DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

CESAM-PD-EI

October 28, 2021

U.S. ARMY CORPS OF ENGINEERS,
MOBILE DISTRICT

NOTICE OF AVAILABILITY FOR THE

DRAFT ENVIRONMENTAL ASSESSMENT
FOR
LAKE SIDNEY LANIER PROJECT MASTER PLAN UPDATE AND SEAPLANE ACTIVITY POLICY

GEORGIA

TO ALL INTERESTED PARTIES:

The U.S. Army Corps of Engineers (USACE), Mobile District requests your review and comment on the proposed Lake Sidney Lanier Project Master Plan Update and Seaplane Activity Policy, Georgia. A copy of the draft environmental assessment is located on the following website: https://www.sam.usace.army.mil/Missions/Planning-Environmental/Environmental-Assessments/. The document is being circulated to resource agencies and interested members of the public for a 30-day comment period.

The proposed Master Plan update includes the following management measures: 1) Increase natural resource management and safety education outreach efforts; 2) Conduct a condition assessment of erosion of the lake's shoreline and pool capacity; 3) Assess the feasibility of future recreation site improvements and development and proposed land-based amenities to accommodate current and future demand while balancing the range of diverse opportunities and protection of the resource; 4) Address issues with crowding and conflict; 5) Expand wildlife habitat and hunting opportunities; and 6) Consider policy change to permit recreational seaplane activity on Lake Lanier. Coordination with the U.S. Fish and Wildlife Service and the Georgia State Historic Preservation Officer is ongoing.

Correspondence concerning this draft Environmental Assessment should be directed via email to Ms. Velma Diaz at velma.f.diaz@usace.army.mil or via mail to U.S. Army Corps of Engineers, Mobile District, CESAM-PD-EI, Attention: Ms. Velma Diaz, Post Office Box 2288, Mobile, Alabama 36628. Comments must be received within 30 days of date of this notice.

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Date: 2021.10.28 16:07:46 -05'00'

Jeremy M. LaDart
Chief, Planning and Environmental Division

Draft
Environmental Assessment
for Lake Sidney Lanier Project Master Plan Update and Seaplane Activity Policy

Lake Sidney Lanier, Georgia

US Army Corps of Engineers
Mobile District

Prepared by
U.S. Army Corps of Engineers
Mobile District
Mobile, AL

with Technical Assistance from
Tetra Tech, Inc.
Fairfax, VA

May 2021

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DRAFT ENVIRONMENTAL ASSESSMENT

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

Title: Draft Environmental Assessment for Lake Sidney Lanier Project Master Plan Update and Seaplane Activity Policy

Designation: Draft EA

Proposed Action: Update Lake Sidney Lanier Project Master Plan with and implement management measures to improve recreational experience and enhance natural resources protection at Lake Sidney Lanier, Georgia, and to consider allowing seaplane activity on Lake Sidney Lanier.

Affected Jurisdiction: Lake Sidney Lanier, Georgia, including all federally owned and USACE-operated lands surrounding the lake.

Point of Contact: Ms. Velma Diaz, Planning and Environmental Division, Inland Environment Team, U.S. Army Corps of Engineers, Mobile District, Mobile, AL
E-mail: velma.f.diaz@usace.army.mil

Abstract: This Draft EA discusses the affected environment and potential environmental and socioeconomic effects on the resources of the Lake Sidney Lanier environment of implementing an updated Master Plan for the Lake Sidney Lanier Project in Georgia (the preferred alternative) and of continuing to manage the lake's resources under the 1987 Master Plan (the no action alternative). The purpose of the proposed action is to address deficiencies in the Master Plan, which was last updated in 1987 and needs revising to address changes in regional land use, population, outdoor recreation trends, and USACE management policy. The proposed action is needed to bring USACE's management and development of the project's resources into compliance with the regulations in Title 36 of the *Code of Federal Regulations* (CFR) part 327, which specify that the natural, cultural, and developed resources of USACE projects are to be managed in the public interest, providing the public with safe and healthful recreational opportunities while protecting and enhancing resources. The decision of which alternative to adopt will be covered within a finding of no significant impact (FONSI), if the decision maker determines that a FONSI is appropriate. If it is determined that implementing the selected alternative would result in unavoidable or unmitigable significant adverse environmental impacts, USACE will either publish a notice of intent to prepare an environmental impact statement and initiate its preparation or do nothing. This Draft EA also analyzes the potential impacts of allowing seaplanes on Lake Sidney Lanier to support the USACE, Mobile District's potential policy decision to permit recreational seaplane activity on the lake.

Review Comment Deadline: Comments are requested by no later than 30 calendar days from publication of the notice of availability.

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TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AQCR	air quality control region
ARC	Atlanta Regional Commission
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CAA	Clean Air Act of 1970
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CSA	Combined Statistical Area
dB	decibels
dBA	A-weighted decibels
DNL	day-night sound level
DoD	Department of Defense
EA	environmental assessment
EIS	environmental impact statement
EO	executive order
ER	engineer regulation
FE	federally listed as endangered
FHA	Federal Highway Administration
FONSI	finding of no significant impact
FT	federally listed as threatened
GAEPD	Georgia Environmental Protection Division
GHG	greenhouse gas
I-	Interstate
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NOI	notice of intent
O_3	ozone
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
RCCS	recreational carrying capacity study
ROI	region of influence
SE	state-listed as endangered
SR	State Route
ST	state-listed as threatened
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers

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SECTION 1.0
PURPOSE OF AND NEED FOR THE ACTION

1.1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mobile District has prepared this environmental assessment (EA) to analyze the potential environmental effects of implementing an updated master plan for the Lake Sidney Lanier (Lake Lanier) Project in north-central Georgia (the proposed action) and of allowing seaplanes on Lake Lanier to support the USACE, Mobile District's potential policy decision to permit recreational seaplane activity on the lake (Figure 1-1). The National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] § 4321 *et seq.*) requires federal agencies to consider the environmental consequences of proposed actions during their decision-making process.

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 USACE. Buford Dam at river mile 348 on the Chattahoochee River in Forsyth and Gwinnett counties, GA, was constructed to form the lake. Lake Lanier extends up the Chattahoochee and Chestatee rivers and lies within Dawson, Forsyth, Gwinnett, Hall, and Lumpkin counties. The dam controls an area of about 1,040 square miles on the southern slope of the Blue Ridge Mountains.

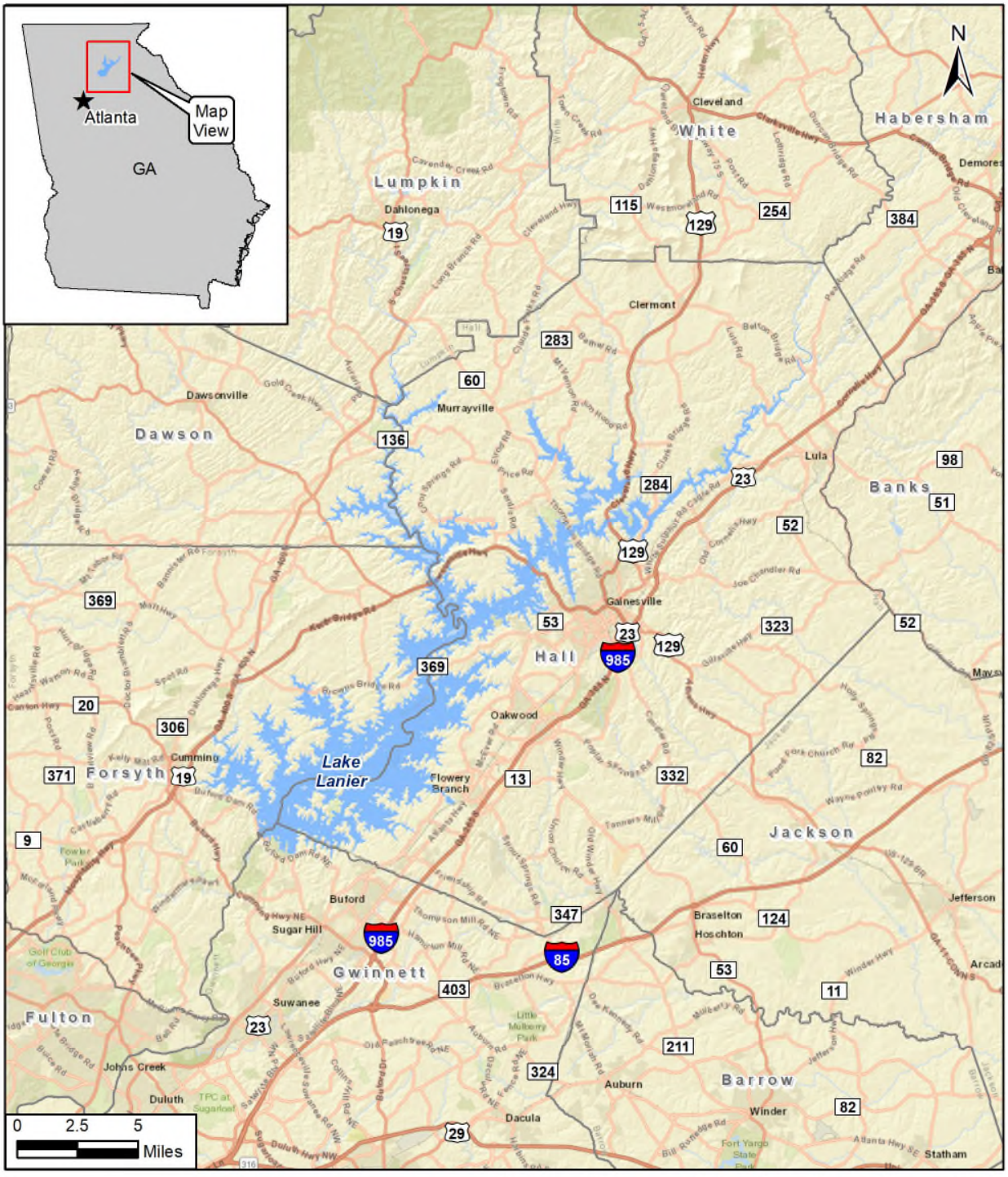
The *Lake Sidney Lanier Project Master Plan* is the strategic land-use management document that guides the comprehensive management and development of all project recreational, natural, and cultural resources throughout the life of the water resources project. The current Master Plan, developed in 1987 (USACE 1987), needs revising to address changes in regional land use, population, outdoor recreation trends, and USACE management policy. Key topics to be addressed in the Master Plan Update include revised land classifications; new natural and recreational resource management objectives; recreation facility needs; and invasive species management, threatened and endangered species habitat, and other specialized issues.

The Council on Environmental Quality (CEQ) published its *Final Rule: Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)* in the Federal Register on July 16, 2020. The new CEQ NEPA Regulations went into effect September 14, 2020. Preparation of this *Environmental Assessment for Lake Sidney Lanier Project Master Plan Update and Seaplane Activity Policy* commenced prior to enactment of the new NEPA regulations. USACE may only apply the prior CEQ NEPA regulations from 1978, as well as relevant USACE regulations and guidance, to such pending reviews. As such, this EA has been prepared in accordance with the NEPA and the CEQ 1978 regulations.

1.2 PURPOSE AND NEED

The proposed action is to implement an updated Master Plan for the Lake Lanier Project. The purpose of the proposed action is to address deficiencies in the Master Plan, which was last updated in 1987 (USACE 1987) and needs revising to address changes in regional land use, population, outdoor recreation trends, and USACE management policy. The proposed action is needed to bring USACE's management and development of the project's resources into compliance with the regulations in Title 36 of the *Code of Federal Regulations* (CFR) part 327, which specify that the natural, cultural, and developed resources of USACE projects are to be managed in the public interest, providing the public with safe and healthful recreational opportunities while protecting and enhancing resources.

1



Location of Lake Lanier, GA

Figure 1-1

2

The 1987 Lake Lanier Master Plan does not allow seaplane operations on the lake. USACE, Mobile District is considering a policy change to allow seaplanes to operate on the lake. The proposed action regarding seaplanes is to allow seaplanes to use the navigable waters of the lake for recreational seaplane activity as outlined in 36 CFR part 328, *Regulation of Seaplane Operations at Civil Works Water Resource Development Projects Administrated by The Chief of Engineers*. The overall intent of allowing seaplane activity on Lake Lanier would be to provide recreational use of the lake resources, such as restaurants, campgrounds, maintenance, and fueling stations, to another user group.

1.3 REGULATORY FRAMEWORK

The intent of NEPA is to protect, restore, and enhance the environment through well-informed decision-making. NEPA established the Council on Environmental Quality (CEQ) to implement and oversee federal policy for that process. Accordingly, the CEQ issued regulations to implement the procedural provisions of NEPA (40 CFR parts 1500–1508), which USACE has supplemented by promulgating its own NEPA regulations (33 CFR part 230).

As part of this EA, USACE considered applicable federal laws, regulations, and policies during analysis of the proposed action's effects on individual environmental and social resources, including the following:

- American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1996)
- Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§ 469–469c-2)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa *et seq.*)
- Clean Air Act of 1970 (CAA) (42 U.S.C. § 7401)
- Clean Water Act of 1972 (33 U.S.C. § 1251)
- Endangered Species Act of 1973 (16 U.S.C. §§ 1531–1543)
- NEPA
- National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. § 470 *et seq.*)
- Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000)
- Engineer Regulation (ER) 1130-2-406, *Shoreline Management at Civil Works Projects* (May 28, 1999)
- ER 1130-2-540, *Environmental Stewardship Operations and Maintenance Policies* (November 15, 1996)
- ER 1130-2-550, *Recreation Operations and Maintenance Policies* (November 15, 1996)

1.4 SCOPE OF THE EA

USACE has developed this EA in accordance with NEPA and the implementing regulations issued by the CEQ and the USACE. Its purpose is to inform decision makers and the public of the likely environmental consequences of the proposed action and its alternatives.

This EA discusses the affected environment and the potential environmental and socioeconomic effects of implementing the proposed action and the no action alternative on the following categories of environmental and socioeconomic resources: land use, aesthetics and visual resources, air quality, noise, topography and soils, water resources, biological resources, socioeconomics, transportation, and utilities and infrastructure. Cultural resources and hazardous and toxic materials and waste are not analyzed in detail in the EA for reasons explained in section 3.2.

The decision of which alternative to adopt will be covered within a finding of no significant impact (FONSI), if the decision maker determines that a FONSI is appropriate. If it is determined that implementing the selected alternative would result in unavoidable or unmitigable significant adverse environmental impacts, USACE will either publish a notice of intent (NOI) to prepare an environmental impact statement (EIS) and initiate its preparation or do nothing.

1.5 PUBLIC INVOLVEMENT

USACE invites and strongly encourages public participation in the NEPA process. Consideration of the views of and additional information from all interested parties promotes open communication and enables better decision-making. USACE specifically urges all agencies, organizations, and members of the public with a potential interest in the proposed action—including minority, low-income, disadvantaged, and Native American groups—to participate in the decision-making process.

1.5.1 EA Review and Comment

Regulations in 33 CFR part 230 guide opportunities for public participation in preparing this EA and decision-making on the proposed action. USACE has made this EA and a draft FONSI available to the public for review and comment for 30 days. Interested parties can review the documents on the USACE website for the Lake Lanier Project Master Plan Update at https://www.sam.usace.army.mil/Missions/Civil-Works/Recreation/Lake-Sidney-Lanier/Master-Plan-Update/. At the end of the 30-day public review period, USACE will consider all comments received on the EA and draft FONSI. Then, as appropriate, USACE will either execute a final FONSI and proceed with implementing the proposed action, publish an NOI to prepare an EIS, or do nothing. Comments on the EA and draft FONSI should be sent to Velma Diaz, Planning and Environmental Division, Inland Environment Team, velma.f.diaz@usace.army.mil.

1.5.2 Stakeholder Workshops and Public Meetings

Lake Lanier Project managers conducted a recreational carrying capacity study (RCCS) on Lake Lanier from November 2017 to February 2020. As part of that study, the project managers held stakeholder workshops for representatives of commercial, special interest, and government entities at the Lake Lanier Project Management Office and public meetings at four community locations in 2017 and 2018 to gather input on issues and concerns. The project managers held a second round of workshops and meetings in February 2020 to present the results of the study and to obtain feedback on management measures proposed to be incorporated into the Master Plan Update.

USACE developed four themes from the issues identified at the stakeholder-focused workshops:

- Conflict and crowding
- Facility improvements
- Shoreline management
- Watercraft use

Issues raised at the public meetings included the following:

- Boat number, size, and speed
- Boater behavior
- Boater education and safety training
- Commercial opportunities
- Navigation markers and signs

- Public access
- Public education
- Public hunting areas
- Recreational opportunities
- Regulations enforcement
- Seaplane operations
- Shoreline erosion
- User crowding and conflicts

The management measures proposed to be incorporated into the Master Plan Update are largely based on feedback received at the workshops and meetings.

1.6 ISSUES NOT ADDRESSED IN THE EA

Issues identified by stakeholders and the public that are primarily the responsibility of State and/or local jurisdictions are not part of the master planning process, and therefore are not analyzed in this EA. These include the following:

- Boat size, engine size, and speed
- Boater education, training, and licensing
- Safety and security
- Wildlife control

These issues would be addressed by divisions of the Georgia Department of Natural Resources, including Environmental Protection, Law Enforcement, and Wildlife Resources; county and city law enforcement departments; and county and city commissioners, councils, managers, or mayors.

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SECTION 2.0
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The proposed action is to implement an updated Master Plan for the Lake Lanier Project in Georgia. Doing so would bring USACE's management and development of the project's resources into compliance with the policy set forth in 36 CFR part 327, which requires USACE to manage the natural, cultural, and developed resources of its projects in the public interest, provide the public with safe and healthful recreational opportunities, and protect and enhance project resources. Updating the Master Plan would involve revising some management measures that are already in the Master Plan and adopting new management measures (USACE 1987).

The proposed action regarding seaplanes is to allow seaplanes to use the navigable waters of the lake for seaplane operations. The analysis of seaplane activity on Lake Lanier in this EA supports the USACE, Mobile District's potential policy decision to permit seaplanes to operate on the lake for recreational purposes.

2.2 ALTERNATIVES CONSIDERED

USACE identified two alternatives to evaluate in the EA: the preferred alternative and the no action alternative.

2.2.1 Preferred Alternative

Mobile District embarked on an update to the Lake Lanier Master Plan in 2017, with an overriding goal being to plan and prepare for future recreational needs as indicated by the forecasted population increase over the next 30 years. The Lake Lanier Project Management Office conducted stakeholder meetings, public open-house meetings, and an RCCS and otherwise engaged with lessees and stakeholders to support an updated Master Plan. A map posted on the project website provides detailed information on the efforts conducted to update the Master Plan (see *Master Plan Process Story Map* link at https://www.sam.usace.army.mil/Missions/Civil-Works/Recreation/Lake-Sidney-Lanier/Master-Plan-Update/.

The Atlanta Regional Commission (ARC) is the organization that state and local jurisdictions rely on for assistance with future planning in Metro Atlanta. The RCCS produced a current density/conflict map of Lake Lanier. The population forecast developed by the ARC was applied to the current density/conflict map to produce a recommended density/conflict map. The recommended map is the 30-year projection of the density/conflict at Lake Lanier (Figure 2-1) and serves as a goal on which to base management decisions today to achieve that goal in 30 years.

Under the preferred alternative, USACE Mobile District would implement the approved Master Plan Update for the Lake Lanier Project. The Master Plan Update would include the management measures listed below as changes to the content of the 1987 Master Plan.

- **Education**
  - Increase natural resource management and safety education outreach efforts.
- **Erosion and Sedimentation**
  - Conduct a condition assessment of erosion of the lake's shoreline and pool capacity.

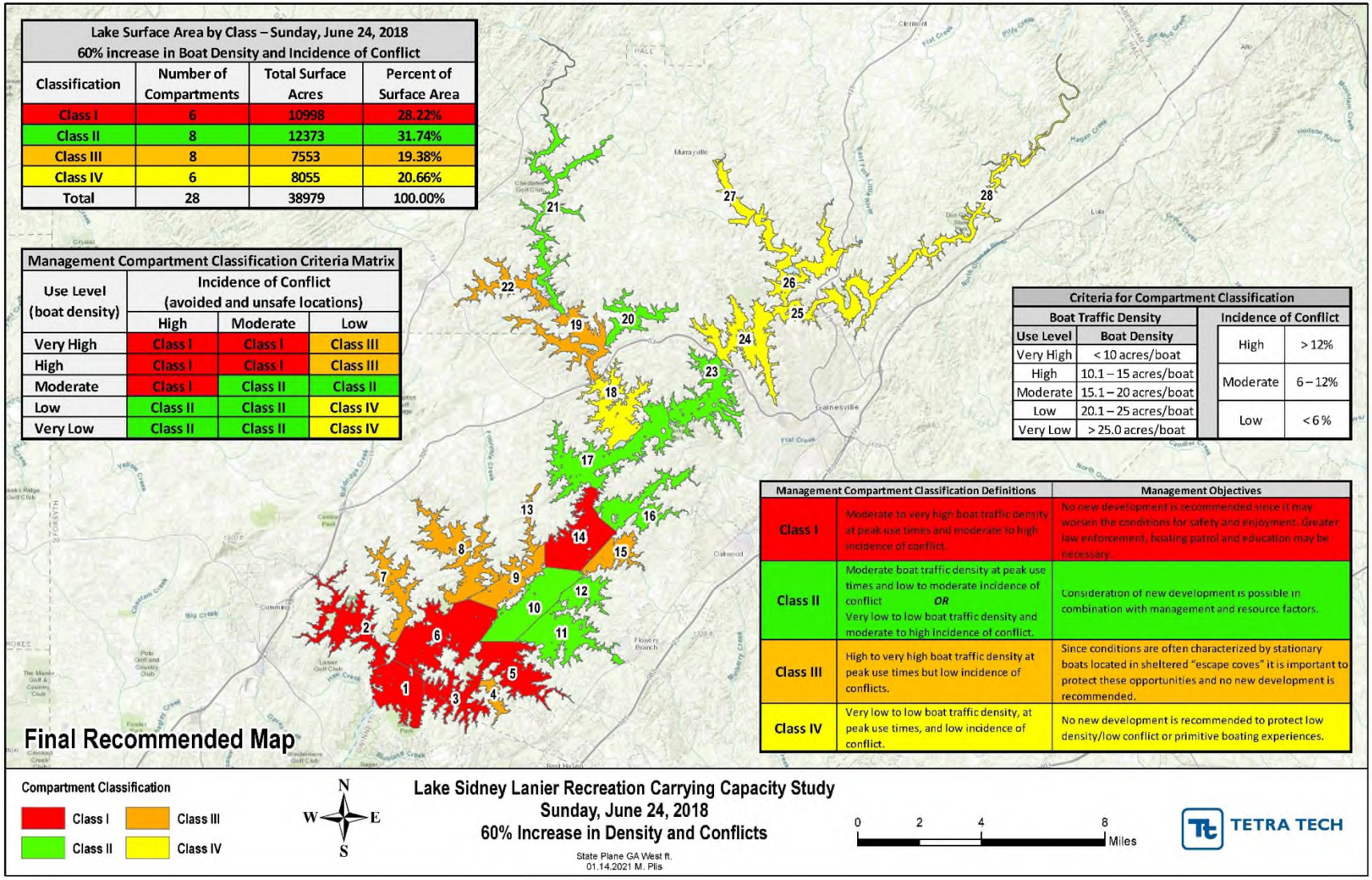

Figure 2-1. Recommended Density/Conflict Map.

- **Facilities**
  - Assess the feasibility of future recreation site improvements and development.
  - USACE has proposed land-based amenities to accommodate current and future demand while balancing the range of diverse opportunities and protection of the resource. Reference individual site development plans for details. Associated with this Master Plan Update, USACE would take or consider the following noteworthy actions:
    - Honor the previously approved concept of a resort development at Mary Alice Park. No additional boat ramps would be developed at Mary Alice Park.
    - Increase hiking and walking trail opportunities.
    - Increase mountain biking opportunities.
    - Consider establishing a dog park on the south end of the lake.
    - Increase paddle sports launching and dock facilities.
    - Identify locations where marine contractors can operate separated from developed recreation areas.
    - Relocate Buford Dam Road off saddle dikes 1 and 2 from Sawnee campground to the main dam. Install traffic roundabouts at Sawnee campground, West Bank, and the Lake Lanier Project Management Office.
- **Crowding and Conflict**
  - Maintain existing and currently approved plans for public boat ramps. (This would limit public boat ramp development to already-approved projects. No additional public boat ramp plans would be approved.)
  - Permit no additional marina development over what is currently approved. (This would limit marina development to already-approved projects. No marina development plans would be approved beyond that.)
  - Consider studying vehicle traffic congestion on busy weekends and take corrective actions to address it.
  - Assess the adequacy of hazard markers, location markers, and regulatory buoys/signs and address inadequacies.
- **Hunting/Wildlife**
  - Expand wildlife habitat and hunting opportunities.

The preferred alternative with respect to seaplanes is to allow seaplane operations on Lake Lanier. The USACE, Mobile District is considering a policy change to permit recreational seaplane activity on Lake Lanier. If the policy is changed, seaplane operations on Lake Lanier would be limited as noted below.

- No commercial operation of seaplanes on Lake Lanier would be allowed.
- Seaplanes would not be allowed to moor at docks authorized by a shoreline use permit (that is, individual private docks or community docks). However, if mooring at docks is allowed at all, it would be addressed in the update to the Lake Lanier Shoreline Management Plan.
- Use of courtesy docks at recreational areas (parks and campgrounds) would be allowed. Overnight mooring of seaplanes at campgrounds while its pilot and guest(s) are camping would be allowed.
- USACE, Mobile District would not restrict the use of commercial docks by seaplanes, but their use would be at the discretion of the individual lease holder (marina, restaurant, etc.).
- No seaplane operation would be allowed between sunset and sunrise, that is, a seaplane engine could not be on between sunset and sunrise.

2.2.2 No Action Alternative

Inclusion of a no action alternative is prescribed by CEQ regulations and serves as a benchmark against which the proposed action (preferred alternative) is evaluated. Under the no action alternative, USACE Mobile District would continue to manage the Lake Lanier Project under the 1987 Master Plan. Below is the "no action alternative" statement for each of the proposed action management measures:

- **Education**
  - Do not increase natural resource management and safety education outreach efforts.
- **Erosion and Sedimentation**
  - Do not assess erosion of the lake's shoreline and pool capacity.
- **Facilities**
  - Maintain facilities at recreation sites in their current state.
- **Crowding and Conflict**
  - Continue to consider requests for additional public boat ramps beyond those identified in the 1987 Master Plan or that have already been approved.
  - Continue to accept requests for marina development beyond those that have already been approved.
  - Do not conduct a vehicle traffic study of congestion on busy weekends.
  - Maintain existing hazard markers, location markers, and regulatory buoys/signs.
- **Hunting/Wildlife**
  - Maintain existing wildlife habitat and hunting opportunities.

Typically, because under the no action alternative no changes would be made from the current situation, no resource areas would be affected. In a context such as recreational use of Lake Lanier, which is greatly influenced by external factors such as development around the lake and in the Metro Atlanta area, however, not modifying how the lake is managed would be expected to result in a future condition different than today's. For instance, not limiting site improvements and facility development, or marina or public boat ramp development, would be expected to eventually (estimated by 2050) result in overcrowding at land-based recreation areas and on the lake, which would in turn diminish the recreational experience, increase impacts on natural resources and facilities, increase unsafe and inconsiderate behavior, and increase conflict and accidents. Traffic along Buford Dam Road, recreation area access roads, and other connecting roads would be expected to worsen over time. Road repairs would be needed more frequently, traffic congestion would increase, safety would decrease, and operations and maintenance costs would increase. The overall effect of the no action alternative, therefore, would be expected to be a worsening of conditions at the lake over the next 30 plus years. The effects of the no action alternative on each resource area considered in the EA are presented in section 3.0.

Under the no action alternative seaplanes would not be allowed to operate on Lake Lanier.

SECTION 3.0
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

USACE focused the discussions of the affected environment and environmental consequences on the components of the natural and human environments that would reasonably be thought to be affected by implementing the proposed management measures within the region of influence (ROI). Unless otherwise stated, the ROI for this analysis is Lake Lanier and the communities surrounding it. This section presents the affected environment for each resource area considered and an analysis of the reasonably foreseeable environmental consequences of implementing the proposed action and the no action alternative on each resource area considered.

3.1 RESOURCE AREAS NOT DISCUSSED IN THE EA

USACE's preliminary analysis of the potential effects of the preferred alternative on the Lake Lanier environment concluded that none of the proposed management measures nor seaplane operations would affect either cultural resources or hazardous and toxic materials and waste. As a result of that analysis, those resource areas were not carried forward for detailed analysis in the EA. These conclusions are summarized below.

3.1.1 Cultural Resources

A proposed action would have an adverse effect on cultural resources if it would (a) alter the character or use of an historic property; (b) diminish the integrity of the historic property's location, design setting, materials, workmanship, feeling, or association; or (c) otherwise cause an unresolvable adverse impact under section 106 of the NHPA.

According to the Lake Lanier Historic Properties Management Plan, except for some isolated tracts of fee-owned lands at the north end of the project, historic resource surveys have been completed for all fee-owned lands in the Lake Lanier Project area (USACE 1997). The historic resource surveys revealed a few prehistoric- or historic-period archaeological sites that are eligible or potentially eligible for listing on the National Register of Historic Places and three historic cemeteries, all of which are on fee-owned lands. No Native American resources apart from archaeological sites have been identified in the project area, and no Native American lands are within the project's boundaries. All known cultural resources sites are in Protected shoreline areas, and if during any ground-disturbing activity on project lands a cultural resource was discovered, the activity would cease and USACE and the State Historic Preservation Officer would be notified immediately. Therefore, the preferred alternative would not be expected to have an effect, adverse or beneficial, on any of the lake's cultural resources. Note also that individual cultural reviews and coordination may be conducted once project designs have reached a point at which a project-specific analysis can be performed.

3.1.2 Hazardous and Toxic Materials and Waste

A proposed action would have an adverse effect on hazardous and toxic materials and waste if it would result in noncompliance with applicable federal and state regulations or increased the amounts of waste generated or products procured beyond current waste management procedures and capacities. Hazardous and toxic materials and waste must be stored, handled, transported, and disposed of in accordance with applicable federal, state, and local laws and regulations. None of the proposed Master Plan management measures or permitting seaplane operations on the lake would require an increase in the need for hazardous and toxic material use or storage at the lake or create an increase in the amount of hazardous waste transported or disposed of. Therefore, the preferred alternative would not be expected to have an

effect, adverse or beneficial, on hazardous and toxic materials or waste or their use, storage, transportation, or disposal.

3.2 RESOURCE AREAS FULLY CONSIDERED IN THE EA

The affected resources analyzed in this EA are land use, aesthetics and visual resources, air quality, noise, topography and soils, water resources (including wetlands and floodplains), biological resources, socioeconomic resources, and utilities. The anticipated effects of implementing the proposed management measures—which constitute the preferred alternative—are presented after the affected environment discussions for each resource area, as are the effects of implementing the no action alternative.

USACE considered context and intensity in determining a potential impact's significance, as defined in 40 CFR 1508.27. *Context* is the geographic, biophysical, and social context in which the impact occurs. *Intensity* is the severity of the impact, in whatever context(s) it occurs, and is characterized as none/negligible, minor, or significant for adverse and beneficial impacts, as described below.

- *None/negligible*—No measurable impacts would be expected to occur.
- *Minor*—The action would be expected to have a less than significant impact on the resource.
- *Significant*—The action would have serious impacts on a resource. These impacts would be considered significant unless they could be mitigated to a less-than-significant level.

USACE used quantitative and qualitative analyses, as appropriate, to determine the level of impact. Based on the results of the analyses, this section identifies whether a potential impact would be adverse or beneficial to each resource area and its severity.

NEPA requires an analysis of *cumulative* effects, which are the effects of a project in combination with other past, present, or reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant, actions occurring over time. Section 3.16 discusses cumulative impacts.

3.3 LAND USE

3.3.1 Affected Environment

Lake Lanier has approximately 18,000 acres of land surrounding the lake above the full summer pool of 1,071 feet above mean sea level (msl) that results in 692 miles of boundary line with adjacent property. USACE has jurisdiction over the administration of these government lands. Under the current Master Plan (USACE 1987), these lands are placed in one of five land-use classifications—Operations, Recreation Intensive Use, Recreation Low Density, Wildlife Management, and Natural Areas.

USACE regulations providing guidance for the master planning process were updated in January 2013 with a further clarifying implementation memo distributed in November 2015. The updated guidance provided for somewhat different land classifications in addition to adding water surface classifications:

- Operations
- High-Density Recreation
- Mitigation
- Environmentally Sensitive

- Multiple Resource Management (with sub-classifications)
  - Low-Density Recreation
  - Wildlife Management
  - Vegetative Management
  - Future or Inactive Recreation
- Water Surface
  - Restricted
  - Designated No-Wake
  - Fish and Wildlife Sanctuary
  - Open Recreation

Table 3-1 presents the land-use classifications under the 1987 Master Plan and the 2013 USACE regulations.

Table 3-1. Land Use Classifications of Project Lands

	Acres of Land Under Different Classifications	
Land Use Classification	**1987 Master Plan**	**2013 USACE Regulations**
Inactive	n/a	1,528
Operations	151	151
Recreation Intensive Use	4,776	n/a
Recreation High Density	n/a	5,203
Recreation Low Density	9	42
Wildlife Management	5,544	5,457
Natural Areas	5,719	n/a
Vegetative Management	n/a	5,651
Total	**16,199**	**18,032**

Note: All figures are approximate and rounded to nearest whole number.

Additionally, under the current Shoreline Management Plan (USACE 2004) the lake's shoreline is allocated to one of four shoreline zone classifications—Limited Development Area, Prohibited, Protected, and Public Recreation. Shoreline allocation begins at the waterline and extends lakeward. This allocation is for floating facility considerations. Table 3-2 presents the acres of Project lands associated with the shoreline allocation classifications.

Table 3-2. Project Lands Under Shoreline Allocations

Shoreline Allocation Classification	**Acres**
Limited Development Area	5,719
Prohibited	151
Protected	5,544
Public Recreation	6,484
Total	**17,898**

Note: All figures are approximate and rounded to nearest whole number.

The land adjacent to Lake Lanier has been heavily developed for residential use, with the lower lake (nearest Buford Dam) being the most densely populated area. Development density increases around the upper lake annually and nearly equals that of the lower lake in more densely developed areas. The land surrounding the lake lies in five counties, each of which contains a percentage of the lake's shoreline: Dawson County—7 percent, Forsyth County—29 percent, Gwinnett County—4 percent, Hall County—58 percent, and Lumpkin County—2 percent. Land use in each county is governed by that county's comprehensive plan and zoning ordinances. Land use in incorporated areas within each county is governed by the respective city planning and zoning ordinances.

Because of the steep topography surrounding the lake, complete clearing of the land for development has not been possible or desired and residences are interspersed within still-abundant tree cover, although unauthorized clearing on government lands adjacent to development is steadily increasing. In areas where private land extends to the lake surface (which are very limited in extent), some property owners have removed the natural vegetation and planted grass.

Undeveloped areas in the region are mostly forested with oak-pine and oak-hickory forests, with lesser amounts of loblolly-shortleaf pine forest. Urban and suburban land cover is becoming more dominant as more of the area is developed. Undeveloped open areas are mostly in pasture with some small areas of cropland. Hay, cattle, and poultry are the main regional agricultural products.

3.3.2 Environmental Consequences

An adverse effect on land use would result if a proposed action would conflict with applicable land-use ordinances or permit requirements, be noncompliant with an applicable general or land-use plan, or be incompatible with adjacent or nearby land uses.

An effect, whether adverse or beneficial, is considered minor if it would have no substantial effect in the context of the ROI. For instance, a local jurisdiction leasing and developing an area would alter use of that land parcel but, in the overall context of the lake's shoreline use, the effect would be minor and insignificant.

3.3.2.1 Preferred Alternative

No adverse effects on land use would be expected from implementing the preferred alternative. Implementing the Master Plan Update management measures could change the land use at some locations along the lake shoreline. Specifically, the proposed management measure to expand wildlife habitat and hunting opportunities could result in an increase in Protected shoreline areas and a decrease in one or more other shoreline areas, and assessing the feasibility of future recreation site improvements and development and implementing proposed land-based amenities would have no adverse effects on adjacent land uses or land use along the lake shoreline. Other development activity associated with the preferred alternative (e.g., currently approved public boat ramps and marinas, paddle sports launch facilities and docks, and a dog park) would occur in areas designated for those uses and would not involve land-use changes.

No effects on land use would be expected from allowing seaplane operations on Lake Lanier.

3.3.2.2 No Action Alternative

Long-term minor and negligible adverse impacts on land use would be expected under the no action alternative. Facility development (e.g., marinas and public boat ramps) would continue to be allowed under the no action alternative, both in established recreation areas and in areas newly leased for that purpose. Also, over time, more conversion of developable project lands to commercial and recreational uses and less land preserved as natural areas would be expected.

3.4 AESTHETICS AND VISUAL RESOURCES

3.4.1 Affected Environment

Aesthetics and visual resources are natural resources, landforms, vegetation, and man-made structures in the environment that generate sensory responses in the observer, particularly pleasurable responses. Lake Lanier's wooded shoreline is long and irregular with numerous arms and coves, creating a total distance of approximately 692 miles, with another 59 miles of island shoreline (when the lake is at full

conservation pool of 1,071 feet above msl). The strong relief features numerous pine- and hardwood-covered islands and promontories that create dramatic views across the lake's bays and channels. Most of the shoreline varies in slope from 5–30 percent.

The lake's shoreline is interrupted by 38 developed recreation areas operated by USACE, project operation areas near Buford Dam, more than 10,000 privately owned boat docks, and 45 areas leased to other entities to include nine marinas with about 6,500 slips.

Lake Lanier viewsheds can be classified into three general areas: lower lake viewshed, middle lake viewshed, and upper lake viewshed. Each area is characterized by magnitudes of project use, topographic changes, vegetation, adjacent land use, and lake shape. Figures 3-1, 3-2, and 3-3 provide typical viewshed views.

***Lower Lake Viewshed*:** This viewshed is from the lake's southern end to Browns Bridge. Project lands in the lower viewshed area are intensely developed and receive the bulk of the lake's recreational use (Figure 3-1). Canopy trees have been preserved in recreation areas. The visual character is of large expanses of water framed by the sloping shoreline. Numerous islands jutting out of the lake's surface contribute to a high scenic quality.

Figure 3-1. Aerial view of the Lower Lake Lanier viewshed.

***Middle Lake Viewshed*:** This viewshed is the area from Browns Bridge north to Bolding Bridge on the Chestatee River and northeast to Thompson Bridge on the Chattahoochee River. The lake in this area has not been developed to the extent the lower lake area has, it forms elongated channels and bays with narrow coves, and the terrain is more pronounced with larger changes in elevation (Figure 3-2). An observer at the shoreline in this area can see far across the lake but not as far as in the lower lake area. Residential lots overlook the lake. Development on ridgelines off government property impact the viewshed in several areas. This viewshed area rates high scenic value that is visually pleasant but not unique.

***Upper Viewshed Zone*:** This viewshed is in the upper reaches of the Chestatee and Chattahoochee rivers, which are the most scenic areas on Lake Lanier. Development is sparse and the landscape has retained a wilderness aesthetic. These areas have narrow channels, rolling mountain topography, and diverse vegetation cover (Figure 3-3). They are dominated by mature stands of hardwoods and pines that create a secluded setting not found elsewhere on the lake. Steeply sloping hills, bluff rock outcroppings, and mature forests dominate the views in this area. As in the middle viewshed, development on ridgelines off government property impact the viewshed in places.

3.4.2 Environmental Consequences

A proposed action would have an adverse effect on aesthetics and visual resources in and around Lake Lanier if it would:

- Adversely affect a scenic vista or viewshed;
- Damage scenic resources, including primary/secondary ridgelines, trees, rock outcroppings, and historic buildings;

Figure 3-2. Aerial view of the Middle Lake Lanier viewshed.

Figure 3-3. Aerial view of the Upper Lake Lanier viewshed.

- Degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of light or glare that would adversely impact daytime or nighttime views in the area.

3.4.2.1 Preferred Alternative

Short- and long-term minor adverse and long-term minor beneficial effects on aesthetics and visual resources would be expected from implementing the preferred alternative. Adverse effects would be expected to result from activities that would change areas of the shoreline from natural to developed (e.g., development at Mary Alice Park and previously authorized marina expansions or development), increase development along the shoreline, or add an activity that could conflict aesthetically with existing activities in areas of the lake (e.g., areas to which marine contractors are relocated). If the preferred alternative is adopted, these aesthetic effects would be long term. Short-term adverse effects would also result from any development-related construction. No significant adverse effects on aesthetics would be expected from implementing the preferred alternative.

Beneficial aesthetic effects would be expected from implementing management measures that improve the appearance of the lake or preserve the lake's natural state such as by expanding wildlife habitat.

No effects on aesthetics or visual resources would be expected from allowing seaplane operations on Lake Lanier.

3.4.2.2 No Action Alternative

Long-term minor adverse impacts on aesthetics and visual resources would be expected under the no action alternative. Continued development would be allowed under the 1987 Master Plan, which would be expected to result in more conversion of project lands to developed, commercial uses. An increase in shoreline development would decrease the visual appeal of the lake environment. The number of public boat ramps and marinas would be allowed to increase, which would in turn be expected to result in an increase in the number of boaters and users of recreational areas. The resulting crowding would have an adverse aesthetic effect on all users of the lake.

3.5 AIR QUALITY AND CLIMATE CHANGE

3.5.1 Affected Environment

Region 4 of the U.S. Environmental Protection Agency (EPA) and the Air Protection Branch of the Georgia Environmental Protection Division (GAEPD) regulate air quality in Georgia. The CAA, as amended, assigns EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50). The NAAQS specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide, carbon monoxide, oxides of nitrogen, ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) apply to pollutants that contribute to acute health effects, and long-term NAAQS (annual averages) apply to pollutants that contribute to chronic health effects. Although each state has the authority to adopt standards stricter than those established under the federal program, Georgia has accepted the federal standards.

Federal regulations designate air quality control regions (AQCRs) in violation of the NAAQS as "nonattainment areas" and AQCRs with pollutant levels below the NAAQS as "attainment areas." Four of the five counties in which Lake Lanier lies (Dawson, Forsyth, Hall, and Lumpkin) are in the Northeast Georgia Intrastate AQCR (40 CFR 81.237). Gwinnett County is within the Metropolitan Atlanta Intrastate AQCR (40 CFR 81.45).

Dawson and Lumpkin counties are designated as being in attainment for all criteria pollutants (USEPA 2020). Table 3-3 lists Forsyth, Gwinnett, and Hall counties as not being in attainment for some NAAQS and being in attainment for all other NAAQS.

Table 3-3. Counties in Nonattainment Areas for Select Air Quality Standards

	County		
Air quality standard	**Forsyth**	**Gwinnett**	**Hall**
1997 $PM_{2.5}$	Moderate nonattainment—Maintenance		
1997 O_3 (8-hour)	Moderate nonattainment—Maintenance		
2008 O_3	Moderate nonattainment—Maintenance		
2015 O_3		Marginal nonattainment	

Source: USEPA 2020.

Climate and Greenhouse Gases. Average monthly high temperatures in the Lake Lanier area range from 50 degrees Fahrenheit (°F) to 87 °F, with July being the hottest month and January the coldest (US Climate Data 2021). Average monthly low temperatures range from 32 °F in January to 69 °F in July. The area has average annual precipitation of 54 inches. The wettest months of the year are January, February, and March, with each month averaging 5 or more inches of rain.

Greenhouse gases (GHGs) (or heat-trapping gases) are components of the atmosphere that trap heat relatively near the surface of the Earth and, therefore, contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but their concentrations are increased by human activities such as burning fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add CO_2, methane, nitrous oxide, and other GHGs to the atmosphere. Whether rainfall will increase or decrease remains difficult to project for individual regions (IPCC 2014; USEPA 2016).

EO 13834, *Efficient Federal Operations*, outlines policies intended to ensure that federal agencies meet statutory GHG requirements in a manner that increases efficiency, optimizes performance, eliminates

unnecessary use of resources, and protects the environment. The EO specifically requires Department of Defense (DoD) agencies to measure, report, and reduce their GHG emissions from both their direct and indirect activities. DoD has reported that it reduced GHG emissions by 23 percent from FY 2008 to FY 2018 and another 1 percent from FY 2018 to FY 2019 (DoD 2020).

3.5.2 Environmental Consequences

A proposed action would have a significant adverse effect on air quality if the action would:

- Increase ambient air pollution concentration levels above any NAAQS;
- Contribute to an existing violation of any NAAQS;
- Interfere with or delay timely attainment of NAAQS;
- Expose people to hazardous air pollutants at high concentrations; or
- Result in a substantial increase in any permitted entity's potential to emit GHGs.

3.5.2.1 Preferred Alternative

Short-term minor and negligible adverse and negligible beneficial effects on air quality would be expected from implementing the preferred alternative. The minor adverse effects would result from vehicle and equipment emissions and fugitive dust associated with construction projects, particularly development at Mary Alice Park and relocating Buford Dam Road. The negligible adverse effects would result from emissions from equipment and vehicles used to accomplish small projects such as creating additional hiking and biking trails. By curtailing future development of marinas and public boat ramps, future emissions related to those activities would be lessened in comparison to continuing to operate under the 1987 Master Plan.

Although implementing many of the proposed management measures would result in some additional air pollutant emissions, no activities proposed to occur under the preferred alternative would be expected to emit air pollutants in concentration levels that would violate a NAAQS or local ordinance. In the context of the AQCRs in which the activities would occur, the emissions would be considered minor. No significant adverse effects on air quality would be expected from implementing the preferred alternative. Note also that individual NEPA analyses might be required for projects that differ substantially from what is presented on the Master Plan Story Map, accessed at the **Master Plan Process Story Map** link at https://www.sam.usace.army.mil/Missions/Civil-Works/Recreation/Lake-Sidney-Lanier/Master-Plan-Update/ (see *10 - Proposed Facilities and Actions, 2020*).

Long-term negligible adverse effects on air quality would be expected from allowing seaplane operations on Lake Lanier. Most seaplanes have engines with less than 240 horsepower, so the engine emissions from a seaplane landing, taxiing, and taking off approximates that of a mid-sized car (LSPA 2017). The addition of a small number of daily seaplane operations on Lake Lanier would not measurably affect regional air quality.

3.5.2.2 No Action Alternative

Short- and long-term minor adverse effects on air quality would be expected under the no action alternative. As under the preferred alternative, short-term adverse effects would be expected from equipment and vehicle emissions associated with developing shoreline areas and long-term adverse effects would be expected from emissions resulting from activities at those developed areas that would continue into the foreseeable future. Congestion already is a concern on many recreation area access roads as well as along Buford Dam Road. Under the no action alternative, Buford Dam Road's alignment

would remain as it is and congestion along the road would be expected to worsen over time as usership of the lake increases with the growth of the Metro Atlanta area, which, in turn would be expected to worsen air quality. In the regional context, however, the adverse effect on air quality would not be considered significant.

3.6 NOISE

3.6.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, EPA provided information suggesting that continuous and long-term noise levels in excess of a day-night sound level (DNL) of 65 A-weighted decibels (dBA) are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. (The DNL averages sound energy in a 24-hour period with a 10-decibel [-dB] penalty added to nighttime levels [10:00 p.m. to 7:00 a.m.] to account for increased sensitivity to noise at night. dBA is a measure of sound that approximates a frequency response expressing the perception of sound by humans.) The control of environmental or community noise is left to state and local agencies. Georgia has a state-level regulation relating to motorboat noise level control that limits marine noise to 84 dB. With minor exceptions, motorboat noise on Lake Lanier has not been identified as unacceptable by lake users. Residents along lake coves have complained about boaters and personal watercraft users not observing no wake rules and speeding in coves, the large engines on some boats, and boaters playing loud music, all of which creates excessive noise in what would otherwise be quiet lake areas.

Existing sources of noise on Lake Lanier and its shoreline include boat engines, activity at recreation areas, vehicular traffic, and aircraft overflights. The overall noise environment is relatively quiet, with concentrations of noise at recreational areas and on busy parts of the lake such as at marinas.

3.6.2 Environmental Consequences

A proposed action would have an adverse effect on the noise environment if it would:

- Conflict with applicable federal, state, interstate, or local noise control regulations; or
- Result in continuous and long-term noise levels at 85 dB or above.

3.6.2.1 Preferred Alternative

Short-term minor and negligible adverse and negligible beneficial effects on the noise environment would be expected from implementing the preferred alternative. The effects on the noise environment would be expected to mirror those on air quality. That is, the same activities (construction) that contribute to air pollution would contribute to the noise environment, and the noise effects would be short term. Unlike air quality impacts, noise impacts would be site-specific. The preferred alternative would not be expected to result in long-term noise effects, and all effects on the noise environment would be considered minor.

Long-term negligible adverse effects on the noise environment would be expected from allowing seaplane operations on Lake Lanier. With engines no larger than those in a mid-sized car, seaplanes are generally quieter than ski boats and bass fishing boats (LSPA 2017). Noise is generated by a seaplane primarily during takeoff as the plane accelerates. This noise source would be heard infrequently and briefly—a takeoff lasts about 30–40 seconds, and it would not constitute an ongoing source of background noise.

3.6.2.2 No Action Alternative

Short-term minor and long-term negligible adverse effects on the noise environment would be expected under the no action alternative. Marina and boat ramp development and facility expansions on the lake would be expected to continue under the no action alternative, all of which would involve use of vehicles and equipment that would generate localized noise. New marina developments would be sources of long-term localized noise. With Lake Lanier's many coves and inlets being the primary locations of marinas and boat ramps, those noise sources would not be expected to affect Lake Lanier's overall noise environment.

3.7 TOPOGRAPHY AND SOIL RESOURCES

3.7.1 Affected Environment

Topography. Elevations in the Lake Lanier watershed range from about 4,440 feet to 1,071 feet above msl at lakeside. The topography in the immediate vicinity of the lake ranges from steep cliffs and bluffs extending to the water's edge to relatively flat, sloping shorelines in coves. The areas with steep bluffs and cliffs are primarily concentrated in the upstream portions of the Chestatee and Chattahoochee rivers.

The steepness of the landforms plays a major role in the development of recreation facilities and other land uses. Lake Lanier is a steep-sided impoundment with slopes on the adjacent terrain ranging from 5–30 percent or more. The sharpest relief is north and northwest of the lake. Rounded edges, hilltops, bluffs, islands, and elongated ridges protrude from the water's edge, creating a wide variety of topographic features.

Slope analysis maps exist for each recreation area at the lake. The developable lands of the project area are based on the following criteria:

- 0–10 percent slopes: Areas with the most potential for development unless restricted by poor access or poor soils. Appropriate uses include buildings and parking areas.
- 10–15 percent slopes: Areas appropriate for moderate development with a small footprint. Camping and picnic areas and trails are appropriate for these slopes.
- 15–20 percent slopes: Non-intensive, restrictive uses are appropriate for these slopes. Restricted trails and scenic overlooks are appropriate uses.

Slopes steeper than 20 percent are not appropriate for recreational development. Also, a vegetative buffer of 100 feet along the shoreline from 1,071 feet msl is required, except where penetration is approved for access purposes, to maintain the natural character of the shoreline, to provide visual screening, and to limit erosion and sedimentation.

Soils. Fifty-five soil series have been identified in Lake Lanier public use areas from Natural Resources Conservation Service maps (USDA NRCS 2020). The more predominant soil types on project lands include Altavista, Appling, Cecil, Chewacla, Louisa, Madison, Roanoke, Starr, Toccoa, Vance, Wickham, and Wilkes. Table 3-4 lists the pertinent characteristics of the soil types. With slopes of 10 percent or less, the Altavista, Chewacla, Roanoke, and Starr soil series are suitable for the most intensive development on recreational areas, whereas the other soil series each has a broader range of potential slopes. According to the Natural Resources Conservation Service none of the soil types on upland Project lands are hydric soils (USDA NRCS 2020).

Table 3-4. Characteristics of Soil Series on Lake Lanier Project Lands

	Series characteristics				
Soil series	**Depth class**	**Drainage class**	**Permeability**	**Surface runoff rate**	**Slope (%)**
Altavista	Very deep	Moderately well drained	Moderate	Slow	0–10
Appling	Very deep	Well drained	Moderate	Medium to rapid	0–25
Cecil	Very deep	Well drained	Moderate	Medium to rapid	0–25
Chewacla	Very deep	Somewhat poor	Moderate	Negligible to low	0–2
Louisa	Shallow	Somewhat excessive	Moderately rapid	Moderate to very rapid	6–80
Madison	Very-to-moderately deep	Well drained	Moderate	Medium to rapid	2–60
Roanoke	Very deep	Poor	Slow to very slow	Slow to very slow	0–2
Starr	Very deep	Well drained	Moderate	Slow	0–8
Toccoa	Very deep	Well drained and moderately well drained	Moderately rapid	Very low	0–4
Vance	Moderately deep to very deep	Well drained	Slow	Medium to rapid	2–25
Wickham	Very deep	Well drained	Moderate	Medium to rapid	0–25
Wilkes	Shallow	Well drained	Moderately slow to slow	Rapid	4–60

Source: USDA NRCS 2020.

3.7.2 Environmental Consequences

A proposed action would have an adverse effect on topography or soils if it would:

- Result in a topographic change over a relatively wide area;
- Decrease the amount of developable area at a recreation site by increasing the slope to more than 20 percent; or
- Create soil loss impacts that mitigation measures could not reduce to a less-than-significant level.

3.7.2.1 Preferred Alternative

Short- and long-term minor adverse and long-term minor beneficial effects on soils would be expected under the preferred alternative. The short-term effects would be attributable to soil disturbance during construction projects, and disturbed soils would be stabilized once construction activities had been completed. Long-term minor adverse effects would be attributable to new mountain biking trails, which could result in ongoing soil disturbance from the passage of bikes over the trails. If USACE assesses erosion along the lake's shoreline, that effort could be followed by activities to reduce erosion, resulting in long-term beneficial effects on soils. Other than some very localized alterations to accommodate water access or to install a specific facility, implementing the preferred alternative would not be expected to affect topography.

No effects on topography or soil resources would be expected from allowing seaplane operations on Lake Lanier.

3.7.2.2 No Action Alternative

Short-term minor adverse effects on soils would be expected under the no action alternative. Development expected to occur under the 1987 Master Plan—marinas, boat ramps, and additional facilities—would involve ground disturbance that would disturb soils. In accordance with Georgia construction requirements, all soils would be stabilized to the extent practicable at the completion of construction. Minor localized changes in shoreline topography to accommodate facility construction would be expected under the no action alternative.

3.8 WATER RESOURCES

3.8.1 Affected Environment

Watershed. The Lake Lanier Project is in the Upper Chattahoochee River watershed (U.S. Geological Survey Hydrologic Unit Code 03130001). Counties contributing to the Lake Lanier watershed are Forsyth, Habersham, Hall, Lumpkin, and White counties, along with small portions of Dawson and Gwinnett counties. The total area of the Upper Chattahoochee River watershed is 660,000 acres (1,040 square miles), of which the 39,038 acres of lake surface area constitute 6 percent and the 56,782 acres of total project area constitute about 9 percent. The average depth of the lake is 60 feet, with a maximum depth of approximately 160 feet near Buford Dam. A minimum flow of 600 cubic feet per second (cfs) is discharged constantly 7 days per week. The current goal for minimum flows from Buford Dam is to provide a minimum flow of 750 cfs between May to October and 650 cfs between November to April, measured 40 miles downstream from Buford Dam in the Chattahoochee River, just upstream of the confluence with Peachtree Creek (USACE 2017). The lake is 44 miles long up the Chattahoochee River and 19 miles long up the Chestatee River and is oriented from the north and northeast to the southwest. It is narrow in its upper reaches where the Chestatee and Chattahoochee rivers feed into it and widens progressively toward the dam at its southwest extent. Its average width is about 1.4 miles with its width being more than 2.5 miles in a few locations. The average inflow to the lake is 2,071 cfs. Of this flow, 45 percent (934 cfs) is contributed by the Chattahoochee River and 28 percent (568 cfs) by the Chestatee River. The remaining water comes from inflow from streams (23 percent) and precipitation (4 percent) (LTI 1998).

Water Quality. Pollutant loadings to Lake Lanier come from various sources, including watershed runoff from the Chattahoochee and Chestatee rivers as well as from small streams, permitted point source discharges to the tributaries and the lake, and boating activities on the lake (fueling and illegal discharge of human waste). Watershed runoff from the Chattahoochee and Chestatee rivers delivers most of the loadings.

Forty or more facilities in the lake watershed are permitted under the National Pollutant Discharge Elimination System. Boating activities and operations affect water quality in Lake Lanier by resuspending sediment through boat operations and wakes, introducing hydrocarbons into the water through refueling and boat operation and metals and other toxic materials (arsenic, zinc anodes, copper, tin, iron, and chrome) through boat maintenance activities, and illegal waste discharges. The Official Code of Georgia Annotated, section 12-5-29(c), prohibits discharging the contents of marine toilet holding tanks into Lake Lanier. Despite this ordinance, illegal discharges from marine toilets by some users increase the fecal coliform counts in the lake.

Former 19th and early 20th century gold mines in the Lake Lanier watershed, at which mercury was commonly used to amalgamate and separate the gold from the ore, are a source of mercury waste in soils and sediments in the lake watershed. Copper also was mined at the Chestatee Pyrite Mine on the

Chestatee River. Mercury and copper are present at only slightly elevated levels in Lake Lanier. Atmospheric deposition is another source of mercury common throughout the southern states.

Because of the lake's width and water depth, it is well suited for recreational activities such as waterskiing, sailing, pleasure boating, and fishing. The overall water quality is favorable for recreational activities and meets the criteria for "recreational" classifications as established by the GAEPD. Some natural improvement in water quality has occurred in many cases as a result of inundation. However, there are some problem areas. The poultry producing and processing industries have been partly responsible for creating water quality problems within the Lake Lanier basin, but the chief pollutant is sediment, attributable to the steep mountain slopes in the watershed and moderately erosive clay soils. Low dissolved oxygen concentrations have been observed in lake water quality data, but overall, dissolved oxygen concentrations meet water quality standards. Nevertheless, most of Lake Lanier (from the lower lake to just below Clark's Bridge) does not support its designated uses of drinking water, recreation, and fishing because of chlorophyll a (GAEPD 2020). Wahoo Creek and the Little River above Thompson Bridge do support the same designated uses. Total maximum daily loads (TMDLs) have been completed to address water quality issues in the various portions of the lake.

Floodplains. USACE owns most of the lands surrounding Lake Lanier in fee title. The lake's maximum flood elevation is 1,085 feet above msl. In some areas, where enough land was not acquired and the flood elevation is on private property, USACE is legally allowed to occasionally flood the property (these areas are termed "flowage easements") and the landowner is prohibited from constructing habitable structures on or altering the existing contour of that land. USACE also has the right to occasionally flood private property downstream of Buford Dam. There is no regional flood contour established downstream; instead, each tract of private property that is occasionally flooded has a calculated high-water elevation unique to its location.

Wetlands. According to National Wetlands Inventory data, there are 1,424 acres of wetlands within 1 mile of Lake Lanier (USFWS 2020a). With the lake's surface water covering 39,038 acres, wetlands make up a small portion of the shoreline and adjacent land. Wetlands within the Lake Lanier Project boundary are generally present as pockets in the upper reaches of coves where streams enter the lake, there is little wave action, and the stream input provides a consistent source of water. National Wetlands Inventory data shows that most wetlands on Project lands are freshwater emergent wetlands, with some pockets of freshwater forested/scrub wetlands. Around much of the lake the shoreline is steep and daily and weekly fluctuations in water level and wave action from boat wakes erode the lakeshore and make it nearly impossible for wetland vegetation to establish and persist. The channels of the Chattahoochee and Chestatee rivers are counted as riverine wetlands—areas found within a channel of continuously flowing water.

3.8.2 Environmental Consequences

A proposed action would have an adverse effect on water resources if it would:

- Violate federal or state surface water protection laws;
- Constitute a substantial risk to aquatic animals and/or humans or contamination posing secondary health risks during the project life;
- Eliminate or sharply curtail existing aquatic life or human uses dependent on in-stream flows or water withdrawals during the project's life;
- Place structures within a 100-year flood hazard area that violate federal, state, or local floodplain regulations; or

- Expose people or structures to a substantial risk of loss, injury, or death involving flooding, including flooding because of the failure of a levee or dam.

3.8.2.1 Preferred Alternative

Short-term minor adverse, long-term minor beneficial, and negligible adverse and beneficial effects on water resources would be expected from implementing the preferred alternative. Ground disturbance associated with construction projects and small development projects (e.g., trail creation) would be expected to have short-term negligible and minor adverse effects. Efforts to educate lake users about natural resource management at the lake, including shoreline erosion and assessing erosion along the lake shoreline could lead to less sedimentation in the lake—a long-term beneficial effect. Curtailing future marina and public boat ramp development would avoid erosion and sedimentation associated with those construction projects, reducing inputs of sediment compared to what could occur under the no action alternative. No effects on floodplains or wetlands would be expected. Permanent structures other than those needing to be below the water line (e.g., boat ramps) would not be permitted to be constructed below the lake high water level. As necessary, individual projects would determine whether wetlands might be present within the project area, conduct a wetland delineation, obtain necessary permits, and perform required mitigation to minimize wetland impacts.

Long-term negligible adverse effects on water quality would be expected from allowing seaplane operations on Lake Lanier. Seaplanes would be expected to contribute small quantities of pollutants, mostly from engine emissions and leaks, to Lake Lanier's water. The effect of these pollutants on water quality would be expected to be immeasurable and indistinguishable from those contributed by boat engines, and to be far less than the effects of boat engines because of the much larger number of boats operating on the lake versus the number of seaplane operations that would be expected. No effects on floodplains or wetlands would be expected from allowing seaplane operations on Lake Lanier.

3.8.2.2 No Action Alternative

Short-term minor and long-term negligible adverse effects on water resources would be expected under the no action alternative. Development expected to occur under the 1987 Master Plan would involve ground disturbance that would lead to some sedimentation in the lake. All disturbed ground would be stabilized to the extent practicable at the completion of construction. Negligible quantities of oils and lubricants from vehicles and additional boats on the lake would be expected to have a negligible effect on water resources.

3.9 BIOLOGICAL RESOURCES

3.9.1 Affected Environment

***Vegetation Communities*.** Lake Lanier lies in the Oak-Pine Forest Region of the Southern Piedmont Plateau. Virgin forests existed in the region, but were completely harvested, leaving only small islands of 200–300-year-old trees and a patchwork of old fields, pastures, maintained lawns, second-growth forest, and culled hardwood stands. Regular maintenance by landowners discourages woody plants and keeps grasses, weeds, and wildflowers dominant.

***Wildlife*.** Game and nongame species of wildlife are present in the Lake Lanier area. Beaver (*Castor canadensis*), deer (*Odocoileus virginianus*), rabbits (*Sylvilagus floridanus*), squirrels (*Sciurus* spp.), and other mammals; wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), passerine birds, raptors, and many nongame birds; and amphibians and reptiles inhabit the waters, forests, and fields. Wildlife provides enjoyment for the sightseer, naturalist, and outdoor recreationalist.

Protected Species. The U.S. Fish and Wildlife Service lists one species of mammal, three species of fish, and three flowering plant species as protected and potentially occurring in the Lake Lanier Project area (USFWS 2020b). Table 3-5 lists these species and those listed on the Georgia Biodiversity Portal as occurring in the five counties in which Lake Lanier is located (GBP 2020c). There have been no known sightings of federally listed species on project lands. Of the flowering plant species listed in Table 3-5, Georgia Natural Heritage Program data indicate that Georgia aster (*Symphyotrichum georgianum*) occurs near Lake Lanier near Buford Dam, the Chestatee River, Gainesville, and Murrayville; goldenseal (*Hydrastis canadensis*) occurs near Gainesville; and sweet pinesap (*Monotropsis odorata*) occurs near Lula along the upper reaches of the Chattahoochee River in Lake Lanier.

Table 3-5. Federal- and State-Listed Species Potentially Occurring in the Lake Lanier Area

Common name	Scientific name	Status	Counties listed
Mammals			
Northern long-eared bat	*Myotis septentrionalis*	FT, ST	Dawson, Hall, Lumpkin
Birds			
Bald eagle	*Haliaeetus leucocephalus*	BGEPA, ST	Forsyth, Hall
Fish			
Amber darter	*Percina antesella*	FE, SE	Dawson
Altamaha shiner	*Cyprinella xaenura*	ST	Gwinnett, Hall
Bridled darter	*Percina kusha*	SE	Dawson, Lumpkin
Cherokee darter	*Etheostoma scotti*	FT, ST	Dawson, Forsyth, Lumpkin
Coosa chub	*Macrhybopsis etnieri*	SE	Dawson, Forsyth, Lumpkin
Etowah darter	*Etheostoma etowahae*	FE, SE	Dawson, Forsyth, Lumpkin
Frecklebelly madtom	*Noturus munitus*	SE	Dawson, Forsyth
Freckled darter	*Percina lenticula*	SE	Dawson
Halloween darter	*Percina crypta*	ST	Lumpkin
Holiday darter	*Etheostoma brevirostrum*	SE	Lumpkin
Crustaceans			
Chattahoochee crayfish	*Cambarus howardi*	ST	Forsyth, Gwinnett, Hall, Lumpkin
Etowah crayfish	*Cambarus fasciatus*	ST	Dawson, Lumpkin
Flowering Plants			
Bay star-vine	*Schisandra glabra*	ST	Dawson, Gwinnett
Black-spored quillwort	*Isoetes melanospora*	SE	Gwinnett
Dwarf hatpins	*Eriocaulon koernickianum*	SE	Gwinnett
Georgia aster	*Symphyotrichum georgianum*	ST	Dawson, Forsyth, Gwinnett, Hall
Goldenseal	*Hydrastis canadensis*	SE	Dawson, Gwinnett, Hall
Granite stonecrop, Puck's orpine	*Sedum pusillum*	ST	Gwinnett
Headwaters hornwort	*Megaceros aenigmaticus*	ST	Dawson
Large witch-alder	*Fothergilla major*	ST	Lumpkin
Monkeyface orchid	*Platanthera integrilabia*	ST	Forsyth
Pool sprite, snorkelwort	*Amphianthus pusillus*	ST	Gwinnett
Small whorled pogonia	*Isotria medeoloides*	FT, ST	Lumpkin
Smooth coneflower	*Echinacea laevigata*	FE	N/A
Starflower	*Trientalis borealis*	SE	Lumpkin
Sweet pinesap	*Monotropsis odorata*	ST	Hall, Lumpkin
Three-toothed cinquefoil	*Sibbaldiopsis tridentata*	SE	Lumpkin
White fringeless orchid	*Platanthera integrilabia*	FT	Forsyth

Source: GBP 2020c, USFWS 2016, USFWS 2020c.
Notes: BGEPA = protected under the Bald and Golden Eagle Protection Act; FE = federally listed as endangered; FT = federally listed as threatened; N/A = not applicable; SE = state-listed as endangered; ST = state-listed as threatened.

Georgia aster once grew in Post Oak Savannah communities in the southeastern United States. It is known from Alabama and Georgia to North and South Carolina in about 126 populations, with most consisting of 10–100 stems and a few having upwards of 1,000 stems (GBP 2020d; Natureserve 2020). It persists in disturbed areas such as roadsides, utility rights-of-way, and other open areas disturbed by

recurring human activity. It is threatened by fire suppression, succession to woody plants, and development and is vulnerable to accidental destruction from utility and road maintenance activities such as herbicide application and road expansion (GBP 2020d; Natureserve 2020; USFWS 2020b).

Goldenseal occurs in moist, deciduous hardwood forests with patchily open canopies (GBP 2020a). It is rare throughout most of its range, which is Alabama, Georgia, and Mississippi north to Vermont and Ontario and west to Kansas and Oklahoma. It is threatened by habitat conversion to pine plantations and developments, logging and other mechanical clearing, limerock mining, invasion by exotic pest plants, and harvesting by people collecting it for medicinal purposes.

Sweet pinesap occurs in mixed pine-hardwood or chestnut oak-dominated forests (GBP 2020b). It is known from Alabama, Delaware, Georgia, Kentucky, Maryland, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. It is threatened by habitat conversion to pine plantations and developments, fire suppression, and foot traffic through populations.

3.9.2 Environmental Consequences

A proposed action would have an adverse effect on biological resources if it would:

- Cause detectable impacts on native communities, and species would be expected to be outside the natural range of variability for long periods of time or in perpetuity;
- Cause large, short-term declines in species populations or instability in population numbers or structure, genetic variability, and other demographic factors for species;
- Cause a loss of habitat that could affect the viability of at least some native species; or
- Jeopardize the continued existence of a federally listed species.

3.9.2.1 Preferred Alternative

Short- and long-term minor adverse and beneficial effects on biological resources would be expected from implementing the preferred alternative. Construction and development projects would result in some vegetation loss and sediment addition to the lake, which can affect aquatic biota. Sediment inputs from the surrounding watershed and upstream sources are dominant in determining overall water quality in the lake. Minor inputs from construction runoff would not substantially affect the lake's water quality. Beneficial effects on biological resources and natural areas around the lake would be expected from educational efforts aimed at increasing visitors' knowledge and appreciation for the lake's natural resources and from expanding areas of wildlife habitat around the lake.

No federally or state-protected species would be expected to be affected and no population of any individual species would be threatened by development along the lake's shoreline, so all effects on biological resources would be considered insignificant. Aquatic biota would be largely unaffected by the preferred alternative. Surveys for federal and state listed species and coordination with federal and state agencies would be conducted for individual projects once their designs had reached a point at which a project-specific analysis could be performed.

No effects on biological resources would be expected from allowing seaplane operations on Lake Lanier.

3.9.2.2 No Action Alternative

Short- and long-term minor adverse effects on biological resources would be expected under the no action alternative. As with the preferred alternative, construction and development projects would result in some vegetation loss and sedimentation to the lake, but the inputs would be negligible in comparison

to those from the surrounding watershed and upstream sources and would not substantially affect the lake's water quality.

No federally or state-protected species would be expected to be affected and no population of any individual species would be threatened by development activities. All effects on biological resources would be considered insignificant.

3.10 SOCIOECONOMIC RESOURCES

3.10.1 Affected Environment

Lake Lanier is in the Metro Atlanta area—the Atlanta-Athens-Clarke County-Sandy Springs GA Combined Statistical Area (CSA), which encompasses 39 counties. The lake has about a $5-billion annual economic impact on the region from the operation and maintenance of the lake and from the tourism-driven businesses around the lake such as aquatic equipment rentals, hotels, marinas, recreational facilities, rental properties, resorts, and restaurants (GHCC 2020). The tourism and recreation industries account for about 20 percent of the CSA's gross domestic product and employment (BEA 2020a, 2020b). According to the USACE Value to the Nation, visitation to Lake Lanier in fiscal year 2019 resulted in approximately $691 million in visitor spending, $387 million in sales, 4,844 jobs, $176 million in labor income, and $111 million in National Economic Development Benefits (USACE IWR 2020).

Table 3-6 lists socioeconomic data for the CSA, the state, and the nation. Metro Atlanta has a growing economy that is attracting population to the area—the population increased by 12 percent between 2010 and 2018 (U.S. Census Bureau 2019).

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires each federal agency to identify and address any disproportionately significant and adverse human health or environmental effects its programs and policies might have on minority or low-income populations.

Table 3-6. Socioeconomic Data

	Population (2010)	Population (2018)	Population change (2010-2018)	Per capita income/median household income (2018)	Minority population (2018)	Population below poverty (2018)
Atlanta-Athens-Clarke County-Sandy Springs GA CSA	5,910,296	6,631,604	12%	$34,668/ $67,456	52%	12%
Georgia	9,687,653	10,519,475	9%	$31,187/ $58,756	48%	14%
United States	308,745,538	327,167,439	6%	$33,831/ $61,937	40%	13%

Sources: U.S. Census Bureau 2010, 2020a, 2020b, 2020c.

Based on CEQ guidance, the minority population of the CSA is just above the 50 percent threshold at 52 percent and is higher than Georgia's statewide minority population level of 48 percent and the national minority population level of 40 percent (CEQ 1997). Based on poverty thresholds established by the U.S. Census Bureau, the CSA's poverty rate was 12 percent, lower than the Georgia poverty rate of 14 percent and U.S. poverty rate of 13 percent (Table 3-5) (U.S. Census Bureau 2020e).

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, is meant to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of federal policies, programs, activities, or standards. The EO acknowledges that children can suffer disproportionately from environmental health and safety risks because children's bodily systems are not fully developed; children eat, drink, and breathe more in proportion to their body weight; their size and weight may diminish protection from standard safety features; and their behavior patterns might make them more susceptible to accidents. Children are present at Lake Lanier as visitors and adjacent residents.

3.10.2 Environmental Consequences

A proposed action would have an adverse effect on socioeconomic resources if it would:

- Cause substantial gains or losses in population or changes in the composition of the population;
- Cause extensive relocation or disruption of community businesses, creating an economic hardship for surrounding communities;
- Cause disequilibrium in the housing market such as severe housing shortages or surpluses, resulting in substantial property value changes; or
- Cause changes to accessibility of community services or change demands so the current system cannot accommodate the change.

A proposed action would have an adverse effect on environmental justice if it would have a disproportionate adverse effect on minority, low-income, or youth populations.

3.10.2.1 Preferred Alternative

Short- and long-term minor beneficial effects and negligible adverse effects on socioeconomics would be expected from implementing the preferred alternative. Beneficial economic effects would be expected from construction spending, primarily to develop Mary Alice Park and to relocate Buford Dam Road, and long-term revenue from operations at the park. Recreation improvements—such as additional biking and hiking trails—would be expected to increase visitation and visitor spending as well. Negligible adverse effects on economic activity would be expected by curtailing future marina and public boat ramp development, which could lessen economic spending in comparison to what might occur under the no action alternative.

Increased public education outreach efforts on boating and water safety could decrease the number of boating accidents and improve safety overall, which could have a beneficial effect on the protection of children.

The preferred alternative would not be expected to result in disproportionately significant and adverse human health or environmental effects on low-income or minority populations. Implementing the preferred alternative would not substantially adversely affect human health or the environment and would not have the effect of excluding anyone, denying anyone benefits, or subjecting anyone to discrimination.

Long-term minor beneficial effects on regional economics would be expected from allowing seaplane operations on Lake Lanier. Seaplane pilots and their passengers would be expected to visit restaurants on the lake and make fuel purchases, and commercial seaplane operations (e.g., aerial sightseeing tours of the lake), if permitted, would also contribute to the regional economy.

3.10.2.2 No Action Alternative

Short- and long-term minor beneficial effects on socioeconomic resources would be expected under the no action alternative. Beneficial economic effects could arise in the short term from constructing new

marinas and boat ramps. These developments and increased water access could increase the number of lake visitors and visitor spending, leading to minor long-term benefits.

The no action alternative would not be expected to result in disproportionate adverse effects on low-income or minority populations or children. Neither human health nor the environment would be substantially adversely affected—continued operation under the 1987 Master Plan would not exclude anyone, deny anyone benefits, subject anyone to discrimination, or expose anyone to disproportionately significant and adverse environmental health or safety risks.

3.11 RECREATION

3.11.1 Affected Environment

Lake Lanier is the most visited USACE project in the United States, attracting nearly 11 million or more visitors each year (USACE 2019). In 2019 more than 11 million users spent a day at the lake and more than 725,000 stayed overnight. Lake Lanier's popularity is partly attributable to its proximity to the Metro Atlanta area, which encompassed 29 counties with an estimated population of 6.6 million in 2019 (U.S. Census Bureau 2020d). Recreation facilities at Lake Lanier include 83 developed recreation areas, 45 of which are managed by other entities under lease agreements to include nine commercially operated marinas. Electrical outlets and water are provided at some campsites. Many day-use parks have boat ramps, fishing piers, and beaches as well as picnic sites, basketball and volleyball courts, and soccer fields. The marinas have approximately 1,600 dry storage slips and 6,500 wet slips.

Waterfowl hunting is permitted at Lake Lanier in accordance with State Laws and regulations. Two lottery hunts for deer on Project lands by archery only are held annually.

3.11.2 Environmental Consequences

A proposed action would have an adverse effect on recreation if it would:

- Reduce access to recreation facilities;
- Reduce the availability of recreation opportunities; or
- Decrease the perceived value of the recreational experience.

3.11.2.1 Preferred Alternative

Long-term minor beneficial effects on recreation would be expected from implementing the preferred alternative. Educational outreach efforts on boating and water safety; the additional recreation facilities at Mary Alice Park and other areas; increased hiking, biking, and paddle sports opportunities; locating marine contractors out of recreational areas; and improving navigation markers and signs would all be expected to improve the recreational experience at Lake Lanier. The preferred alternative would not be expected to adversely affect the recreational experience at the lake.

Under the updated Master Plan, deer hunting would be expanded and small-game hunting programs would be developed at identified areas. Waterfowl hunting would still be conducted in accordance with State Laws and regulations, and deer hunting would continue to be by lottery and of limited scope. These changes would be expected to have a long-term beneficial effect on recreational hunting with no adverse effect on wildlife populations.

Long-term minor beneficial effects on recreation would be expected from allowing seaplane operations on Lake Lanier. Seaplane visits to the lake are a recreational activity. Allowing seaplane operations on the lake would increase the variety of recreational opportunities at the lake. Seaplane operations on Lake

Lanier would not be expected to interfere with boat activities on the lake. Seaplane takeoffs and landings are done on clear areas of a lake, much like waiting for an opening to launch or retrieve a boat at a boat ramp (LSPA 2017). That is, a seaplane would not land (or take off) if the landing (or takeoff) would conflict with another lake user.

3.11.2.2 No Action Alternative

Long-term minor adverse and beneficial effects on recreation would be expected if Lake Lanier continues to be managed under the 1987 Master Plan. Not acting to ease congestion on roads around the lake would result in continued and increasing delays on the roads during peak-use times and the situation would be expected to worsen over time. Not assessing in-water obstacles in the lake between 1,064 feet msl and 1,071 feet msl would be expected to result in increasing incidents over time as the number of users of Lake Lanier increases. In addition, maintenance delays due to incorrect locations of markers could be expected. Adding water access points and more marinas and marina slips could increase congestion on the lake while also providing access for more users. Improved and new recreation areas and additional points for water access would provide access to the lake to more people, at the possible expense of worse crowding and less recreational safety. Under the no action alternative, the Lake Lanier Project Management Office would not increase educational activities aimed at safer boating on the lake.

3.12 TRANSPORTATION

3.12.1 Affected Environment

The area around Lake Lanier has become increasingly urban and is considered part of Metro Atlanta, with Atlanta being about 35 miles southwest of the lake. Two-lane roads serve the parks on the lake and the towns that surround it. Georgia State Route 400, also called "Georgia 400" or "GA 400," connects Atlanta to Cumming, GA, west of the lake. Interstate 985 (I-985), a spur of I-85, passes near Gainesville and is the major access route to areas east of the lake. State Route (SR) 369, SR 306, and SR 53 are the main east-west corridors across Lake Lanier, connecting GA 400 in the west with Gainesville and I-985 in the east. Bridges over the lake are on SR 369, SR 53, SR 60, SR 284, SR 136, and SR 11/U.S. Highway 129 (Figure 1-1).

During the off-season (October–April), the amount of traffic on highways and local roads near the lake is typical of rural areas, with the roads nowhere near their designed capacities. In contrast, during the recreation season (May–September), traffic on the roads can be very heavy, especially at the more popular parks at the southern end of the lake. The most heavily used parks are Big Creek, Buford Dam, Burton Mill, West Bank, Lanier Park, Lower Pool East/West, Lower/Upper Overlook, Old Federal Day Use, Shoal Creek Day Use, and Van Pugh North/South. Access to many of the Lake Lanier recreation areas is via roads that pass through residential areas, and most of the access roads are under local community jurisdiction; USACE has no control over their operation and maintenance.

The rapid population growth and increase in traffic in the communities surrounding Lake Lanier have resulted in many roads around the lake having a poor level of service during the recreation season. Buford Dam Road in particular is heavily used during the recreation season and was not constructed to handle the volume and weight of traffic that it now supports. The Federal Highway Administration (FHA) completed a feasibility study of improving the sections of the road that traverse the Lake Lanier Corps of Engineers Project lands (FHA 2017). FHA developed five alternatives for addressing the shortcomings of the road, and all five alternatives share these common features:

- Provide a safer and more enjoyable route for current and future users.
- Buford Dam Road will remain a two-lane, minor arterial/urban collector street.

- Buford Dam Road will continue to be limited to only private vehicles; no commercial vehicles (such as large service or delivery trucks) can travel through the Corps property.
- Improvements to support non-motorized travel by bicyclists and pedestrians.
- Minor improvements such as increasing the width of the vehicle travelway from two 11-foot lanes to two 12-foot lanes.
- Traffic operational and safety improvements at each at-grade intersection along the study corridor, including the addition of dedicated left-turn lanes on some intersection approaches and the use of single-lane roundabouts as both traffic-calming and safety enhancements at several locations.

3.12.2 Environmental Consequences

A proposed action would have an adverse effect on the transportation system if it would:

- Increase the amount of traffic on local roads to the point at which they are unable to accommodate the additional vehicles; or
- Cause a road not to comply with federal, state, or local laws and regulations.

3.12.2.1 Preferred Alternative

Short-term minor adverse effects and long-term minor adverse and beneficial effects on transportation would be expected from implementing the preferred alternative. A short-term minor adverse effect on transportation at the southern end of the lake would be expected during construction activities related to modifying Buford Dam Road on Project land. This would be offset, however, as a long-term beneficial transportation effect from the improved traffic circulation along Buford Dam Road once the road relocation project had been completed. A long-term minor adverse effect on the roads near Mary Alice Park would be expected from the increased use the park would have after being developed into a resort facility. An overall long-term beneficial effect on transportation around the lake would be expected from implementing the preferred alternative, much of which would be implemented to achieve sustainable long-term use levels at the lake and to avoid overcrowding at recreational areas. Future recreation developments would be expected to help alleviate overcrowded conditions at existing recreation areas.

No effects on the transportation system would be expected from allowing seaplane operations on Lake Lanier. As mentioned in the recreation discussion, seaplane takeoffs and landings are done when they do not conflict with other lake users. Seaplanes are operated at under 30 miles per hour except when taking off and landing. During taxi to or from a clear area for takeoff or seaplane speeds do not exceed 3–6 miles per hour (LSPA 2017). Seaplane activity, then, would not be expected to affect boat traffic on the lake.

3.12.2.2 No Action Alternative

Long-term minor adverse effects on the transportation system would be expected under the no action alternative. Additional marinas and recreation facilities allowed under the 1987 Master Plan along with expansions of supporting businesses would be expected to increase the amount of traffic to Lake Lanier and degrade traffic conditions on local roads.

3.13 UTILITIES

3.13.1 Affected Environment

Potable Water. Lake Lanier Project facilities obtain potable water from surrounding municipalities. Water is withdrawn from Lake Lanier for municipal purposes by Gwinnett County and the cities of

Cumming, Buford, and Gainesville. Forsyth County does not have a water withdrawal permit for lake water but could obtain one in 5–10 years. . Lake releases are made so the minimum flow from Buford Dam, when combined with local inflows between the dam and Atlanta, total a minimum of 750 cfs.

Wastewater Treatment. Treated sewage from 10 municipal and private wastewater treatment plants is discharged into the Lake Lanier watershed. The total treated sewage discharge from these plants is approximately 19 million gallons per day. Lake Lanier Islands has its own wastewater treatment plant. A privately operated wastewater treatment plant was recently removed from Project lands and another is being considered for removal.

On-Site Wastewater Treatment Systems. Except for Lake Lanier Islands, which has its own wastewater treatment plant, all facilities on Lake Lanier Project lands are on septic systems. Most rural areas around Lake Lanier use septic tanks to treat and dispose of waste, and septic tanks located close to the lake's floodplain or that do not function properly occasionally degrade the water quality of Lake Lanier and other surface waters and groundwater with nutrients and pathogens, which can stimulate plant growth and cause eutrophication. Some local jurisdictions are switching subdivisions or other residential areas from septic systems to sewer lines, with easements requested on Project lands for some sewer lines.

Electricity. Georgia Power is the main provider of electrical service in Georgia, although electric cooperatives and membership services also provide electrical service. All developed recreation areas at Lake Lanier are supplied with electricity. A few facilities are powered by solar energy.

Natural Gas. Georgia Natural Gas is the main provider of natural gas in Georgia. Easements for natural gas lines pass through Lake Lanier Project lands, but no facilities at the project are served by natural gas.

3.13.2 Environmental Consequences

A proposed action would have an adverse effect on a utility system if it would increase demand to a point at which the existing system would be unable to meet.

3.13.2.1 Preferred Alternative

Long-term negligible adverse effects on utilities would be expected under the preferred alternative. Additional services and facilities would increase demand on utility systems, although within the regional context the additional demand would be expected to be well below a less-than-significant level.

No effects on utilities would be expected from allowing seaplane operations on Lake Lanier.

3.13.2.2 No Action Alternative

Long-term minor adverse effects on utilities would be expected under the no action alternative. The effects under the no action alternative would be substantially the same as those under the preferred alternative, but with more development permitted under the 1987 Master Plan. Utility demand would be expected to increase slightly under the no action alternative but would not be expected to reach a level of significance in a regional context.

3.14 SUMMARY OF EFFECTS

3.14.1 Preferred Alternative

Short- and long-term minor adverse and beneficial effects and negligible adverse and beneficial effects on resource areas at Lake Lanier would be expected from implementing the preferred alternative. None of the adverse effects would be expected to be significant, many would be of short duration, and most would be apparent to only a small number of lake users or cause effects that would be considered negligible. No federal, state, or local laws or regulations would be violated by implementing the proposed management measures. The beneficial effects of those measures would also be considered negligible but could be more apparent to the lake user population because many of the measures could have a broader beneficial effect on the recreational experience at the lake.

Long-term negligible adverse and minor beneficial effects on resource areas at Lake Lanier would be expected from allowing seaplane operations on the lake. None of the adverse effects would be expected to be significant. All seaplane operations would be conducted in accordance with Federal Aviation Administration (FAA) regulations, which require that all pilots have a current FAA license and be specially trained and rated in seaplanes, and in accordance with USACE, Mobile District policies regarding seaplane activities on USACE-managed recreational resources.

3.14.1.1 Adverse Effects

Short-term adverse effects of implementing the preferred alternative would result from construction activities and vehicle and equipment use required to implement the management measures, with their associated air pollutant emissions, noise, ground disturbance, and transportation effects. Long-term adverse effects of implementing the preferred alternative would result from permanent changes at the lake that would introduce additional traffic and other activities that could create on-going resource use and impacts.

Long-term negligible adverse effects of allowing seaplane operations on Lake Lanier would be expected from engine emissions, noise, and engine leaks.

3.14.1.2 Beneficial Effects

Short-term beneficial effects of implementing the preferred alternative primarily would be economic effects attributable to construction and development activity. Long-term beneficial effects of implementing the proposed management measures would be expected on aesthetics, water resources, biological resources, economics, and recreation. Many of these beneficial effects would be realized directly by lake users. Lake users—and especially frequent users of the lake—therefore, would be expected to perceive the preferred alternative and Master Plan Update primarily as having a beneficial effect.

Long-term minor beneficial effects of allowing seaplane operations on the lake would be expected from the additional economic and recreational activity seaplane operations would generate.

3.14.2 No Action Alternative

Short- and long-term negligible and minor adverse and beneficial effects on the resources of Lake Lanier would be expected from implementing the no action alternative. The no action alternative would be expected to have much the same effects as the preferred alternative but some of those effects, particularly adverse effects, would be expected to have a slightly greater impact because of the additional

development that would be allowed and the lack of increased educational outreach activities under the no action alternative. No federal, state, or local laws or regulations would be violated by implementing the no action alternative, no disproportionate adverse effects on low-income or minority populations or children would be expected, no federal- or state-protected species would be expected to be affected, and no population of any individual species would be threatened by development along the lake's shoreline. The beneficial effects of continuing to manage the lake under the 1987 Master Plan would also be considered minor.

3.14.2.1 Adverse Effects

Adverse effects under the no action alternative would be expected from construction temporarily and operational activities on a continuing basis, ground disturbance to accomplish the development and increased future user activity at the lake, decreased natural vegetation along the shoreline, increased traffic congestion and more boaters on the lake, and additional demand on utility systems.

3.14.2.2 Beneficial Effects

Beneficial effects under the no action alternative would be expected from the economic contributions of construction and development activities and increased visitor spending.

3.15 CUMULATIVE EFFECTS

CEQ regulations define a cumulative impact as:

> …the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. (40 CFR 1508.7)

Continued development near the lake and within the larger watershed draining to the lake has the potential to create a cumulative effect. Development is expected to continue on private lands immediately adjacent to the lake and within the lake's watershed areas. More residential and commercial development is expected, accompanied by additional roads and other infrastructure elements. Increased population will accompany growth, and development will place greater demands on lake resources and potentially lead to further development of facilities at the lake. Air pollution, noise, congestion on area roads, and other effects that normally accompany growth will affect the lake environs. Construction associated with development will cause soil loss and sedimentation in streams and rivers feeding the lake, affecting water quality. Watershed loadings provide the bulk of the loadings to the lake. Most of the load originates in the upper watershed of the Chattahoochee River. The most direct influence of development in adversely affecting lake water quality would be the result of increased concentrations of total phosphorus and total nitrogen and decreased dissolved oxygen. Given the overriding influence that the watershed has on the lake's water quality, adverse effects attributable to the preferred alternative would contribute negligibly to any cumulative effect on lake water quality.

The preferred alternative of updating the Lake Lanier Master Plan would have an overall effect of limiting overuse of the lake's resources as compared to the no action alternative. By doing so, the preferred alternative would be expected to contribute less to cumulative adverse effects on lake resources than would the no action alternative.

3.16 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects are those effects that cannot be avoided or fully mitigated if the proposed action is implemented. Although adverse effects could be avoided, minimized, or mitigated by the measures described in section 4.2, some effects would remain. Some erosion and sedimentation resulting from soil disturbance is unavoidable. Resources would be consumed by activities required to implement the preferred alternative. Vehicle and equipment use, creation and modification of land-based amenities, and most notably among the proposed management measures—a realignment of Buford Dam Road, would all consume resources and would likely result in some erosion and sedimentation. No unavoidable adverse effect would be significant and with the proposed management measures being geared toward achieving a goal of meeting current and future recreational needs at Lake Lanier while preserving the resource for future generations, future unavoidable adverse effects would be expected to be reduced by adopting the proposed action.

3.17 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

This analysis looks at the relationship between man's short-term uses of environmental resources and the maintenance and enhancement of long-term productivity. Adopting the proposed Lake Lanier Master Plan management measures would have both short-term and long-term effects on the environment that cannot be mitigated. The adverse effects would be negligible or minor. Water quality and biological resources on Project lands and in the surrounding watersheds would be mostly unaffected by the proposed management measures, and these are the resources of greatest importance to the long-term productivity of the lake and its authorized uses. Indeed, adopting the management measures would be expected to help preserve the lake's resources for future generations, thus doing so would be expected to benefit the long-term productivity of the Lake Lanier environment.

3.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitments generally affect environmental resources such as soils, wetlands, and riparian areas, but can involve financial resources. Such commitments are considered irreversible and irretrievable because their implementation would affect a resource that has deteriorated to the point that renewal can occur only over a long period or at a great expense, or because they would cause the resource to be destroyed or removed. Because adopting the proposed action would involve a continuation of existing activities at Lake Lanier and a reduction in potential future construction and overuse of the lake's resources, any irreversible or irretrievable commitment of resources would be minimal.

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SECTION 4.0 FINDINGS AND CONCLUSIONS

4.1 FINDINGS

Overall, both the preferred alternative and the no action alternative would have adverse and beneficial effects on many of the resource areas at the lake. For each resource area on which the preferred alternative would be expected to have an adverse effect, the no action alternative would also be expected to have an adverse effect, but for many of the same resource areas, the preferred alternative would be expected to have beneficial effects as well. On balance, implementing the preferred alternative would be expected to improve environmental and socioeconomic conditions at Lake Lanier, and, under the no action alternative, environmental and socioeconomic conditions at the lake would be expected to deteriorate (Table 4-1).

Table 4-1. Comparison of Effects of the Preferred Alternative and No Action Alternative

Resource area	Preferred alternative effects	No action alternative effects
Land Use	Minor beneficial	Negligible/minor adverse
Aesthetics and Visual Resources	Minor adverse Minor beneficial	Minor adverse
Air Quality	Negligible/minor adverse Negligible beneficial	Minor adverse
Noise	Negligible/minor adverse Negligible beneficial	Negligible/minor adverse
Topography and Soils	Negligible/minor adverse Negligible beneficial	Minor adverse
Water Resources	Negligible/minor adverse Negligible/minor beneficial	Negligible/minor adverse
Biological Resources	Minor adverse Minor beneficial	Minor adverse
Cultural Resources	None	None
Socioeconomics	Negligible adverse Minor beneficial	Minor beneficial
Recreation	Negligible/minor beneficial	Minor adverse Minor beneficial
Transportation	Negligible/minor adverse Negligible/minor beneficial	Minor adverse
Utilities	Minor adverse	Negligible adverse
Hazardous and Toxic Materials and Wastes	None	None

4.2 MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

No significant adverse effects would be expected to occur from updating the Lake Lanier Project Master Plan and implementing the preferred alternative. USACE would take necessary measures to minimize the adverse effects of implementing the preferred alternative by using and requiring that other entities operating on the lake use best management practices (BMPs) to reduce adverse effects. BMPs would primarily relate to controlling air pollution, noise, soil loss, and water pollution during construction activities in accordance with federal, state, and local requirements.

4.3 CONCLUSION

Based on the analysis in this EA, USACE's preliminary conclusion is that implementing the preferred alternative would have no significant effects on the quality of the natural or human environment and, consequently, that the analysis in the EA supports a FONSI. Preparation of an EIS under NEPA is not required.

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SECTION 6.0 PERSONS CONSULTED

Adam Brown
Regional Economist
U.S. Army Corps of Engineers, Mobile District

Amy Cobb
Natural Resources Management Section
U.S. Army Corps of Engineers, Mobile District

Velma Diaz
Civil Engineer
Planning and Environmental Division
U.S. Army Corps of Engineers, Mobile District

Russell Lundstrom
Lake Lanier Project Management Office
U.S. Army Corps of Engineers, Mobile District

Timothy A. Rainey
Operations Project Manager
Lake Lanier Project Management Office
U.S. Army Corps of Engineers, Mobile District

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SECTION 7.0 LIST OF PREPARERS

Michelle Cannella, Tetra Tech, Inc.
BS, Mineral Economics, Pennsylvania State University
Years of Experience: 19

Penelope Garver, Tetra Tech, Inc.
BS, Journalism, University of Maryland
Years of Experience: 28

Jennifer Jarvis, Tetra Tech, Inc.
BS, Environmental Resource Management, Virginia Polytechnic Institute and State University
Years of Experience: 17

Tim Lavallee, LPES, Inc.
MS, Environmental Health, Tufts University
BS, Mechanical Engineering, Northeastern University
Years of Experience: 25

Samuel Pett, Tetra Tech, Inc.
MS, Environmental Science and Policy, University of Massachusetts/Boston
BS, Wildlife Biology and Zoology, Michigan State University
Years of Experience: 25

Kristin Shields, Tetra Tech, Inc.
BA, Environmental Science, Sweet Briar College
Years of Experience: 27

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