict with the counties' zoning and local land use patterns and infrastructure plans. It states that 100 percent of the shoreline is already encompassed by local zoning ordinances and there is a high probability for conflicts between local zoning and the SMP. The County Relicensing Committee argues that the shoreline classifications were developed using a disparate approach from the zoning

³³ See EA at § 4.1.

approach used by the counties.³⁴ Specifically, it claims that Appalachian's proposed shoreline classifications "are blunt instruments, based on a few criteria that fail to take into account important differences between parcels, the adjacent communities, or the many different uses of the project's reservoirs."³⁵ The County Relicensing Committee also asserts that there are significant mapping errors and conflicts between the SMP shoreline classifications and zoning and land use plans.

71. The County Relicensing Committee states that Appalachian's approach to adopting the more stringent classification for conflicts between the SMP and local government land use controls is not an acceptable resolution for the counties. The County Relicensing Committee states that the SMP ignores the nature of the counties' planning process, whereby each government unit is required by state law to generate a comprehensive plan or an ideal for its community, and then shape the plan as real people, developments, and events occur. It asserts that after five years, for example, if real-life development does not occur where it originally hoped, or if event change conditions, a governmental unit is required to re-examine its planning goals and readjust them to fit reality. The County Relicensing Committee contends that the ability to be flexible in order to respond to reality is a key part of good zoning and land use planning decision. It argues that the proposed SMP would deny it that flexibility.

72. The County Relicensing Committee argues that the SMP would give Appalachian broad discretion on shoreline land use decisions with no local accountability or any requirement to consider local governments land use plans. The County Relicensing Committee contends that absent a mechanism for local review, governments and individuals that disagree with Appalachian's decisions will be required the go to the Commission or through the court system for relief. It argues that for the county government or an individual resident with limited resources to initiate a complaint with the Commission and to meet the burden of proof is formidable. The County Relicensing Committee concludes that approval of the SMP as proposed would systematically override local decision-making and would allow Appalachian to dictate the location and form of land use development in the region, whereas local governments have only limited resources to challenge Appalachian's decisions. The County Relicensing Committee states that this is inconsistent with the Commission's public interest mandate.

³⁴ The County Relicensing Committee consists of representatives from Bedford, Franklin, and Pittsylvania counties.

³⁵ County Relicensing Committee comments to draft EA at 6.

73. The County Relicensing Committee proposes that the SMP be modified to include a local resolution board to resolve conflicts between existing zoning and shoreline classification by identifying conflicts and working out resolutions. It reasons that a local resolution board is the only way to ensure that local government planning and zoning are properly considered on an ongoing basis when shoreline land use decisions are made. The County Relicensing Committee states that a resolution board would provide a mechanism for those who disagree with Appalachian's shoreline decisions to have their concerns heard, while protecting the Commission's jurisdiction over Appalachian and the Commission's ability to ensure that Appalachian meet its licensee obligations. The County Relicensing Committee also proposes that the resolution board could jointly establish standards for permit processing, address enforcement and permitting issues, and clarify language in the SMP. Several other commentors also recommend that the Commission require a local resolution board to resolve issues at the local level.

74. The Commission's obligation under the Federal Power Act (FPA) is to ensure that the project is operated and maintained in such a way as to balance the public interest, which includes protecting the fishery, water quality, and scenic values of the project. We cannot cede this responsibility to local entities. The Commission believes that the SMP, which contains reasonable restrictions on development, is a reasonable compromise between protecting the project's scenic, recreational, and environmental values and providing adequate opportunities for development at the lakes.

75. The shoreline between Hales Ford Bridge and a point one-half mile from the bridge, for example, was classified commercial in recognition of the significant resources that Bedford and Franklin counties expended on infrastructure and the fact that this area is one of the most accessible by major roads around the lake. As stated, the SMP directs development to these areas and away from the conservation areas and impact minimization zones. If the counties have classified as commercial non-project property that is adjacent to the project lands classified under the SMP as conservation areas and impact minimization zones, that fact does not warrant reclassifying the project land as commercial.³⁶

³⁶ We note that only 3.5 percent and 3.7 percent of the shoreline of Smith Mountain Lake is currently classified as Impact Minimization Zone and Conservation/Environmental areas, respectively. On Leesville Lake 2.8 percent and 18.4 percent is currently classified as Impact Minimization Zone and Conservation/Environmental areas, respectively.

76. The land use requirements and classifications under the SMP are planning criteria, not absolute standards. As such, they are subject to revision. To the extent that there are conflicts between the county zoning and the SMP, the SMP provides for a revision process that allows for challenges to the current classifications.³⁷ The Commission retains authority to require and make changes to the plan, if necessary, and to waive SMP provisions if sufficient evidence warrants a change. However, we note that the SMP classifications are based on differing criteria than the counties' zoning and land use planning decisions and do not sustain the same inherent flexibility. Wetland and fisheries cannot be easily reclassified because real-life developments now dictate that the adjacent non-project property would be better suited for a high-rise condominium development or commercial enterprise. Therefore, we conclude that the SMP strikes a reasonable balance between environmental protection and the development interests represented by the County Relicensing Committee.³⁸

77. In approving the classification maps based on digital aerial photograph and GPS of the project shoreline, we agree that there may be inaccuracies and inconsistencies in the SMP maps when compared to actual data. The SMP classification maps may from time to time require revisions to cure material inaccuracies so that a particular classification conforms to the SMP. However, such errors do not diminish the usefulness of the SMP as a reliable planning tool,³⁹ nor does it preclude approval of the SMP at this time. Again, the SMP's revision process can be used to address mapping inaccuracies as they arise. However, we will require Appalachian to file revised maps correcting any shoreline classification errors, as they are determined, or when the shoreline classifications are modified. Reconciling the maps with the SMP should ensure that the most accurate information is in the record and is available to all interested parties.

78. While Appalachian's license requires that it maximize opportunities for public recreational access to project lands and waters, approval of private access and docking facilities is a privilege that Appalachian has the discretion to grant or deny, subject to Commission review.⁴⁰ Accordingly, we do not believe it is appropriate to relinquish

³⁷ See Shoreline Management Plan dated August 29, 2003, at § 2.2.1.

³⁸ We note that the shoreline classifications only limit the use and development of the shoreline within the project boundary. The property adjacent to the project boundary remains subject to the counties' zoning and development requirements.

³⁹ See *Duke Energy Corp.*, 111 FERC ¶ 61,197 at P 24 (2005). See also *Grand River Dam Authority*, 105 FERC ¶ 61,100 at P 13 (2003).

⁴⁰ *Alcoa Power Generating, Inc.*, 93 FERC ¶ 61,152 at 61,478 (2000)(*Alcoa*).

Appalachian's decision-making authority to a local dispute resolution board. We note, however, that this does not foreclose the counties and interested parties, including Appalachian if it chooses, to form an entity to assist Appalachian in its decision-making process and enforcement under the SMP.⁴¹

79. The County Relicensing Committee, however, proposes to put the final decision-making power for implementing the SMP under the local resolution board's discretion. The Commission only has jurisdiction over Appalachian. It is ultimately Appalachian's and the Commission's responsibility to assure that the project is operated in a manner that meets the comprehensive development/public interest standards required under the FPA. That being the case, we must ensure that responsibility for discretionary land use matters remains with Appalachian, subject to Commission review. Appalachian is responsible for the administration of the SMP and is the sole party that is subject to the Commission's jurisdiction.

I. Compliance and Enforcement

80. Several commentors express concern that Appalachian will not adequately enforce compliance with the SMP. Appalachian has continuing responsibility under its license to supervise and control the use and occupancy for which it grants permission under the SMP, and to ensure the compliance with the conditions imposed under the SMP. If a permitted use and occupancy violates any applicable law or regulation, or any condition imposed by Appalachian in its permits, for the protection and enhancement of the project's scenic, recreational, or other environmental values, or if a condition of the conveyance is violated, Appalachian must take any action necessary to correct the violation (including, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities). To monitor Appalachian's enforcement of the SMP, the Commission will require that Appalachian document all complaints, compliance, and enforcement issues and file a report regarding these matters with the Commission on a yearly basis. The report should include a discussion of the action Appalachian took to resolve the issue raised.

⁴¹ We note that during the recent study plan meeting for the ILP a SMP working group was established to explore permitting and enforcement under the SMP.

J. Erosion/Sedimentation

81. Approximately 50 percent of the total shoreline at Smith Mountain Lake is unnatural. Of this unnatural shoreline, most is stabilized with riprap. The remaining unnatural stabilization techniques include seawalls, retaining walls, building/infrastructures, breakwater, and ramps. Soil erosion in isolated areas along the shoreline is generally correlated with ongoing or recent construction of buildings and docks and clearing for access to the shoreline.

82. As stated, the proposed SMP implements several programs that would address some of the existing erosion and sedimentation issues. For example, the SMP requires the preservation of existing vegetation. The EA concludes that the preservation of existing vegetation would reduce sedimentation by stabilizing the shoreline and reducing erosion and turbidity. Further, implementing Best Management Practice (BMP) and providing for post-construction stabilization of the upland areas either through planting of vegetation or the placement of riprap would minimize erosion and mitigation of sediments offsite. BMPs include use of mulches, hay bales, silt fences, or other devices capable of preventing erosion and migration of sediments from construction sites.

83. Under the SMP, trees and shrubs may be pruned or removed to provide a view of the water but shall be replaced with other vegetation to maintain the function of the buffer. Any tree or shrub removed would be replaced by native plants. Additionally, individuals may be required to plant or pay for the planting of vegetation in the event vegetation is removed without a permit. The construction of access paths, as allowed under the SMP, would minimize impairment of the vegetative buffer and limit erosion. Retaining vegetation on steep slopes would prevent slope failure and minimize erosion and sedimentation. Replacement of lost vegetation with native species would assist in the management and/or elimination of invasive species of vegetation. The areas of conservation/environmentally sensitive and impact minimization zones where development is strongly discouraged and/or prohibited would maintain those areas of shoreline in a natural and scenic state.

84. Several commentors expressed concern about the erosion and sedimentation around the lake, specifically the run-off from the developments outside the project boundary. They contend that while Appalachian is not the cause of much of the sedimentation in the lake, it has a responsibility to prevent further run-off and to have the damage remedied by the violator.

85. The Commission has determined that buffer zones provide environmental benefits that include reduced bank erosion and buffers against sediments and associated pollutants from entering the water.⁴² Additionally, they displace activities from the water's edge that represent potential sources of non-point source pollution. We find that the SMP provides an appropriate foundation for resolving some of the erosion and sedimentation issues at the Smith Mountain and Leesville reservoirs. However, we note that Appalachian's project boundary consists of only the land below the 800- and 620-foot contour line for the Smith Mountain and Leesville reservoirs, respectively. A large percentage of the current problem originates because of lax erosion control and enforcement policies for the development adjacent to the project boundary.

86. Specifically, on a recent site visit, Commission staff observed extensive new home construction, a significant portion of which was located on steep inclines, where the land had been stripped of every tree and all the groundcover had been removed all the way down to, and possibly including, the project boundary. While silt fences had been installed, many were buried under dirt and ceased to provide any functional benefits. To the extent that erosion and sedimentation from adjacent properties affect project purposes, specifically water quality issues and fisheries, Appalachian must take appropriate action to remedy such impact. However, the better solution lies in prevention, which is within the control of the adjacent property owners and the surrounding counties. Implementing and enforcing more effective erosion control requirements could greatly improve and prevent much of the current problem.

⁴² See *Georgia Power Co.*, 74 FERC ¶ 62,146 at 64,559 (1996).

87. During relicensing, Appalachian plans to study sedimentation⁴³ and erosion⁴⁴ around the Smith Mountain and Leesville reservoirs.⁴⁵ Depending on the results of these studies, we may consider establishing certain buffer zones requirements on relicensing.

K. Property Rights

88. Some commentors raise the issue of the impact that the SMP will have on the property rights of owners of real estate abutting the waters of the reservoirs. They contend that Appalachian has been requiring that dock permits be recorded in the county clerk's offices and that they will become permanent encumbrances on the property. In his comments, Mr. George I. Vogel, II contends that Appalachian acquired the land and flowage easements to construct the Smith Mountain Lake in different manners. He states that, in some instances, it purchased land above and below the 800-foot contour line. In other instances, he asserts that it only purchased an easement to flood the land up to the 800-foot contour. He contends that under some easements, the property owners were left with easements to construct boat docks. Mr. Vogel concludes that owners of property adjoining the lake have vested property rights below the 800 foot contour. He states that the permitting process requires property owners to sign a questionable document that will relinquish lakefront owners of their vested property rights. Mr. Vogel requests that the property rights be made an issue in the SMP and that a study be conducted to determine adjoining property owners' rights.

⁴³ Appalachian proposes to update the storage volume curves for the developments, determine areas where sediment accumulation is most prevalent, identify extent of problems associated with sediment accumulation within the project reservoirs, determine the rate of sediment accumulation, and identify sources of sediments discharging into the reservoirs.

⁴⁴ Appalachian proposes, among other things, to identify effects of project operations on shorelines along both Smith Mountain and Leesville reservoirs, update existing information regarding shoreline protection along the project reservoirs, identify degrees of susceptibility of areas along the project reservoirs to bank erosion, and identify areas undergoing accelerated bank erosion.

⁴⁵ At the recent study plan meeting, working groups were formed with interested parties to determine the scope of the proposed studies.

89. Standard license Article 5 requires the licensee to acquire and retain all interests in non-federal lands and other property necessary or appropriate to carry out project purposes.⁴⁶ The licensee may obtain these property interests by contract or, if necessary, by means of federal eminent domain pursuant to FPA section 21.⁴⁷ A licensee's property interests can range from fee simple to perpetual or renewable leases, easements, and

⁴⁶ Standard article 5 appears in what are called "L-Forms," which are published at 54 FPC 1792-1928 (1975) and are incorporated into project licenses by an ordering paragraph. *See* 18 C.F.R. § 2.9 (2003). Article 5 states in pertinent part:

The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. . . .

⁴⁷ *See* 16 U.S.C. § 814.

rights-of-way.⁴⁸ If there is a question concerning specific property rights, it will have to be resolved between the property owner and Appalachian in a property law action in a court of appropriate jurisdiction.⁴⁹

L. Water Withdrawal

90. The County Relicensing Committee states that Article 41 should be changed under the SMP to allow the counties to withdraw water from the project. It also states that: (1) the counties should not be charged for the drinking water withdrawals, (2) the Commission should require that Appalachian submit any application for drinking water to the Commission without requiring unreasonable compensation, (3) Appalachian must balance power generation with local fire safety and drinking water needs, and (4) Appalachian must provide the counties with variances and direct access related to the withdrawal of water.

91. As discussed in the EA, water withdrawals, which have nothing to do with shoreline management, are not within the scope of this proceeding, but may be addressed as part of the relicensing process. Appalachian has proposed a drinking water withdrawal study plan as part of its ILP. At the recent study plan meeting, it established a work group to examine further the parameters of this study.

⁴⁸ Thus, title to lands within the boundary can be owned by someone other than the licensee, so long as the licensee holds the necessary property interests (*e.g.*, flowage easements) and permits (*e.g.*, a Forest Service special use permit) to carry out licensed project purposes. If the Commission requires additional control in order to accomplish a project purpose, or amends the license to expand or add a project purpose, it can direct its licensee to obtain any necessary additional property rights, whether inside or outside the existing project boundary, and amend the boundary as appropriate. *See, e.g., FPL Energy Maine Hydro LLC*, 88 FERC & 61,116 at 61,274 (1999); *PacifiCorp*, 80 FERC & 61,334 at 62,113-14 (1997); *Great Northern Paper, Inc.*, 77 FERC & 61,066 at 61,247-48 (1996); *Niagara Mohawk Power Corp.*, 77 FERC & 61,306 at 62,391 (1996); *Georgia Power Co.*, 32 FERC & 61,237 (1985).

⁴⁹ *See West Penn Power Co.*, 81 FERC ¶ 91,362 at n. 26 (1997).

M. Fees

92. The County Relicensing Committee contends that Appalachian continues to avoid a discussion concerning the fees it intends to charge for the management/monitoring of the SMP. It wants assurances that it will have input into the amount of the fees that may be charged to determine if they may affect or conflict with other local policies.

Appalachian does not propose to impose any fees at this time. Should Appalachian in the future propose to collect an administration fee, we will consider any relevant argument.⁵⁰ Accordingly, we find that the County Relicensing Committee's concerns over future fees are speculative and premature.

N. Time Schedules

93. Many commentors contend that the permitting, variance, and classification resolution process are too vague and Appalachian should be required to implement specific time frames for the approval process. Section 3.1 of the SMP lists the minimum information needed for Appalachian to process a request for a permit. Prior to beginning any review process, it must review the application to make sure it includes sufficient information for Appalachian to evaluate the request. If the application is incomplete, it must communicate the deficiency to the requesting party and wait until the applicant provides all the necessary information. Once it determines that a request is complete, it can process the application; however, any action is contingent on the receipt of all other applicable permits. Similarly, a variance request also consists of various documentation requirements, and includes a comment period.

94. Given the many uncertainties involved in both processes, and the fact that some of the variables are out of Appalachian's control, we do not believe it is necessary to require Appalachian develop specific timelines at this time. However, we will require that Appalachian file, on a yearly basis, a list of all permits granted, including where the permitted structures are, their size, and when they were built. The filing should include information concerning variances and why they were either denied or granted. Appalachian should state when the permit and variance applications were filed and when they were acted on. We also do not preclude Appalachian, through its own initiative, from developing potential timeframes in consultation with the local community, if it determines such action is appropriate.

⁵⁰ *Alcoa*, 93 FERC at 61,480.

O. SMP Updates and Modifications

95. Appalachian proposes to update its SMP every five years. As stated, Appalachian's current license expires in 2010 and it is proceeding with an ILP under which various studies are being conducted at this time. The Commission may determine based on the information gathered during the studies that the SMP may need modifications. Moreover, the Commission reserves the right to revisit and revise the SMP at any time when evidence warrants a change.

The Commission orders:

(A) Appalachian Power Company's request for approval of the Shoreline Management Plan for the Smith Mountain Project No. 2210, filed on September 2, 2003, is granted as modified in this order.

(B) Section (b)(2) of Article 41 of Appalachian Power Company's license is amended to read: "piers, landings, boat docks, or similar structures and facilities as determined under the Commission approved Shoreline Management Plan."

(C) Section (d)(5) of Article 41 of Appalachian Power Company's license is amended to read: "private or public marinas as determined under the Commission approved Shoreline Management Plan."

(D) All in-water construction, except pile driving and associated above water dock construction activities, is prohibited from February 15 through June 15. Pile driving and associated in-water dock construction activities are prohibited from April 15 to June 15. Installation or maintenance of navigational markers is exempt from these time-of-year construction restrictions.

(E) Appalachian Power Company shall consult with the Virginia Department of Game and Inland Fisheries to establish no-wake zones in the vicinity of commercial facilities and shall require the owners of commercial facilities purchase, install, and maintain appropriate bouys.

(F) Appalachian Power Company shall seek Commission review and approval for any variance request.

(G) The programmatic agreement executed on June 30, 2005, that addresses protection of historic properties during the implementation of the Shoreline Management Plan, is made part of the license for the project.

(H) Appalachian Power Company shall compile and final with the Commission the following annual reports by January 31 of each year, beginning January 2007:

(1) A list of all dredging activities conducted within the project boundary:

(2) A list of all permits issued for modifying the vegetative buffer or for the removal of vegetation and measures implemented to mitigate for the removal of woody debris;

(3) A list of all complaints, compliance, and enforcement actions, including a discussion on the measures taken to resolve the issues raised in these actions; and

(4) A list of all permit applications, including information concerning when they were received, the activity requested (including the size and parameters of the request), when they were granted or denied, and when the activity performed or the status of the activity if it is still pending;

(5) A list of all variances requested, including information concerning when they were received, why they were granted or denied or any action taken to process the request, and when the request was acted on.

(I) Appalachian Power Company shall file revised shoreline maps when the classifications are modified, or to correct any shoreline classification errors, as they are determined.

(J) The Commission reserves the right to revisit and modify the SMP at any time if evidence warrants a change.

(K) Appalachian Power Company shall update its SMP in 2010.

(L) The County Relicensing Committee's request for a working group is denied.

(M) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR § 385.713.

By the Commission.

(S E A L)

Linda Mitry,
Deputy Secretary.

ENVIRONMENTAL ASSESSMENT

APPLICATION FOR SHORELINE MANAGEMENT PLAN

Smith Mountain Project

FERC No. 2210-090

Virginia



Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration and Compliance

888 First Street, NE
Washington, DC 20426

TABLE OF CONTENTS

1.0	APPLICATION.....	1
2.0	PURPOSE AND NEED FOR ACTION	1
3.0	PROPOSED PLAN AND ALTERNATIVES	2
3.1	PROJECT LOCATION AND DESCRIPTION	7
3.2	ACTION ALTERNATIVES.....	9
3.3	NO-ACTION ALTERNATIVE.....	9
4.0	AGENCY CONSULTATION AND PUBLIC INVOLVEMENT	18
4.1	ISSUES NOT ANALYZED AS PART OF SHORELINE MANAGEMENT PLAN.....	18
5.0	ENVIRONMENTAL ANALYSIS.....	18
5.1	PROPOSED ACTION	18
5.1.1	Aquatic Resources.....	18
5.1.2	Terrestrial Resources.....	29
5.1.3	Land Use and Aesthetics	38
5.1.4	Recreational Resources	41
5.1.5	Cultural Resources.....	47
5.1.6	Socioeconomic Resources	48
5.1.7	Cumulative Effects	51
5.2	NO-ACTION ALTERNATIVE.....	53
6.0	CONCLUSIONS AND RECOMMENDATIONS.....	54
6.1	SUMMARY OF THE PROPOSED ACTION'S ENVIRONMENTAL EFFECTS	54
6.2	FINDINGS	55
7.0	LITERATURE CITED.....	56
8.0	LIST OF PREPARERS	56

LIST OF FIGURES

- Figure 1. Vicinity Map.
- Figure 2. Location of VDEQ Water Quality Stations at Smith Mountain and Leesville Lakes.
- Figure 3. Boat Densities at Smith Mountain and Leesville Lakes.

LIST OF TABLES

Table 1	Shoreline Classifications and Maximum Allowable Dock Characteristics per the Proposed Smith Mountain Lake Shoreline Management Plan.
Table 2.	Physical Characteristics of Smith Mountain Lake and Leesville Lake.
Table 3.	Comments, Interventions, and Protests Filed in Response to the Public Notice.
Table 4.	Water Quality Data for Smith Mountain Lake, 1999-2002.
Table 5.	Water Quality Data for Leesville Lake, 1999-2002.
Table 6.	Shoreline Characterization at Smith Mountain Lake.
Table 7.	Vegetation Replacement Rates.
Table 8.	Natural Heritage Resources for Bedford, Campbell, Franklin, and Pittsylvania Counties.
Table 9	Zoning Areas at Smith Mountain and Leesville Lakes.
Table 10.	Shoreline Totals and Percentages for Smith Mountain Lake.
Table 11.	Shoreline Totals and Percentages for Leesville Lake.
Table 12.	Boat Launching and Fishing Access Facilities at Smith Mountain and Leesville Lakes.
Table 13.	Population and Demographic Information for the Smith Mountain Lake Project Region, 2000.
Table 14.	Population Projections for the Smith Mountain Lake Region, 1990-2030.
Table 15.	Environmental Effects of Proposed Action.

LIST OF ACRONYMS

ADA	Americans With Disabilities Act
AEP	American Electric Power
APC	Appalachian Power Company
APE	Area of Potential Effects
BMP	Best Management Practice
°C	Degrees Celsius
DO	Dissolved Oxygen
EA	Environmental Assessment
EPA	Environmental Protection Agency
°F	Degrees Fahrenheit
FERC	Federal Energy Regulatory Commission
m	Meters
mg/l	Milligrams Per Liter
mgd	Million Gallon(s) Per Day
ml	Milliliters
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHP	Natural Heritage Program
NWI	National Wetlands Inventory
RTE	Rare, Threatened, and Endangered Species
SAV	Submerged Aquatic Vegetation
SHPO	State Historic Preservation Officer
SMLA	Smith Mountain Lake Association
SMP	Shoreline Management Plan
µg/l	Micrograms Per Liter
USACE	U.S. Army Corps of Engineers
VAC	Virginia Administrative Code
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDHR	Virginia Department of Historic Resources
VGDF	Virginia Department of Game and Inland Fisheries
VSO	Virginia Society of Ornithologists

1.0 APPLICATION

Application Type: Amendment of License-Shoreline Management Plan
Date Filed: September 2, 2003
Applicant: Appalachian Power Company (Appalachian Power)
Water Body: Smith Mountain Lake and Leesville Lake
County & State: Bedford, Campbell, Franklin, and Pittsylvania Counties,
Virginia

2.0 PURPOSE AND NEED FOR ACTION

The stated purpose of the proposed Shoreline Management Plan (SMP) is to provide guidelines and regulations for shoreline development for Smith Mountain Lake and Leesville Lake. The overall goal of the SMP is to develop a management tool that provides guidance for Appalachian Power to fulfill its license responsibilities and obligations for protecting and enhancing the project's recreational, environmental, cultural, and scenic resources and the project's primary function, which is the production of electricity. Appalachian Power's jurisdiction is limited to activities within the project boundary defined as the 800-foot contour at Smith Mountain Lake and the 620-foot contour at Leesville Lake.

Specific goals of the plan are:

1. Protecting environmental attributes such as wetlands, habitat, and spawning areas;
2. Preserving the natural scenic quality of the shoreline for boaters and shore viewers and preserving specific scenic attributes;
3. Protecting cultural resources;
4. Enhancing recreational opportunities by considering boating densities and navigation and maximizing available use of the project waters by the public;
5. Cooperating with multiple governmental entities that surround the project to coordinate adjacent land uses and proposed infrastructure with shoreline uses;
6. Working with the same entities to coordinate permitting efforts;
7. Minimizing impacts among contrasting uses; and
8. Striving for a balance that supports local economic interests yet protects environmental and recreational resources and that allows the public to enjoy these interests and resources.

3.0 PROPOSED PLAN AND ALTERNATIVES

Currently, under article 41 of its license, Appalachian Power Company (Appalachian Power or licensee) may permit development of docks with no more than

10 slips, shoreline stabilization, and a number of other types of development without prior Commission approval. Appalachian Power has developed an SMP with the intent of receiving additional authority from the Federal Energy Regulatory Commission (FERC or Commission) to permit development within the project boundary. The SMP has strict definitions for shoreline development and exact standards for the proposed development. Shoreline classifications were developed to dictate regulations that will apply to future proposed development. Regulations, as well as definitions, were created for areas including high density commercial, high density multi-use, public use, low density use, conservation, and impact minimization zones. Table 1 describes the shoreline classifications developed and the maximum allowable dock characteristics for the proposed Smith Mountain Lake and Leesville Lake SMP. In addition, regulations were created for flotation materials, vegetative cover, and woody debris. The SMP also includes restrictions on shoreline stabilization, vegetation, dredging, and excavation. This Environmental Assessment (EA) analyzes the proposed SMP.

Table 1. Shoreline classifications and maximum allowable dock characteristics per the proposed Smith Mountain Lake Shoreline Management Plan.

<i>Shoreline Classification</i>	Shoreline Classification Definition	Maximum Number of Slips	Maximum Size (square feet)	Minimum Setback	Maximum Length (From Base Elevation)	Maximum Height (From Base Elevation)	Maximum Width of Access Structures ^a
High-Density Commercial	Project lands and waters where profit seeking individuals or entities operate facilities as a place of business.	N/A	48 square feet (per enclosure; maximum 1 enclosure per service dock)	100 feet / 60 feet ^b	One-third of cove width or 120 feet, whichever is less	33 feet	12 feet
High-Density Multi-Use (Community Dock)	Project lands and waters where boats can be launched, retrieved, or moored for the purpose of providing private access to the lake for specific residential properties including multi-family dwellings and/or subdivision access lots.	1 slip per housing unit; maximum 4 slips per 100 linear feet of shoreline	400 square feet (per slip)	100 feet / 60 feet ^b	One-third of cove width or 120 feet, whichever is less	19 feet for flat roof; 26 feet for pitched roof	12 feet
High-Density Multi-Use (Courtesy Pier and Ramp)	Allows for access to the lakes for more than one property owner.	N/A	1,200 square feet	Minimum 100 feet plus fairway distance from dock easement lines	One-third of cove width or 100 feet, whichever is less	N/A for piers – no enclosures allowed	12 feet
Public Use (Multi-Slip Docks)	Project lands and waters where facilities are operated by non-profit organizations, the licensee, or governmental entities that support areas used for public good.	1 enclosure per service dock	500 square feet (per boat enclosure)	100 feet / 60 feet ^b	One-third of cove width or 120 feet, whichever is less	33 feet	12 feet
Public Use (Courtesy Pier and Ramp)	Project lands and waters where facilities are operated by non-profit organizations, the licensee, or governmental entities that support areas used for public good.	N/A	1,200 square feet	100 feet / 60 feet [*]	One-third of cove width or 100 feet, whichever is less	N/A for piers – no enclosures allowed	12 feet
Low-Density Use							
		2 slips	1,500 square feet per 100-300 linear feet of shoreline				
		3 slips	2,250 square feet per 301-600 linear feet of shoreline	15 feet from dock easement lines; 30-foot minimum fairway between docks	One-third of cove width or 100 feet, whichever is less	19 feet for flat roof; 26 feet for pitched roof	6 feet (8 feet for floating walkways)
a) Single-Family-Type Residential	Project lands and waters that support private facilities for waterfront landowners.	4 slips	3,000 square feet per 601-900 linear feet of shoreline				
		1 slip	750 square feet per additional 300 linear feet of shoreline				

<i>Shoreline Classification</i>	<i>Shoreline Classification Definition</i>	<i>Maximum Number of Slips</i>	<i>Maximum Size (square feet)</i>	<i>Minimum Setback</i>	<i>Maximum Length (From Base Elevation)</i>	<i>Maximum Height (From Base Elevation)</i>	<i>Maximum Width of Access Structures^a</i>
b) Low-Density Multi-Use	Project lands and waters that support apartments, townhouses, and condominiums and off-water or common lot access for development.	1 slip per housing unit	400 square feet (per slip)	Minimum 30 feet from dock easement lines	One-third of cove width or 100 feet, whichever is less	19 feet for flat roof; 26 feet for pitched roof	12 feet
c) Low-Density Commercial	Project lands and waters where profit-seeking individuals or entities operate facilities as a place of business.	N/A	400 square feet (per slip)	Minimum 30 feet from dock easement lines	One-third of cove width or 100 feet, whichever is less	19 feet for flat roof; 26 feet for pitched roof	12 feet
d) Low-Density Public Use (Multi-Slip Docks)	Project lands and waters where facilities are operated by non-profit organizations, the licensee, or governmental entities that support areas used for public good.	2 slips per 100 feet of shoreline	400 square feet (per slip)	Minimum 30 feet from dock easement lines	One-third of cove width or 100 feet, whichever is less	19 feet for flat roof; 26 feet for pitched roof	12 feet
e) Low-Density Public Use (Courtesy Pier)	Project lands and waters that have specifically-identified importance from an environmental, scenic, cultural, or recreational standpoint. Includes areas around the lakes that are particularly important for protecting and enhancing various resources (i.e., water quality, fish and wildlife habitat, wetlands).	N/A	1,200 square feet	Minimum 30 feet from dock easement lines	One-third of cove width or 100 feet, whichever is less	N/A for piers – no enclosures allowed	12 feet
Impact Minimization Zone (IMZ)		Development in these areas must apply to Appalachian Power and follow the variance process.					
Conservation/Environmental		Development in these areas must apply to Appalachian Power and follow the variance process.					

Notes: N/A – Not Applicable.

^a Minimum setback is 100 feet plus a fairway equivalent of two times the longest slip length adjacent to the side lot from dock easement lines for facilities that are adjacent to low density use areas, and 60 feet from dock easement lines if adjacent to High Density Commercial, High Density Multi-Use, or Public Use facilities.

^b Access structures include stairways, ramps, or landings that connect the dock to the land.

The plan includes provisions for dredging. Projects requiring dredging must be appropriately permitted and meet all state, federal, county, and Appalachian Power dredging requirements. Dredging restrictions that apply within the project boundary include the following.

- A U.S. Army Corps of Engineers (USACE) nationwide permit #19 is required for projects that contain dredging and/or excavation less than 25 cubic yards. Notification to Appalachian Power is required 10 working days prior to commencement of the project.
- A joint USACE and Appalachian Power application is required for projects that contain dredging and/or excavation greater than 25 cubic yards.
- Dredging and/or excavation are prohibited in wetland areas.
- Sufficient buffers are required for projects that contain dredging and/or excavation near wetland areas.
- Dredging and/or excavation are prohibited to a depth greater than the 789-foot elevation.
- Dredging and/or excavation are prohibited between elevations 795 and 793 feet.
- No dredging and/or excavation are allowed between March 1st and June 30th of each year.
- To conform to all federal, state, and local regulations, all dredged and/or excavated material must be deposited outside the project boundary.
- Appalachian Power must approve all dredging and excavation requiring USACE and/or VDEQ approval.

The plan further contains shoreline stabilization restrictions consisting of the following.

- Shoreline stabilization will only be permitted in areas with active erosion.
- Existing vegetation shall remain in place if existing vegetation is sufficient to control erosion and the shoreline is not actively eroding.

- Planting of vegetation to control erosion is encouraged.
- Sediment and erosion controls must be used and maintained in compliance with the Virginia Erosion and Sediment Control Handbook.
- Shoreline stabilization will not be permitted in conservation/environmental areas.
- Bulkheads are prohibited, unless a variance is obtained.
- Riprap will be required at the toe of the structure if a bulkhead is approved.
- Shoreline stabilization less than 500 linear feet qualifies under the USACE nationwide permit #13.
- Shoreline stabilization greater than 500 linear feet requires filing the joint USACE/Appalachian Power application with the appropriate agencies.
- Construction of sand beaches is prohibited, except for public use areas or with a variance in high density commercial and high density multi-use areas.
- Existing beaches may be maintained, but not expanded and no placement of sand is permitted below the 795-foot contour line on Smith Mountain Lake and the 613-foot contour line on Leesville Lake.
- Riprap shall be clean, solid rock and consist of a minimum of class I sized material. Riprap shall be installed on top of a filter cloth barrier at a maximum of 3:1 slope for the final grade.
- Shoreline stabilization must meet any state and federal requirements.
- Jetties are prohibited.
- Any necessary local, state, or federal permits must be obtained prior to the commencement of work.

The SMP also contains procedures for three types variances which would permit activities in a particular zone not authorized by the zone's parameter or regulations. The variances are broken into four categories: Low Density Use variances; agency review variances; IMZ variances, and FERC review variances. Under each case, the individual must apply to Appalachian Power and show that no reasonable alternative is available which would meet the SMP guidelines. Appalachian Power would then apply a specific variance procedure depending on the nature of the activity and the shoreline classification.

Variances for structures that fall within the low density use shoreline classifications can be approved by Appalachian Power. These variances would be considered for changes that affect the individuals ability to utilize the dock including length, location, setback, distance between docks and extended property lines. Appalachian Power would review the variances on a case-by-case basis. Under the agency review variances, structures that fall within the High Density Commercial, High Density Multi Use, Public Use Shoreline classifications, shoreline stabilization, beaches, ramps in a low density classification, boardwalks and dredging could be approved by Appalachian Power. Appalachian Power would review the request and then forward it to the resource agencies for comments. In the IMZ variance process, the applicant would forward the request to Appalachian Power, Appalachian Power would request agency comments within 45 days, and the applicant would be required to adhere to specific resource-dependent mitigation requirements. For example, if the IMZ classification is for an area that had a wetland less than 100 feet, the applicant would be required to develop a plan to protect these wetlands from the proposed development and document concurrence by the appropriate regulatory agency. The fourth variance process is for changes in shoreline classification, construction in a conservation/environmental zone, dredging activity not conforming to specifications in the SMP, and alterations of the project boundary. Appalachian Power would review the variance request, contact the appropriate agencies, and forward the request to the Commission for approval if appropriate.

3.1 PROJECT LOCATION AND DESCRIPTION

Smith Mountain Lake is a man-made reservoir located on the Roanoke River in west-central Virginia, about 30 miles southwest of Lynchburg, Virginia (figure 1). The lake, Virginia's second largest, was formed in 1966 by damming the Blackwater and Roanoke rivers and was originally created to generate electricity for the surrounding area. The Smith Mountain Project contains an upper pumped storage development (Smith Mountain) located at river mile 314 and a lower conventional development (Leesville) at river mile 296. The Smith Mountain development consists of a powerhouse and concrete arch dam that creates a reservoir of approximately 26,000 acres in surface area. Approximately 500 miles of shoreline envelop the reservoir with a number of public and

private recreational sites and private residences. The normal maximum operating level is elevation 795.0 feet National Geodetic Vertical Datum (NGVD). The project boundary for the Smith Mountain development generally follows contour elevation 800.0 feet around the perimeter of the reservoir except where defined by survey outside of the referenced contour elevation. At times of high inflow, the reservoir occasionally rises over the 800.0 feet NGVD contour.

The Leesville development is the lower reservoir development of the Smith Mountain Pumped Storage Project and straddles Pittsylvania and Bedford counties (figure 1). It consists of a concrete gravity dam and powerhouse and a reservoir of approximately 3,400 acres in surface area. Leesville reservoir has approximately 100 miles of shoreline. During a normal generation/pumpback cycle, the reservoir can fluctuate up to 13 feet in elevation. The normal upper operating level for the Leesville development is 613.0 feet NGVD except in areas defined by survey beyond the referenced contour elevation. The shoreline along the Leesville reservoir is less developed than Smith Mountain Lake and consists of some residential development, boat launching facilities, and two marinas.

The project provides electricity and flood control as well as public drinking water and recreation in the form of fishing, swimming, boating, and nature viewing. Smith Mountain Lake is a popular tourist destination. Recreational opportunities and tourism at the Smith Mountain Lake and Leesville Lake projects are important to the local economy. Four counties surround the Smith Mountain and Leesville developments: Bedford, Campbell, Franklin, and Pittsylvania. Bedford and Campbell counties lie in the Central Virginia Planning District; Franklin and Pittsylvania are in the West Piedmont Planning District (Virginia Department of Conservation and Recreation [VDCR], 2002). Smith Mountain Lake State Park and the Smith Mountain Wildlife Management Area are located in the Smith Mountain Lake vicinity. Smith Mountain Lake covers parts of three Virginia counties: Franklin, Bedford, and Pittsylvania. Leesville Lake is located in Pittsylvania and Campbell counties. Average air temperatures for the region are 76 degrees Fahrenheit (°F) in July and 37°F in January. Annual rainfall averages 43 inches. Annual snowfall averages 13 inches (Virginia Economic Development Partnership website, 2004, http://www.yesvirginia.com/corporate_location/varegoutlook.aspx#CommunityProfiles, accessed on January 21, 2004). Table 2 shows the physical characteristics of Smith Mountain Lake and Leesville Lake.

Table 2. Physical characteristics of Smith Mountain Lake and Leesville Lake. (Source: Smith Mountain Pumped Storage Project SMP, 2003, <http://www.smithmtn.com/ShorelineManagement/Plan/pdf/Final/FinalSMP.pdf>, accessed on January 27, 2004)

Physical Characteristics	Smith Mountain Lake	Leesville Lake
River mile (dam)	314	296
Miles of shoreline (approximate)	500	100
Surface area (approximate acres)	20,600	3,040
Normal maximum operating level (NGVD)	795	613
Surface elevation fluctuation (feet)	Up to 2	Up to 13
Project boundary	Generally follows contour elevation 800 feet NGVD	Generally follows contour elevation 620 feet NGVD

3.2 ACTION ALTERNATIVES

No alternatives to the proposed plan have been identified.

3.3 NO-ACTION ALTERNATIVE

Under the no-action alternative, required through the National Environmental Policy Act (NEPA) per the Council on Environmental Quality, there would be no SMP to provide guidelines and regulations for shoreline development for Smith Mountain and Leesville lakes. Appalachian Power could not implement any provisions in the SMP that are not included in the current license. Appalachian Power's delegated authority would be limited to those provisions contained in article 41.

4.0 AGENCY CONSULTATION AND PUBLIC INVOLVEMENT

A steering committee was formed to guide the SMP development process. Since May 2001, 13 state agencies, counties, chambers of commerce, and homeowners, along with Appalachian Power, worked together to provide an open forum for the development of the SMP. The steering committee has met quarterly, at a minimum, to review, develop, and discuss the SMP. In addition, Appalachian Power developed a website to provide information to the steering committee and the general public (www.smithmtn.com). On January 29, 2002, Appalachian Power held a general information meeting that provided information about the SMP process and to request input from the public regarding important issues and resources on Smith Mountain and Leesville lakes. Questionnaires were provided to a number of groups, counties, individuals, and local papers and were posted on the SMP website.

Appalachian Power held three additional public meetings between August 2002 and July 2003. On August 7, 2002, Appalachian Power presented preliminary results of data that were collected during the summer and reported the status of the SMP. Appalachian Power presented draft shoreline classification parameters and the regulations for the shoreline development during the February 19-20, 2003, public meeting. On July 23 and 24, 2003, the draft SMP was presented during the two public meetings.

On September 10, 2003, the Commission issued a public notice of the application requesting comments, recommendations, and motions to intervene, or protests with a comment closing date of October 10, 2003. The closing date was then extended to January 10, 2004, due to a series of requests. A DEA was prepared to address the comments received by the Commission during the comment period.

The Commission received the following filings (table 3) related to the Smith Mountain Lake and Leesville Lake SMP during the comment period for its application notice.

Table 3. Comments, interventions, and protests filed in response to the public notice.

Entity	Filing Date	Type of Filing
Franklin County Board of Supervisors	September 10, 2003	Intervention
Franklin County Board of Supervisors	September 22, 2003	Request to extend comment period

Entity	Filing Date	Type of Filing
U.S. House of Representatives, Virgil Goode, Jr.	September 22, 2003	Request to extend comment period
Franklin County Board of Supervisors	September 22, 2003	Request to extend comment period
Lars B. Hagen	September 23, 2003	Comments
Franklin County Board of Supervisors	September 23, 2003	Request to extend comment period
Dave Gresham	September 25, 2003	Comments
Gary Kirby	September 26, 2003	Comments
U.S. House of Representatives, Virgil Goode, Jr.	September 29, 2003	Comments
Mike and Nancy Atkins	September 30, 2003	Comments
Rodney Sayles	October 1, 2003	Comments
Robert and Kathryn Schmeding	October 1, 2003	Comments
Jim and Karen Klepek	October 1, 2003	Comments
VA Department of Game & Inland Fisheries (VDGIF)	October 3, 2003	Comments
Erik Plyer	October 6, 2003	Comments
Smith Mountain Lake Association (SMLA)	October 6, 2003	Intervention
SMLA	October 6, 2003	Comments/Intervention
John Snidow	October 7, 2003	Comments
Susan W. Maynard	October 8, 2003	Comments/Protest
U.S. Department of the Interior	October 9, 2003	Comments
VA Department of Historic Resources	October 14, 2003	Comments
William F. Redslond	October 14, 2003	Comments
VA Department of Environmental Quality (VDEQ)	October 14, 2003	Comments
Bedford County Office of the County Administrator	October 16, 2003	Intervention

Entity	Filing Date	Type of Filing
Unidentified	October 18, 2003	Comment
Association of Lake Area Communities	October 20, 2003	Comments
David Weiler	October 28, 2003	Comments
John Y. Barr	November 4, 2003	Comments
Smith Mountain Lake Chamber of Commerce	December 22, 2003	Intervention
Smith Mountain Lake Chamber of Commerce	December 22, 2003	Comments
Smith Mountain Lake Chamber of Commerce	December 23, 2003	Comments
Amelia Gentry	December 23, 2003	Comments
Joldn Jones	December 23, 2003	Comments
Ilma Mowery	December 23, 2003	Comments
R. Brush	December 23, 2003	Comments
David Gent	December 23, 2003	Comments
Jason M. Turner	December 23, 2003	Comments
Erik L. Plyler	December 23, 2003	Comments
Glenda McDaniel	December 23, 2003	Comments
Unidentified	December 23, 2003	Comments
Becky Linkous	December 23, 2003	Comments
Tim A. Basham	December 23, 2003	Comments
Judith Flora	December 23, 2003	Comments
Franklin County Board of Supervisors	December 23, 2003	Comments
H. Clay Johnston	December 24, 2003	Comments
Gary L. Phillips	December 24, 2003	Comments
Gordon Wilson	December 24, 2003	Comments
Frank E. Baar	December 24, 2003	Comments

Entity	Filing Date	Type of Filing
Ronnee Chivas-Clayton	December 29, 2003	Comments
Unidentified	December 29, 2003	Comments
Stanley P. Rife	December 29, 2003	Comments
John A. White	December 29, 2003	Comments
Linda M. Burford	December 29, 2003	Comments
Unidentified	December 29, 2003	Comments
Mary L. Howard	December 29, 2003	Comments
Nancy Steffen	December 29, 2003	Comments
Brian Weitzman	December 29, 2003	Comments
William J. West	December 29, 2003	Comments
Betty Turner	December 29, 2003	Comments
Robert Gerner	December 29, 2003	Comments
Ruth Mitchell-Golladay	December 29, 2003	Comments
Matthew White	December 29, 2003	Comments
James A. Mercadante	December 29, 2003	Comments
Joseph E. Wells	December 30, 2003	Comments
Eric Noonkester	December 30, 2003	Comments
Scott Easter	December 30, 2003	Comments
Tom Lovegrove	December 31, 2003	Comments
Charles A. Foster	December 31, 2003	Comments
Ken A. Adkins	January 1, 2004	Comments
Sheldon R. Bower	January 2, 2004	Comments
Linda Knisley	January 2, 2004	Comments
Roanoke Home Builders Association	January 6, 2004	Comments
Micah Gaudio	January 6, 2004	Comments
William Piatt	January 7, 2004	Comments
James G. Petrine	January 7, 2004	Comments
Jim & Karen Klepek	January 8, 2004	Comments

Entity	Filing Date	Type of Filing
Jim Mills	January 8, 2004	Comments
Barbara C. Oplinger	January 9, 2004	Comments
Leesville Lake Association	January 9, 2004	Comments
Connie Higginbetham	January 9, 2004	Comments
Dreamer T. Walton	January 9, 2004	Comments
Mike Ryan	January 9, 2004	Comments
Charles D. Poindexter	January 9, 2004	Intervention
Gael M. Chaney	January 9, 2004	Comments

The above filings raise a number of environmental issues that are relevant to the proposed action. Approximately 50 filings voiced their support for the SMP and did not have specific comments. The comments and motions to intervene are summarized in the following section. Specific responses to the issues raised are given in the appropriate resource section in section 5, Environmental Analysis.

The U.S. House of Representatives, representative Virgil Goode, Jr., requested the allowance of the Franklin County Board of Supervisors to intervene in Project No. P-2210-090 SMP and for Franklin County to submit further comments when it has the opportunity to consider mapping of the shoreline classification in the SMP.

Franklin County filed a motion to intervene in the Smith Mountain Project SMP. Smith Mountain Lake borders Franklin County, and the SMP would affect its shoreline development standards and procedures. Franklin County also requested additional information on boating densities and states that there are inaccuracies in the shoreline mapping. Franklin County believes the SMP is unclear whether the parameters or the maps will determine the shoreline classification and it recommends that the parameters should be used to determine the shoreline classification, and the maps should be considered as a guide or concept plan. Franklin County recommends that the SMP include the vegetative cover standards with best management practices (BMPs) as well as lake area issues, such as water level management, debris removal, invasive vegetation control, siltation removal, water quality testing, and navigation safety aids. Franklin County states that BMPs are defined as an effective method that prevents or reduces the amount of sediment, nutrients, and other pollutants from the land to surface or groundwater.

Bedford County filed a motion to intervene. Smith Mountain and Leesville lakes are bordered by Bedford County. Bedford County believes that issues such as debris removal, treatment of invasive aquatic vegetation, control of water levels, water quality, removal of silt, and maintenance of navigational aids need to be addressed by the SMP. Bedford County requests that an economic impact study be completed prior to the approval of the SMP, and it requests an increase in water withdrawals by Appalachian Power to 5 million gallons per day (mgd) to allow for the increasing demands of development. In addition, Bedford County requests that commercial areas be included in the high-density commercial classification. Bedford County states that Appalachian Power should have the responsibility to review, approve, and maintain the drawings containing the dock easement lines instead of the municipality. It also states that clarification is needed on the ownership of undeveloped islands located above the 800-foot contour outside of the project boundary. In addition, Bedford County believes that the transfer of permits with land ownership is an issue and needs to be defined within the SMP.

VDGIF supports the SMP and believes the final version is a good, balanced plan and urges the Commission to approve the plan as submitted by Appalachian Power.

SMLA filed a motion to intervene. The mission of SMLA is to protect its members' investments in the area surrounding the lake, as well as the lake itself. SMLA states that the SMP would have a significant impact on the lake if approved by FERC. SMLA supports the SMP and believes that Appalachian Power listened to all concerns of residents, businesses, and builders; the boating density was taken into consideration and development is encouraged in areas capable of withstanding increased boating traffic; the SMP protects the environment with a fair balance between development and preservation; and the SMP is flexible.

VDEQ reviewed the SMP and states that it is a balanced plan and approves of the SMP. However, VDEQ states that there are no restrictions that have been placed on the number of piers, docks, and dock slips that may be constructed in commercial areas. VDEQ recommends that the plan include restriction on the number and size of these facilities to protect water quality. VDEQ also recommends that an additional plan stipulation be made to the effect that project proponents make all possible attempts to avoid dredging for new docks and piers, and proposed development activities use information on the presence or absence of fringe wetlands to avoid impacts on wetlands or surface waters.

The U.S. Department of the Interior (Interior) strongly supports the SMP and the goals to protect the environment, preserve the scenic qualities, enhance recreation opportunities, and minimize impacts. Interior recommends that the Commission undertake a cumulative effects analysis of the rapid build-out of the Smith Mountain Lake shoreline. Interior states that the landowners have expressed concerns regarding

woody vegetation removal, dredging, invasive species, and water level fluctuation. It believes that these are the main issues of the SMP, and additional time should be provided to allow for the resolution of these issues.

VDHR believes that the SMP does not fully address the impact of shoreline development and other activities concerning cultural resources. It requests that qualified cultural resource professionals survey the Area of Potential Effects (APE) and that the information found be provided to the SHPO for a determination of effect. To adequately assess the effects of proposed activities, the SHPO requires the result of an identified (Phase I) survey of the project's APE and recommendations regarding the National Register eligibility of previously identified properties and those identified during the above-referenced survey. The SHPO recommends that section 3.3.3 of the SMP be amended to reflect the need for SHPO consultation and concurrence with this type of ground-disturbing activity. The SHPO requests the findings resulting from field investigation in the project's APE to determine whether any previously unidentified historic architectural or landscape properties exist and the findings concerning the National Register eligibility of previously identified properties.

On December 22, 2004, the Tri-County AEP Relicensing Committee filed a motion to intervene out of time. This motion was granted on March 8, 2005.

The Commission staff public noticed the draft environmental assessment (DEA) on March 2, 2005 with a 45-day comment period. Staff also held a public meeting in Bedford, Virginia on April 7, 2005. The environmentally-related comments from the public notice and the meeting and the Commission staff's responses will be addressed in this document. All other comments such as requests for a local dispute resolution board, property rights, oversight and enforcement, time limit of permits, and fees will be addressed in the order on the proceeding. As stated in the DEA, issues regarding debris removal, sedimentation, and water withdrawals will be handled as part of the on-going relicensing process and will not be further discussed.

COMMENTS ON DRAFT ENVIRONMENTAL ASSESSMENT

AGENCY	DATE	CONCERNS/COMMENTS
VDEQ	4/20/2005	Environmental impacts and mitigation
Warren Theis	4/21/2005	Erosion and sedimentation
Jim Klepek	4/18/2005	Limiting development in commercial areas, carrying capacity
Karen Klepek	4/18/2005	Enforcement of plan

Leesville Lake Association	4/18/2005	Variance process, time limit for approval of applications, local dispute resolution, Appalachian Power staff for permitting compliance and enforcement
Peter Fisette	4/18/2005	Appalachian Power's stewardship of lake, enforcement of plan,
US Fish and Wildlife Service (FWS)	4/18/2005	Dredging, shoreline stabilization, enforcement of plan, aquatic vegetation, cumulative affects of docks, conservation and impact minimization zones variances
Nancy Atkins	4/18/2005	Enforcement of regulations
Tri-County Relicensing Committee (TCRC)	4/18/2005	Local dispute resolution, performance standards, conflicts with local zoning, erosion and sedimentation control, debris removal, in-water construction restriction, flowage easements, fee assessment
William Brush	4/15/2005	Erosion and sediment control, shoreline Classifications and article 41, local dispute resolution and oversight
VDGIF	4/13/2005	Dredging provisions, aquatic habitat, monitoring and enforcement of SMP
Appalachian Power	4/12/2005	Commercial dock restrictions
Association of Lake Area Communities	4/12/2005	Local dispute procedure, performance standards, fees, licensee stewardship

Turner's Building Inc.	3/21/2005	Concerns about seasonal in-water construction restriction
Vogel and Cromwell LLC	3/7/2005	Property rights

COMMENTS FROM APRIL 7, 2005 PUBLIC MEETING INCLUDED IN
TRANSCRIPT BUT NOT SEPARATELY FILED

NAME	COMMENT
Napier Niles	Seasonal In-water construction restriction, navigation and reflectors, siltation,
Francis Frances	Coordination with TCRC
Bruce Duncan (Smith Mountain Lake Association)	Stewardship of lakes, enforcement of SMP, local dispute resolution, performance standards, fees
John Snidow	Water quality and sedimentation
Stan Smith –Tri County Lake Administration	Navigation and pile driving
Donald Holland	Oversight and enforcement
Reba Short	Seasonal In-water construction restriction
Nancy Atkins	Sedimentation, enforcement
John White	Oppose plan, responsibility of Appalachian Power
Don Meyer and Jason Pryor- Dock Doctors	Seasonal In-water construction restriction, siltation
Jeff Graff	Economic development
Ron Willard	Economic impact, property rights, notification to property owners
Lars Hagen	Water quality, density
Ed Yarbaugh	Notification to property owners
Laurie Rhodes	In-water construction restriction, conformance with SMP regulations currently

4.1 ISSUES NOT ANALYZED AS PART OF THE SMP

The analysis of the shoreline management plan covers the impacts from implementation of the plan including the classification systems, development parameters and limitations, and recreation issues.

Several comments were filed which are outside the scope of this environmental assessment. These include comments on water level management or lake levels, siltation removal, water quality testing, water withdrawals, and debris removal. These issues will not be addressed in this document, but may be addressed as part of the relicensing.

5.0 ENVIRONMENTAL ANALYSIS⁵¹

5.1 PROPOSED ACTION

This section of the EA analyzes the impacts of the proposed SMP on the project's environmental resources. The direct and indirect effects of the proposed SMP are analyzed first under each resource section. These effects are then analyzed from a cumulative effects standpoint at the end of the document. The geographic and temporal scope of these analyses varies with each resource and issue under consideration.

5.1.1 Aquatic Resources

Water Quality

Affected Environment

Virginia water quality standards (9 Virginia Administrative Code [VAC] 25-260-5) mandate statewide water protection requirements for all surface water supplies. Water quality standards are used to protect the public health or welfare, enhance the quality of water, and serve the purposes of the state Water Control Law and the federal Clean Water Act. All state waters, including wetlands, are designated for the following uses: "recreational uses, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life, including game fish; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish" (9 VAC

⁵¹Information obtained from Smith Mountain SMP, unless otherwise noted.

25-260-10) (VDEQ, 2003, <http://www.deq.state.va.us/wqs/>, accessed on January 20, 2004).

The water quality classifications for Smith Mountain and Leesville lakes include:

- Class III-Nontidal Waters (coastal and piedmont zones);
- Class IV-Mountainous Zones Waters; and
- Class V-Stockable Trout Waters.⁵²

VDEQ established water quality monitoring stations throughout Smith Mountain and Leesville lakes (figure 2). VDEQ collects water quality information from 17 stations on the Roanoke River and Smith Mountain Lake and 3 on Leesville Lake. At each station, several water quality parameters are measured at three different depths. A subset of the surface water quality parameters measured for Smith Mountain and Leesville lakes for monitoring years 1999-2002 is included in tables 4 and 5.

VDEQ designates Smith Mountain Lake as “nutrient enriched” (9 VAC 25-260-350 Water Quality Standards). Nutrient-enriched waters are determined by historical water quality data for one or more of the following indicators of enrichment: chlorophyll a concentration, DO fluctuations, and concentrations of total phosphorus.

The average shallow DO concentration measurements for all of the VDEQ water quality monitoring stations throughout Smith Mountain and Leesville lakes fall above the minimum ranges for DO as set forth in the water quality criteria (9 VAC 25-260-50). The average DO concentration measured at a shallow depth ranges from approximately 7.89 to 10.16 mg/l. The average DO concentrations measured at the deepest depths for each station fall in and outside of the water quality criteria of 5.0 mg/l minimum DO and range from approximately 1.87 to 6.41 mg/l.

In surface waters samples, Escherechia coli bacteria per 100 milliliters (ml) of

⁵² The minimum and daily average dissolved oxygen (DO) standards for Class III and IV waters are 4.0 milligrams per liter (mg/l) and 5.0 mg/l, respectively. The DO standards for Class V waters are 5.0 mg/l (minimum) and 6.0 mg/l (daily average). The maximum water temperature standards are 32 degrees Celsius (°C) (Inland Waters), 31°C (Mountainous Zone), and 21°C (Stockable Trout). See 9 VAC 25-260-50 Water Quality Standards.

water shall not exceed 235 E. coli bacteria for a single sample maximum (9VAC 25-260-170). The water quality data indicate that 17 stations from Smith Mountain Lake and the 3 stations at Leesville Lake fall under the maximum water quality criteria for E. coli bacteria. A single sampling event at one station, the McVeigh Ford station, located along Smith Mountain Lake, was the only station that exceeded the water quality criteria for E. coli with a maximum E. coli count of 400/100 ml in the surface water.

Table 4. Water quality data for Smith Mountain Lake, 1999-2002.^a (Source: VDEQ, 2003, <http://www.deq.state.va.us/watermonitoring/monitoring.html>, accessed on January 20, 2004)

Station Description	Descriptive Statistics	Temperature (°C)	Total Ammonia (mg/l)	Total Nitrate (mg/l)	Total Phosphorus (mg/l)	<i>E. coli</i> (N/100 ml)	Chlorophyll <i>a</i> (µg/l)	DO (mg/l)	DO (mg/l)	Secchi Depth (m)
Near Surface Results - Depth = 0.3 meters									DO at Deepest Depth ^b	Secchi Depth
Confluence w/Little Bull Run - Station 15	Min	14.89	0.04	0.04	0.01	10.00	0.50	6.40	0.08	1.70
	Max	29.30	0.10	0.17	0.04	10.00	4.20	10.90	8.19	3.70
	Average	22.31	0.04	0.08	0.01	10.00	2.08	8.58	3.82	2.89
Near mouth of Blackwater - Station 7	Min	15.00	0.04	0.04	0.01	10.00	0.50	6.00	0.10	2.00
	Max	29.20	0.05	0.21	0.02	10.00	6.32	10.50	8.36	4.60
	Average	22.32	0.04	0.09	0.01	10.00	1.93	8.46	3.75	3.04
Buoy No. 23 - Station 8	Min	16.37	0.04	0.04	0.01	10.00	0.71	6.20	0.07	1.60
	Max	29.80	0.17	0.22	0.02	10.00	5.87	11.48	8.40	3.50
	Average	23.36	0.05	0.08	0.01	10.00	2.68	8.72	3.02	2.41
Buoy No. 50 - Station 9	Min	16.90	0.04	0.04	0.02	10.00	5.39	7.10	0.12	0.50
	Max	31.00	0.15	0.53	0.20	10.00	26.35	11.45	11.28	1.50
	Average	23.99	0.05	0.19	0.04	10.00	11.47	9.14	6.41	0.94
Mouth of Craddock Cr. - Station 16	Min	15.30	0.04	0.04	0.01	10.00	0.52	5.00	0	2.10
	Max	28.9	0.04	0.21	0.10	10.00	4.95	11.20	9.58	4.00
	Average	23.68	0.04	0.10	0.02	10.00	1.70	8.17	4.58	2.97
Cool Branch - Station 14	Min	14.80	0.04	0.04	0.01	10.00	0.50	5.80	0.10	2.00
	Max	29.40	0.06	0.30	0.02	10.00	4.90	14.50	14.80	4.60
	Average	22.19	0.04	0.11	0.01	10.00	1.92	8.69	5.03	3.14

Station Description	Descriptive Statistics	Temperature (°C)	Total Ammonia (mg/l)	Total Nitrate (mg/l)	Total Phosphorus (mg/l)	<i>E. coli</i> (N/100 ml)	Chlorophyll <i>a</i> (µg/l)	DO (mg/l)	DO (mg/l)	Secchi Depth (m)
Near Surface Results - Depth = 0.3 meters									DO at Deepest Depth ^b	Secchi Depth
Below Strippers Landing – Station 11	Min	16.40	0.04	0.04	0.01	10.00	0.50	2.80	0.09	1.60
	Max	30.10	0.20	0.16	0.12	10.00	7.65	10.31	10.31	3.00
	Average	23.44	0.05	0.06	0.02	10.00	3.66	8.53	3.43	2.23
Smith Mtn. Dam - Station 5	Min	13.30	0.04	0.04	0.01	10.00	0.50	4.90	0	2.30
	Max	27.34	0.06	0.22	0.02	10.00	5.41	11.90	10.40	4.50
	Average	22.52	0.04	0.10	0.01	10.00	1.90	8.11	5.14	3.21
Confluence w/Blackwater - Station 6	Min	13.40	0.04	0.04	0.01	10.00	0.50	4.90	0	1.90
	Max	27.94	0.06	0.19	0.02	20.00	6.20	11.40	10.40	4.00
	Average	22.80	0.04	0.08	0.01	13.33	1.99	8.34	3.30	3.11
Buoy No. 12R	Min	13.70	0.04	0.04	0.01	10.00	0.50	5.00	0	1.90
	Max	28.50	0.23	0.22	0.11	10.00	6.11	11.50	11.00	4.00
	Average	23.37	0.05	0.09	0.02	10.00	2.34	8.38	3.19	2.82
Hales Ford	Min	14.70	0.04	0.04	0.01	10.00	0.75	5.40	0	1.00
	Max	29.00	0.07	0.58	0.03	10.00	8.94	11.20	11.80	3.00
	Average	23.79	0.04	0.15	0.01	10.00	5.05	9.01	2.22	1.88
Confluence with Indian Creek	Min	15.10	0.04	0.04	0.01	10.00	2.55	3.86	0.10	0.70
	Max	29.50	0.18	0.53	0.07	10.00	19.61	12.60	10.50	2.50
	Average	23.93	0.05	0.19	0.02	10.00	8.89	9.69	2.15	1.52

Station Description	Descriptive Statistics	Temperature (°C)	Total Ammonia (mg/l)	Total Nitrate (mg/l)	Total Phosphorus (mg/l)	<i>E. coli</i> (N/100 ml)	Chlorophyll <i>a</i> (µg/l)	DO (mg/l)	DO (mg/l)	Secchi Depth (m)
Near Surface Results - Depth = 0.3 meters										
									DO at Deepest Depth^b	Secchi Depth
Confluence with Beaverdam Creek	Min	14.90	0.04	0.04	0.01	10.00	0.87	5.00	0	0.60
	Max	29.40	0.11	0.84	0.05	10.00	23.87	15.80	8.10	2.20
	Average	23.84	0.05	0.36	0.02	10.00	11.20	10.16	1.87	1.39
Hardy Ford Bridge (Road Station)	Min	1.70	0.04	0.45	0.01	0	0.77	5.68	---	0
	Max	30.00	0.49	2.84	0.10	0	87.72	13.80	---	0
	Average	16.63	0.10	1.23	0.06	0	12.67	10.05	---	0
Hardy Road - Lake Run	Min	14.20	0.04	0.71	0.02	10.00	0.96	5.80	---	0.50
	Max	28.50	0.65	3.28	0.11	20.00	40.80	16.60	---	1.30
	Average	22.88	0.13	1.43	0.05	11.67	17.49	9.37	---	0.72
McVeigh Ford	Min	13.60	0.04	0.63	0.03	10.00	0.50	6.00	---	0.40
	Max	26.50	0.77	3.87	0.22	400.00	6.83	13.30	---	1.20
	Average	21.65	0.14	1.90	0.06	111.67	1.94	8.27	---	0.78
Mouth of Witcher - Station 17	Min	14.00	0.04	0.04	0.01	10.00	0.50	4.70	0	1.50
	Max	28.00	0.05	0.22	0.02	10.00	5.60	11.60	10.03	4.30
	Average	23.24	0.04	0.12	0.01	10.00	1.74	7.89	4.05	3.08
Totals	Min	1.70	0.04	0.04	0.01	0	0.50	2.80	0	0
	Max	31.00	0.77	3.87	0.22	400	87.72	16.60	14.80	4.60
	Average	22.70	0.06	0.38	0.02	0	5.33	8.80	3.71	0

^a Samples collected May-October of each year.

^b Data from deepest depth at station.

Table 5. Water quality data for Leesville Lake, 1999-2002.^a (Source: VDEQ, 2003, <http://www.deq.state.va.us/watermonitoring/monitoring.html>, accessed on January 20, 2004)

Station Description	Descriptive Statistics	Temperature (°C)	Total Ammonia (mg/l)	Total Nitrate (mg/l)	Total Phosphorus (mg/l)	E. coli (N/100 ml)	Chlorophyll (µg/l)	DO (mg/l)	DO (mg/l) ^b	Secchi Depth (m)
<i>Near-Surface Results – Depth = 0.3 Meters</i>										
Leesville Dam - Station 1	Min	12.50	0.04	0.04	0.01	0	0.93	5.50	0	1.30
	Max	30.40	0.05	0.65	0.02	0	15.89	10.60	10.70	3.00
	Average	24.18	0.04	0.14	0.01	0	4.55	8.20	2.24	2.03
Ramp near Bedford and Campbell County line - Station 2	Min	11.50	0.04	0.04	0.01	0	2.45	5.40	0.40	0.50
	Max	28.80	0.04	0.24	0.02	0	12.60	10.90	10.80	2.50
	Average	23.31	0.04	0.11	0.01	0	4.89	8.12	4.22	1.69
Confluence w/Pigg R. - Station 3	Min	10.90	0.04	0.12	0.01	0	1.26	3.98	3.98	0.30
	Max	25.40	0.08	0.30	0.04	0	6.94	11.00	11.00	1.80
	Average	20.08	0.04	0.20	0.02	0	3.56	7.23	7.23	0.90
Totals	Min	10.90	0.04	0.04	0.01	0	0.93	3.98	0	0.30
	Max	30.40	0.08	0.65	0.04	0	15.84	11.00	11.00	3.00
	Average	22.52	0.04	0.15	0.02	0	4.33	7.85	4.56	1.54

^a Samples collected May-October of each year ^b Data from deepest depth at station.

The U.S. Environmental Protection Agency (EPA) has officially declared Smith Mountain Lake a “no discharge” zone, preventing boaters from discharging boat sewage into the lake. Virginia also prohibits the discharge of sewage into the lake via a statewide regulation prohibiting the discharge of untreated sewage into the waters of Virginia (Roanoke River Basin Association website, 2000, <http://www.rrba.org/news103.html>, accessed on January 26, 2004).

Environmental Effects

One commenter believes that water quality and the overall quality of life at Smith Mountain Lake should be a high priority in the SMP. Another commenter states that the plan should address management of the project’s water levels and Leesville Lake discharge rates, especially since the lake level is a significant influence on the environment, recreation, and ecology within the project. Yet another commenter states that water releases should be managed to ensure that all stakeholders’ interests are considered and protected. The Leesville Lake Association believes there is a lack of verbiage within the SMP that addresses petroleum spills and prevention.

The proposed SMP contains measures designed to minimize the impact of boat docks, marinas, and adjacent shoreline development on the water quality in the project reservoirs. These include standards for each shoreline classification (table 1) that act to limit the number of eligible piers and marinas, and would reduce the water quality impacts of those facilities and additional watercraft on project reservoirs. Additionally, the construction and maintenance of docks and marinas would have temporary site-specific effects on water quality because of the associated excavation, installation of pilings, and clearing of shoreline areas needed to support such facilities. The operation of motorized boats and personal watercraft associated with docks and piers could affect water quality through the introduction of chemicals and oils into the water via engine exhaust or during maintenance and fueling through drips and spills. For commercial facilities and public use facilities, compliance with the Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings and the location of restroom facilities outside of the project boundary would reduce impacts on water quality from sewage. Non-commercial facilities and private facilities will not have a significant impact on water from sewage as they have to meet all requirements set forth by local, state, and federal agencies.

The setbacks contained in the Smith Mountain SMP would protect water quality by slowing runoff from paved surfaces and would reduce the contribution of non-point source pollutants such as pesticides and nutrients. The SMP also contains measures that will decrease runoff and erosion by protecting vegetation in and along Smith Mountain Lake and Leesville Lake, prohibiting logging and preserving wetlands. These measures provided in the SMP minimize the impact of shoreline development on water quality in Smith Mountain Lake and Leesville Lake.

Aquatic Habitat

Affected Environment

Aquatic habitat at Smith Mountain and Leesville lakes has three classifications:

- submerged timber and timber-woody debris that consist of downed trees submerged in coves with at least five trees per 100 linear feet and with diameters of 10 inches or greater at the trunk base;
- fringed wetland areas, which are a diverse assemblage of herbaceous and woody plant (emergent/submergent and scrub/shrub) species in shallow water habitat (less than 6 feet in depth) of coves and not associated with a tributary stream; and
- scrub-shrub habitat, which consists of island or peninsula areas associated with the emergent/submergent vegetation areas.

Environmental Effects

The SMP requires the preservation of existing vegetation. The preservation of existing vegetation would further reduce sedimentation by stabilizing the shoreline and reducing erosion and turbidity. Implementing the Shoreline Stabilization Restrictions in the SMP listed above will result in shoreline stabilization in active erosion zones. Refer to section 3, "Shoreline Stability and Soil Erosion," in this EA for a description of the Shoreline Stabilization Restrictions listed in the Smith Mountain Lake SMP. The Smith Mountain SMP also requires shoreline landowners to take responsibility for the health and viability of submerged aquatic vegetation (SAV) when building piers and/or docks. Retaining the health and viability of SAV helps maintain water quality since SAV absorbs nutrients, reduces wave action, and provides stabilization of the substrate.

Any ground-disturbing activities in this area must be minimal to maintain the function of the buffer. To modify the existing vegetative cover, a permit is required. The permit will cover removing vegetation to provide for reasonable view of the water, to construct access paths to the shoreline and/or dock, to construct erosion control measures along the shoreline, and for general maintenance to the vegetated area. If vegetation is removed without a permit, then individuals may be required to plant or pay for the planting of vegetation within the project boundary.

Enforcement of dredging restrictions should reduce water quality impacts by reducing sedimentation and disturbance of aquatic habitat. The use of erosion and sediment control structures also would minimize the degradation of water quality.

Fisheries

Affected Environment

Smith Mountain Lake provides an outstanding recreational fishery that supports a variety of warmwater species. Game species include striped bass, largemouth and smallmouth bass, muskellunge, walleye, flathead and channel catfish, and crappie. Various sunfish species are also present. The forage base consists of gizzard and threadfin shad, as well as alewife. Largemouth bass are found in the highest densities upstream in the Blackwater River and Roanoke River arms of Smith Mountain Lake. Smallmouth bass are more evenly distributed throughout the reservoir. Striped bass have been stocked into Smith Mountain Lake since 1963. Striped bass generally are found throughout the lake, though they concentrate in the lower lake areas during summer and early fall. Populations of crappie, sunfish, and catfish also support recreational fishing. The population of crappie at Smith Mountain Lake is small, but sunfish are abundant. Channel catfish and the introduced flathead catfish are popular recreational fish species. Muskellunge fingerlings are stocked in the lake. VDGIF has suspended stocking of walleye, but a small, naturally reproducing population of walleye does occur in the reservoir. Presently, fish stocking in the lake by VDGIF includes striped bass, smallmouth bass, largemouth bass, muskellunge, catfish, and various sunfish species (VDGIF website, 2005, http://www.dgif.state.va.us/fishing/lakes/smith_mountain_lake/index.html, accessed on January 26, 2004).

The striped bass fishery is the most notable fishery at Smith Mountain Lake. Striped bass are one of the most popular sport fish at Smith Mountain Lake. Largemouth bass fishing on the lake is considered excellent. The largemouth bass fishery has steadily improved in the lake over the past 10 years. The size and numbers of flathead catfish in the upper section of the lake have significantly increased in recent years (VDGIF website, 2003, http://www.dgif.state.va.us/fishing/lakes/smith_mountain_lake/index.html, accessed on January 26, 2004).

Leesville reservoir experiences water fluctuations to a maximum of 13.0 feet daily as a result of power generation and pump-back storage for Smith Mountain reservoir. The large fluctuations in water level and related water temperature changes at Leesville reservoir reduce bass habitat and spawning success in the upper reaches of the reservoir. Still largemouth bass is one of the most sought after species for anglers at the Leesville reservoir. Roanoke bass are found in very low numbers. Striped bass and walleye are stocked in Leesville reservoir and, along with a natural population of white bass, support a popular sport fishery. The reservoir is not as popular with anglers as Smith Mountain Lake because of the large fluctuations in water level (VDGIF website, 2003, http://www.dgif.state.va.us/fishing/lakes/smith_mountain_lake/index.html, accessed on January 26, 2004).

Environmental Effects

The construction activities that could occur in or near the reservoir under allowable provisions in the SMP may temporarily displace some fish and wildlife species during the construction period. Further, any disturbance of the shoreline could result in small quantities of sediment reaching Smith Mountain Lake during rainfall events, suspension and dispersal of sediments and a temporary increase in local turbidity levels.

The Smith Mountain SMP would help protect the fishery in both Smith Mountain and Leesville lakes by protecting water quality and fish habitat. Two of the most important requirements in the SMP for protection of the lake fisheries are (1) the requirements to protect aquatic vegetation, and (2) minimizing the removal of lap trees⁵³ and other woody debris. Juvenile fish benefit from the protection of SAV beds that provide important cover and feeding habitat. Lap trees and woody debris would continue to provide cover and feeding areas for inshore fish. Additionally, the shoreline classification limitations and the restrictions and regulations proposed by the SMP preserve the shoreline vegetation and protect against erosion and sedimentation. Limited disturbance of aquatic habitat would occur with the limitations placed on the length of piers (table 1).

The Smith Mountain Lake SMP's designation of impact minimization zones and conservation/environmental zones, where the installation of piers and marinas are not permitted without a variance, would protect shoreline areas with identified significant natural resources, including wetlands and other fish habitats.

As previously indicated, the majority of game fish species found in Smith Mountain Lake are members of the sunfish, bass, and perch families and include crappie, rock bass, Roanoke bass, large and smallmouth bass, white and striped bass, walleye and perch. According to the VDGIF's State Fishing Guide,⁵⁴ the spawning seasons for these species are typically anywhere from late February through June. Construction activities along the shoreline have the potential to disturb sediment which could become suspended in the water column and then be deposited in areas used for spawning by some of these fish species. This could decrease spawning success of important game fishes to some degree. The DEA recommended that SMP restrict any in-water construction from February 15 through June 15 to minimize impacts to these fish species.

⁵³ Lap trees are defined as dead or fallen trees in the water along the shoreline.

⁵⁴ See www.dgif.state.va.us/fishing/virginia_fishes

In comments filed on the DEA, several entities stated that in-water construction restriction from February 15 to June 15 each year causes undue hardship on the local economy especially the dock building industry. Commenters also state that it may interfere with the timely installation and maintenance of navigation markers. They also state that this restriction is also unnecessary because of the amount of protection afforded the fisheries resources in the plan. After receiving comments in response to the DEA and from the public meeting, staff examined the spawning patterns of the fishery at the Smith Mountain and Leesville reservoirs and determined that pile driving could be allowed in the early season as pile driving would likely have a minimal impact on fish that spawn during that time of year (basically from February 15 through April 14) as compared to the period from April 15 through June 15.

The reason for this is that the species of concern that spawn from February 15 through April 14 (which include walleye, muskellunge, yellow perch, sauger, and northern pike) do not build nests. These fish release their eggs randomly across the shallow water areas so that their eggs stick to aquatic vegetation, rocks, and stumps (i.e., elevated above the reservoir bottom where siltation could affect the eggs). Thus, pile driving is not likely to affect the eggs of these fish since the impacts of pile driving is mainly disturbing the sediments in a small concentrated area (about a 8 to 12 inch diameter pole).

During the period of April 15 through June 15, largemouth and smallmouth bass, catfish, and white crappie build nests and spawn in the shallow water areas near shore. Largemouth and smallmouth bass species are considered by the VDGIF as the predominant or sought after species targeted by anglers. These species have the most economic importance in terms of fishing/recreation. Since these species build nests to spawn, their eggs could be impacted by pile driving. Pile driving could directly destroy a nest that is hit by a piling or by disturbed sediments landing and covering the eggs. As such, we would restrict pile driving from April 15 through June 15.

The FWS and VDGIF expressed concern about continued, cumulative impacts associated with in-water construction. The VDGIF' 2004 Fisheries Management Report states that surveys indicate that largemouth bass and smallmouth bass fishery has been declining for several years. Small business owners (dock builders), developers, and others questioned whether the fishery is impacted by pile driving, relative to the 500 miles of shoreline in a 26,000 acre lake. Given that Smith Mountain Lake is one of Virginia's premier fisheries and a great economic asset for the surrounding community, staff deemed it prudent to protect this valuable resource by setting these restrictions. We further believe that for the safety of the boating community, it is necessary to install and maintain navigational markers in a timely manner, and will not place any time of year restrictions on the installation or maintenance of navigational markers.

Terrestrial Resources

Shoreline Stabilization

Affected Environment

Located in the western Piedmont physiogeographic region of Virginia, the terrain around Smith Mountain Lake is rolling to hilly and varies in elevation from 400 to 1,000 feet. The shoreline is dominated by forestland with some grasslands and agricultural lands. Pine and hardwood species are mixed in a secondary growth forest along much of the shoreline.

Portions of Smith Mountain Lake's shoreline are steep, and exposed bedrock is present in some of the steeper areas. Lawns and croplands are present along the portions of the shoreline that have been modified by landowners. Much of the shoreline of Smith Mountain Lake with adjacent development has been stabilized by the placement of riprap along the shoreline. Soil erosion in isolated areas along the shoreline is generally correlated with ongoing or recent construction of buildings and docks and clearing for access to the shoreline.

A study was completed along the shoreline of Smith Mountain Lake to determine bank condition and existing erosion control techniques. Table 6 displays the bank conditions and erosion control techniques measured, the total lengths along the shoreline, and percent of the shoreline used.

Table 6. Shoreline characterization at Smith Mountain Lake. (Source: letter from T. Rogers, Reservoir Superintendent, Appalachian Power, Roanoke, Virginia, to M.R. Salas, Secretary, FERC, Washington, DC, April 5, 2004).

Bank Condition	Total Length (miles)	Percent of Total
Natural Bank	215.10	45
Sandy Beach	2.75	0.57
Vegetation	0.04	0.01
Rip-Rap	220.60	46
Seawall	18.10	3.80
Retaining Wall	0.03	0.01
Building/Infrastructure	0.47	0.10
Breakwater	0.03	0.01

Bank Condition	Total Length (miles)	Percent of Total
Ramps	0.39	0.08
Unknown	0.97	0.20
No Access (N/A)	23.18	5

Approximately 45 percent of the shoreline is natural. Existing banks (approximately 45 percent), sandy beaches (approximately 0.57 percent), and vegetation (approximately 0.01 percent) are included in the natural shoreline category at Smith Mountain Lake. Approximately 50 percent of the total shoreline at Smith Mountain Lake is unnatural. Of this unnatural shoreline, most is stabilized with riprap. The remaining unnatural stabilization techniques include seawalls, retaining walls, buildings/infrastructures, breakwater, and ramps. Based on the results of the shoreline study, there was no access to approximately 5 percent of the shoreline, and approximately 0.20 percent of the shoreline was characterized as unknown (figure 4).

Environmental Effects

Several commenters disagree with the shoreline stabilization and vegetation restrictions. They state that the SMP discourages the use of riprap and is promoting vegetation to be used instead. The commenters do not believe that vegetation would be adequate to control erosion at the site and also state that riprap should be used to stabilize the shoreline. The Leesville Lake Association expresses concerns over the lack of any plan to control the extent of erosion taking place on Leesville Lake due to the frequency and extent of the rise and fall of water levels.

The SMP encourages the use of natural vegetation to control erosion, prevent water pollution, and provide habitat for birds, mammals, and fish. Future shoreline stabilization would only be permitted in areas of active erosion. Local governments would issue land disturbance permits after approving sediment and erosion control plans for proposed docks. Implementing the SMP would enhance shoreline stability at Smith Mountain or Leesville lakes due to the shoreline classification limitations and the restrictions and regulations stated in the SMP. Construction of boat docks and piers within the project boundary could cause short-term disturbance to the lake bottom and a resulting increase in sediment turbidity and suspended solids in the immediate area during times of normal lake levels. If construction in the project boundary is conducted during low lake levels, the short-term impacts on water quality could be avoided. Implementing BMPs and providing for post-construction stabilization of the upland areas either through the planting of vegetation or the placement of riprap would minimize erosion and mitigation of sediments offsite. BMPs include the use of mulches, hay bales, silt fences, or other devices capable of preventing erosion and migration of sediments from the construction sites.

Wetland Resources

Affected Environment

Based on the National Wetlands Inventory (NWI) maps of the area, wetlands are primarily located in the narrow coves and inlets along the shoreline of Smith Mountain Lake and in a few small inlets on Leesville Lake. The wetlands appear to consist of backwater sloughs, alluvial flats, and islands as seasonally flooded wetlands. These areas are classified as impact minimization or conservation zones. The wetlands inventory categorizes the wetlands as inland shrub swamp and/or inland forested wetland (NWI website, 2004, <http://www.nwi.fws.gov>, accessed on January 27, 2004).

Environmental Effects

The Smith Mountain Lake SMP's designation of impact minimization zones and conservation zones are to discourage individuals from constructing structures in these areas. Development in an impact minimization zone would be limited, but possible, based on a review of the related plans including the mitigation for any impacts to resources. Construction in the conservation/environmental zones would be prohibited without a variance. Any individual who wishes to build any structures, conduct any land disturbing activity or stabilize the shoreline within the project boundary must apply for and follow the procedures for a variance. These provisions of the SMP should protect wetlands found at the project.

Wildlife and Riparian Habitat

Affected Environment

Smith Mountain and Leesville lakes are located in the rolling hills of the Piedmont region where pine and hardwood tree species are mixed in a secondary growth forest along much of the lake's shoreline. The region contains populations of wild turkey and white-tail deer and supports numerous small mammals (rabbit and squirrel) and reptiles, as well as a variety of bird species including nesting osprey (VDGIF, 2003). The region also includes the Smith Mountain Wildlife Management Area.

Environmental Effects

A commenter states that the impact minimization zone and conservation areas are insignificantly small for such a large lake. He believes that the impact minimization zone parameters were excluded from the Smith Mountain Lake shoreline. Another commenter believes that the SMP section on removing vegetation lacks detail and many questions still need to be answered. He states that there is no detail on who determines if the vegetation should be removed or the definition of a "reasonable" view of the water. He

also wants to know if Appalachian Power requires a site plan showing the size, location, type, and caliper of each tree proposed to be removed. A third commenter believes that the base of Smith Mountain should be forever protected as a nature and wildlife preserve due to the area being very steep, rocky, and inappropriate for development. He also states that Appalachian Power must be restricted from further development on any property along the mountain, including Witcher Creek.

While development is allowed in the impact minimization zones, the SMP requires that the natural shoreline resources be protected and that Appalachian Power follow the variance procedures. Appalachian Power will require a permit be issued before any vegetative materials are removed within the project boundary. During this permitting process, Appalachian Power will be able to review an alternative to removing the vegetation. Appalachian Power will determine what is reasonable and states in the SMP that modifications to the vegetation within the project boundary may provide a view of the water without impairing the overall function of the vegetated boundary. Trees and shrubs may be pruned or removed to provide a view of the water but shall be replaced with other vegetation to maintain the function of the buffer. Any trees or shrubs removed would be replaced by native plants. In areas of multi-family developments, view of the water would be provided in a common area.

Additionally, individuals may be required to plant or pay for the planting of vegetation in the event that vegetation is removed without a permit. Table 7 provides vegetation replacement rates, as presented in the SMP, and describes the size and type of vegetation that is acceptable if vegetation is removed. Compliance with the proposed SMP will have a beneficial impact on the wildlife and riparian habitats associated with the Smith Mountain Project by directing development away from areas with important environmental resources.

Table 7. Vegetation replacement rates. (Source: Smith Mountain Pumped Storage Project SMP, 2003, <http://www.smithmtn.com/ShorelineManagement/Plan/pdf/Final/FinalSMP.pdf>, accessed on August 18, 2004)

Vegetation Removed	Preferred Replacement Vegetation	Acceptable Alternative Vegetation
1 tree or sapling ½- to 2½-inch caliper	1 tree at equal caliper or greater	Or 2 large shrubs at 3 to 4 feet or 10 small shrubs or woody groundcover ^a at 15 to 18 inches
1 tree greater than 2½-inch caliper	1 tree at 1¾- to 2-inch caliper per every 2-inch caliper of tree removed (e.g., a 12-inch caliper tree would require 6 trees	Or 75 percent trees at 1¾ to 2 inch and 25 percent large shrubs at 3 to 4 feet per every 2-inch caliper of tree removed (e.g., an 8-inch caliper tree removed would require 3 trees

Vegetation Removed	Preferred Replacement Vegetation to replace it)	Acceptable Alternative Vegetation and 1 large shrub)
1 large shrub	1 large shrub at 3 to 4 feet	Or 10 small shrubs or woody groundcover at 15 to 18 inches per 2-inch caliper of tree removed (e.g., a 9-inch caliper tree removed requires 50 small shrubs) Or 5 small shrubs or woody groundcover at 15 to 18 inches

^a Woody groundcover is considered to be a woody, spreading shrub that remains close to the ground, to 18 inches high, such as a shore juniper (*Juniperus conferta*). Vines may not be considered “woody groundcover” for the purpose of vegetation replacement.

Rare, Threatened, and Endangered Species

Affected Environment

Information on potential rare, threatened, and endangered (RTE) species in the vicinity of Smith Mountain and Leesville lakes was collected from the VDCR Natural Heritage Program (NHP) database (VDCR-NHP website, 2002, http://www.192.206.31.52/cfprog/dnh/naturalheritage/display_counties.cfm, accessed on January 18, 2005). Table 8 presents a list of species found in the surrounding counties of Bedford, Campbell, Franklin, and Pittsylvania.

Table 8. Natural Heritage resources for Bedford, Campbell, Franklin, and Pittsylvania counties. (Source: VDCR-NHP website, 2002, http://www.192.206.31.52/cfprog/dnh/naturalheritage/display_counties.cfm accessed on January 18, 2005.)

Common Name	Scientific Name	Preferred Habitat	Status ^a
Invertebrates			
Pittsylvania well amphipod	<i>Stygobromus obrutus</i>	Freshwater	F-SOC
Atlantic pigtoe mussel	<i>Fusconaia masoni</i>	Sand/gravel stream	F-SOC; S-LT
Spirit supercoil snail	<i>Paravitrea hera</i>	Leaf litter	F-SOC; S-LE
Persius duskywing butterfly	<i>Erynnis persius persius</i>	Open areas, stream sides	F-SOC
Appalachian grizzled skipper	<i>Pyrgus wyandot</i>	Clearcuts, areas adjacent to woods	F-SOC

Common Name	Scientific Name	Preferred Habitat	Status ^a
Reptiles and Amphibians			
Peaks of otter salamander	<i>Plethodon hubrichti</i>	Mature forest, white pine, oak, hemlock	F-SOC; S-SC
Mole salamander	<i>Ambystoma talpoideum</i>	Floodplains, forest	S-SC
Fish			
Orangefin madtom	<i>Noturus gilberti</i>	Freshwater	F-SOC; S-LT
Roanoke logperch	<i>Percina rex</i>	Freshwater	F-LE; S-LE
Birds			
Winter wren	<i>Troglodytes troglodytes</i>	Coniferous forest	S-SC
Non-Vascular Plants			
Keever's bristle-moss	<i>Orthotrichum keeverae</i>	Trunks and branches of live and dead oaks	F-SOC
Vascular Plants			
Kankakee globe-mallow	<i>Iliamna remota</i>	Gravel streambeds	F-SOC
Nestronia	<i>Nestronia umbellula</i>	Wooded streambeds	S-LE
Smooth coneflower	<i>Echinacea laevigata</i>	Open woods, clearcut	F-LE
Sword-leaved phlox	<i>Phlox buckleyi</i>	Grassland, thickets	F-SOC
Torrey's mountain-mint	<i>Pycnanthemum torrei</i>	Forest, thickets, successional fields	F-SOC

Notes:

- ^a F-SOC – Federal Species of Concern
 F-LE – Federal Listed Endangered
 S-SC – State Status-Special Concern
 S-LT – State Listed Threatened
 S-LE – State Listed Endangered

- ^b B – Bedford County
 C – Campbell County
 F – Franklin County
 P – Pittsylvania County

Many of the species listed in Table 8 require specialized habitats that are not associated with either an aquatic or shoreline environment and, therefore are not likely to be found along the project reservoirs shoreline. Several aquatic species, including orangefin madtom (*Noturus gilberti*), Roanoke logperch (*Percina rex*), and Atlantic pigtoe mussel (*Fusconaia masoni*), are known from the upper reaches of the Roanoke River. One specimen of Roanoke logperch was taken from upper Smith Mountain Lake in 1981 and was assumed to be a waif from the upper Roanoke River drainage. Two additional specimens were found in 1989 in lower Leesville reservoir and were thought to have hatched in the Pigg River (Terwiliger, 1991). The spirit supercoil snail (*Paravitrea hera*) is found as a very rare endemic in Pittsylvania County where it is restricted to leaf litter on river bluffs. Winter wren (*Troglodytes troglodytes*) is considered an uncommon transient and winter resident in the Piedmont (Virginia Society of Ornithologists [VSO], 1987).

Of the plants listed as RTE species in the counties surrounding Smith Mountain and Leesville lakes, nestronia (*Nestronia umbellula*) and kankakee globe-mallow (*Iliamna remota*) are the only species found in association with aquatic environments. Both are found along streams, with nestronia preferring wooded streams and kankakee globe-mallow preferring gravel streambeds.

In a letter dated December 16, 2003, to the Commission, Interior indicated that the presence of species that are federally listed or proposed for listing as endangered or threatened at Smith Mountain Lake is unlikely. Interior states that, except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist in the project area. No endangered or threatened species reside in the lake, but upstream and downstream habitats are being reviewed and considered for surveys for the presence and/or restoration of the endangered Roanoke logperch. Finally, Interior concludes no Biological Assessment or Section 7 Consultation (under the Endangered Species Act) with the U.S. Fish and Wildlife Service is required.

The VDEQ filed comments on the DEA regarding natural heritage resources notably the Roanoke log perch and orange fin mad tom. It recommends that the Commission coordinate with the FWS. The Commission staff is aware of its responsibilities regarding threatened and endangered species and as noted above, the FWS stated that additional section 7 consultation was not necessary.

Environmental Effects

The SMP includes restrictions and regulations for vegetative cover, woody debris, and impact minimization and conservation/ environmentally sensitive zones. The

proposed SMP would offer RTE species along the shoreline some measure of protection and habitat where the wooded shoreline is maintained. Conservation/environmentally sensitive zones also would protect other potential RTE species in areas of wetlands.

5.1.2 Land Use and Aesthetics

Affected Environment

There are approximately 500 miles of shoreline at Smith Mountain Lake. The properties adjacent to and surrounding the shoreline of Smith Mountain Lake are within Bedford, Campbell, Franklin, and Pittsylvania counties. Development in the immediate area consists of agriculture, residential, light commercial and business, and sparse industrial.

Approximately 20 percent of the Smith Mountain project shoreline is designated as agriculture. The majority of the agricultural areas are found in Bedford, Campbell, and Franklin counties. Residential areas include combined subdivisions, multifamily development, residential planned development, and suburban subdivisions. Approximately 26 percent of shoreline is zoned for residential areas that are included in Bedford, Campbell, and Franklin counties. Approximately 2 percent of the Smith Mountain Lake shoreline is designated for commercial, industrial, and business district areas (table 9). Bedford and Franklin counties provide zoning for commercial areas, and Pittsylvania and Franklin counties provide zoning for industrial and business district areas.

Table 9. Updated Zoning areas at Smith Mountain and Leesville lakes. (Source: letter from T. Rogers, Reservoir Superintendent, Appalachian Power, Roanoke, Virginia, to M.R. Salas, Secretary, FERC, Washington, DC, June 21, 2005).

Zoning Areas	Shoreline Length (miles)	Percent
Agriculture	216.9	37.3
Residential	352.8	60.7
General Business District	2.6	0.4
Light Industrial District	.5	0.1
Planned Commercial Development	8.5	1.5
Total	580.9	100

The area surrounding Leesville Lake in Campbell County has recently (within the past 3 years) become a focus for residential growth. A subdivision of more than 300 residential lots has been developed on Leesville Lake, and a significant portion of these lots contain either vacation or retirement homes for owners from outside of central Virginia (Campbell County Comprehensive Plan, 2002, <http://www.co.campbell.va.us/Comprehensive%20Plan/index.htm>, accessed on January 21, 2004). The future land use map for Campbell County 2003-2018 (Campbell County Comprehensive Plan, 2002, <http://www.co.campbell.va.us/Comprehensive%20Plan/index.htm>, accessed on January 21, 2004) identified the potential land use patterns along Leesville Lake as areas of transitional growth and rural character. Housing density for these areas is defined as one housing unit per 30.1 acres or greater for rural-low density zones and one housing unit per 5.1 to 30.0 acres for transitional (intermediate density) areas. On a whole, the land use plan designates approximately two-thirds of the county for continued rural uses and one-third for more intense development use. Campbell County is expecting moderate residential, commercial, and industrial growth over the 15-year planning period (2003-2018).

Environmental Effects

Appalachian Power provided maps on shoreline classification and boat density at Smith Mountain Lake and Leesville Lake. Tables 10 and 11 show shoreline totals and percentages for Smith Mountain and Leesville lakes, respectively.

Table 10. Shoreline Classifications for Smith Mountain Lake. (Source: Smith Mountain SMP, 2003, <http://www.smithmtn.com/ShorelineManagement/Plan/pdf/Final/FinalSMP.pdf>, accessed on January 27, 2004)

Shoreline Classification	Total Miles	Percentage
High-density commercial	20.92	4.3
High-density multi-use	36.83	7.5
Public use	20.17	4.1
Low-density use	376.61	76.9
Impact minimization zone	17.29	3.5
Conservation/environmental	18.19	3.7

Table 11. Shoreline Classifications for Leesville Lake. (Source: Smith Mountain SMP, 2003, <http://www.smithmtn.com/ShorelineManagement/Plan/pdf/Final/FinalSMP.pdf>, accessed on January 27, 2004)

Shoreline Classification	Total Miles	Percentage
High-density commercial	0.18	0.2
High-density multi-use	22.50	24.3
Public use	0.21	0.2
Low-density use	49.96	54.0
Impact minimization zone	2.60	2.8
Conservation/environmental	17.04	18.4

Shoreline classification maps were generated by information collected by the Steering Committee. The boat density maps were developed by aerial photography of the lakes on ten randomly chosen holiday and weekend days. Appalachian Power used current conditions as well as county zoning in the development of the shoreline classifications. The shoreline classifications are considered hierarchal meaning that uses permitted in the conservation/environmental zones would be permitted in the high density commercial areas, but not vice versa. The SMP also states that if the county zone and the shoreline classifications differ, the more stringent classification would be used.

Implementation of the shoreline management plan could reduce the amount of development along the shoreline in comparison to the current conditions, provided no variances are issued. The classifications place the potential for development in areas that could support and sustain such development and away from areas of sensitive environmental resources. In addition, the SMP does not prohibit development in any areas. If development is requested in impact minimization zones, the request could be granted if the permittee takes specific measures to protect the environment or mitigate the loss. Under current conditions, as stated above, there are no areas that are restricted from development and no requirements to mitigate any impacts.

The potential of additional dock facilities to be built along the shoreline of Smith Mountain and Leesville lakes may block the view of the mountains from adjacent property owners. The SMP also provides for high-density commercial development in limited areas that would maintain the heaviest development in localized areas along the

shoreline and conserve shoreline in other areas for visual aesthetics. Further, proper construction of floating docks with the use of puncture-resistant materials such as pressure-treated lumber, and other non-corrosive material, would provide for maintenance of shoreline aesthetics by reducing the construction material and debris collecting along the shoreline.

In comments on the DEA, the FWS and VDGIF express concern about the amount of shoreline that remains natural around the lake. The purpose of the SMP is to protect sensitive areas around the lake including wetlands, historic resources, and areas of aesthetic value at the lakes. The lakes were zoned to balance the amount of natural shoreline and development and to take into account the current uses of the lakes.

5.1.4 Recreational Resources

Recreational Opportunities

Affected Environment

The Smith Mountain Project and the immediate area offer excellent recreational opportunities, including a variety of water sports. Recreational activities include boating, fishing, swimming, picnicking, jet skiing, water skiing, camping, sightseeing, nature study, and golf. Smith Mountain State Park and Smith Mountain Wildlife Management Area are adjacent to Smith Mountain Lake. The Blue Ridge Parkway and Appalachian National Scenic Trail are also nearby (approximately 20 and 28 miles from Smith Mountain Lake, respectively). Smith Mountain Wildlife Management Area contains approximately 5,000 acres of woodlands open to public hunting and leased by VDGIF from Appalachian Power. Primary recreation facilities include public boat launches, lake access areas for shoreline fishing, marinas, yacht clubs, campgrounds, swimming beaches, visitor centers, and Smith Mountain State Park.

The Smith Mountain lakefront includes five public boat-launching sites and Leesville Lake includes two; all are managed by VDGIF on lands owned by Appalachian Power (Table 12). According to the Smith Mountain Lake Pumped Storage Project Recreation Use Assessment, Hardy Ford public boat launch receives the most use of all the public boat ramps in the project area because of its proximity to the city of Roanoke, the largest city in the vicinity of Smith Mountain Lake. It includes a pier that meets Americans with Disabilities Act (ADA) guidelines and access for bank fishing. Penhook public boat launch located in Franklin County is also a high-use launch facility that includes gasoline pumps, a restaurant, and bait shop operated by a concessionaire. Hales Ford public boat launch is used primarily by jet-skiers, anglers, and people with small

pleasure boats (less than 20 feet). Scruggs public boat launch is located in Franklin County. The primary users of this site are smaller fishing boats and mid-sized pleasure boats. The Anthony Ford public launch located in Pittsylvania County is used by jet-skiers, bank anglers, and boaters; however, it is the least used of all the public boat launches at Smith Mountain Lake.

In addition to the public boat launches, VDGIF also manages a fishing access area just below Leesville dam. Commercial facilities within the project boundary include 22 marinas on Smith Mountain Lake and 2 on Leesville Lake as of the filing of the SMP. On Smith Mountain Lake the marinas are clustered near Route 122 and opposite Smith Mountain dam. The facilities provide a variety of services, including boat launching, concessions, gas, and equipment rental and sales. The cove and nearby point are popular locations for bank fishing and launching jet-skis.

On Leesville Lake, a public boat launch is located upstream of Leesville dam. This boat launch is used by anglers fishing Leesville Lake with small to medium sized boats. Locals use the Myers Creek boat launch on Leesville Lake primarily on weekend days and evenings. The Leesville dam fishing access area is used primarily by local anglers fishing for striped bass and is heavily used during the spring spawning period from mid-April through May.

Table 12. Boat launching and fishing access facilities at Smith Mountain and Leesville lakes. (Source: Smith Mountain Pumped Storage Project, Recreation Use Assessment, 2004, <<http://www.smithmtn.com>>, accessed on January 20, 2004)

Facility	Number of Parking Spaces	Number of Ramps/ Length	Bank Fishing Access?	ADA Compliant Fishing Area?
Smith Mountain Lake				
Hardy Ford Public Boat Launch	65	two / 75 feet long	Yes	Yes
Hales Ford Public Boat Launch	30	one / 42 feet long	No	No
Smith Mountain Lake State Park	90	one / length N/A	Yes	Yes
Scruggs Public Boat Launch	30	one / 63 feet long	Yes	No
Penhook Public Boat Launch	50	one / 47 feet long	No	No
Anthony Ford Public Boat Launch	15	one / length N/A	Yes	No
Leesville Lake				
Myers Creek Public Boat Launch	30	one / length N/A		No

Leesville Dam Public Boat Launch	20	one / length N/A	No	No
Leesville Dam Picnic Area	30	None	Yes	No
Leesville Dam Fishing Access Area	25	None	Yes	No

Note: N/A – Information not available.

Much of the recreational use is by private landowners with residences around Smith Mountain Lake. Residences along the lake range from mid-to-high income single-family units and multi-family structures. It is estimated that there were at least 6,336 private docks on Smith Mountain Lake and 98 private docks on Leesville Lake in 2002 (letter from T. Rogers, Reservoir Superintendent, Appalachian Power, Roanoke, VA, to Secretary Salas, FERC, Washington, DC, April 5, 2004). The 1996 recreational survey determined that resident use of Smith Mountain Lake relates primarily to use of motorboats; 40 percent of the resident use of Smith Mountain Lake is motorboat related. Additionally, the data showed that residents of Smith Mountain Lake account for 30 percent of the use of the lake during the recreational season (April 1st to October 31st).

The recreational season at the Smith Mountain Project was defined as occurring between April 1st and October 31st and consisting of 151 weekdays, 54 weekend days, and 9 days as holiday weekends for the purpose of the 1996 recreational survey. The total recreational season use in 1996 was 598,742 visitors; off-season use was 71,849 visitors.

Based on the 1996 recreational use study, use of Leesville Lake is much less than that of Smith Mountain Lake. Total recreational use of Leesville Lake (239,444) was 36 percent of the total recreational use for Smith Mountain Lake (inclusive of the Appalachian Power visitor center and Smith Mountain Lake State Park visitation). Peak weekend average day use at Leesville Lake (7,123) was 3.5 percent of the peak weekend day use at Smith Mountain Lake; peak weekend average night use was 2.5 percent of Smith Mountain Lake's peak weekend average night use.

The land surrounding the Smith Mountain Project offers a variety of land-based recreation opportunities, including golf, trail hiking, picnicking, camping, hunting, sightseeing, antiquing, shopping, and relaxing. From the latest Licensed Hydropower Development Recreation Report (Form 80) filed with the Commission in 2003, more than 1.4 million annual daytime visitors recreate at the project.

Virginia Dare and Blue Moon are cruise and charter boats privately owned and operated on Smith Mountain Lake by Paddlewheel Cruises, Inc. Different types of cruises are offered for sightseeing, dinner, and champagne brunch, available throughout

the year. Private charters for weddings, receptions, or corporate parties can also be reserved.

Several campgrounds are located around Smith Mountain Lake, including Smith Mountain Lake State Park and four privately owned and operated campgrounds; no overnight camping facilities are located on Leesville Lake.

The Smith Mountain Lake 4-H Educational Center is a full-service regional conference and educational facility located on the Blackwater River portion of Smith Mountain Lake. The center is open year-round and offers a variety of recreational activities.

Smith Mountain Lake also supports a diverse recreational fishery, including largemouth and smallmouth bass, striped bass, walleye, muskellunge, catfish, and various sunfish species.

Smith Mountain Lake State Park, a 1,248-acre park located in Bedford and Franklin counties, lies on the east side of the central portion of the lake. The state park offers activities that include hiking, camping, picnicking, and a variety of special programs, such as night hikes, canoe trips, and wilderness skills training. The park also offers fishing with an ADA-compliant, barrier-free fishing pier, a public boat-launching ramp, and a 500-foot swimming beach. According to the 1996 recreational survey, total visitation at Smith Mountain Lake State Park was 296,330, approximately 21 percent of the total recreational use for Smith Mountain Lake.

A peninsula of 37 acres has been leased to Franklin County for development as a local park, which may include water access, fishing, and picnicking. Smith Mountain Lake State Park is also undergoing an update of its master plan to expand its capacity to meet increased demand in the lake region. Proposed new facilities include the development of a full-service campground, visitor center, and amphitheater (VDCR, 2002).

Environmental Effects

The Smith Mountain SMP will provide for continued recreational use and development of the project's recreational resources. The shoreline classifications (table 1) presented in the SMP provide for development and shoreline protection in specific areas from high-density use to public use areas. Development in areas where there are no sensitive environmental resources would provide recreational benefits to the public. Areas where there are sensitive resources also provides for passive recreation such as bird

watching or wildlife viewing.

Currently, the SMP does not place limitations on the number of docks allowed in commercial areas, but does place limits on the size of structures. If development is permitted without limitations on the number of docks in the commercial areas, there could be impacts to navigation and public safety because of crowding or reduction in line of sight within the commercial areas. Further, unlimited construction could have indirect effects elsewhere on the lake by causing excessive noise, congestion, or increased wave action. The DEA recommended that Appalachian Power develop and incorporate into the SMP criteria to limit the number of piers, docks, and slips that may be constructed in commercial areas.

In response to the recommendation in the DEA to place limits on docks and piers in commercial areas, Appalachian Power, in a letter dated April 12, 2005, states that there are regulations in place to aid in navigational safety in commercial areas. These include: the maximum dock length is 120 feet or 1/3 of cove whichever is less unless the dock is located in an area that is 510 feet or greater;⁵⁵ there are differing setbacks depending on the various adjacent uses such as commercial docks and residential properties; docks are not allowed to block or obstruct vision between channel markers; white reflective tape or white reflectors are required; and in the area of the largest commercial shoreline classification, there are additional requirement that docks must be 60 feet landward from the navigational lane. As a result, the length of available shoreline and the setbacks will limit the number of slips constructed in commercial areas. Appalachian Power recommends that there be an additional requirement of consulting with the VDGIF to establish a no-wake zone in the vicinity of commercial facilities. If in consultation with the VDGIF, the installation of no-wake buoys is determined to be appropriate, Appalachian will require the owners of the commercial facility to purchase, install, and maintain the required buoys. This additional measure along with the required conditions in commercial areas will address the navigational issues in these areas

Boating Use and Navigational Safety

Affected environment

Boating density was determined for Smith Mountain Lake as part of the SMP

⁵⁵In these areas, a 50-foot no-wake zone has been added to the dock length and the sum of these two numbers has to be less than 1/3 of the distance to the far shoreline. There is a maximum dock length of 166 feet.

preparation. Based on interviews, aerial photography, and the definitions of boat density provided in the Virginia Statewide Comprehensive Outdoor Recreation Plan (SCORP) (VDCR, 2002), a map of boating density was created for Smith Mountain Lake. The SCORP set a standard for power boating of 12 acres per boat. Based on the standard, high density areas are areas that contain more boats than the standard of 12 acres per boat, medium density areas are defined as a boating density between 12 acres per boat and 15 acres per boat, and low density areas contain fewer boats than would be allowed using a standard of 15 acres per boat.⁵⁶ Approximately 10 areas were identified on Smith Mountain Lake where boating density was high. The majority of the area of Smith Mountain Lake was defined as low-density boating. The medium and high-density areas were mainly found close to residential areas, business districts, and commercial areas. The high boat density is mainly located at the shoreline in Pittsylvania County, which is zoned as business and light industrial district (figure 3). Boating density for Leesville Lake was determined not to drop below 20 acres per boat during the usage study and was not extensively mapped because of the low boat density.

Environmental Effects

Two commenters state that Smith Mountain Lake already has a dangerous high-impact boat density and that the SMP would allow for high-impact watercraft congestion, which would lead to accidents. In addition, they state that there are no speed limits or noise limits.

Construction of additional boat docks within the project boundary would create additional boating activity. The additional boat activity would fluctuate depending on the season, day of week, or time of day. The traffic generated by additional docks would be dispersed geographically throughout Smith Mountain Lake and Leesville Lake and temporally throughout the day. Most development and boating would be concentrated in areas already developed, but this activity would disperse throughout the lakes. Table 1 provides the regulations for each of the shoreline classifications mentioned in the SMP.

One commenter suggests that the navigational markers on the lake be placed so individual property owners are not in effect “blocked” from building a dock because construction of docks cannot impede use of these markers. He states that currently the Tri-County Lake Association determines the locations of navigational markers and they

⁵⁶ The Steering Committee determined the standard of 15 acres per boat would be used to determine medium and low density areas.

have been placed in inappropriate locations (e.g., 10 feet off of the shoreline in 4 feet of water). Two other commenters state that the booming development will exacerbate present summertime congestion and safety issues. Leesville Lake Association expressed concerns about the enforcement to minimize, reduce, and remove debris accumulating in the lake to maintain the safe use and aesthetic enjoyment of Leesville Lake.

The SMP requires that docks do not block, obstruct or otherwise impede the line of vision between public channel markers or the visibility of other public navigational aids. It also states that they shall not encroach closer than 30 feet to a public channel marker or other navigational aid. Appalachian Power states that individuals can apply to the appropriate permitting authority for relocation of navigational aids that would allow for pier/dock location that would be precluded by the existing navigational aid. The SMP also states that white reflective tape or white reflectors are required on each furthestmost waterward cord of the dock and every 20 feet on both sides of the dock.

In comments on the DEA, several entities stated that the placement of white reflective markers and white reflective tape required on each furthestmost waterward corner of the docks and every 20 feet on both sides of the docks does not work. The Commission notes that the VDGIF recommended this measure to aid navigation and is responsible for the navigational aids on state waters. These measures should enhance navigational safety.

The licensee does not set the speed limits or noise level requirements on the lakes. These are the responsibilities of the counties and State of Virginia. Further, the Tri-County Lake Association has the responsibility of determining the need and placement of navigational markers. The implementation of the SMP should assist these agencies in fulfilling their responsibilities by indicating areas of high or low development.

Shoreline Access

Access to the waters of Smith Mountain Lake from land is limited. The 2003 Licensed Hydropower Development Recreation Report submitted by Appalachian Power Company (APC) for the Smith Mountain Project states that 5 percent of the shoreline of the Smith Mountain development is safely accessible to the general public by land travel without trespassing. The majority of the recreational users of Smith Mountain Lake are private landowners with residences around Smith Mountain Lake.

Environmental Effects

Implementation of the SMP would not impact general shoreline access but would direct shoreline development and access to certain areas within the specific classifications. Access to the lakes would be available for adjacent property owners.

The Smith Mountain SMP allows minimal modification of the vegetation within the project boundary along the shorelines of Smith Mountain and Leesville lakes. Continuing to provide a vegetated shoreline wherever possible would provide for continued scenic vistas for lake users and recreationists. The provision of limited landscape modification for shoreline landowners should provide for privacy screening as well as scenic enjoyment of the lakes. The use of a common viewing area for multi-family developments would maintain more of the shoreline in a natural state because it would eliminate extensive clearing of the shoreline.

The installation of access paths recommended in the SMP would minimize impairment of the vegetative buffer and limit erosion. Retaining vegetation on steep slopes would prevent slope failure and minimize erosion and sedimentation. Replacement of lost vegetation with native species would assist in the management and/or elimination of invasive species of vegetation. The areas of conservation/environmental sensitivity and impact minimization zones where development is strongly discouraged and/or prohibited would maintain those areas of shoreline in a natural and scenic state.

5.1.5 Cultural Resources

Affected Environment

During the development of the SMP for the Smith Mountain Project, the Virginia SHPO was contacted to determine the extent of cultural resources found within 0.25 miles of the shoreline of the Smith Mountain Project. Known archaeological and architectural sites were documented. A relational database was created from the information in the SHPO files that included the location of the site and type of site. More detailed information (e.g., site integrity, approximate time period, and eligibility for the National Register of Historic Places) was included in the database when it was available. The total number of cultural sites is 129 archaeological and 38 architectural resources.

Environmental Effects

The SMP states that all work associated with a permit must be stopped in the event that any previously known or unknown cultural resource materials are discovered. Before continuing any further work within the project boundary, Appalachian Power must be notified and consultation with the SHPO must be completed. The Smith Mountain SMP requires consultation with and concurrence from the SHPO to ensure the protection of unknown cultural resources when constructing new high-density commercial facilities, high-density multi-use facilities, and public use facilities. Appalachian Power met with VDHR on March 31, 2004, to discuss recommendations on the SMP and Section 106 requirements. Appalachian Power worked with VDHR on revisions to the SMP and development of a Programmatic Agreement (PA) in regards to cultural resources at the lakes. Appalachian Power has consulted with the Virginia Council of Indians to discuss Section 106 requirements.

On May 19, 2005, the Commission staff sent a letter to the Advisory Council on Historic Preservation in addition to other consulting parties which included the request for participation in consultation and the draft PA. This PA will address protection of historic properties during the implementation of the Shoreline Management Plan prior to the issuance of a new license for the project. The Council responded June 15, 2005, and the PA was executed on June 30, 2005. This PA will be made part of the license for the project.

5.1.6 Socioeconomic Resources

Affected Environment

The Smith Mountain Lake area has a variety of housing, ranging from lakefront studio condominiums to single-family homes. Smith Mountain Lake is home to approximately 14,000 permanent residents and supports considerable tourism and recreation. Table 13 presents socioeconomic and demographic information for the four counties surrounding Smith Mountain and Leesville lakes. The local economy is primarily dependent upon recreation and tourism. All four counties promote the accessibility of the Blue Ridge Mountains as well as the Smith Mountain Project for hunting, fishing, camping, and other recreational pursuits.

Table 13. Population and demographic information for the Smith Mountain Lake Project Region, 2000. (Source: U.S. Census website, 2000, <http://www.factfinder.census.gov>, accessed on January 27, 2004, and Virginia Economic Development Partnership website, 2004, http://www.yesvirginia.com/corporate_location/varegoutlook.aspx#CommunityProfiles, accessed on January 21, 2004)

County	Population	Percent White	Percent Non-White	Per Capita Income	Unemployment Rate
Bedford	60,371	91%	9%	\$26,852	3.9%
Campbell	51,078	83%	17%	\$24,913 ^a	6.1%
Franklin	47,286	89%	11%	\$21,107	4.5%
Pittsylvania	61,745	75%	25%	\$21,280	8.3%

^a Includes Lynchburg.

According to the SCORP (VDCR, 2002), Bedford County is the fastest growing county west of Richmond. The catalyst for growth is Smith Mountain Lake's recognition as a prime retirement area and subsequent development of a large retirement community. Condominium and time-share developments are also becoming popular at Smith Mountain Lake. In addition, Bedford County is also growing as a result of the expansion of metropolitan Lynchburg to the east of the county and the attraction of some communities as bedroom communities for the city of Roanoke (Bedford Citizens for Land Preservation website, 2002, <http://www.bedfordpreservation.org/>, accessed on January 26, 2004). Table 14 presents population projections from 1990 to 2030 for the four counties associated with the Smith Mountain Lake Project.

Table 14. Population projections for the Smith Mountain Lake region, 1990-2030. (Source: Virginia Employment Commission website, 2003, http://www.VEC.state.va.us/pdf/pop_projs.pdf, accessed on January 21, 2004)

Population Year	Bedford County	Campbell County	Franklin County	Pittsylvania County
1990	45,656	47,572	39,549	55,655
2000	60,371	51,078	47,286	61,745
2010	69,400	53,600	53,200	63,400
2020	77,400	56,100	58,800	65,200

2030	83,200	58,400	64,400	66,900
------	--------	--------	--------	--------

Environmental Effects

Smith Mountain Lake and, to a lesser extent, Leesville Lake are active recreation areas for residents and visitors who enjoy outdoor activities, particularly water-based pastimes such as fishing, boating, and jet skiing. Expenditures by the recreational enthusiasts are a portion of the local economy that would continue under the SMP as development of the lakeshore continued. Implementation of the SMP may negatively affect developers and/or property owners on an individual basis because fewer commercial marinas or private piers may be granted overall when compared to the no-action alternative or current conditions. Increased employment from construction and seasonal services could be expected as development continues.

Under the current conditions, there are no set limits on development within the lakes. The SMP sets aside significant areas for development, but restricts or limits development in areas with sensitive environmental resources. All shoreline that is between Hales Ford Bridge and a point ½ mile from the bridge area were classified as commercial in recognition of the significant resources that Bedford and Franklin counties expended on infrastructure and the fact that this area is one of the most accessible by a major road around the lakes. Other areas with environmental resources have enhanced protection. Development would be directed to areas where appropriate to protect these environmental resources. Implementation of the SMP is a reasonable compromise between protecting the project's scenic, recreational, and environmental values while at the same time providing adequate opportunities for development at the lakes.

5.1.7 Cumulative Effects

The licensee's proposed SMP would have positive cumulative benefits for water quality resources, fisheries, wildlife habitat, and the project's long-term scenic qualities. Conservation/environmental zones and impact minimization zones would protect sensitive areas from developmental pressure. The SMP regulates the number of piers and docks for each shoreline classification, except the commercial classification. With less construction of private piers and marinas, fewer environmental impacts will occur to water quality and riparian buffers and there will be less erosion and disturbance of wildlife and fish, wetlands.

Vegetation would reduce erosion and sedimentation into the lake that would in turn benefit water quality and fisheries in the lakes. Commission staff would also expect less nutrients and non-point source pollution to enter project waters as a result of the

vegetation along the shoreline. Forested buffers slow runoff, capture nutrients, and reduce shoreline erosion.

Implementation of the SMP would have positive cumulative benefits to the project's fish and wildlife resources. The SMP's restrictions on removing lap trees and other woody debris would also benefit the project's fisheries by preserving or replacing habitat important for sustained fish populations. This would provide recreational benefits for anglers in each of the reservoirs. The SMP's regulations would also protect aquatic vegetation which would benefit the project's fisheries as well as water quality.

The SMP discourages development in Impact Minimization and Conservation Zones because these areas have identified important natural and cultural resources. Any such facilities permitted in a Conservation Zone would have to be mitigated to the satisfaction of state and federal resource agencies and meet the mitigation requirements identified in the SMP. These provisions in the SMP would provide cumulative benefits to the project's most important natural resources. Resources such as wetlands and aquatic vegetation, scenic areas and known cultural resources are also included in Conservation Zones or Impact Minimization Zones and therefore, would also be protected.

The SMP would reduce the overall number of private piers and other shoreline facilities permitted on Smith Mountain and Leesville Lake as compared to the current conditions where there are minimal restrictions on development. In some cases, developers and adjacent property owners, whose property would no longer be eligible for a private pier or marina, would be negatively affected. Reducing the overall number of piers and other shoreline facilities would benefit the project's fish and wildlife resources as discussed above. Adjacent property owners may benefit by construction of fewer shoreline facilities which would allow more natural areas providing aesthetic and possibly recreational benefits.

In comments on the DEA, the FWS and VDGIF expressed concern about the amount of dredging at the project. Currently the U.S. Corps of Engineers Nationwide permit #19 is used for project less than 25 cubic yards. The agencies are concerned about the cumulative impacts from the loss of shallow water habitat due to excessive dredging. In addition, the FWS and VDGIF commented about the removal of submerged aquatic vegetation when building piers and/or docks. The VDGIF states that since there is no requirement to leave lap trees in the lake, the environmental assessment should reflect that removal of lap trees and woody debris will be extensive and thus provide little protection for fisheries in the two lakes. VDGIF also recommends that shoreline restoration and preservation should include preservation of at least 100 feet in width.

The shoreline around the two lakes was classified in order to protect areas of significant environmental resources. These areas include the Impact Minimization Zones and Conservation Zones. Pursuant to the plan, dredging will not be permitted in wetland areas and any dredging near wetland areas would require sufficient buffers to ensure not adverse impacts. In addition, no dredging is permitted to a depth greater than 789 feet and only accumulated sediment may be removed.

The SMP contains provisions for dredging commensurate with the Corps' permit. In addition, the licensee will require that the property owner notify Appalachian Power 10 working days prior to the commencement of dredging of less than 25 cubic yards. . We will also require the licensee file annually with the Commission a list of all dredging activities permitted within the project boundary. If the number and scope of these activities indicates that there is a significant loss of shallow water habitat, the Commission will reserve the right to require additional restrictions on dredging activities. The Commission expects the licensee to enforce its license and ensure that activities permitted within the project boundary comply with all permits

As for vegetation removal, Virginia State law permits landowners to remove certain vegetation provided they follow the guidelines on any herbicide. However, the SMP contains provisions for additional protection of vegetation within the project boundary. It discourages the removal of vegetation and states that it may require individuals to plant or pay for planting vegetative materials within the project boundary if vegetation is removed without a permit. It also states that it will encourage property owners to reestablish a vegetative buffer in order to protect the water quality and decrease runoff. In addition, with regard to the recommendation from the VDGIF for a 100 foot buffer, we note that Appalachian's and Leesville project boundary consists of only the land below the 800 and 620-foot contour line, respectively. Accordingly, 100 feet width of shoreline may be outside the project boundary and, therefore, presently only subject to the requirements of Virginia law.

There is no data available to the Commission to indicate that there will be extensive removal of lap trees or other woody debris. However, the Commission staff agrees that wording in the SMP for the removal of vegetation is vague. For example, there is no definition of what a "reasonable view of the water" or "minimizing removal of woody debris" means. As a result, the Commission will require the licensee to annually file a list of permits issued for modifying the vegetative buffer or for removal of vegetation. If the number and scope of these activities indicates that there is a significant loss of vegetation, the Commission will reserve the right to require additional restrictions on vegetation modification or removal.

5.2 ACTION ALTERNATIVES

No alternatives have been identified.

5.3 NO-ACTION ALTERNATIVE

Under the no-action alternative, required through NEPA per the Council on Environmental Quality, there would be no SMP to provide guidelines and regulations for shoreline development for Smith Mountain and Leesville lakes. Without the SMP, the Commission would continue to allow Appalachian Power to permit development of docks with no more than 10 slips, shoreline stabilization, and a number of other types of development under Article 41 of the existing license to operate the project. Appalachian Power would continue to work with the four counties surrounding Smith Mountain and Leesville lakes, as well as state and federal agencies and non-governmental organizations, to coordinate the existing permitting processes.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY OF THE PROPOSED ACTION'S ENVIRONMENTAL EFFECTS

Table 15 summarizes the environmental effects of the proposed action.

Table 15. Environmental effects of proposed action.

Impact Issue	Impact Rating		
	1 – Minor 2 – Moderate 3 – Major	A – Adverse B – Beneficial NI – No Impact	S – Short Term L – Long Term R – Recurrent or Ongoing
Terrestrial Resources			
Shoreline Stability	1	B	R
Soil Erosion	1	B	R
Aquatic Resources			
Water Quality	1	B	R
Fisheries	1	B	R
Wetlands	1	B	R
Threatened and Endangered Species	NA	NI	NA
Recreation			
Boating Use & Navigational Safety	1	BI	R
Shoreline Access	1	NI	NA
Cultural Resources	NA	NI	NA
Landscape Aesthetics			

Impact Issue	Impact Rating		
	1 – Minor 2 – Moderate 3 – Major	A – Adverse B – Beneficial NI – No Impact	S – Short Term L – Long Term R – Recurrent or Ongoing
Visual Character & Scenic Quality	1	A/B	R
Socioeconomic Considerations	1	A/B	R

Notes: NA – Not Applicable for this particular resource.

6.2 FINDINGS

Based on information, analyses, and evaluations contained in this EA, we find that implementation of the proposed SMP, with our recommended revisions and/or additions, would not constitute a major federal action significantly affecting the quality of the human environment. Our recommended modifications include:

- (1) The licensee will implement the PA executed on June 30, 2005.
- (2) There will be no in-water construction from February 15 to June 15 each year to protect the fisheries, with the exception of pile driving which will only be restricted from April 15 to June 15 each year. There will be no restriction on in-water construction for the purposes of installing or maintaining navigational aids.
- (3) To address the potential for excessive dredging at the project, the licensee will be required to file annually with the Commission a list of all dredging activities permitted within the project boundary. If the number and scope of these activities indicates that there is a significant loss of shallow water habitat, the Commission will reserve the right to require additional restrictions on dredging activities.
- (4) The licensee will be required to annually file a list of permits issued for modifying the vegetative buffer or for removal of vegetation. If the number and scope of these activities indicates that there is a significant loss of vegetation, the Commission will reserve the right to require additional restrictions on vegetation modification or removal.

We also find that Appalachian Power's proposal, with our recommended additions, would not be inconsistent with the operation and maintenance of the project or with the protection of the project's recreational and environmental resources. Based on

these conclusions, Commission staff recommends that the licensee's application, as modified with our recommendations, be approved.

7.0 LITERATURE CITED

Terwiliger, Karen. 1991. Virginia's Endangered Species. The McDonald and Woodward Publishing Company. Blacksburg, VA. 672 pages.

VDCR (Virginia Department of Conservation and Recreation). 2002. Virginia Outdoors Plan.

VDGIF (Virginia Department of Game and Inland Fisheries). 2003. Virginia Birding and Wildlife Trail.

VSO (Virginia Society of Ornithologists). 1987. Virginia's Birdlife: An Annotated Checklist. Virginia Avifauna Number 3, Second Edition (Teta Kain, ed.). June. 127 pages.

8.0 LIST OF PREPARERS

Heather Campbell, Task Monitor, Outdoor Recreation Planner

Robert Fletcher- Aquatic Ecologist

Suzie Boltz, Fisheries Biologist

Danielle Bower, Environmental Planner

Michelle Harden, Scientist

Mary Alice Koeneke, Ecologist

Charles Leasure, Scientist



FIGURE 1. VICINITY MAP

©PROJECTS/PROJECTS/GOODWIN/VA AND

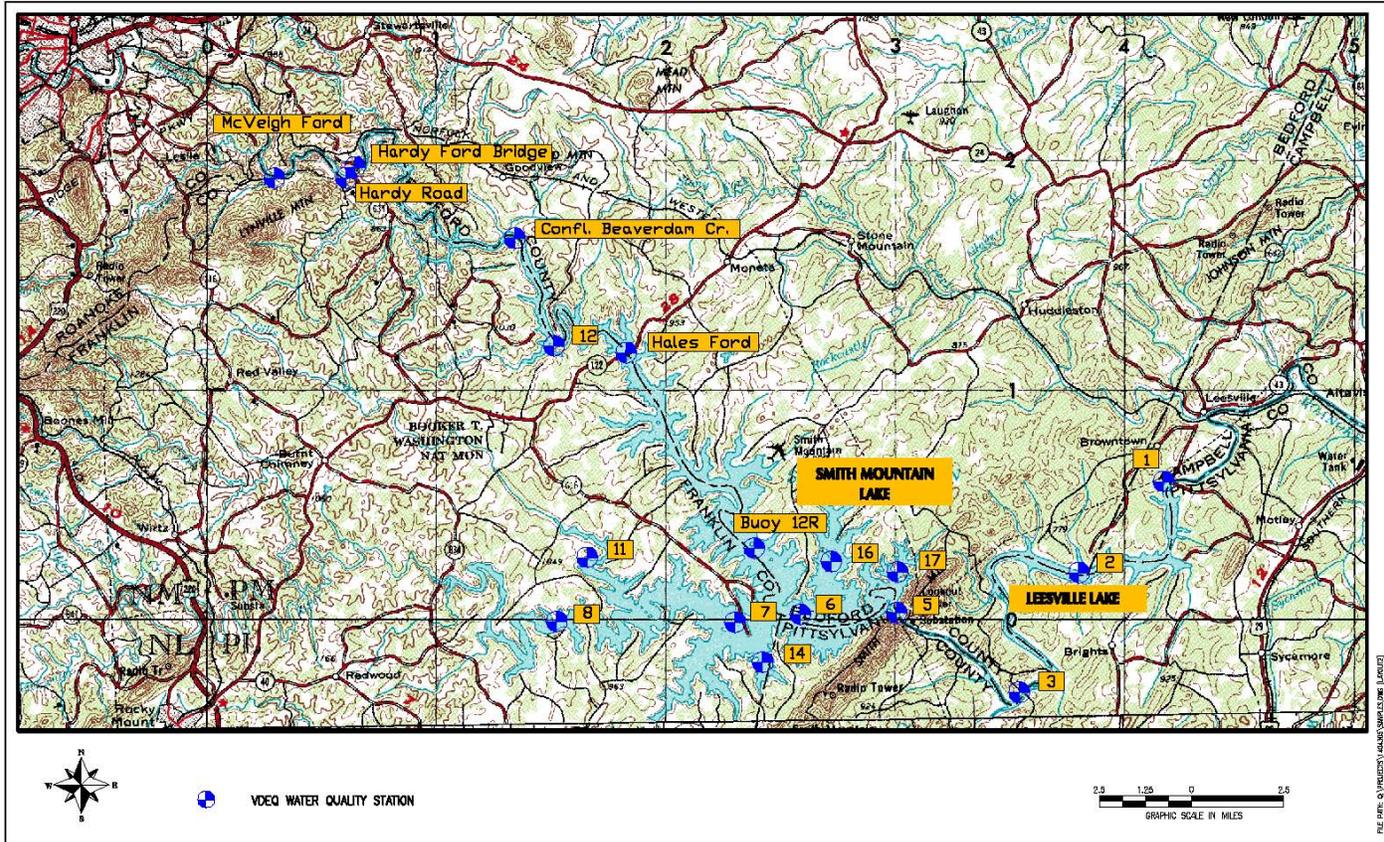


FIGURE 2. LOCATION OF VDEQ WATER QUALITY STATIONS AT SMITH MOUNTAIN AND LEESVILLE LAKES.

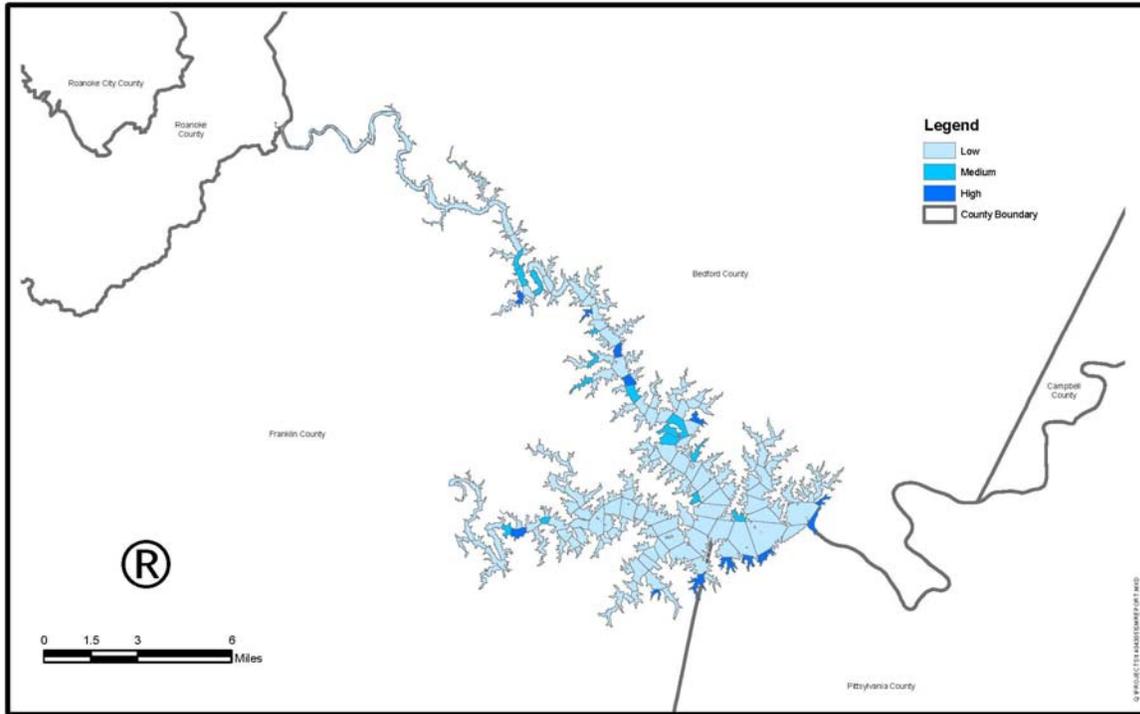


FIGURE 3. BOATING DENSITIES AT SMITH MOUNTAIN LAKE.