



**US Army Corps
of Engineers**
Mobile District

Prepared for
US Army Corps of Engineers
Mobile District
Mobile, Alabama

Prepared by
Tetra Tech, Inc.
November 2003



Final

Environmental Impact Statement for the Operation and Maintenance of

Lake Sidney Lanier, Georgia

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FINAL
ENVIRONMENTAL IMPACT STATEMENT

Lead Agency: Mobile District, U.S. Army Corps of Engineers

Title: Final Environmental Impact Statement (DEIS) for the Operation and Maintenance of Lake Sidney Lanier, Georgia

Designation: Final EIS

Proposed Action: Implement modifications to operation and maintenance activities at Lake Lanier, Georgia, including modifications to the Shoreline Management Plan

Affected Jurisdiction: Lake Sidney Lanier, Georgia, and the counties that affect the lake's watershed: Dawson, Forsyth, Lumpkin, Hall, and Gwinnett.

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Abstract: The purpose of this Final EIS is to analyze the potential environmental and socioeconomic effects of the U.S. Army Corps of Engineers (USACE) proposal to continue the ongoing operation and maintenance activities necessary for recreation, natural resources management, and shoreline management, and to implement specific improvements in these operation and maintenance programs to better manage the project on a sustainable basis. These activities will be performed within the context of operations to satisfy the flood control, hydropower generation, and navigation purposes of the Buford Dam project. The purpose of the proposed action is to accomplish congressionally authorized project purposes while balancing permitted private uses; community, social, and economic needs; and sound environmental stewardship. The proposed action reflects two levels of activity: (1) the minimal measures necessary for operation and maintenance of Lake Lanier to meet current USACE standards, and (2) proposed program improvements, which include a large array of actions designed to enhance the environmental quality of the project and to provide for the long-term use and environmental sustainability of project resources.

Review Comment Deadline: Comments must be received by December 23, 2003.

EXECUTIVE SUMMARY

INTRODUCTION

The US Army Corps of Engineers (USACE, Corps), Mobile District, manages the water and land areas at Lake Sidney Lanier (known as “Lake Lanier”) to ensure compliance with the specific Congressionally authorized purposes of hydropower generation, navigation, and flood control, and to fulfill additional purposes that arise from general statutory authority, including water supply, fish and wildlife management, and recreation. The proposed action for this Environmental Impact Statement (EIS) is the continued implementation of the ongoing operation and maintenance activities necessary for flood control, hydropower generation, recreation, natural resources management, and shoreline management, as well as the modification of specific operation and maintenance programs that are necessary to manage the Lake Lanier Project on a sustainable basis. The purpose of the proposed action is to accomplish Congressionally authorized project purposes in balance with permitted private uses; community, social, and economic needs; and sound environmental stewardship.

The need for the proposed action is to comply with the policy, set forth in Title 36 of the Code of Federal Regulations (CFR), Part 327, that natural, cultural, and developed resources of projects are to be managed in the public interest, providing the public with safe and healthful recreational opportunities while protecting and enhancing resources. A second need for the action lies in the challenge to protect and enhance resources, which is posed by the project’s exceptional popularity as a residential and recreational venue. Development along the periphery of the lake and the annual volume of recreation have increased steadily since the project was completed in 1956. Current levels of public use stress environmental resources, degrade water quality, cause erosion and siltation, and diminish aesthetic qualities. The proposed action is needed to maintain the quality of the project’s resources in the future as the increasing land use changes, recreational demands, and water supply needs pose challenges to the management of the lake.

The USACE, specifically the Lake Lanier Project Management Office (PMO), is responsible for evaluating the operation and maintenance activities for Lake Lanier. The objective of this EIS is to update and expand upon the project actions outlined in the original EIS prepared in 1974, and to update the environmental, social, and economic changes that have occurred in the project’s environmental setting. The evaluation of project actions includes the entire range of project operation and maintenance activities for the lake and government-owned lands surrounding the

lake, within the framework of the varying lake levels that could result from any future alternative operational plan.

The EIS explains projected conditions under which the lake will continue to be operated and maintained into the reasonably foreseeable future. All project activities performed at the lake are considered in the impact evaluations. In addition, the results of specific investigations conducted to lay the foundation for updating Lake Lanier's Shoreline Management Plan (SMP) are considered in this EIS so that this document can serve the NEPA document needs for the SMP.

On April 24, 2001, the USACE published in the *Federal Register* a Notice of Intent to prepare a Draft EIS to address the full range of activities performed to operate and maintain Lake Lanier.¹ Through the Lake Lanier PMO, the USACE solicited the observations and advice of numerous state and local agencies, regional and local interest groups, and individuals to identify issues of concern regarding preservation and protection of the lake's resources. The USACE conducted a public scoping meeting to solicit input from interested agencies and the public regarding the range of issues and reasonable alternatives that should be considered in the EIS. In addition, the USACE hosted four focus groups to obtain the views of stakeholders with readily identifiable interests in the condition of the lake (lake area residents, August 17, 2001; recreational users, August 20, 2001; business owners and operators, August 21, 2001; and environmental organizations, August 22, 2001). The USACE also solicited comments by e-mail through its Web site at <http://www.usacelakelaniereis.net>.

SETTING

The Lake Lanier Project was authorized by the Rivers and Harbors Act of July 24, 1946. The multiple-purpose water resources development project is operated by and under the jurisdiction of the USACE.

Buford Dam is at river mile 348.3 on the Chattahoochee River in Gwinnett and Forsyth Counties, Georgia, about 35 miles northeast of Atlanta and 4.5 miles northwest of the town of Buford, Georgia. Lake Lanier extends up the Chattahoochee and Chestatee Rivers and lies within Gwinnett, Forsyth, Hall, Dawson, and Lumpkin Counties. The dam controls an area of 1,040 square miles on the southern slope of the Blue Ridge Mountains.

¹ *Fed. Reg.* 66(79): 20639, April 24, 2001.

Located in the upper reaches of the Piedmont Plateau, Lake Lanier covers 47,182 acres at an elevation of 1,085 feet above mean sea level (msl) (maximum storage capacity), providing for storage of 2,554,000 acre-feet of water.² At full conservation pool (normal level, 1,071 feet msl), the lake covers 39,038 acres, has a perimeter shoreline of 693 miles, and provides for storage of 1,957,000 acre-feet of water. During drought periods, the lake may be as low as 1,035 feet msl and cover 22,442 acres, with a for storage of 867,600 acre-feet of water that is capable of releasing enough water to maintain minimum river flow downstream. Of the project's 17,744 acres above full power pool, 2,360 acres are open and the remainder is forested by pines, oaks, hickories, elm, sweet bay, ash, sycamore, persimmon, dogwood, and other trees.

As measured by recreational visitor counts, Lake Lanier is one of the Corps of Engineers' most popular water resources development projects. It lies within reasonable driving distance of Atlanta, a city that has grown substantially in the past few decades. Residential development and commercial growth at the project's periphery have been equally substantial.

ALTERNATIVES

The Corps has identified as principal alternatives³ for detailed analysis the No Action Alternative and the Preferred Alternative. Both focus management actions on shoreline management activities, recreation, fish and wildlife, timber management, real estate, and water quality within the context of the larger water management scenarios that are conducted to accomplish the hydropower generation, navigation, and water supply project purposes of Lake Lanier. The development of selected management activities embedded in these two principal alternatives for the maintenance of Lake Lanier involved a screening analysis of resource-specific management alternatives. The screening analysis involved the use of accepted standards, guidelines, and policies (e.g., USDA/NRCS *National Soils Handbook*; USEPA *Lake and Reservoir Restoration Guidance*; USEPA *Protecting Natural Wetlands*; *A Guide to Stormwater Best Management Practices*), when available, as well as best professional judgment, to identify management practices for achieving Lake Lanier's management objectives. The outcome of the screening analysis led to the development of the proposed action (Preferred Alternative). Obviously, an infinite number of permutations of specific management activities, and hence of additional alternatives, are possible. Consistent with the intent of NEPA, this process focused on

² An acre-foot is the volume of a liquid (water) covering 1 acre to a depth of 1 foot, or approximately 326,000 gallons.

³ The term *principal alternatives* as used to identify the alternatives selected for detailed analysis in this EIS includes the two "shoreline use permitting" alternatives identified in Section 2.3.1.

considering a reasonable range of resource-specific management alternatives and using those alternatives to develop a plan that could be implemented in the foreseeable future. It then dropped from detailed analysis management alternatives deemed to be infeasible. Programmatic operation and management alternatives that were considered during the screening process but not analyzed in detail are described in the EIS. Application of the screening process in developing the proposed action (adoption of the management activities contained in the Preferred Alternative) eliminated the need to define and evaluate hypothetical alternatives that could not, or would not, be implemented. As a result, the EIS formally addresses the two principal alternatives, the Preferred Alternative and the No Action Alternative.

Alternative 1: No Action Alternative. The No Action Alternative serves as a baseline against which the impacts of the proposed action can be evaluated. Council on Environmental Quality (CEQ) regulations prescribe inclusion of the No Action Alternative. Under this alternative, the Mobile District would make no changes in its existing operation and maintenance activities at Lake Lanier and would not update the existing SMP. No new management actions would be adopted, and no existing management activities would be modified. Shoreline allocations, actions on shoreline use permit applications, and administration of permits would continue as at present, including continued noncompliance with Engineer Regulation (ER) 1130-2-406. The total number of additional private boat docks that could be permitted under this alternative is 16,734, for an eventual total of 25,327 docks. Activities under the Lake Lanier Master Plan that guides orderly development of project resources in accordance with established laws, regulations, and policies and the Operational Management Plan that outlines the operation and maintenance of Lake Lanier would continue unchanged. The No Action Alternative is evaluated in detail in this EIS.

Alternative 2: Preferred Alternative. The Preferred Alternative (the proposed action) reflects two levels of activity: (1) the minimal measures necessary for operation and maintenance of Lake Lanier to meet current USACE standards and (2) proposed program improvements, which include a large array of actions designed to enhance the environmental qualities of the project and to provide for long-term use and environmental sustainability of project resources. The proposed improvements to current ongoing operation and maintenance programs are summarized in Table ES-1.

**Table ES-1
Proposed Program Improvements to Operation and Management Activities at Lake Lanier**

Operation and Maintenance Category	Proposed Program Improvements
<i>Environmental Resources</i>	
Fisheries and Wildlife	Coordinating with Georgia DNR to establish a proactive deer management program. The program should include periodic harvesting using discreet methods (e.g., bowhunting) to reduce competition and improve the condition of the herd.
Shoreline Management	<p>Vegetation</p> <p>Maintaining a vegetative (forested) shoreline buffer consisting of native woody shrubs and trees (understory and overstory) along all shoreline allocation zones, excluding Prohibited Areas. Limited underbrushing may be authorized in conjunction with Shoreline Use Permit/Licenses.</p> <p>Improving shoreline vegetation through additional planting of native species.</p> <p>Allowing for the revocation of Shoreline Use Permits (private boat dock permits) for major violations of the permit conditions, including destruction of public property and removal of vegetation.</p> <p>Approving or renewing Specified Acts Permits when work is for the purpose of wildlife habitat enhancement or forest stand improvement. All work plans are required to be supported by written landscape proposals that detail species selection and placement.</p> <p>Requiring all open areas where grass mowing has not been previously authorized under the existing Shoreline Use Permits to be restored naturally, revegetated by the permittee or at the Corps's discretion.</p> <p>Because grass does not provide a diverse quality vegetative buffer, it is project policy to restore grassed mowing areas to a more natural state when not maintained. When permitted areas are not maintained and woody vegetation has reestablished itself, this portion of the permit will not be renewed. During changes of ownerships minimization of permitted mowed areas will be encouraged to help protect the lake's water quality, aesthetics, and wildlife habitat.</p> <p>Allocating budget resources to provide for vigorous enforcement of prohibitions against unauthorized removal of vegetation.</p> <p>Private Boat Docks</p> <p>Implementing new Shoreline Use Permitting Policy. Policy changes include:</p> <ul style="list-style-type: none"> • 50 percent utilization of LDAs per ER 1130-2-406. • Total additional private boat docks = 2,022. • Potential total private boat docks = 10,615. <p>Requiring that the adjacent private property for which a new boat dock is proposed must have a minimum of 82 feet of private land adjoining public property (50-foot buffer between docks plus maximum allowable dock width of 32 feet) and provide not less than a 6-foot depth at the end of the dock at elevation 1,071 feet msl. This is to ensure that there is sufficient space and frontage for the placement of docks.</p> <p>Requiring the use of community docks in all new residential developments. Requests that do not meet the guidance described in Section 15.1, Eligibility Requirements of the SMP, can be further evaluated based on their environmental benefits and public interest. If site conditions prohibit the use of community dock, the Operations Manager may permit a variance for the use of private individual docks.</p> <p>Allowing communities that install courtesy docks rather than private docks to build a private ramp within the community for ready access by residents.</p>

**Table ES-1
Proposed Program Improvements to Operation and Management Activities at Lake Lanier**

Operation and Maintenance Category	Proposed Program Improvements
	Encouraging existing private dock permittees to convert to community docks followed by rezoning of the shoreline from LDA to Protected Area. Implementing vigorous inspection and enforcement of private and community boat dock maintenance standards.
Shoreline Management (continued)	<p>Providing that Shoreline Use Permits for private or community boat docks are ineligible for renewal (for a period of 1 year) in the event corrective actions are not taken effectively or in a timely manner.</p> <p>Boat Dock Usage</p> <p>Requiring that the length of a vessel allowed at a private dock will be determined by the length of the dock, mooring safety requirements and site conditions. Generally, boats that create blind spots, diminish boating safety, or exceed the docks ability to safely moor and protect from storm damage must be stored in marina facilities.</p> <p>Requiring the mooring of boats in boat slips and prohibiting the mooring of boats to other boats.</p> <p>Prohibiting the use of boat slips to accommodate boats or personal watercraft (e.g., Jet Skis, Wave Runners) having mufflers above the water line. State law stipulates that mufflers must be at, or below, the waterline.</p>
Island Management	<p>Encouraging day uses (e.g., fishing, sunbathing, wading, hiking, swimming, birdwatching, and picnicking).</p> <p>Establishing the islands as wildlife conservation areas through vegetation, timber stand, habitat and wildlife management activities.</p> <p>Explore the establishment of archery deer hunting to control over abundant deer populations on the islands.</p> <p>Establishing an Adopt-An-Island program, or something similar, as a source of volunteer labor and/or funding for shoreline protection and stabilization activities. Islands that become highly eroded have the potential to become navigation and safety concerns.</p>
Nonnative Plant Management	Developing programs to provide better control of invasive and noxious species (e.g., kudzu, English ivy, and poison ivy) by encouraging adjacent owners', partners', and volunteers' efforts and providing educational and outreach programs to inform the public about desirable and undesirable plant species.
Fire Management	Continue ongoing operations—no improvements necessary.
Erosion Management	<p>Requiring that permittees requesting fixed structures on the shoreline, such as steps, install shoreline stabilization measures when renewing or applying for a new Shoreline Use Permit or USACE outgrant. This measure is necessary to protect such structures from becoming unsafe due to erosion.</p> <p>Allowing applicants for real estate outgrants to mitigate effects of their use of the shoreline by constructing erosion control measures at locations other than the sites impacted by the outgrants.</p>
Water Quality	Requiring permittees during renewal and change of owner inspections of authorized facilities to identify the location of septic system that are located on public property above elevation 1,085 feet msl. If present the property owner must provide certification from the county health department that the system is functioning properly. County Health Department officials can provide this certification upon request. In addition, all septic tanks below 1,085 feet msl on public property will be removed.
Endangered Species	Continue ongoing operations—no improvements necessary.
Wetlands	Continue ongoing operations—no improvements necessary.

**Table ES-1
Proposed Program Improvements to Operation and Management Activities at Lake Lanier**

Operation and Maintenance Category	Proposed Program Improvements
Sections 10/404 Permitting	<p>Regional Permits for Shoreline Protection Discontinuing the use of sea walls or bulkheads and authorizing riprap, or biostabilization only. Maintenance costs for seawalls/bulkheads can become too high for individual homeowners to assume. As a result many seawalls and bulkheads installed by homeowners have failed.</p> <hr/> <p>Allowing sea walls or bulkheads only in locations where private property falls below the 1,071-foot msl elevation.</p> <hr/> <p>Requesting the revision of regional authority to allow an increase in the linear foot distance of shoreline protection. This approach would increase the length of shoreline that is protected from further erosion.</p> <hr/> <p>Dredging A silt removal plan will be required from the permittee and must include a cross-section with dimensions illustrating current and final slope, as well as quantity of silt and depths after work is complete. The plan must describe the method in which excavated material is to be removed and the location where the silt will be relocated. However, the removal of hardpan or creating significant negative impacts on public property will not be allowed. Requests for dredging will be reviewed on an individual basis and approved if the public interest is protected.</p> <hr/> <p>Requesting the revision of regional authority to allow an increase in the cubic yardage of silt removal to a total of 2,500 cubic yards of silt per permit. Currently, a person may be eligible to receive three permits for the removal of 500 cubic yards of silt per permit, or a total of 1,500 cubic yards.</p>
Forest Management	Continue ongoing operations—no improvements necessary.
Pollution Abatement	Prior to Shoreline Use Permit renewal, owners will be encouraged to replace beaded Styrofoam with encapsulated flotation materials for continued use of the boat dock.
NEPA	Continue ongoing operations—no improvements necessary.
Cultural and Historic Resources	Continue ongoing operations—no improvements necessary.
Recreation	
Campground Operations	Converting campground sites to day use sites in the southern portion of the lake and developing new campground sites in the northern portion of the lake. Relocated and/or renovated camping sites will be provided in existing recreational areas. Planning for these will be pursued as funding permits.
Environmental Education	Establishing an Environmental Education Center to facilitate educational, environmental, watchable wildlife, and public outreach initiatives.
Partnerships	Continue ongoing operations—no improvements necessary.
Dam Safety	Continue ongoing operations—no improvements necessary.
Day Use Park Operations	<p>Expanding boat ramp parking capacity 1,698, which is the maximum allowed by the 1987 Master Plan.</p> <hr/> <p>Leasing recreational areas where public use is low. Although all recreational areas could be considered for outgranting, sites most likely to be leased in the near term are listed in Table 2-9.</p> <hr/> <p>Modernizing of recreational sites that have substantial investments in infrastructure (e.g., waterborne toilets, showers, boat ramps, picnic facilities, playgrounds).</p>

**Table ES-1
Proposed Program Improvements to Operation and Management Activities at Lake Lanier**

Operation and Maintenance Category	Proposed Program Improvements
Day Use Park Operations (continued)	Increasing the number of locations and facilities suitable for bank fishing to accommodate the many recreational users that do not have access to boats.
	Giving preference to funding the development of the northern portion of the lake (above Brown's Bridge) and shifting emphasis from boating-related activities and facilities (e.g., ramps) to lake-related activities (e.g., swimming, use of beaches) and facilities (campgrounds, picnic areas, and beaches). The goal is to decrease the intensity of use, crowding, and associated impacts in the southern portion of the lake.
	Establishing additional boat launch facilities in the northern portion of the lake, but only to offset the number of launch facilities that are expected to be closed in the southern parts of the lake. The overall objective is to maintain, but not exceed, the maximum number of parking spaces at boat ramps (1,698) described in the Master Plan.
	Establishing sites in the northern portion of the lake to be used exclusively for bank fishing.
	Establishing a take-out site at Belton Bridge Park for passive recreation (e.g., rafting, kayaking, canoeing).
	Establishing additional foot trails in forested areas and on the points of Protected Areas for expanding nonconsumptive uses such as the watchable wildlife program.
	Evaluating the potential for building a hardened bike trail without increasing adverse collateral impacts.
Emergency Management	Continue ongoing operations—no improvements necessary.
Security	Continue ongoing operations—no improvements necessary.
Sign Program	Continue ongoing operations—no improvements necessary.
Navigation Aids	Continue ongoing operations—no improvements necessary.
Water Safety	Continue ongoing operations—no improvements necessary.
Watchable Wildlife	Continue ongoing operations—no improvements necessary.
Recycling	Continue ongoing operations—no improvements necessary.
Special Events	Closing the Clark's Bridge area to boat traffic on an as-needed basis to accommodate major rowing events, such as regional or national competitions, sponsored by the Olympic Rowing Center.
Spill Prevention, Control, and Countermeasures Plan	Continue ongoing operations—no improvements necessary.
Planning	
Landscape Architecture	Continue ongoing operations—no improvements necessary.
Management	
Special Interest Groups	Continue ongoing operations—no improvements necessary.
Real Estate Activities	
Boundary Management	Continue ongoing operations—no improvements necessary.
Outgrants	Allowing commercial marinas to continue operations in accordance with their approved Master Plans.

**Table ES-1
Proposed Program Improvements to Operation and Management Activities at Lake Lanier**

Operation and Maintenance Category	Proposed Program Improvements
	Pursuing the development of a facility to supply marina services (e.g., fuel, supplies, slips, restaurant, etc.) to meet users needs on the Chestatee River.
	Allowing applicants for real estate outgrants to mitigate effects of their use of the shoreline by constructing mitigation measures at locations other than the sites impacted by the outgrants.

The current operation and management activities and the proposed improvements reflect public and agency input, as well as the best professional judgment of the Corps Project Management Office at Lake Lanier based on extensive operational experience. Taken together, the activities that constitute the proposed action attempt to achieve a balance between serving present needs and preserving and protecting Lake Lanier's resources for future generations. The sustainability of Lake Lanier rests on well-informed management actions. Given the extent of management activities that fall under operation and management at Lake Lanier, an infinite number of permutations of specific management alternatives are possible. The development of these improvements considered a reasonable range of individual management alternatives for each group of management activities (recreation, natural resources, and the like), and an overall plan was developed from the individual resource management scenarios.

One of the proposed program improvements included in the Preferred Alternative is a change in the shoreline use permitting policy that reflects the tremendous growth of these permits and the demands this has placed on the resources and facilities of Lake Lanier. As a result of the *Private Boat Dock Carrying Capacity Study*, the Corps has elected to include *Scenario 2: Average Dock Spacing, 50 Percent Dock Installation Density, Complete Compliance with ER 1130-2-406* as part of the Preferred Alternative. The total number of additional private boat docks that could be permitted under this scenario is 2,022, for a potential total of 10,615. It includes reducing the number of additional docks based on the number of excess docks currently located in overdeveloped Limited Developed Areas (LDAs). Therefore, this is the only scenario that fully complies with the provisions of ER 1130-2-406.

CONCLUSIONS

Direct, indirect, and cumulative environmental and socioeconomic effects that would likely occur upon implementation of the two alternatives were analyzed. Cumulative effects were analyzed

taking into account past, present, and reasonably foreseeable future actions in the Lake Lanier area. A summary of the environmental and socioeconomic effects is presented below and in Table ES-2 and Table ES-3.

No Action Alternative. The No Action Alternative would lead to a significant, long-term, direct adverse effect on the aesthetics of the lake. Continuing to implement the current private boat dock permitting policy would allow the addition of 16,734 private boat docks to the lake along LDAs, which would result in the lake having a total of 25,327 private boat docks along its shoreline. That would equate to one private dock for every 74 feet of LDA shoreline. Such a dramatic change in boat dock density would reduce public safety at the lake by limiting the space available for navigation in many coves and along many stretches of shoreline. It would also reduce the potential for other lake users to recreate on project lands located above the lake level. Based on comments received from the Scoping Meeting for the EIS, permitting such a high density of private docks would also be controversial among nearby residents, recreational users of the lake, and environmental organizations.

Other aspects of the No Action Alternative would lead to reduced shoreline vegetation, more shoreline erosion, decreased wildlife habitat along the mainland and island shorelines, increased number of boats stored on the lake at private boat docks, and water pollution problems. Over the 20-year period between baseline conditions (2000) and 2020 (the period considered in the EIS), an increase in demand for facilities and visitation to the lake would lead to greater boater and visitor density in the southern part of the lake. The Corps would respond to these changes under the No Action Alternative by developing more recreational facilities in the southern part of the lake, which would result in more boating traffic on that part of the lake.

Under the No Action Alternative, minor additional demands would be placed on infrastructure resources—landfill capacity; road infrastructure; potable water supplies; wastewater treatment capabilities; storm drainage; solid waste disposal facilities; and police, fire, and rescue services—but these effects would generally be dwarfed in comparison to the demands placed on these

**Table ES-2
Summary of Environmental and Socioeconomic Effects**

Resource Area	Effects Under the No Action Alternative	Effects Under the Preferred Alternative
Lake Lanier Watershed	Minor degradation of water quality due to sedimentation, bacteria, and petroleum compounds.	Some improvement to water quality due to reduced sedimentation, less bacterial pollution, and less Styrofoam from dock floatation.
Groundwater	No effects.	Minor improvements due to the required vegetative shoreline buffer and better public maintenance practices for septic systems.
Land Use, Land Cover, and Land Use Controls	Degradation of vegetative cover and habitats along the shoreline and on the islands.	More dense vegetative cover on shorelines, and ecological improvements to island habitats.
Infrastructure	Minor increased demand for utilities and infrastructure.	Minor increased demand for utilities and infrastructure.
Socioeconomics	Minor stimulation of the local economy.	Negligible effects.
Visual and Aesthetic Resources	Significant deterioration in the aesthetic quality of the lake's shoreline due to private docks.	Significant preservation of the lake's aesthetic quality due to limiting the number of private boat docks on the lake's shoreline.
Recreation and Recreational Facilities	Increased crowding at recreation facilities on the southern lake and increased boating density on the southern lake.	Redistribution of lake use and recreational facilities across the lake and more opportunities for all types of recreational activities.
Geology and Soils	Minor increases in shoreline and soil erosion.	Reduced shoreline erosion and sediment in the lake.
Ecological Systems	Reduced vegetation and wildlife habitat along the shoreline and on the islands, more exotic and nuisance plant species.	Improved island and mainland vegetative cover, healthier and more diverse wildlife populations, more native vegetation and less nuisance plants.
Cultural Resources	Minor losses of cultural and historic resources on Corps property.	Reduced likelihood of disturbance of cultural and historic resources on Corps property.
Air Quality	Minor, localized increases in air pollution from boats and automobiles.	Reduced likelihood of localized increases in automobile and boat emissions.
Hazardous and Toxic Substances	Negligible increases in gas and oil spills in parking lots and from boats.	Minor increases in gas and oil spills in parking lots and from boats.
Noise	Potentially more noise from boats in the southern part of the lake and reaching shoreline residents.	Reduction in noise to shoreline residents due to more vegetation and no increase in noise from boats.

**Table ES-3.
Alternatives Impacts Comparison Analysis**

Resource Areas	No Action Alternative		Preferred Alternative	
	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects
Lake Lanier Water Resources		○		○
Land Use, Land Cover, & Land Use Controls	⊖	⊖	⊖	⊖
Infrastructure		⊖		⊖
Socioeconomics	⊖	⊖	⊖	⊖
Visual and Aesthetic Resources	⊖		⊕	
Recreation & Recreational Facilities	⊖	⊕	⊕	
Geology & Soils		⊖		⊖
Ecological Systems	⊖	⊖	⊖	⊕
Cultural Resources	⊖	⊖	⊖	⊖
Air Quality		⊖		⊖
Hazardous and Toxic Substances & Pollution		⊖		⊕
Noise		⊖	⊕	⊕

Impacts Legend

- Long-term Effect
- Minor to Negligible Effect
- Beneficial Effect
- Short-term Effect
- Major to Moderate Effect
- Adverse Effect
- Significant Effect

Examples:

- Long-term negligible/minor adverse effects
- Short- and long-term major/moderate adverse effects
- Short- and long-term moderate/major adverse & long-term significant beneficial effects
- No effects

resources by normal growth and development within the greater Atlanta area. The region's economy would not be affected by the No Action Alternative unless the lake level dropped to a level at which the Corps would suspend issuing permits for boat docks or visitation at the lake was affected, but these economic effects would be small in the context of the regional economy.

The No Action Alternative would have only minor effects on the resource areas of air quality, cultural resources, noise, and hazardous and toxic substances. Table ES-2 and Table ES-3 present a summary of the environmental and socioeconomic consequences of the No Action Alternative for each resource area. No violations of federal, state, and local laws would be expected to occur if the No Action Alternative was implemented.

Preferred Alternative. Adopting the Preferred Alternative would have a significant, long-term, direct beneficial effect on the lake. The lake would have 14,712 fewer docks along LDAs under the Preferred Alternative than it would under the No Action Alternative. The total of 10,615 private docks that could be permitted on the lake under the Preferred Alternative would increase the number of docks by only 2,022 more than the lake had in 2000. Whereas, under the No Action Alternative the lake would have an equivalent density of a dock every 74 feet of LDA shoreline, under the Preferred Alternative LDAs would have an equivalent density of a dock every 176 feet. In addition to the aesthetic benefits of a less cluttered shoreline, fewer docks would allow for better navigation in coves and along the shoreline, better public safety, and greater public access to the shoreline.

The Preferred Alternative is a response by the Corps to the significantly changed environment around Lake Lanier. Explosive growth has occurred in the Greater Metropolitan Atlanta region, and Lake Lanier managers see a need to improve the management of the lake to respond to this growth and the pressure it creates on the lake's resources. The Preferred Alternative includes improvements to the Corps's operation and management program that would protect vegetative communities and wildlife habitats along the lake's shoreline, reduce the amount of Styrofoam and boat dock debris on the shoreline, decrease shoreline erosion, and maintain and enhance island habitats for wildlife and recreational enjoyment. Project staff would modernize the heavily used recreational facilities on the lake and create additional recreational facilities to encourage redistribution of boating and recreational pressure from the southern part of the lake to the northern part. This redistribution could reduce boating density and crowding at recreational facilities in the southern portion of the lake.

The impacts on infrastructure, air quality, cultural resources, noise, and hazardous and toxic pollution under the Preferred Alternative would be minimal. Table ES-2 and Table ES-3 present a summary of the environmental and socioeconomic consequences of the Preferred Alternative for each resource area. No violations of federal, state, or local laws would be expected to occur if the Preferred Alternative was implemented.

ISSUES TO BE RESOLVED

No issues related to the proposed action remain unresolved.

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