
***WHITE RIVER WATERSHED
ARKANSAS AND MISSOURI
WHITE RIVER
TABLE ROCK LAKE***

***MASTER PLAN FOR DEVELOPMENT
AND MANAGEMENT OF TABLE ROCK
LAKE***



Revised Final: February 2014

PREFACE

The Master Plan for Table Rock Lake was first approved January 19, 1956. Subsequent revisions were prepared with the latest revision approved on December 23, 1976. The Master Plan is intended to serve as a guide for the orderly and coordinated development, management, and stewardship of all lands and water resources of the project. It presents data on existing conditions, anticipated recreational use and the type of facilities needed to service anticipated use, sensitive resources requiring protection, and an estimate of future requirements. Since the 1976 master plan revision, commercial and resort home development in the Table Rock Lake region has created new and unforeseen demands on the public lands and resources of the project. These new demands on project resources, as well as naturally occurring changes to the resources and new management procedures and directives within U. S. Army Corps of Engineers (USACE), has dictated the preparation of this Master Plan revision.

This revised Master Plan presents an inventory of land resources and how they are classified, existing park facilities, an analysis of resource use, anticipated influences on project operation and management, and an evaluation of future needs (required to provide a balanced management plan for cultivating the value of the land and water resources). Included in the revised Master Plan is an evaluation of expressed public opinion, new resource use objectives, and a new land classification system. The format utilized for this plan is outlined in Engineer Regulation/Engineer Pamphlet 1130-2-550 (dated 30 January 2013), which sets forth policy and procedure to be followed in preparation and revision of project Master Plans. This guidance is different from the original Master Plan format, which was a design memorandum. Table Rock Lake's original Master Plan can be found in design memorandum 17; a listing of all the previous Master Plan design memorandums and prior supplements can be found in Appendix C.

U.S. Army Corps of Engineers Commonly Used Acronyms and Abbreviations

404(b)(1) – Water quality permit per CWA 77	CVM – Contingent Value Method
AAE – Average Annual Equivalent	CW – Civil Works
AAR –After Action Review	CWA – Clean Water Act, 1977
AF – Acre Feet	CX – Center of Expertise
AFB – Alternatives Formulation Briefing	CY – Cubic Yard/ Current Year
AOR – Area of Responsibility	DA – Department of Army
ASA(CW) – Assistant Secretary of the Army for Civil Works	DC – District Commander/Division Commander
ASAP – As Soon as Possible	DCG – Deputy Commanding General
ATR - Agency Technical Review	DCW – Director of Civil Works
BC – Benefit Cost	DDC – Deputy District Commander
BCR – Benefit Cost Ratio	DDE – Deputy District Engineer
BFE – Base Flood Elevation	DDR – Design Documentation Report
BG – Brigadier General	DE – District Engineer/ Division Engineer
BLUF – Bottom Line Up Front	DEIS – Draft Environmental Impact Statement
BMP—Best Management Practice	DIST – District
BOD – Biological Oxygen Demand	DIV – Division
BY – Budget Year	DMP – Decision Management Plan
C - Construction	DOD – Department of Defense
CDR - Commander	DOE – Department of Energy
CE – Corps of Engineers	DOI – Department of Interior
CEA – Cost Effectiveness Analysis	DOJ – Department of Justice
CE/ICA – Cost Effectiveness/ Incremental Cost Analysis	DOT –Department of Transportation
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act, 1980 (Superfund)	DQC - District Quality Control
CERL – Construction Engineering Research Laboratory	DP – Decision Point
CEQ – Council on Environmental Quality	DPM – Deputy for Project Management
CF – Copy Furnished	DPR – Detailed Project Report
CFR – Code of Federal Regulations	DSAP – Dam Safety Assurance Program
CFS – Cubic Feet per Second	DX - Directory of Expertise
CG - Construction General/ Commanding General	E&D – Engineering and Design
COB – Close of Business/ Command Operating Budget	E&PW – Energy and Public Works (Senate)
COL – Colonel	EA—Environmental Assessment
CONUS – Continental United States	EAB – Expected Annual Benefits
COP – Community of Practice	EAD – Expected Annual Damages
COR – Contracting Officer’s Representative	EC – Engineering Circular
CRA – Continuing Resolution Authority	EDR – Engineering Decision Report
	EGM – Economics Guidance Memorandum
	EIS – Environmental Impact Statement
	EM – Engineering Memorandum
	EO – Executive Order
	EOC – Emergency Operations Center
	EOY – End of Year

EP – Engineering Pamphlet
ER – Engineering Regulation
ERDC – Engineering Research & Design Center
EROC – Electronic Reporting Organization Code
EPA – Environmental Protection Agency
ESA Endangered Species Act
ESG – Executive Steering Group
EQ – Environmental Quality
ETL – Engineer Technical Letter
F&A – Finance and Accounting
FWL – Fish and Wildlife
FWS – Fish and Wildlife Service
FCA – Flood Control Act
FCSA – Feasibility Cost Sharing Agreement
FEIS – Final Environmental Impact Statement
FEMA – Federal Emergency Management Agency
FERC – Federal Energy Regulatory Commission
FERS – Federal Employees Retirement System
FFE – First Floor Elevation/ Finished Floor Elevation
FOA – Field Operating Agency/Activity
FOI – Freedom of Information
FOIA – Freedom of Information Act
FONSI - Finding of No Significant Impact
FPMS – Floodplain Management Services
FR – Federal Register
FRC – Feasibility Review Conference
FRM – Flood Risk Management
FS – Feasibility Study
FSM – Feasibility Scoping Meeting
FUDS – Formerly Used Defense Site
FUSRAP – Formerly Utilized Sites Remedial Action Program
FY – Fiscal Year
FYI – For Your Information
FYSA- For Your Situational Awareness
GI – General Investigations
GIS - Geographic Information Systems
GNF – General Navigation Features

GOV – Government/ Government-owned Vehicle
GRR – General Reevaluation Report
GS – General Schedule
GSA – General Services Administration
H&H – Hydrology and Hydraulics
HAC – Hydropower Analysis Center
HAZMAT – Hazardous Materials
HD – House Document
HEC – Hydrologic Engineering Center
HEP – Habitat Evaluation Procedures
HES – Habitat Evaluation System
HHS – Health and Human Services
HQ - Headquarters
HQUSACE – Headquarters, U. S. Army Corps of Engineers
HR – Human Resources/House of Representatives/House Resolution
HTRW – Hazardous, Toxic, and Radioactive Wastes
HU – Habitat Unit
I - Investigations
IDIQ – Indefinite Delivery, Indefinite Quantity
IEPR – Independent External Peer Review
IG – Inspector General
IN – Inland Navigation
IPA – Intergovernmental Personnel Act
IPR – In-Progress Review
IRC – Issue Resolution Conference
ITR – Independent Technical Review (now ATR)
IWR – Institute for Water Resources
IWW – Inland Waterways
IWTF – Inland Waterway Trust Fund
IWUB – Inland Waterway User Board
L&D – Lock and Dam
LCC –Life Cycle Cost
LDA – Limited Development Area
LER – Lands, Easements, and Rights-of-Way
LERR – Lands, Easements, Rights-of-Way, and Relocations
LERRD – Lands, Easements, Rights-of-Way, Relocations, and Disposal
LOI – Letter of Intent

LPP – Locally Preferred Plan/ Local Protection Project
LRR – Limited Reevaluation Report
LSF – Local Service Facilities
LTC – Lieutenant Colonel
M&I – Municipal and Industrial
MACOM – Major Army Command
MCACES – Micro-computer Aided Cost Engineering System
MCX – Mandatory Center of Expertise
MFR – Memorandum for Record
MG – Major General
MHHW – Mean Higher High Water
MHW – Mean High Water
MILCON – Military Construction
MIPR – Military Interdepartmental Purchase Request
MLW – Mean Low Water
MLLW – Mean Lower Low Water
MOA – Memorandum of Agreement
MOB – Mobilization
MOU – Memorandum of Understanding
MOY – Middle of Year
MR&T – Mississippi River and Tributaries
MRC – Mississippi River Commission
MSC – Major Subordinate Command
MSL – Mean Sea Level
NAS – National Academy of Sciences
NAV – Navigation
NDC – Navigation Data Center
NED – National Economic Development
NER – National Ecosystem Restoration
NEPA – National Environmental Policy Act
NFIP – National Flood Insurance Program
NGO – Nongovernmental Organization
NGVD – National Geodetic Vertical Datum
NHPA – National Historic Preservation Act
NLT – No Later Than
NOAA – National Oceanographic and Atmospheric Administration
NPS – National Park Service
NRHP – National Register of Historic Places
NTE – Not to Exceed
NTP – Notice to Proceed
O&M – Operations and Maintenance
OBE – Overcome by Events

OC – Office of Counsel
OMB – Office of Management and Budget
OMRR&R – Operations, Maintenance, Repair, Replacement and Rehabilitation
OSA – Office of the Secretary of Army
OSD – Office of the Secretary of Defense
OSE – Other Social Effects
OWPR – Office of Water Project Review
P&D – Planning and Design
P&G – Principles and Guidelines
P&S – Principles and Standards/ Plans and Specifications
PA – Planning Associate/ Per Annum
PAB – Planning Advisory Board
PAC – Post-authorization Change
PACR – Post-authorization Change Report
PAS – Planning Assistance to States
PCoP – Planning Community of Practice
PCS – Permanent Change of Station
PCX – Planning Center of Expertise
PDT – Project Delivery Team
PE – Professional Engineer
PED – Pre-construction Engineering and Design
PGM – Project Guidance Memorandum
PGN – Planning Guidance Notebook
PIR – Project Implementation Report
PL – Public Law
PM – Project Manager/Management
PMBP – Project Management Business Process
PMP – Project Management Plan
PMF – Probable Maximum Flood
POA – Alaska District
POC – Point of Contact
POTUS – President of the United States
POV – Privately-owned Vehicle/ Point of View
PPA – Project Partnership Agreement
PRB – Project Review Board
PTL – Planning Technical Lead
Q's & A's – Questions and Answers
QA/QC – Quality Assurance / Quality Control
QM – Quality Manual
QMP – Quality Management Plan

QMR – Quality Management Representative
QMS – Quality Management System
RA – Risk Analysis/ Risk Assessment/Remedial Action
R&D – Research and Development
R&H – River and Harbor
R&U – Risk and Uncertainty
RBRCR – Remaining Benefits, Remaining Costs Ratio
REC - Recreation
RED – Regional Economic Development
REP – Real Estate Plan
RIT – Regional Integration Team
RITA – Relocation Income Tax Adjustment
RFP - Request for Proposal
RP – Review Plan/ Resource Provider
RMB – Regional Management Board
RMC – Risk Management Center
RMO – Review Management Organization/Resource Management Office
RMP – Risk Management Plan
ROD – Record of Decision
ROW – Right of Way
RR – Risk Register
RTS – Regional Technical Specialist
S&A – State and Agency/Supervision and Administration
S&I – Supervision and Inspection
SAR – Safety Assurance Review
SCORP – State Comprehensive Outdoor Recreation Plan
SCOTUS – Supreme Court of the United States
SCS – Soil Conservation Service
SD – Senate Document
SEPWC – Senate Environment and Public Works Committee
SES – Senior Executive Service
SFO – Support for Others

SHPO – State Historic Preservation Office
SITREP – Situation Report
SMART – Specific Measurable Attainable Risk-Informed Timely
SME – Subject Matter Expert
SMSA – Standard Metropolitan Statistical Area
SOP – Standard Operating Procedure
SOS – Scope of Services/Scope of Studies
SOW – Scope of Work
SPF – Standard Project Flood
SR – Senate Resolution
T&ES – Threatened and Endangered Species
T&I – Transportation and Infrastructure (House)
TBA – To be Announced
TBD – To be Determined
THPO – Tribal Historic Preservation Office
TMDL -Total Maximum Daily Load
TRC – Technical Review Conference
UDV – Unit Day Value
USACE – U. S. Army Corps of Engineers
USC – United States Code
USCG – United States Coast Guard
USEPA – United States Environmental Protection Agency
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
VE – Value Engineering
VT – Vertical Team
VTC – Video Teleconference
WMP – Watershed Management Plan
WQ – Water Quality
WRC – Water Resources Council
WRDA – Water Resources Development Act
WS – Water Supply

TABLE OF CONTENTS

Chapter 1	Introduction.....	1-1
	a. Project Authorization	1-1
	b. Project Purpose.....	1-2
	c. Purpose and Scope of Master Plan	1-3
	d. Brief Watershed and Project Description	1-3
	e. Listing of Prior Design Memorandums	1-4
	f. Pertinent Project Information.....	1-4
Chapter 2	Project Setting and Factors Influencing Management and Development	
(Existing Conditions)		2-1
	a. Description of Reservoir	2-1
	b. Hydrology and Groundwater.....	2-1
	c. Sedimentation and Shoreline Erosion.....	2-2
	d. Water Quality	2-2
	e. Project Access	2-4
	f. Climate	2-6
	g. Topography, Geology, and Soils.....	2-7
	h. Resource Analysis (Level One Inventory Data)	2-10
	(1) Fish and Wildlife Resources.....	2-10
	(2) Vegetative Resources.....	2-11
	(3) Threatened & Endangered Species	2-14
	(4) Invasive species	2-14
	(5) Ecological Setting	2-15
	(6) Wetlands.....	2-17
	i. Cultural Resources	2-17
	(1) Prehistoric.....	2-17
	(2) Historic	2-18
	(3) Previous Investigation in the Table Rock Lake Area	2-18
	(4) Recorded Cultural Resources in the Lake Area	2-18
	j. Demographics	2-19
	k. Recreation Facilities, Activities and Needs	2-21
	(1) Facility Information	2-22
	(2) Recreation Areas.....	2-22

(3) Future Park Development Area	2-28
(4) Zones of Influence	2-28
(5) Visitation Profiles (OMBIL)	2-32
(6) Recreation Analysis	2-32
(7) Recreational Carrying Capacity.....	2-37
l. Real Estate	2-43
(1) Acquisition Policy.....	2-43
(2) Management and Disposal Policy	2-43
m. Pertinent Public Laws	2-43
Chapter 3 Goals and Objectives.....	3-1
a. The Table Rock Lake Master Plan Revision Vision Statement	3-1
b. Policy and Master Plan Revision Schedule.....	3-1
c. Goals and Objectives	3-3
(1) Goals	3-3
(2) Resource Objectives.....	3-4
Chapter 4 Land Allocation, Land Classification, Water Surface, and Project Easement	
Lands	
a. Introduction	4-1
Chapter 5 Resource Plan	5-1
Chapter 6 Special Topics/Issues/Considerations	6-1
a. Vegetative Management Area.....	6-1
b. Shoreline Moratorium.....	6-2
c. Corps Partnership with Ozark Rivers Heritage Foundation (ORHF).....	6-2
d. Table Rock Lake Shoreline Management Plan (SMP).....	6-2
e. Encroachments and Trespasses	6-3
f. Cow Creek Land Exchange.....	6-3
g. Low Density to ESA Classification Changes	6-4
h. Rezoning Requests	6-4
i. Updated Threatened and Endangered Species List/Cultural Resource Sites.....	6-4
j. Current Shoreline Use Permits in ESA.....	6-5
k. Commercial Remote Service Dock Policy	6-5
l. SWEPCO	6-5
m. Limited Development Area Zoning Impacts	6-6
n. Future of Joe Bald Park	6-6
o. Expansion in the Kimberling City Area	6-7

p. Sedimentation.....	6-7
q. Water Supply.....	6-7
r. Public Safety	6-8
s. Public Outreach	6-8
t. Boat Dock Building.....	6-9
u. Dry Storage Operations	6-9
v. Water Management and Flood Risk Management.....	6-10
w. Population Increase/Generational Analysis	6-15
x. Symbiotic relationship between Table Rock Lake and Branson	6-15
Chapter 7 Agency and Public Coordination.....	7-1
a. Introduction	7-1
b. Scoping	7-1
c. Focus Groups.....	7-2
d. Draft Master Plan/Draft Environmental Assessment	7-2
e. Final Master Plan/Final EA.....	7-3
Chapter 8 Summary of Recommendations.....	8-1
a. Summary Overview	8-1
b. Land Classifications	8-1
c. Recommendation	8-1
Chapter 9 Bibliography	9-1

List of Tables:

Table 1-1 Pertinent Data of the Dam and Lake
Table 1-2 Real Estate Acquisition Limits
Table 1-3 Flows at Table Rock Dam
Table 2-1 Threatened, Endangered, and Species of Concern
Table 2-2 Population and Income Projections for the Table Rock Lake Zone of Influence
Table 2-3 Race and Ethnicity by State for the Table Rock Lake Zone of Influence
Table 2-4 Age and Education by State for the Table Rock Lake Zone of Influence, 2010 (percent)
Table 2-5 2012 Table Rock Lake Corps of Engineers Distribution of Reservations by County
Table 2-6 Annual Attendance from 2003 – 2012
Table 2-7 Popular Outdoor Activities (Arkansas)
Table 2-8 Popular Outdoor Activities (Missouri)
Table 2-9 Table Rock Project Occupancy Percentages
Table 5-1 Acreage Matrix

List of Figures:

Figure 1-1 Frequency of Lake Elevation

Figure 2-1 Table Rock Lake Project Access

Figure 2-2 Geology and Fault Lines of Table Rock Lake

Figure 2-3 Cow Creek Block Vegetation

Figure 2-4 Table Rock Lake Zone of Influence

Figure 2-5 Table Rock Lake Management Compartment Classification for Ramp Boaters (Map A)

Figure 2-6 Table Rock Lake Management Compartment Classification for Marina, Dock, and Resident Boaters (Map B)

List of Appendices:

Appendix A Land Classification and Easement Plates

Appendix B Park Map Plates

Appendix C Design Memorandums and Prior Supplements

Appendix D NEPA Documents

Chapter 1 Introduction

a. Project Authorization

Authorization is defined as “permission to undertake a specific activity”. In the context of this Master Plan revision, project authorization refers to congressional legislation which granted authority to the USACE to study, construct, and eventually operate the White River Basin reservoirs, specifically Table Rock Lake. Initial authorizations for the project included the primary project purposes of flood control and generation of hydroelectric power, followed by subsequent authorizations for recreation, fish and wildlife habitat, and water supply.

In 1937 the Chief of Engineers presented a report to Congress providing an overview of flood-control plans for the Ohio and Mississippi Valleys. The report stressed the need for construction of a system of flood control reservoirs in the White River Basin. In reviewing the Chief of Engineers’ report, the House Committee on Flood Control determined that in addition to flood control, permanent pools for recreation, power generation, and conservation of water for other useful purposes would significantly increase the value and utility of reservoir projects without sacrificing flood control values.

The Table Rock Lake project was originally authorized as one of the multiple-purpose reservoir projects in the White River Basin for control of floodwaters, generation of hydropower, and other purposes by Section 4 of the Flood Control Act of 1938 and as amended by the Flood Control Act of 1941.

Table Rock Lake project authorizations include the following:

- The Flood Control Act approved 28 June 1938 (Public Law No. 761, 75th Congress, 3rd Session) as modified by the Flood Control Act approved 18 August 1941 (Public Law No. 228, 77th Congress, 1st Session) to include the authorization of the project for flood control and generation of hydroelectric power.
- Section 4 of the Flood Control Act approved 22 December 1944 (58 stat 889), as amended by Section 4 of the Flood Control Act approved 24 July 1946 (60 stat 642), as amended by Section 209 of the Flood Control Act approved 3 September 1954, as further amended by Section 207 of the Flood Control Act of 1962, as further amended by Section 2 of the Land and Water Conservation Fund Act of 1965;
- Section 210 of the Rivers and Harbors Flood Control Act of 1968 authorized the Chief of Engineers, under supervision of the Secretary of the Army, to provide for recreational development and use of the lake projects under his control.
- Public Law 86-93, 86th Congress, (s. 42, approved 17 July 1959) modified the authorization of the project to include, without reimbursement, 27,000 acre-feet of storage to provide water for operation of a fish hatchery by the State of Missouri.
- Section 6, Public Law 78-534. Under Section 6 of Public Law 78-534 (the 1944 Flood Control Act), the Secretary of the Army is authorized to enter into agreements for surplus water with states, municipalities, private concerns, or individuals at any reservoir under the control of the Department of the Army. The price and terms of the agreements may be

as the Secretary deems reasonable. These agreements may be for domestic, municipal, and industrial uses, but not for crop irrigation.

- Title III of Public Law 85-500 (the 1958 River and Harbor Act) is entitled the "Water Supply Act of 1958." Section 301(a), established a policy of cooperation in development of water supplies for domestic, municipal, industrial, and other purposes. Section 301(b) is the authority for the Corps to include municipal and industrial (M&I) water storage in reservoir projects and to reallocate storage in existing projects to M&I water supply. However, as specified in Section 301(d), modifications to a planned or existing reservoir project to add water supply, which would seriously affect the project, its other purposes, or its operation, requires congressional authorization. This act was amended by Section 10 of Public Law 87-88 and by Section 932 of Public Law 99-662.
- Section 10 of Public Law 87-88 (the Federal Water Pollution Control Act Amendments of 1961) modified the 1958 Water Supply Act. This modification permitted the acceptance of assurances for future water supply to accommodate the construction cost payments for future water supply.
- Section 932 of Public Law 99-662 (the Water Resources Development Act 1986), amended the Water Supply Act of 1958, as amended. This amendment applies to Corps projects but not to Bureau of Reclamation projects. The amendment eliminated the 10-year interest free period for future water supply, modified the interest rate formula, limited repayment to 30 years, and required annual operation, maintenance and replacement costs to be reimbursed annually. This latter requirement had always been a part of Corps policy and repayment procedures.
- Public Law 88-140, approved 16 October 1963, extended to the non-Federal sponsor of water supply storage the right to use the storage for the physical life of the project subject to repayment of costs. This removed an uncertainty as to the continued availability of the storage space after the 50-year maximum period previously allowed in contracts.
- Public Law 104-303 (the Water Resources Development Act of 1996). Authorized recreation and fish and wildlife mitigation as purposes of the project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of the project.
- Section 729 of Public Law 99-662 (the Water Resources Development Act 1986). The Secretary, in coordination with the Secretary of the Interior and in consultation with appropriate Federal, State, and local agencies, is authorized to study the water resources needs of river basins and regions of the United States. WRDA 2000, Section 202 established the cost sharing of Section 729 studies at 50% Federal/50% non-Federal, half of which can be in-kind services and increased the authorization ceiling from \$5,000,000 to \$15,000,000. WRDA 2007, Section 2010 modified the cost sharing to 75% Federal/25% non-Federal, 100% of which can be in-kind services.

b. Project Purpose

Table Rock Lake is a multiple purpose water resource development project operated primarily for flood risk management and hydropower generation. Additional purposes include providing water storage to supply a fish hatchery (Public Law 86-93 of 1959), recreation, and fish and wildlife mitigation to the extent that those additional purposes do not adversely affect flood control, power generation, or other authorized purposes of the project (Flood Control Act of

1944 as amended in 1946, 1954, 1962, 1965 and 1968 and the Water Resources Act of 1996). Table Rock Lake is a major component of a comprehensive plan for water resource development in the White River Basin of Missouri and Arkansas. Additional beneficial uses include increased power output of downstream power stations resulting from the regulated flow from the Table Rock Lake project.

c. Purpose and Scope of Master Plan

This revised Master Plan replaces Design Memorandum No. 17-E, Updated Master Plan for Development and Management of Table Rock Reservoir approved December 1976. The 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 resource project. The Master Plan guides the efficient and cost-effective management, development, and use of project lands. It is a vital tool for the responsible stewardship and sustainability of project resources for the benefit of present and future generations.

The Master Plan guides and articulates Corps responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. The Master Plan is a dynamic operational document projecting what could and should happen over the life of the project and is flexible based upon changing conditions. The Master Plan deals in concepts, not in details, of design or administration. Detailed management and administration functions are addressed in the Operational Management Plan (OMP), which implements the concepts of the Master Plan into operational actions.

The Master Plan will be developed and kept current for Civil Works projects operated and maintained by the Corps and will include all land (fee, easements, or other interests) originally acquired for the projects and any subsequent land (fee, easements, or other interests) acquired to support the operations and authorized missions of the project.

The Master Plan is not intended to address the specifics of regional water quality, shoreline management, or water level management; these areas are covered in a project's shoreline management plan or water management plan. However, specific issues identified through the Master Plan revision process can still be communicated and coordinated with the appropriate internal Corps resource (i.e. Operations for shoreline management) or external resource agency (i.e. Missouri Department of Natural Resources for water quality) responsible for that specific area.

d. Brief Watershed and Project Description

The project is located in the scenic Ozark Mountain region of southwest Missouri and northwest Arkansas. The total area contained in the Table Rock project, including both land and water surface, consists of 62,207 acres. Of this total, 2,576 acres are in flowage easement (Note: a small difference in acreage figures exist throughout this document due to using GIS/survey plats data which is more accurate and based on new technology versus the deed language which was derived many years ago without the aid of technology). The region is characterized by narrow ridges between deeply cut valleys that are forested with deciduous trees and scattered pine and

cedar. When the lake is at the top of the conservation pool, the water area comprises 42,560 acres and 742 miles of shoreline. The shoreline is irregular with topography ranging from steep bluffs to gentle slopes.

Construction of Table Rock Dam was initiated in November 1954. The dam was completed in August 1958, and the powerhouse and switchyard were completed in June 1959. Table Rock Lake was declared operational for public use in March 1960. There are 26 public use areas around Table Rock Lake. There are 12 parks on the lake presently managed by the Corps of Engineers. At the drafting of this final Master Plan, the Corps is planning for significant changes to park operations and/or closures because of constrained funding. Parks have been evaluated using an efficiency review process. Those parks chosen for closure for budgetary reasons may be offered for lease through standard leasing procedures, and if not leased, these parks may be reopened at such time as adequate funding becomes available. One park, Viney Creek, is temporarily closed. The U.S. Forest Service has one public use area (Big Bay) which they maintain and operate. One State Park (Table Rock State Park) is located on Table Rock Lake and it is operated by the Department of Natural Resources. Two Parks (Port of Kimberling and Long Creek) are operated by a commercial concessionaire. One Park (Beaver) is operated by the City of Beaver, Arkansas. There are eight other public use areas operated by the Corps around the lake. One of the eight is the Cow Creek public use area which the Corps operates the boat launch site, but the Boy Scouts maintain and operate the group camping area. A more detailed description of these parks follows in Chapter 2.

e. Listing of Prior Design Memorandums

A listing of prior design memorandums and accompanying supplements are provided in a table listing in Appendix C. The supplements are also provided in Appendix C and with the release of this Master Plan, are considered incorporated into this document.

f. Pertinent Project Information

Although this revised Master Plan is focused on management of land and water surface related to project purposes of outdoor recreation and environmental stewardship of natural and cultural resources, the following information about primary project facilities is provided to aid in understanding how all project purposes are interrelated.

Table Rock Dam is located at river mile 528.8 on the White River in Stone and Taney Counties, Missouri, about six miles southwest of Branson, Missouri. The lake extends westerly along the White River to Beaver Dam at mile 609.0 and comprises lands in Taney, Stone, and Barry Counties in Missouri and Boone and Carroll Counties in Arkansas. Table Rock Lake is one of a series of five lakes in the Upper White River Basin in northern Arkansas and southern Missouri. The other lakes in the series are Beaver, located upstream, Taneycomo and Bull Shoals located downstream on the White River, and Norfolk on the North Fork River.

The Table Rock project includes a concrete gravity-type dam with embankment extensions and a hydro-electric generating plant. The dam is comprised of 1,602 feet of concrete gravity section and 4,821 feet of embankments at a height of 252 feet above the streambed. The spillway

section, 531 feet long, is located above the river channel and is controlled by 10 tainter crest gates 37 feet high by 45 feet long. In the base of the concrete section are four, 4-foot by 9-foot conduits and four, 18-foot diameter power penstocks. The power generating plant consists of four 50,000 kilowatt generating units. Table 1-1 summarizes the pertinent engineering data on the project. Real estate acquisition limits are shown in Table 1-2.

The Corps completed construction of an auxiliary spillway in 2005 to provide additional release capacity for the safe operation of the dam during the most extreme rainfall events. The auxiliary gated spillway and embankment is located approximately 3,500 feet north of the existing dam. The auxiliary spillway was placed here because a natural draw occurs just upstream of the existing embankment at this location (former Moonshine Beach area) and because the existing embankment was more shallow in this area, thereby reducing the construction cost. The auxiliary spillway includes a gated ogee spillway, earthen embankment, spillway bridge with roadway, and other features. The auxiliary spillway has eight—48 ft wide by 46.75 ft high Tainter gates with seven—10 ft wide intermediate piers. The concrete ogee weir has a crest elevation of 896 ft, which matches the crest elevation of the existing dam. Overall, the spillway is approximately 459 ft wide and provides a release capacity of 400,000 cfs. This increases the total spilling capacity of Table Rock Dam to about 950,000 cfs, which will pass the most severe rainfall events.

Operation of the project related to the storage in the pools is twofold. Conservation pool storage is designed for holding water to be used for authorized purposes, both during normal conditions or during an extended period of below normal rainfall. The flood pool zone is for the temporary impoundment of water to be released after downstream high water has receded. The hydroelectric power plant produces electricity which is marketed by the Southwestern Power Administration, U.S. Department of the Energy. The dam was designed with spillway capacity to pass inflow with a maximum pool elevation of 942 feet above mean sea level (m.s.l.) Under less than extreme conditions, the lake is operated for a nominal flood control pool elevation of 931 feet m.s.l. Withdrawals of storage for authorized conservation uses, can cause the lake elevation to fluctuate between 915 feet m.s.l., which is the top of the conservation pool, and 881 feet m.s.l., the bottom of the conservation drawdown pool. Under prolonged extreme conditions of low rainfall and runoff, the reservoir may be drawn as low as the maximum probable drawdown, elevation 846 feet m.s.l. to meet the long-range hydro-electric power commitments. During flood conditions, the lake level may rise into the flood control pool and it is possible to exceed the top of the flood control pool by raising the tainter gates. The lake can exceed the top of the flood control pool by several feet when raising these gates in an operation known as an induced surcharge operation. A summary of the inflow to the lake for the 90-year period from 1922 to 2012 is shown in Table 1-3. The area-capacity data for various elevations are furnished on Figure 1-1.

In 2005, the USACE started Screening for Portfolio Risk Analysis (SPRA). This analysis screened each dam in the USACE inventory based on available information, to expeditiously identify and classify every dam according to perceived risk. The screening has yielded a basic understanding of the greatest risks and priorities for dams throughout USACE.

The Dam Safety Action Classification System (DSAC) is intended to provide consistent and systematic guidelines for appropriate actions to address the dam safety issues and deficiencies of USACE dams. USACE dams are placed into a DSAC class based on their individual dam safety risk considered as a combination of probability of failure and potential life safety concerns. Other considerations such as economic and environmental issues, while important, are secondary compared to life safety issues. The DSAC table presents different levels and urgencies of actions that are commensurate with the different classes of the safety status of USACE dams. These actions range from recognition of an urgent situation requiring immediate action through normal operations and dam safety activities for dams without known issues.

DSAC I (Very High Urgency of Action) – Dams where progression toward failure is confirmed to be taking place under normal operations and the dam is almost certain to fail under normal operations within a time frame from immediately to within a few years without intervention, or the combination of life and/or economic consequences make probability of failure extremely high.

DSAC II (High Urgency of Action) – Dams where failure could begin during normal operations or be initiated as the consequence of an event. The likelihood of failure from one of these occurrences, prior to remediation, is too high to assure public safety, or the combination of life and/or economic consequences make probability of failure very high.

DSAC III (Moderate Urgency of Action) – Dams that have issues where the dam is significantly inadequate, or the combination of life, economic, and/or environmental consequences make the risks moderate to high.

DSAC IV (Low Urgency of Action) – Dams are inadequate but with low risk such that the combination of life, economic, and/or environmental consequences make a probability of failure low, although the dam may not meet all essential USACE engineering guidelines.

DSAC V (Normal) – Dams considered adequately safe, meeting all essential agency guidelines and the residual risk is considered tolerable.

Initially, Table Rock Dam was classified as a DSAC IV in 2008. The dam underwent a detailed periodic assessment (PA) in 2012. The dam has had a good performance history over a range of loadings and falls into the low likelihood of failure category. However, due to the moderate to high consequences of a breach in the highly developed downstream area, the Corps recently re-rated Table Rock Dam to a DSAC III.

For more information on USACE Dam Safety, please reference the following website:

<http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram/ProgramActivities.aspx>

TABLE 1-1

PERTINENT DATA OF THE DAM AND LAKE	
<u>General Information</u>	
Purpose Stream States	FC, P (1) White River Missouri & Arkansas
Drainage area, square miles	4,020
Average annual rainfall over the drainage area, inches, approximately	45.4
<u>Dam</u>	
Length in feet	6,423
Height, feet above streambed	252
Top of dam elevation, feet above mean sea level	947
<u>Generators</u>	
Main units, number	4
Rated capacity each unit, kilowatts	50,000
Station service units, number	2
Rated capacity each unit, kilowatts	700
<u>Lake</u>	
Nominal bottom of power drawdown Elevation, feet above mean sea level	881
Area, acres	27,300
Nominal top of conservation pool Elevation, feet above mean sea level	915
Area, acres	42,644
Length of shoreline, miles	758
Nominal top of flood-control pool Elevation, feet above mean sea level	931
Area, acres	51,291
Length of shoreline, miles	927
<u>Five-Year frequency pool</u>	
Elevation, feet above mean sea level (flood pool)	921
Elevation, feet above mean sea level (drawdown)	902
(1) FC – flood control, P – power	

TABLE 1-2
REAL ESTATE ACQUISITION LIMITS*

Item	Design Data
<u>Elevation contour for land acquisition:</u>	
Fee, feet above mean sea level	923
Flowage easements, elevation, feet above m.s.l.	936

**Note: See Chapter 2, Section M for further Real Estate information*

TABLE 1-3
FLOWS AT TABLE ROCK DAM

Item	Acre-feet	Average rate (c.f.s)
Average annual Inflow (51 years)	3,010,900	4,158
Average annual Release (51 years)	2,855,000	3,943
Maximum annual (1927)	7,362,300	10,190
Minimum annual (1954)	528,100	730
Maximum month (April 1945)	2,290,400	38,560
Minimum month (August 1954)	3,150	51

Figure 1-1: Frequency of Lake Elevation

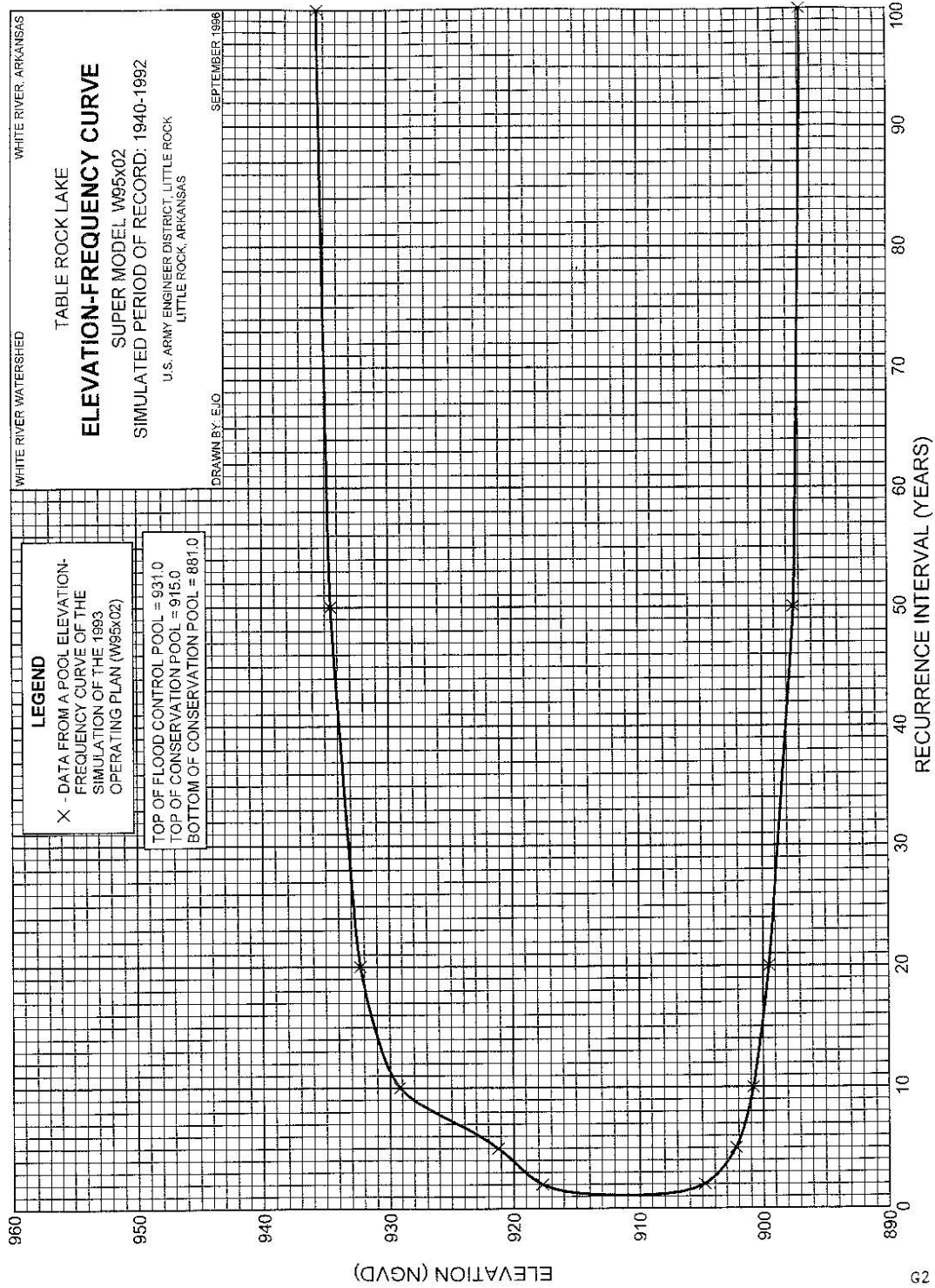


Figure 1-1: Frequency of Lake Elevation

Chapter 2 Project Setting and Factors Influencing Management and Development (Existing Conditions)

a. Description of Reservoir

The project area is located in the heart of the Ozark Mountain region. Most of Table Rock Lake lies in southwestern Missouri with a very small portion of the lake in northwestern Arkansas. The waters of Table Rock Lake have become a playground for visitors from all over the nation. Table Rock Lake's water recreation and activities are as varied as the Ozark Mountain terrain that surrounds the lake.

With over 750 miles of shoreline, Table Rock's many coves and lake arms make boating and water recreation such as skiing, fishing, diving, and swimming especially popular. Commercial concessions like marinas and resorts are scattered throughout the lake and about 12 percent of the shoreline is made available for wet slip storage. Also scattered around the lake are public recreation areas that are known nationwide for camping, hiking, and other recreational uses.

Much of the shoreline has numerous subdivisions, as do the Branson and Kimberling City areas of the lake, which are highly developed. The predominate shoreline vegetation is an oak-hickory hard wood forest with pine and eastern red cedar scattered throughout. Numerous limestone bluffs are prominent landscape features found around the lake also. The Cow Creek area located on the south border in the central part of the lake remains relatively undeveloped.

The extent of Table Rock Lake and the striking landscape features, vistas, and water quality attract many visitors to the lake and surrounding area. The quality recreational and environmental resources of the project have greatly influenced the development of the entire region.

b. Hydrology and Groundwater

Three of the large springs of Missouri feed into Table Rock Lake. Reeds Spring is at the town of the same name in Stone County; Crystal Springs is one-half mile north of Cassville in Barry County; and Roaring River Spring is in Roaring River State Park, seven miles south of Cassville. A great many unnamed springs, both permanent and intermittent, are in the lake area, and all appear to derive their water from higher ground. Information from wells and small springs in the area indicates that the water table under the higher part of that portion of the lake rim is probably near elevation 900. Many impermeable zones exist which create perched water tables, and many of the shallow wells obtain their water from perched ground water pools. However, because of solution widened joints and structures in the rock, an interchange of water occurs between the formations that underlie the area and leaky aquifers which are common. Additionally, because of exposed fractured, weathered, permeable rock, percolation of surface water into the water table is common place.

The dam is located on the main stem of the White River with major tributaries being Kings River and Long Creek from the south and the James River from the north. The drainage is typically steep in the headwaters of the smaller streams and transitions to lesser slopes as they reach the main stem of the White River. These streams can experience flash flooding with intense rainfall. The area is primarily wooded and rural with the exception of the Highway 65 corridor from Branson to Springfield. The percent of the basin which is impervious has increased with the rapid development of the area, but still remains a small percentage of the overall watershed.

c. Sedimentation and Shoreline Erosion

Sedimentation range lines were established at Table Rock Lake at the time of construction. According to the White River 1993 Water Control Master Manual, the inflow to the White River reservoirs has not historically had a major sediment load; therefore, initial sediment ranges for the lake were established as index ranges to be surveyed only on a spot basis unless a sedimentation problem was identified. Some sediment ranges were resurveyed in 1961, 1962, 1964, and the last time in August of 1978. With these surveys, no major sediment deposits were identified. Many of the ranges have not been resurveyed.

Erosion of the residual soil containing cherts and clays accounts for the tumbled gravels found in streambeds of the watershed. Slopes can be as steep as 90 degrees and tend to be steeper in areas close to creeks or water bodies. Noticeable erosion can be found where gravel roadways lead up to boat launches and docks. Most of these embankments are steep and allow stormwater to pick up speed as it heads toward the lake. As gravel washes into Table Rock Lake it also carries smaller sediments and soils. Sediment is a large contributor to nutrient input into any water body.

d. Water Quality

Table Rock Lake has been listed by the Missouri Department of Natural Resources (MDNR) on Missouri's 303(d) list of impaired waters, approved by the Environmental Protection Agency (EPA), due to excessive nutrient concentrations, particularly nitrogen and phosphorus, since 2002. According to the Missouri's 303(d) list, these excessive nutrient concentrations occur most frequently in the James River, Kings River, and Long Creek arms of the lake. The upper portion of the White River is also listed as impaired for excessive chlorophyll and nitrogen. In the study by Jones et. al. (2008), it was shown that Table Rock Lake was an oligotrophic lake based on the samples taken near Table Rock Dam, while various arms or branches of the lake such as the James River mouth or Long Creek area receive water from these tributaries and show tendencies toward being more eutrophic. Lake fluctuations associated with power production and flood control procedures produce changes in the environment along the shoreline of the lake. Turbidity adversely affects Table Rock Lake for short periods of time after heavy rains. During these periods of heavy runoff, urban areas and other parts of the terrain, especially those that have had the protective vegetation removed, contribute silt and other suspended particles to the tributaries. Table Rock, like all other lakes of its size in the Ozark region, stratifies chemically and thermally in the late spring with stratification extending into late fall and early winter. This naturally occurring phenomenon causes portions of the lake below the thermocline to be unfit for fish habitat because of low concentrations of dissolved oxygen. This undesirable water, when discharged downstream may cause some problems in the tailwaters. To combat this problem, the

dissolved oxygen content is monitored and various management measures are implemented to improve the dissolved oxygen concentration in the hydropower releases. A highly productive trout fishery has been established in Lake Taneycomo by the Missouri Department of Conservation because of the available discharge of cold water from the dam.

Water releases are generally made for power generation except in the case of flood control operation. Southwestern Power Administration (SWPA) markets power generated at this dam and other projects in the region. Four 50-MW generating units provide approximately 495,000 MWh annually. The typical peak flow for the hydro facility is 13,000 cfs. The maximum turbine discharge is 15,100 cfs.

Historically, Table Rock Lake experiences periods of up to five months (July-November) duration when dissolved oxygen (DO) concentrations are less than 4 mg/L near the turbine intakes. Accordingly, turbine release DO levels have been low enough to cause concern for downstream aquatic life.

During these low DO periods, there are various management measures that are implemented to improve the DO concentration in the hydropower releases that have been agreed-upon amongst the member agencies of the White River DO Committee and are described in the Table Rock Operational Action Plan developed and approved by the White River DO Committee prior to each low DO season. Turbine aeration modifications (vacuum breaker bypass, ring deflectors, hub holes, and booster baffles) were funded by SWPA and implemented at Table Rock in 1998, which provide for increase aeration of the hydropower releases when the turbine vents and bypass are blocked open (i.e. 'venting operation'), improving the DO concentration by as much as 3 mg/L. The turbine venting operation is the first management measure applied. Further DO concentration improvements can be achieved by SWPA voluntarily reducing the electrical output capacity of the generating unit, which allows for even greater entrainment of air in the hydropower releases. While the venting operation can improve release DO concentrations significantly, both of these measures can be costly due to efficiency losses. Furthermore, reducing capacity hinders the plant's electrical peaking capability.

In addition to using turbine venting and capacity reduction to increase DO, Table Rock is utilizing an existing oxygen system where oxygen is injected into the penstocks. The oxygen storage and injection system at Table Rock was installed in 1973 and has since been modernized for safety and increased liquid oxygen capacity. Currently, oxygen is injected into the penstock through two, ¾-inch piezometer taps around the lower perimeter of the penstock. The oxygen for this system is supplied from a liquid oxygen storage and supply facility consisting of two 52-ton (11,000-gallons each) liquid oxygen storage tanks and a set of water-cooled evaporators capable of producing at least 4,430 scfm of gaseous oxygen.

During the low DO season, electrical output capacity of the generating unit has been voluntarily limited by SWPA based on the Table Rock Operational Action Plan. The following is a quote out of the Table Rock Operational Action Plan for 2013 Low Dissolved Oxygen Season:

Plan of Action: The operational objective is to sustain DO concentrations in the release at or above 6 mg/L as long as possible through use of the turbine venting systems improvements

and to prevent DO concentrations from receding below 4 mg/L, if possible, through actions as outlined below. The plan to accomplish this consists of an oxygen monitoring program, improvements to the turbine venting systems, use of the oxygen injection system, and operational response actions scaled to the severity of DO depletions. Throughout the low DO season, all unit loadings by the powerhouse operator will take into consideration the turbine venting systems improvements to insure the release DO is as high as possible while meeting current electrical output requirements. When required generation combined with the use of the turbine venting systems improvements is insufficient to maintain DO concentrations at the first downstream monitor at or above 4 mg/L, then the use of the oxygen injection system and/or spillway releases will be used to maintain 4.0 mg/L in the downstream releases to the extent possible. (Table Rock Operational Action Plan 2013)

It should be noted that the inflow from Table Rock Lake watershed brings in nutrients, pollutants, and organic compounds that increase the oxygen demand within the lake and act to deplete the DO concentration. Therefore, future improvements to water quality in Table Rock Lake, through efforts addressing point and non-point sources of pollutants and nutrients in the watershed, will have a positive effect on the DO concentration in Table Rock Lake and subsequently on the hydropower releases.

In September 2010, the Tennessee Valley Authority (TVA) released a report (“Table Rock Project Forebay Oxygen Diffuser System Report Update, September 29, 2010”) that presented an analysis of a ‘Forebay Oxygen Diffuser System’ at Table Rock Lake; this forebay oxygen diffuser system would work in conjunction with the existing venting operation and oxygen injection system to help alleviate the low DO concentrations Table Rock Lake experiences. It was decided at that time, however, that the new system was too costly to install, and that operation and maintenance costs would also be very high; as a result, the existing plan of action (use of the venting operation plus the existing oxygen injection system) would continue to be used and would attain the desired results needed during events of low DO concentrations.

e. Project Access

The lake is surrounded by US, State, and county roads, making access possible at many points in any given area of the lake. Further highway and airport access can be referenced in Figure 2-1 Table Rock Lake Project Access.

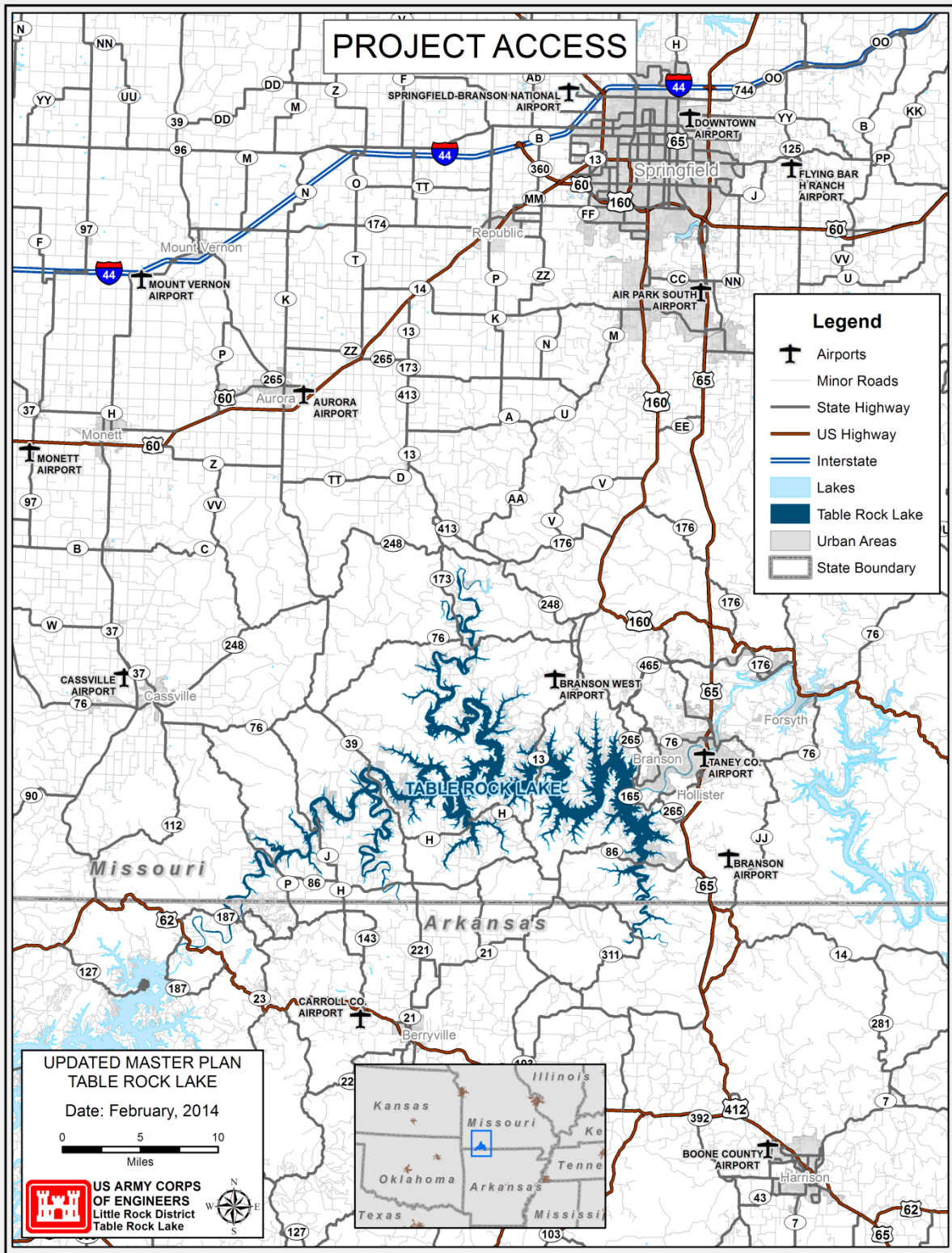


Figure 2-1 Table Rock Lake Project Access

f. Climate

Climate within the Table Rock Lake watershed is temperate, with summer extremes lasting for longer periods throughout northern Arkansas, and winter temperatures being more influential in the zone's northern reaches in Missouri. Extremes may vary from lows around 0°F in the winter months to highs above 100°F occurring from southern Arkansas to central Missouri during the summer months. Extreme temperatures may occur for short periods of time at any location within the watershed. Heavy rainfall events are common. Average annual rainfall over the watershed varies from 44 to 46 inches. Monthly rainfall varies from 2.5 inches in the winter months to about 5 inches in the spring. Snowfall each year averages from 8 to 16 inches from south to north across the watershed. Snow packs are usually short lived and are not commonly a concern for flooding.

Table Rock Lake is located in the Ozark Mountains, remote from heavy smoke-producing industry or large mining operations. The air is very clean and smog is virtually unknown in this region. None of the present operations of the project contribute to air pollution. State laws of both Arkansas and Missouri are quite restrictive pertaining to open burning. Open burning is allowed only in residential areas and in certain controlled agricultural, forestry, wildlife, and industrial activities. Ceremonial fires and campfires are excluded from control by the law.

Climate change became an area of concern due to the potential for effects on numerous aspects of the environment, especially those related to water resources. The U.S. Global Change Research Program (USGCRP) summarized information regarding climate change and its potential effects in regional assessments (<http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>). In the Midwest, which extends from Minnesota to Missouri, extreme events such as heat waves, droughts and heavy rainfall events were projected to occur more frequently. Should these events become significant to impact the operation of Table Rock Lake, the Master Plan and associated documents (i.e. Operations Management Plan and Shoreline Management Plan) will be reviewed and revised, if necessary.

The State of Missouri passed the Water Resources Law in 1989 and was directed to “develop, maintain and periodically update a state water plan for a long-range, comprehensive statewide program for the use of surface water and groundwater resources of the state, including existing and future needs for drinking water supplies, agriculture, industry, recreation, environmental protection and related needs.” The state water plan was done in 2 phases: Phase 1 completed a series of 7 technical assessment documents to provide basic information about Missouri’s streams and rivers, groundwater, water use, water quality, interstate water issues, hydrologic extremes, and water law; Phase 2 is the identification of regional problems and opportunities related to water use. (<http://www.dnr.mo.gov/env/wrc/statewaterplanMain.htm>)

The Arkansas Water Plan is the state’s policy for long term water management. The State of Arkansas last updated their water plan in 1990. The water plan is currently undergoing revision; The update will bring data, science, and public input together to define water demands, water supplies, issues, and potential solutions to meet the state’s needs for the next 40 years. (<http://www.arwaterplan.arkansas.gov/>)

g. Topography, Geology, and Soils

Table Rock Lake is on the southwest flank of the Ozark uplift, a structural and topographic high, which is often referred to as the Ozark Plateaus province. The plateau surfaces of this province are underlain by gently dipping, sedimentary bedrock. The highest ridges in the area surrounding the lake are a part of the Springfield Plateau, the middle level of the plateau province, which in this region rises to an elevation of about 1,400 feet. In this region the river and its tributaries have entrenched themselves about 700 feet below the plateau surface. As a result, the plateau has been deeply dissected by erosion and the original surface is present only as the tops of narrow steep ridges.

Bedrock strata exposed in the uplands bordering the lake are of Mississippian and Ordovician age. The formations of Mississippian age underlie the plateau surface and most of the higher slopes of the basin and in most areas are well away from the lake and associated lake shore developments. Strata of the Jefferson City-Cotter Formation of Ordovician age underlie the lake and the adjoining slopes. This formation is predominantly dolomite but contains subordinate amounts of chert, quartzite, sandstone, and shale. Most of the strata are more or less argillaceous, and several have been silicified in various degrees. Chert occurs as nodules, and in thin beds along with sandstone or quartzite. Shale occurs as material along partings, and as thin seams along bedding planes.

The strata about the lake appear to be nearly horizontal, but are warped gently over a large area by the Osage-Verona anticline, the crest of which is aligned over the Kings River arm of the lake. Two major faults are in the lake area (figure 2-2). These are very old and there are no indications of recent movement along them. One, a part of the Shell Knob - Eagle Rock structure crosses Roaring River where it empties into the lake. It trends about N. 37 E., and is downthrown on the east. It has no effect on the strata beyond the immediate vicinity of the fault. The other, Lampe fault crosses under the Highway 13 White River bridge. It trends N. 30 E., has a displacement of about 190 feet, and is downthrown on the east. Joints observed in rock along the lake are nearly vertical and do not carry through many beds. The strike of the most prominent set (primary) ranges from N. 5 E. to N. 10 W. A secondary, more poorly developed set intersects these at near right angles.

The region surrounding Table Rock Dam is subject to infrequent, mild, seismic shocks but not within recorded history are any shocks of sufficient intensity to damage structures or property.

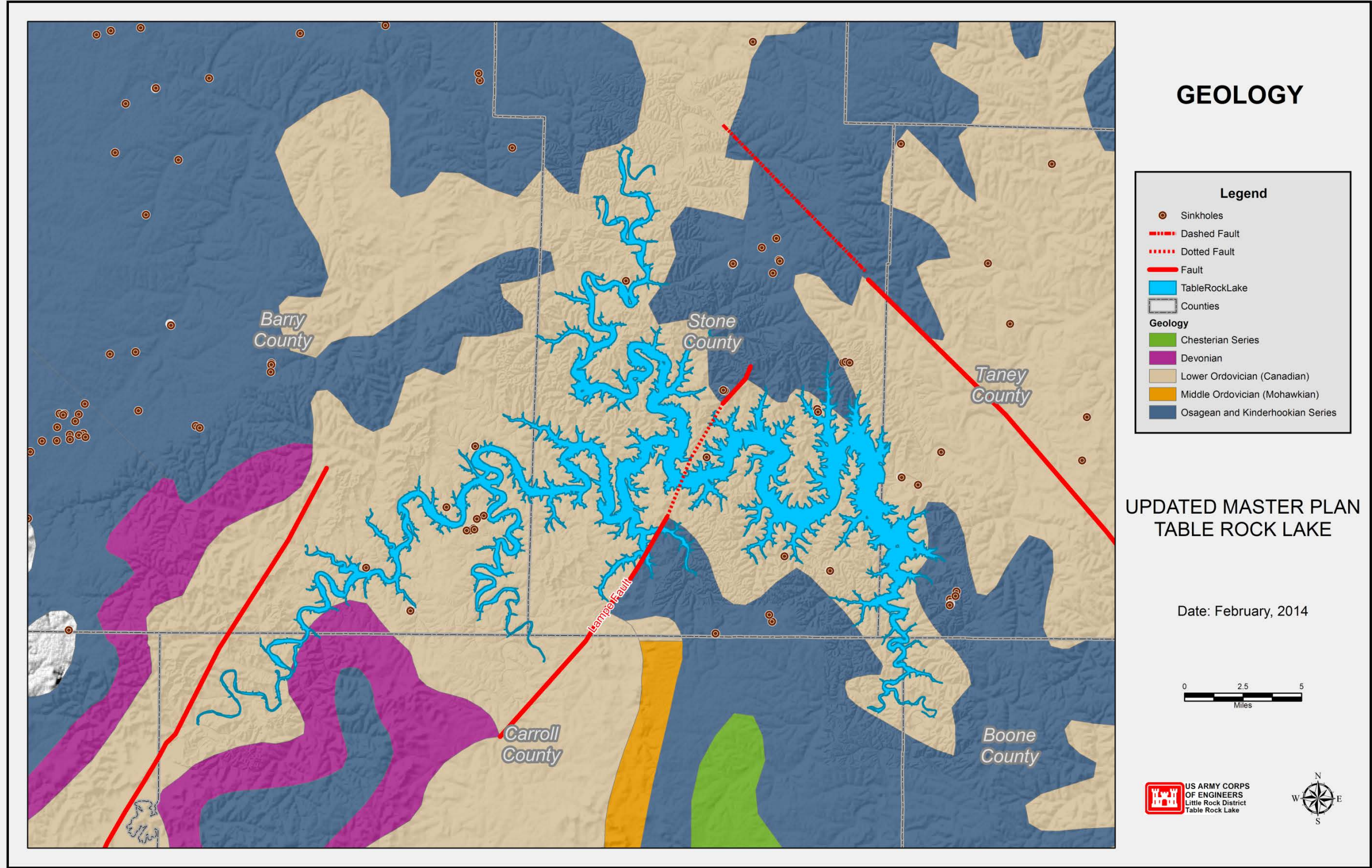


Figure 2-2 Geology and Fault Lines of Table Rock Lake

Although the bedrock of the region is soluble, most of the basin where it is underlain by the dolomites of the Jefferson City-Cotter Formation is characterized by surface drainage. This is indicated by the scarcity of important sinks, the absence of large areas without surface drainage, and a well developed stream system with normal well-branched tributaries. Two caves, Marvel Cave and Fairy Cave, are operated commercially in the region of the lake. Both caves are in the Boone Formation and extend into the Jefferson City-Cotter Formation. However, it should be noted that over most of the area in the Jefferson City-Cotter Formation is not favorable to the extensive development of caves, and those noted in the formation are small.

The most significant factor limiting the development of project land is topography. The typical ruggedness of this area hampers intensive development in many locations, and limits the number of sites containing appropriate slopes and adequately-sized areas of land desirable for the location of water access recreation facilities. Extensive alteration of landforms is not acceptable under Corps of Engineers guidelines.

The geology of the area imposes no unusual restraints on construction. However, ground water pollution is a potentially severe problem because of the easy access of surface water into the water table and of the free interchange of water between rock formations. Soils around the lake, except in the flood plain, and terrace deposits along the streams, are principally residual material formed by decomposition of the dolomite beds. Generally, they are silty soil over clay subsoil, both containing chert fragments from sand size up to small boulders. The material is loose and friable near the surface but becomes harder and more compact with depth. Contacts of leached chert, disintegrated limestone, and plasticity also increase with depth. As much as 20 feet of residual soil has been encountered by borings, but at most places it is less than 8 feet thick and in some places it is entirely absent. Flood plain material consists of silt and sand over sandy, chert gravel at many places in stream channels. Most of the soils in the vicinity of the lake are low in fertility.

The following four soils associations are found in and around the Table Rock Project area: Clarksville-Noark, Captina-Nixa, Caydon-Pembroke-Sogn, and the Caydon-Sogn. Most of the soils found in the Table Rock project do have characteristics which must be considered in development. The ability of soils to withstand intensive use should be investigated prior to initiation of construction. Trampling on these sites may cause soil compaction, resulting in increased surface runoff and accelerated erosion. Also, vegetative cover may be affected because of the reduction of air and water holding capacity of the soil. It should be noted, however, that soil compaction on use sites is not now a major problem because most of the soils are stoney and resist compaction. Another factor in some areas is shoreline erosion resulting from wave action which may cause serious problems in maintenance and hamper development of water related facilities.

Detailed soil survey information can be found through the Natural Resources Conservation Service.

h. Resource Analysis (Level One Inventory Data)

Operational civil works projects administered by USACE are required, with few exceptions, to prepare an inventory of natural resources. The basic inventory required is referred to within USACE regulations (ER and EP 1130-2-540) as a Level One Inventory. This inventory includes the following: vegetation in accordance with the National Vegetation Classification System through the sub-class level; assessment of the potential presence of special status species including but not limited to federal and state listed endangered and threatened species, migratory species, and birds of conservation concern listed by the U.S. Fish and Wildlife Service (USFWS); land (soils) capability classes in accordance with the Natural Resource Conservation Service (NRCS) criteria; and wetlands in accordance with the USFWS' Classification of Wetlands and Deepwater Habitats of the United States. This basic inventory information is used in preparing project master plans and Operation Management Plans (OMP). The OMP is a five-year management plan setting forth detailed information required to implement the concepts set forth in the master plan. An overview of the natural resources and related management actions at the project is provided in the following sections and paragraphs.

(1) Fish and Wildlife Resources

The impoundment of the White River and other tributary streams and rivers which form Table Rock Lake resulted in changes in the composition of the fish populations. Smallmouth bass was the principal game fish found in the White River prior to impoundment. MDC is the agency primarily responsible for managing the fishery and through their efforts a variety of fish species are well-established in the lake. Sport fish species currently found include: largemouth bass, spotted bass, smallmouth bass, white bass, walleye, flathead catfish, channel catfish, white crappie, black crappie and paddlefish. Due to the quality and diversity of the fishery, Table Rock Lake serves as a national fishing destination, hosting hundreds of bass tournaments annually.

Table Rock Lake was first impounded in 1959. Since impoundment, the native forests that were submerged provided much structure and forage habitat for fish. This habitat has degraded over time and in 2007, the Table Rock Lake National Fish Habitat Initiative (NFHI) began with the primary objective to improve fish habitat within Table Rock Lake. Improved water quality, along with placement and monitoring of artificial structures are additional goals of this project. This project has developed a framework for a broader national habitat program. Since 2007, over 2,000 fish habitat structures have been placed in Table Rock Lake. Structures include piles of hardwood and evergreen trees, stumps, and rocks.

The impoundment of Table Rock Lake caused environmental changes in the tailwater portion of the White River downstream from the dam. MDC realized that the cold water discharges from Table Rock Lake would necessitate a change in their fisheries management program for Lake Taneycomo, a 2,080 acre lake formed by the construction of Powersite Dam on the White River in Taney County, Missouri. Rainbow trout and brown trout were stocked in Lake Taneycomo to replace the warm-water fishery. This cold-water fishery is a success. However, because of various unfavorable environmental factors such as lack of suitable substrate, fluctuation of water temperatures and dissolved oxygen levels, and pulsation of water current and water level, trout reproduction is very limited. Shepherd of the Hills trout hatchery has been established

downstream from Table Rock Dam by the MDC. Public Law 86-93 provided that 27,000 acre-feet in the power drawdown storage not to exceed 22 cubic feet per second would be for the use of this hatchery. Approximately 700,000 rainbow and 10,000 brown trout from Shepherd of the Hills Hatchery and from hatcheries of the U.S. Fish and Wildlife Service are stocked in Taneycomo annually. The trout fishery has flourished and is now Missouri's largest and most popular trout fishing destination. Fishing effort has increased from approximately 25,000 fishing trips in 1959 to 140,000 fishing trips in 2009.

Paddlefish and walleye have been introduced into Table Rock Lake to add diversity to the fishery. Natural reproduction of paddlefish in Table Rock Lake is considered minimal. MDC stocks approximately 7,500 paddlefish in the James River Arm each year. Walleye have been stocked by both Arkansas Game and Fish Commission (AGFC) and MDC. MDC has stocked over 350,000 walleye in the James River Arm and these fish are now reproducing on their own .

White-tailed deer and eastern wild turkey are common game animals found and hunted in the Table Rock Lake area. Black bear have become more common in the area over the past few years though Missouri has yet to demonstrate that the black bear population is large enough to sustain hunting.

The principal small game species found in the Table Rock Lake area in open upland areas include bobwhite quail, cottontail rabbit, and mourning dove. Gray and fox squirrels are common in upland wooded areas and are also popular for sportsmen. Habitat management that includes removal of exotic species and application of prescribed fire do much to benefit these populations.

The ringed-neck duck and lesser scaup are the predominant migratory waterfowl species visiting the Table Rock Lake area. Mallard ducks are also present; however, they are only transient visitors as their characteristic feeding habits of obtaining food from shallow waters discourage them from obtaining food from the deep, clear waters of Table Rock Lake. Migratory geese common to the area are lesser snow geese and Canada geese of the Eastern Prairie Population. Giant Canada geese were introduced to the area by the MDC in 1971 and 1972 and have become established as a resident population. Resident giant Canada geese are in fact so numerous in several coves that their presence has become a nuisance. Several egg and nest destruction permits are issued every year to limit local reproduction. Ring-billed gulls are seen frequently around the Table Rock Lake area. Greater and lesser yellow legs are also seen during their peak migration in the spring and fall. Table Rock is also one of the few places in Missouri where visitors can see both the turkey vulture and the black vulture at the same time in the winter.

Principal furbearing animals found in the Table Rock Lake area are mink, muskrat, beaver, and raccoon. In recent years, otters have become more prevalent around the lake.

(2) Vegetative Resources

The area surrounding the lake is mostly forested. Trees and shrubs around the lakeshore include persimmon, honey locust, hawthorn, dogwood, redbud, coralberry, snowberry, sumac, and buttonbush. Frequent periods of inundation keep the thin strip of government owned lands

around the lake in early stages of succession. Red cedar, the principal evergreen, is dispersed throughout the region and is found in many large, scattered groups. Ground covers consist of green briar, sedge, and native grasses.

In 1999 a large tract of land was exchanged between the Corps of Engineers and the U.S. Forest Service in the Cow Creek area. The Corps gained a block of land that is approximately 3,300 acres. Land cover types in this area consist mainly of a deciduous forest. Evergreens consist of shortleaf pine that was planted by the U.S. Forest Service along the ridge tops and red cedar in the side slope glades. See figure 2-3 Cow Creek Block Land Cover.

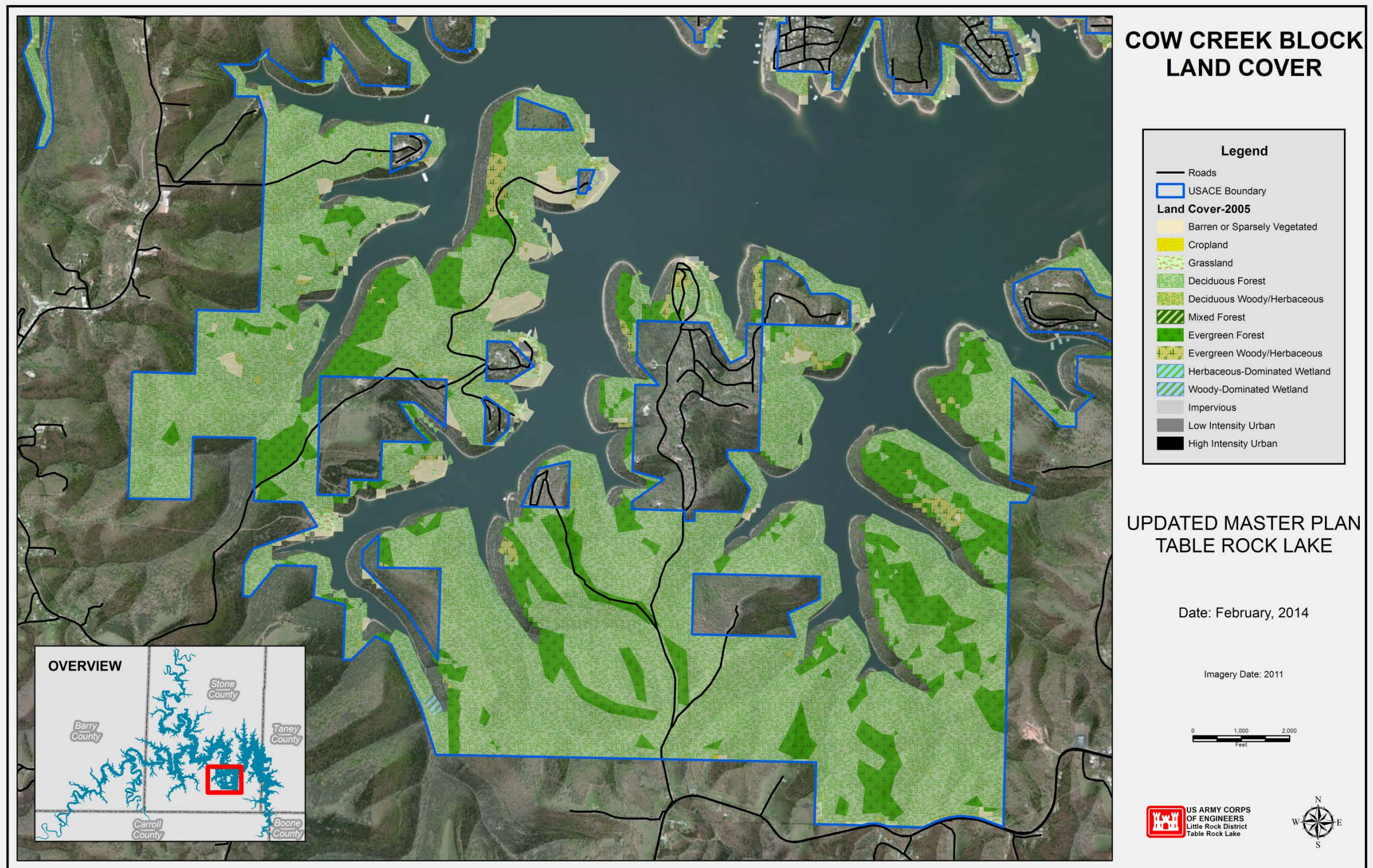


Figure 2-3 Cow Creek Block Vegetation

(3) Threatened & Endangered Species

There are many species in the Ozarks that are considered either threatened or endangered. Species become imperiled for a variety of reasons including over-hunting, over fishing, and habitat loss as a result of human development and pollution; of these, habitat loss is the main contributor that imperils most species. A threatened species is one that is likely to become endangered within the foreseeable future. An endangered species is one in danger of extinction throughout all or a significant portion of its range. The bald eagle, *Haliaeetus leucocephalus*, is common during the winter months around Table Rock Lake. In addition, several bald eagle nests are located around the lake. Although the bald eagle was delisted by USFWS in 2007 due to recovery of the species, both the Bald and Golden Eagles are still protected in accordance with the Bald and Golden Eagle Protection Act. Black vultures, a species of conservation concern, also nest in the Table Rock area. Transient populations of gray bats, a federally endangered species are documented near the Table Rock dam area. The following species listed in Table 2-1 are from the U.S. Fish and Wildlife Service’s federally classified status list of species and the Missouri Natural Heritage data set which have been reported on project lands. There are other threatened and endangered species that are known to be in the area.

Table 2-1 Threatened, Endangered, and Species of Concern

Common Name	Scientific Name	Federal/State Status	State/Global Rank
Bald Eagle	<i>Haliaeetus leucocephalus</i>	*Protected under Bald and Golden Eagle Protection Act	
Gray Bat	<i>Myotis grisescens</i>	E/E	S3/G3
Black Vulture	<i>Coragyps atratus</i>	-	S3/G5
Bush’s Poppy Mallow	<i>Callirhoe bushii</i>	-	S2/G3

E = Endangered; S2: Imperiled: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the nation or state (1,000 to 3,000). Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000). S3: Vulnerable: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals; G3: Vulnerable: Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction or elimination. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals; G5: Secure: Common; widespread and abundant (although it may be rare in parts of its range, particularly on the periphery). Not vulnerable in most of its range. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

(4) Invasive species

In accordance with Executive Order (EO) 13112, an invasive species means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species can be microbes, plants, or animals that are non-native to an ecosystem. In contrast, exotic species, as defined by EO 11987, include all plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States. Invasive species can take over and out compete native species by consuming their food, taking over their territory, and altering the ecosystem in ways that harm native species. Invasive species can be accidentally transported or they can be deliberately introduced because they are thought to be helpful in some way. Invasive species cost local, state, and federal agencies billions of dollars

every year. Table Rock Project is not protected from the spread of invasive species. Locally the project office works with its partners, MDC and United States Department of Agriculture, to help stop the spread of some of the Ozarks most unwanted species. These would include feral hogs (*Sus scrofa*), zebra mussels (*Dreissena polymorpha*), and the emerald ash borer (*Agrilus planipennis*). Project rangers post signage in all the recreation areas to communicate the dangers of spreading invasive species on project lands and waters. Rangers also place emerald ash borer traps on project lands to monitor any infestations of this species.

(5) Ecological Setting

The Natural Resource Management Mission of the U.S. Army Corps of Engineers (ER 1130-2-550, Chapter 2, Paragraph 2-2.a.(1), dated 15 November 1996) states the following:

The Army Corps of Engineers is the steward of the lands and waters at Corps water resources projects. Its Natural Resource Management Mission is to manage and conserve those natural resources, consistent with ecosystem management principles, while providing quality public outdoor recreation experiences to serve the needs of present and future generations.

In all aspects of natural and cultural resources management, the Corps promotes awareness of environmental values and adheres to sound environmental stewardship, protection, compliance and restoration practices.

The Corps manages for long-term public access to, and use of, the natural resources in cooperation with other Federal, State, and local agencies as well as the private sector.

The Corps integrates the management of diverse natural resource components such as fish, wildlife, forests, wetlands, grasslands, soil, air, and water with the provision of public recreation opportunities. The Corps conserves natural resources and provides public recreation opportunities that contribute to the quality of American life.
(ER 1130-2-550 1996)

In support of this mission statement, the following paragraphs describe the ecoregion where Table Rock Lake is located and the natural resources components found within the project area.

Ecoregions are areas with generally similar ecosystems and with similar types, qualities, and quantities of environmental resources. Ecoregion boundaries are determined by examining patterns of vegetation, animal life, geology, soils, water quality, climate, and human land use, as well as other living and non-living ecosystem components.

A large area that includes generally similar ecosystems and that has similar types, qualities, and quantities of environmental resources is known as an ecoregion. The purpose of ecological land classification is to provide information for research, assessment, monitoring, and management of ecosystems and ecosystem components. Federal agencies, state agencies, and nongovernmental organizations responsible for different types of resources within the same area use this

information to estimate ecosystem productivity, to determine probable responses to land management practices and other ecosystem disturbances, and to address environmental issues over large areas, such as air pollution, forest disease, or threats to biodiversity.

The ecoregion Table Rock Lake and surrounding areas fall under is labeled as the “Ozark Highlands”. This ecoregion is defined as follows:

Location: This region covers a large portion of southern Missouri and northern Arkansas, and small portions of northeastern Oklahoma and southeastern Kansas.

Climate: The ecoregion is on the boundary between mild and severe mid-latitude climates, between humid continental and humid subtropical. It has hot summers and mild to severe winters with no pronounced dry season. The mean annual temperature ranges from approximately 12 degrees Celsius to 15 degrees Celsius and the frost-free period ranges from 140 to 230 days. The mean annual precipitation is 1,101 mm (43.4 inches), ranging from 965 to 1,244 mm (38-49 inches). Some snowfall occurs in winter, but lasts only a few days.

Vegetation: Oak-hickory and oak-hickory-pine forest stands are typical. Some savannas and tallgrass prairies were once common in the vegetation mosaic. Post oak, blackjack oak, black oak, white oak, hickories, shortleaf pine, little bluestem, Indiangrass, big bluestem, eastern red cedar glades are common in the area.

Hydrology: Numerous perennial and intermittent streams flow in the region, of low to moderate gradient, and mostly in a dendritic drainage pattern. There are numerous springs, few lakes, but some sinkhole ponds and several large reservoirs.

Terrain: The terrain here is more irregular in physiography than the adjacent regions, with the exception of the Boston Mountains (8.4.6) to the south. Mostly a dissected limestone plateau, the region has karst features, including caves, springs, and spring-fed streams. There are some steep, rocky hills, with elevations ranging from 80 to 560 meters above m.s.l., and some gently rolling plains. Limestone, chert, sandstone, and shale are common, with some small areas of igneous rocks in the east. Ultisols and Alfisols are typical with mesic and some thermic soil temperature regimes and udic soil moisture regimes.

Wildlife: White-tailed deer, coyote, bobcat, beaver, gray bat, wild turkey, eastern bluebird, bobwhite, warblers, collared lizard, many salamanders, and Ozark cavefish occur in the region.

Land Use/Human Activities: Less than one-fourth of the core of this region has been cleared for pasture and cropland, but half or more of the periphery, while not as agricultural as bordering ecoregions, is in cropland and pasture. Livestock farming of cattle and hogs, poultry production, pasture and hay are common. Lead and zinc mining occurs. Forestry, recreation, rural residential, urban uses also occur. There is some public national forest land. Larger towns and cities include Joplin, Springfield, Rolla, Farmington, Eminence, Poplar Bluff, West Plains, Tahlequah, Bentonville, Rogers, Springdale, Berryville, Harrison, Mountain Home, and Batesville.

(6) Wetlands

Wetland areas are relatively limited on project lands and throughout the adjacent government property surrounding the lake. This is due to the steeply sloped terrain and thin, rocky soil layers overlying bedrock along the shoreline, both of which do not typically support wetland vegetation. The sparse wetland areas that occur within the lake surface area have mostly formed as mud flats within the upper reaches of the major tributaries to the lake. Additionally, a few coves on the lake have also established small wetland areas. This is due to sediment washing from streams and accumulating at the point where the stream bed enters the normal lake surface at the upper end of the cove. These areas can support emergent wetland vegetation at times depending on seasonal flooding and the controlled lake elevation.

Within the State of Missouri, the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) indicates approximately 12 acres of wetlands occurring within the lake surface area and in adjacent floodplains. The NWI maps also indicate wetlands in the Arkansas portion of the lake, but approximate acreages are not included. The majority of this wetland acreage is classified as palustrine scrub/schrub, either seasonally or temporarily flooded. Further, there are some areas mapped as palustrine forested occurring within wooded floodplain areas along the upper reaches of the James River, Kings River, and Long Creek.

i. Cultural Resources

(1) Prehistoric

Evidence of human settlement in the Ozark region can be traced back about 14,000 years, coinciding with the end of the last ice age. Early Native Americans in the region were likely a mixture of hunter-gatherers, utilizing caves and bluffs seasonally for shelter near waterways. These nomadic tribes claimed territories, which they would use seasonally for hunting, fishing, and gathering. While the archeological record shows evidence of human settlement in the Ozarks, it is difficult to identify all tribes that made this region their home.

Prehistory is primarily divided into four periods: PaleoIndian (10,000-7,800 BC), Archaic (7,800-800 BC), Woodland (800-950 AD), and Mississippian (950-1600 AD). The PaleoIndian period marks the earliest evidence of habitations in the Ozark region. The emergence of the Archaic period witnesses an increase in populations and larger seasonal encampments on the bluffs along the White River, and its tributaries. The introduction of earthen pottery and the bow and arrow is generally recognized as the Woodland Period in the Ozarks. The Mississippian Culture emerges, flourishes, then declines in present-day Mississippi River Valley and southeastern U.S. Burial mounds, domestic structures, agriculture, and more permanent settlements characterize this era. The Jenkins Cave, located near the head of Bull Creek, and Slow Drip Rockshelter in southern Stone County, contained evidence of a Mississippian component due to the presence of shell-tempered pottery and triangular arrow point. Oral and early written history and archeological evidence suggest some tribes known to have lived or hunted in the Ozarks include the Osage, Caddo, and Quapaw.

(2) Historic

Historically, Ozark country of southwestern Missouri and northwestern Arkansas had few, if any, white settlers before the nineteenth century. Henry Schoolcraft, the first traveler to document his excursions to the region, traveled this portion of the White and James Rivers in 1818 and 1819 while making a survey of lead mines in southwestern Missouri. The turbulent period of the Civil War was keenly felt in southwestern Missouri and northwestern Arkansas. Two of the major battles west of the Mississippi were fought in this part of the country: one in southwestern Missouri at Wilson's Creek and one in the northwestern corner of Arkansas, the Battle of Pea Ridge.

The areas surrounding Table Rock have several historical sites that are significant on the local and regional level. None of these sites have national significance. However, when combined with others like them across the country they record the theme of the American way of life. Marvel Cave, which is located at Silver Dollar City, Missouri, the largest privately owned commercial tourist attraction in the Table Rock Lake area, is listed on the *National Register of Natural Landmarks*.

In the southern portion of the Ozarks in Eureka Springs, Arkansas, much of the rich cultural heritage lies along an area that was once traversed by Native American people during the Trail of Tears. The Bluff Shelter at Blue Springs, which is listed on the *National Register of Historic Places*, is a small shelter that has evidence of prehistoric occupation that dates as far back as 8,000 BC. The small town of Beaver, Arkansas, has a rich historic significance. Beaver Park, which borders the little community of Beaver, was the home place of Squire Beaver, a legendary resident of the portion of the White River which is now the upper end of Table Rock Lake. Beaver Park is the only project property with any specific historical significance. The Beaver Bridge, which is listed on the *National Register of Historic Places* and on Table Rock Lake property, survives as one of three wire cable suspension bridges left in Arkansas and as an outstanding example of Early Transportation Era (1903-1922) engineering. This entire portion of the Ozarks, however, represents a heritage of determined mountain dwellers who adapted to a rough way of life in order to survive. Examples of how dwellers of the Ozarks lived historically can be seen in some of the private tourist attractions within the Table Rock Lake region.

(3) Previous Investigation in the Table Rock Lake Area

The waterways are so important archeologically that the major physiographic regions of the state were subdivided by stream drainages to facilitate the survey and excavation of the archeological resources. A survey of the Table Rock Lake area was conducted under the supervision of Carl Chapman, University of Missouri, in 1951, with additional excavations and testing being conducted by Chapman from 1955 through 1959 during the construction phase of Table Rock Dam. At the conclusion of the work in 1959, 872 sites had been identified in and around Table Rock Lake. Subsequent studies include "Archaeological Assessments Report No. 49, Cultural Resources Survey at Selected Locations, Table Rock Lake, Missouri and Arkansas, 1986"; "Archaeological Assessments Report No. 167, Archeological Investigations at 3CR238, 1993".

(4) Recorded Cultural Resources in the Lake Area

Today, Table Rock fee land is home to 1,076 archeological sites made up of open camp sites, shelter and cave sites, rock cairns, and earthen mound sites. Less than one percent of the known

sites within the lake area were investigated any further than documentation. However, Chapman concluded that a reasonable picture was obtained of the archeological potential in the lake area.

j. Demographics

Population and per capita income within the Table Rock Zone of Influence is projected to increase through the year 2040 as shown in Table 2-2. This zone includes the urban areas of Kansas City and St. Louis, Missouri, as well as Tulsa and Oklahoma City, Oklahoma; Little Rock, Arkansas; and Memphis, Tennessee. Other cities of significant size within the zone of influence include Springfield, Joplin, Jefferson City, and Columbia, Missouri; Fort Smith, Jonesboro, and Pine Bluff, Arkansas; and Muskogee, Oklahoma. The zone is further described in section I. (4).

Table 2-2

Population and Income Projections for the Table Rock Lake Zone of Influence		
Year	Population	Per Capita Income
2000	11,625,921	\$25,885
2010	12,719,370	\$36,496
2020*	13,470,538	\$49,316
2030*	14,385,042	\$61,247
2040*	15,299,547	\$73,177
*Data for these years are forecasted estimates based on historic rates of growth Data from www.census.gov		

Racial and ethnic information for the Table Rock Zone of Influence are shown in Table 2-3.

Table 2-3

Race and Ethnicity by State for the Table Rock Lake Zone of Influence, 2010 (percent)				
	Missouri	Arkansas	Kansas	Oklahoma
White	93.0	84.2	91.6	72.6
Black	3.9	12.5	3.3	4.1
American Indian or Alaska Native	0.6	0.9	1.5	15.5
Asian	0.7	0.8	1.0	0.8
Native Hawaiian or Other Pacific Islander	0.1	0.1	0.1	0.1
Two or More Races	1.7	1.6	2.6	6.9
Hispanic or Latin Origin	2.6	4.9	5.4	4.6
Not Hispanic, White Only	90.8	79.8	86.9	69.2

The tourism generated by Table Rock and its surrounding attractions is the basis for the economic and population growth of the immediate area of the lake.

Population density varies from 9,000 persons per square mile in St. Louis proper to only a few per square mile in many rural counties throughout the zone. Birth and mortality rates do not vary significantly from the average national rates. Population within the zone continues to grow with the most significant growth occurring in the cities. This is due to the younger people moving from rural to urban areas, and workers continuing to move from farming to industrial jobs.

Per capita income within the Table Rock Lake Zone of Influence is steadily increasing as it has for the past twenty years. The most rapid economic growth has occurred in Oklahoma where the per capita income increased about 50 percent during the 2000's. All four States within the zone are experiencing more economic contribution by industry. Kansas City and St. Louis, both within the zone are important trading centers for large regions. They rank among the foremost in the nation as grain and cattle markets. Food processing, aerospace, transportation equipment, pet foods, prefab houses, mobile homes, greeting cards, tires, paint, appliances, fuels, and chemical processing are among the types of manufacturing playing major roles in the economy of the zone. Agriculture makes a substantial contribution to the zone's economy with livestock, dairy, hogs, poultry, soybeans, cotton and rice production among the most influential. Tourism is

becoming increasingly important in Arkansas and Missouri with contributions of millions of dollars annually to each state's economy. Public education programs range from some of the worst in the nation to some of the best. All four states within the zone have advanced education programs with numerous state supported colleges and universities. Table 2-4 shows the rate of educational attainment within the Zone of Influence as well as a breakdown of the population's ages.

Table 2-4

Age and Education by State for the Table Rock Lake Zone of Influence, 2010 (percent)				
	Missouri	Arkansas	Kansas	Oklahoma
Under Age 5	6.2	6.2	6.3	6.5
Between Ages 5 and 18	23.3	23.3	23.8	24.2
Between Ages 18 and 65	53.7	53.6	53.4	53.4
Age 65 and over	16.8	17.0	16.5	15.9
Age 25 or up, High School Degree or Higher	82.7	79.7	89.0	83.6
Age 25 or up, Bachelor's Degree or Higher	16.2	14.3	21.6	17.3

Cultural opportunities vary within the Table Rock Zone of Influence, from Ozark folk culture found throughout northern Arkansas and southern Missouri to professional symphony and ballet companies as well as concert facilities, professional sports teams, museums, a world-class American art museum, and other such activities available in Kansas City and St. Louis.

k. Recreation Facilities, Activities and Needs

The recreational opportunities and potential of Table Rock Lake is considered to be of great importance to this Ozark Mountain region. The project offers many recreational activities such as swimming, SCUBA diving, boating, water skiing, fishing, picnicking, camping, as well as hiking and biking trails. There are 26 public use areas around Table Rock Lake. There are 12 parks on the lake presently managed by the Corps of Engineers. At the drafting of this final Master Plan, the Corps is planning for significant changes to park operations and/or closures because of constrained funding. Parks have been evaluated using an efficiency review process. Those parks chosen for closure for budgetary reasons may be offered for lease through standard leasing procedures, and if not leased, these parks may be reopened at such time as adequate funding becomes available. One park, Viney Creek, is temporarily closed. The U.S. Forest Service has one public use area (Big Bay) which they maintain and operate. One State Park (Table Rock State Park) is located on Table Rock Lake and it is operated by the Department of Natural

Resources. Two Parks (Port of Kimberling and Long Creek) are operated by a commercial concessionaire. One Park (Beaver) is operated by the City of Beaver, Arkansas. There are eight other public use areas operated by the Corps around the lake. One of the eight is the Cow Creek public use area which the Corps operates the boat launch site, but the Boy Scouts maintain and operate the group camping area.

The criteria discussed in this section are of a basic nature to be used for the planning, development, and management of the project with consideration being given to the latest trends in recreational activities and needs. These criteria furnish guidelines for determining the type and number of facilities needed to satisfy the current and projected demand and also furnishes guidelines for serviceability, operation, and maintenance of facilities. Universal accessibility will be included in the design of facilities.

(1) Facility Information

The siting of facilities and development of parks should be of the highest quality, should be safe, and should promote the health, welfare, and aesthetic enjoyment of the public. The siting of each facility should result in the compromise between conservation of the natural environment and providing for public use. Only the most adaptable terrain should be used for siting of overall facilities with consideration given to the natural features so that the most scenic parts of the site may remain undeveloped for the enjoyment of visitors. Facility siting should be in harmony as much as feasible with the environment in which they are to be placed to avoid excessive grading and clearing for site preparation.

(2) Recreation Areas

Aunts Creek-This 59 acre park lies on the east shoreline of the Aunts Creek arm, a tributary of the James River, at the end of Missouri State Highway OO (Plate PM-1). Facilities include a park booth, 56 campsites, four picnic sites, one shower house with restrooms, two restrooms, swim beach, playground, group pavilion, two launch ramps, two courtesy docks, and a RV dump station. Water is supplied by one permitted well and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 1 – 31 and 32 – 56, including upgrading utilities to 50 amp electric service and water to each site.

Baxter- This 60 acre park is located on the east side of the Big Indian Creek arm at the end of Missouri State Highway H (Plate PM-2). Facilities include a park booth, 54 campsites, four picnic sites, one shower house with restrooms, two restrooms, swim beach, playground, launch ramp, courtesy dock, and an RV dump station. Water is supplied by one permitted well and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Construct 12 new campsites on the southeast side of the park.

Beaver Town Campground (Concessionaire)- This 7 acre park is operated by the town of Beaver under long-term contract with the U.S. Army Corps of Engineers and is located in the town of Beaver, Arkansas, on the White River between Beaver Lake and Table Rock Lake and is seven miles NW of the Town of Eureka Springs (Plate PM–3). Facilities include a park booth, 44 RV sites, ten tent sites, five picnic sites, two shower houses (currently shut down), restrooms, swim beach and swim deck, playground, group pavilion, high and low water launch ramps, and an RV dump station. Water is supplied by one permitted well. A contractor periodically removes waste water and sludge. All sites have potable water and electricity. Fifteen RV sites are full hook up.

If adequate funding becomes available for park operation future improvements include the following: Restoration of the swim beach and improving the walking trail by extending it across the old railroad bridge to Holiday Island to connect with their trail.

Big Bay (USFS)- Big Bay Recreation Area is set in a red cedar and hardwood forest on the shore of Table Rock Lake . The facility features the following: picnicking, vault toilet in picnic area, and a boat ramp with parking area near picnic area. In April 2013, an announcement was made by Mark Twain National Forest officials stating the campground portion of the park would be closing while the boat launch and picnic area would remain open. Visitors will need to bring their own water for drinking. Only a launch ramp, road, and parking are located on US Army Corps of Engineers property.

Big Indian - This 52 acre park is located on the west shoreline of Big Indian Creek arm of the lake at the end of State Highway H. Camping is currently prohibited. This park has a launch ramp, courtesy dock, and is only open for day use activities.

Big M- This 97 acre park is located on the north shore of the White River arm at the end of Missouri State Highway M (Plate PM–5). Facilities include a park booth, 60 campsites, seven picnic sites, two shower houses with restrooms, two restrooms, swim beach, playground, launch ramp, courtesy dock, and an RV dump station. Water is supplied by one permitted well, and sewage is disposed of by a non-permitted drip irrigation system. Wastewater and sludge is intermittently removed by a contractor. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 1 – 17 and 32 – 46, including upgrading utilities to 50 amp electric service and adding water to each site.

Campbell Point- This 110 acre park is located on the north shore of the White River arm five miles east of the town of Shell Knob, Missouri (Plate PM–6). Facilities include a park booth, 76 campsites, five picnic sites, two shower houses with restrooms, swim beach, playground, group pavilion, launch ramp, courtesy dock, and an RV dump station. Water is supplied by two permitted wells, and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 48 – 75, upgrading utilities to 50 amp electric service, and adding water to each site, and constructing a new road to service the marina, which would separate marina traffic from the campground traffic.

Cape Fair- This 77 acre park is located approximately one mile southwest of the town of Cape Fair, Missouri (Plate PM-7) . Facilities include a park booth, 81 campsites, four picnic sites, two shower houses with restrooms, two restrooms, two launch ramps, two courtesy docks, swim beach, playground, group pavilion, and RV dump station. Water is supplied by two permitted wells, and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 38 – 82, including upgrading utilities to 50 amp electric service and adding water to each site.

Coombs Ferry – (Plate PM-8) This 64 acre park is located at the end of Missouri State Hwy JJ on the south side of the lake. Camping is currently prohibited. This park has a launch ramp and is only open for day use activities.

Cow Creek – (Plate PM-9) This 63 acre park is located on the south side of the lake. Approximately 56 acres is leased to the Boy Scouts of America. The Boy Scout camp includes campsites, one shower house with restrooms, launch ramp, and a group pavilion. Water is supplied by a permitted well and sewage is disposed of through a permitted discharging system. Approximately seven acres is managed by the Corps of Engineers for a day use area with a launch ramp, parking, and courtesy dock.

Cricket Creek- This 57 acre park is located on the east shore of the Long Creek Arm of Arkansas (Plate PM-10). Facilities include a park booth, 36 campsites, eight picnic sites, one shower house with restrooms, one restroom, swim beach, playground, two launch ramps, courtesy dock, and RV dump station. Water is supplied by a municipal water source and sewage is removed by contract hauler. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Add one new site with electric and water in northeast corner of park. Rehabilitate day use area.

Dewey Short Visitor Center and Project Office – (Plate PM-11) This 34 acre area is located on the south side of Table Rock Dam. Facilities include the Table Rock Project Office, Dewey Short Visitor Center, one restroom, one courtesy dock, three picnic sites, four volunteer campsites, and a trailhead for the 2.2 mile Table Rock Lakeshore Trail. Water is supplied by a permitted well, and sewage is disposed of by Taney County’s municipal sewer system.

If adequate funding becomes available for park operation future improvements include the following: Construction of an eco-playground, outdoor classroom, amphitheatre, pavilion,

Highway 165 pedestrian classroom to the overlook, fishing dock, observation platform, pedestrian pathways, wildlife observation blinds, and interpretive signage.

Eagle Rock- This 45 acre park is located on the north shore of the upper White River arm (Plate PM-12). Facilities include a park booth, 56 campsites, six picnic sites, one shower house with restrooms, one restroom, swim beach, playground, launch ramp, courtesy dock, RV dump station, and a cemetery. Water is supplied by a permitted well, and sewage is disposed by lateral field. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 1 - 35, including upgrading utilities to 50 amp electric service and adding water to each site. Construct a new camping loop with 8 electric and water sites, which includes 4 new sites and relocation of sites 1 - 4. Construct a group pavilion.

Indian Point- This 89 acre park is located on the east shore of the north Indian Creek arm (Plate PM-13). Facilities include a park booth, 78 campsites, group camp area, six picnic sites, two shower houses with restrooms, two restrooms, swim beach, playground, group pavilion, launch ramp, courtesy dock, and RV dump station. Water is supplied by two permitted wells, and sewage is disposed by drip field irrigation. The park has a commercial marina concessionaire

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 10 – 27 and 30 - 47, including upgrading utilities to 50 amp electric service and adding water to each site. Construct new camping loop on the west side of the park. Construct a new camping loop on the north side of the park. Replace restroom near group camp to waterborne.

Joe Bald – (Plate PM-14) This 85 acre park is located on the north shore of the main body of the lake at the confluence of the James River and White River arms. Camping is currently prohibited. This park has a launch ramp and is only open for day use activities.

More information on the future of Joe Bald Park can be found in Chapter 6, Special Topics, Issues, and Considerations.

Port of Kimberling (Concessionaire) This 153 acre park is located in Kimberling City, Missouri (Plate PM-15). The park includes a campground store, 119 campsites, nine park model cabins, three shower houses with restrooms, three pit toilet restrooms, day use area, RV dump station, two launch ramps (one public, one customer only), two courtesy docks, two swimming areas (one public, one customer only), playground area, group pavilion, baseball field, volleyball court, tennis court, basketball court. Water is supplied by three permitted wells and sewage is disposed of through two permitted discharge systems as well as periodic sludge removal by a contractor. The park is operated by a concessionaire: Port of Kimberling Marina. The marina consists of 34 docks of varying sizes within the main lease area of varying sizes as well as 13 remote service docks in the Kimberling City Area. Additionally, the marina includes dry stack storage facilities for boats up to 35ft long. Port of Kimberling works with several sub-lessees

and offers a full service fuel dock, pump-out facility, ski boat rental, fishing boat rental, pontoon rental, houseboat rental, wave runner rental, ski shop, boat towing service and a floating café.

If adequate funding becomes available for park operation future improvements include the following: Continued expansion of the dry stack facility and modernization of the campground and marina facilities.

More information on the Port of Kimberling expansion can be found in Chapter 6, Special Topics, Issues, and Considerations.

Kings River – (Plate PM-16) This 38 acre park is located on the west shoreline of the Kings River Arm. Camping is currently prohibited. This park has a launch ramp and is only open for day use activities.

Long Creek- This 57 acre park is located on the east shore of the Long Creek arm (Plate PM–17). Facilities include a park booth, 47 campsites, six picnic sites, one shower house with restrooms, two restrooms, swim beach, playground, group pavilion, launch ramp, courtesy dock, and RV dump station. Water is supplied by one permitted well, and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor. The park has a commercial marina concessionaire.

At the time of drafting the Final Master Plan, Long Creek Park is leased to a private entity for park operation.

Future improvements are being considered.

Mill Creek- This 33 acre park is located on a peninsula on the south side of the lake at the end of State Highway RB in the Kimberling City area (Plate PM–18). Facilities include a park booth, 67 campsites, three picnic sites, one shower house with restrooms, two restrooms, swim beach, playground, group pavilion, launch ramp, courtesy dock, and RV dump station. Water is supplied by a municipal water source and sewage is disposed of by two separate lateral fields.

If adequate funding becomes available for park operation future improvements include the following: Construction of a fishing tournament weigh-in station. Replace restroom towards point with a restroom/showerhouse.

Moonshine Beach- This 38 acre recreation area is a day use park located north of the Table Rock Dam (Plate PM–19). Facilities include a sand swim beach, one shower house with restroom, one restroom, playground, launch ramp, courtesy dock, 12 picnic shelters with grills, and one pavilion. Water and sewer are provided by municipality.

If adequate funding becomes available for park operation future improvements include the following: Expanding parking facilities, and installing a pavilion on the peninsula.

Old Hwy 86- This 57 acre park is located on the west side of the Long Creek arm of Table Rock Lake at the end of Missouri State Highway UU (Plate PM–20). Facilities include a park booth,

77 campsites, seven picnic sites, one shower house with restrooms, three restrooms, swim beach, playground, group pavilion, launch ramp, courtesy dock, and RV dump station. Water is supplied by one permitted well, and sewage is disposed by drip irrigation field.

If adequate funding becomes available for park operation future improvements include the following: Construction of a new camping loop and restroom/shower house on the northwest side of the park. Construction of a turnaround road at sanitary dump station.

Overlook – (Plate PM-21) This 91 acre area is located on the south end and downstream side of Table Rock Dam. The area includes 1 parking lot for viewing Table Rock Dam, Shepherd of the Hills Fish Hatchery, and Lake Taneycomo. The area has 2 additional parking lots with access for fishing on Lake Taneycomo and a trailhead for the White River Valley Trail. The area contains part of the White River Valley Trail in a partnership with the Missouri Department of Natural Resources, Table Rock State Park.

If adequate funding becomes available for park operation future improvements include the following: Construction of an observation platform and pedestrian pathways and trails.

Peninsula Observation Loop – (Plate PM-22) This 12 acre area consist of a loop road and parking areas for viewing the lake including Table Rock Dam and the Table Rock Auxiliary Spillway.

If adequate funding becomes available for park operation future improvements include the following: Construction of an ADA accessible fishing dock and a restroom facility.

Table Rock State Park (Missouri Department of Natural Resources, MDNR)- This 325-acre park operated by MDNR, Division of State Parks is located on the eastern shore of Table Rock Lake one mile south of Table Rock Dam on Highway 165 (Plate PM-23) . Facilities include the following: a visitor contact station/park office; covered shelter house; sand volleyball court; 4 lane boat launch ramp; 21 picnic sites; three playgrounds; amphitheater for outdoor interpretive programs; two campgrounds with a total 157 campsites consisting of 50-amp and 30-amp campsites with electric/water/sewer and electric only hookups, basic campsites and family campsites with electricity; three shower houses with restrooms and laundry; three restrooms (one has showers and laundry for marina guests); two vault toilets; two park residences; 1.5 miles of paved multi-use trail; one mile of natural surface hiking trail and 11.75 miles of natural surface hiking/mountain biking trails. The park also has a commercial marina concessionaire. The park's infrastructure includes two permitted wells with a 52,000 gallon storage tank. The wastewater system is a mixture of gravity and force main lines with four wastewater lift stations. The wastewater is pumped into Taney County Sewer Districts lift station which is located within our licensed area, and pumped into the city of Hollister for treatment.

If adequate funding becomes available for park operation future improvements include the following: Upgrading campsites to 50-amp electric/water/sewer and 50-amp electric only; constructing a new gated single entrance to the park and administrative complex; constructing camper cabins in the campgrounds; relocating the park residence and maintenance compound.

Viney Creek- This 98 acre park is located on the south shore of the White River arm near Golden, MO (Plate PM–24). Facilities include a park booth, 46 campsites, three picnic sites, one shower house with restrooms, one restroom, swim beach, playground, launch ramp, courtesy dock, and RV dump station. Water is supplied by a permitted well and sewage is disposed of through a permitted discharging system. Wastewater and sludge is intermittently removed by a contractor.

At the drafting of this Final Master Plan, Viney Creek Park is slated for temporary closure based on a park efficiency review process. However, the park is receptive for potential lease to public or private entities through a real estate process.

If adequate funding becomes available for park operation future improvements include the following: Re-open park. Rehabilitation and modernization to campsites 1- 4, and 29 - 43, including upgrading utilities to 50 amp electric service and water to each site. Construct a group pavilion with day use parking.

Viola- This 34 acre park is located on the east shore of the Kings River arm (Plate PM–25). Facilities include a park booth, 53 campsites, one shower house with restrooms, two restrooms, swim beach, playground, launch ramp, courtesy dock, and dump station. Water is supplied by two permitted wells and sewage is disposed of by drip irrigation. The park has a commercial marina concessionaire.

If adequate funding becomes available for park operation future improvements include the following: Rehabilitation and modernization to campsites 1- 9, 25 - 32 and 54 - 58, including upgrading utilities to 50 amp electric service and adding water to each site; relocation of the existing swim beach with additional parking and path.

(3) Future Park Development Area

There are currently no project land areas classified for future park development and none has been added through this Master Plan revision. If future recreation development is needed, development will be accommodated within the existing High Density classified land areas.

Engineering and Design Recreational Facility and Customer Service Standards can be referenced in EM 1110-1-400 http://publications.usace.army.mil/publications/eng-manuals/EM_1110-1-400_sec/toc.htm

(4) Zones of Influence

The Table Rock Lake Zone of Influence has been determined from visitor surveys to include those counties situated with at least 50 percent of their population within 250 highway miles of the lake. Refer to Figure 2-4 for location map of the Zone of Influence. The zone includes counties in Missouri, Arkansas, Oklahoma, and Kansas, and reservation data for these counties are shown in Table 2-5. This zone represents the area in which approximately 90 percent of the day-use visitors and 85 percent of the overnight visitors to Table Rock reside. It therefore has a

direct influence upon the use of the lake and its parks. Table Rock Lake, its public and commercial facilities, and the scenic qualities of the area are nationally advertised in vacation and sporting publications. The lake is well suited for the types of recreational development for which it is being utilized. Further project development as proposed will not adversely affect the integrity of the resource characteristics. Development plans and management practices will continue to be periodically evaluated to assure proper resource use as well as the validity of planning assumptions utilized in this plan. A number of diverse factors were studied in preparation of this Master Plan. The following is a discussion of those factors influencing planning and management of Table Rock Lake.

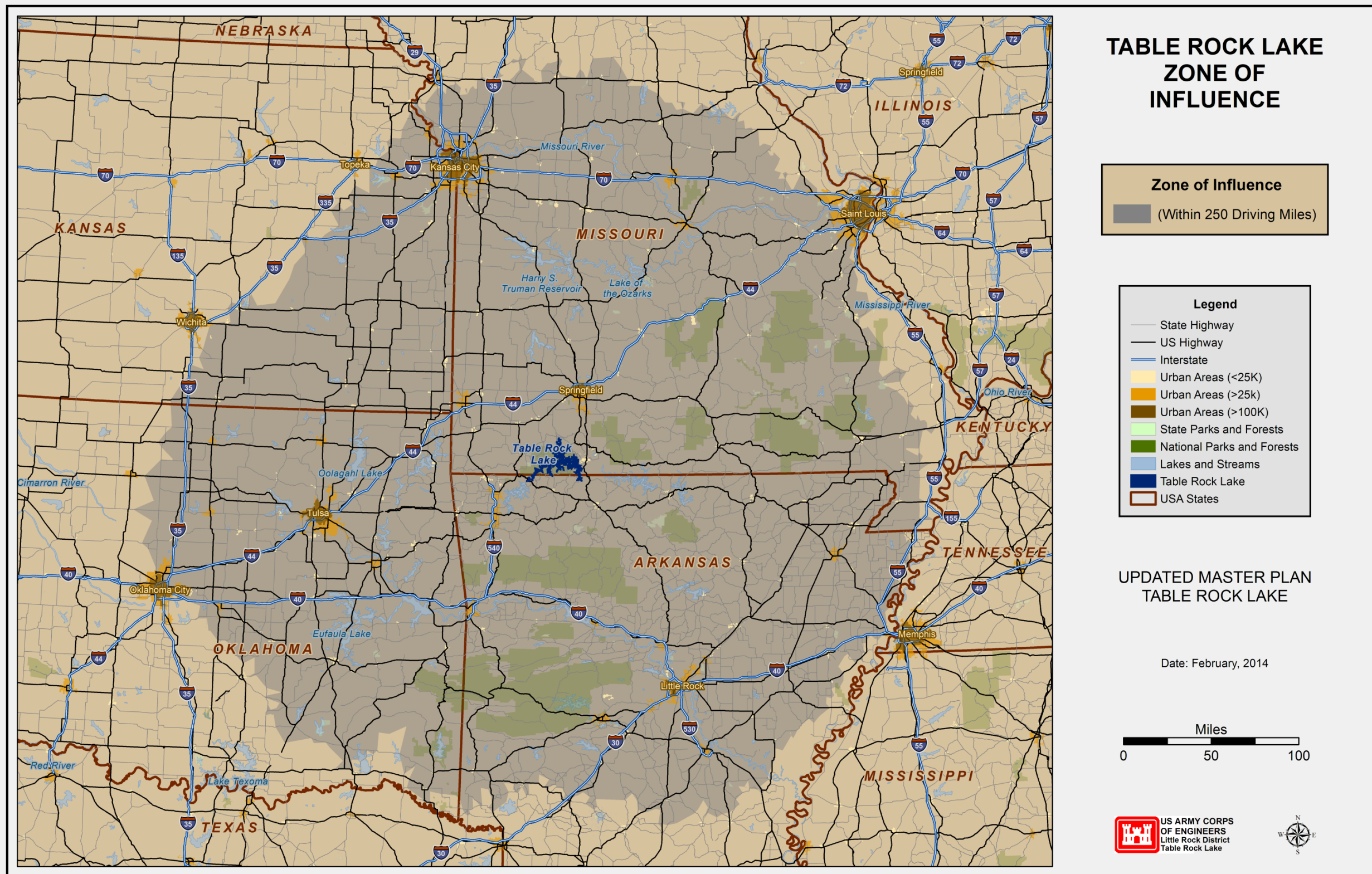


Figure 2-4 Zone of Influence

Table 2-5

**2012 TABLE ROCK LAKE CORPS OF ENGINEERS
DISTRIBUTION OF RESERVATIONS BY COUNTY
2012**

	Reservations	% of Total
CORE MARKETS	8,298	59.6%
BARRY MO	926	6.7%
CHRISTIAN MO	1,510	10.8%
GREENE MO	2,209	15.9%
JASPER MO	466	3.3%
LAWRENCE MO	954	6.9%
NEWTON MO	409	2.9%
OTHER	638	4.6%
STONE MO	629	4.5%
TANEY MO	557	4.0%
PRIMARY MARKETS	1,922	13.8%
CARROLL AR	481	3.5%
BOONE AR	402	2.9%
BENTON AR	191	1.4%
JACKSON MO	176	1.3%
WASHINGTON AR	153	1.1%
SAINT LOUIS MO	152	1.1%
JOHNSON KS	151	1.1%
FRANKLIN MO	110	0.8%
JEFFERSON MO	106	0.8%
OUTER MARKETS	3,703	26.6%
CASS MO	88	0.6%
CLAY MO	74	0.5%
COLE MO	62	0.4%
MADISON AR	61	0.4%
NEWTON AR	40	0.3%
OKLAHOMA OK	42	0.3%
SAINT CHARLES MO	74	0.5%
SEDGWICK KS	157	1.1%
SHAWNEE KS	50	0.4%
TULSA OK	58	0.4%
OTHER	2,997	21.5%
Total	13,923	100.0%

search

TRL 2012 Breakout Publish

(5) Visitation Profiles (OMBIL)

Table 2-6 shows visitation trends as tabulated by Corps personnel and recorded in the Corps' nationwide Operation and Maintenance Business Information Link (OMBIL) database. The methodology used to capture the information in the following table has varied over the period of record shown. At the drafting of this final Master Plan revision, the Corps is in the process of modernizing the Visitation Estimation & Reporting System (VERS) to build on the groundwork laid in the early 1990's visitor use surveys. The new VERS will increase consistency of visitation estimates across projects by improving the level of standardization and transparency in the application of procedures used for visitation use estimation and reporting. This will result in additional variability in visitation numbers in the future and thus the table below should not be relied upon for precise enumeration.

TABLE 2-6
ANNUAL ATTENDANCE FROM 2003-2012

Visitation 2003-2012	
2003	4,261,976
2004	3,863,076
2005	5,456,374
2006	5,410,127
2007	4,612,001
2008	4,644,347
2009	5,247,953
2010	4,792,603
2011	4,152,762
2012	3,942,796

(6) Recreation Analysis

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is an integral part of capturing the history and popular activities to enhance recreation opportunities in Missouri and Arkansas. The SCORP ties together voices from the users of recreation sites, planners and developers, government officials, agency managers and elected officials. This collaboration effort is in place to lay out a plan to guide recreation development in a useful, beneficial, and sustainable manner.

Arkansas SCORP Data (2008-2013):

Over the past 25 years the top 10 recreational activities that Arkansans prefer hasn't changed substantially. According to a recent survey, jogging or walking for pleasure tops the list, and burgeoning interest in healthy lifestyles helps hold this timeless activity at the top. For driving, recent higher gasoline prices may be one factor that influences driving habits; while this activity did not appear on the recent poll, it is still perceived as popular way to view and enjoy the beauty of the natural landscape (See Table 2-7).

Table 2-7
Popular Outdoor Activities (Arkansas)

Recent Poll	1993	1984
Jogging or walking	Driving for pleasure	Walking for Pleasure
Swimming	Walking for Pleasure	Fishing
Nature Viewing and Outdoor Photography	Picnicking	Driving for Pleasure
Boating	Fishing	Picnicking
Picnicking	Swimming	Swimming
Visiting Historical and Ecological Sites	Visiting Historical Sites	Camping/Developed Sites
Camping	Wildlife Observation	Visiting Historical Sites
Bicycling	Short Hikes	Hunting
Playing Tennis	Pleasure Boating	Baseball/Softball
	Bicycling	Jogging/Running
	Camping/Developed Sites	Pleasure Boating
	Basketball	ORV Driving
	Jogging/Running	Bicycling
	Baseball/Softball	Canoeing/Floating
	Photography	Camping/Undeveloped Sites
	Hunting	Water Skiing
	Other Outdoor Games	Photography
	ORV Driving	Tennis
	Canoeing/Floating	Other Outdoor Games
	Camping/Undeveloped Sites	Horseback Riding

Along with walking and driving, other core interests involve access to water (swimming, boating), or common leisure time gatherings (picnics and camping). People often use trails as part of their activities, especially for bicycling, walking, hiking or nature viewing and photography, which makes trails an important type of facility in terms of planning for outdoor recreation. Access to parks, trails and other facilities is primarily through automobiles and roadways. With the interest in driving for pleasure (or total demand increasing with population growth), and general access by car to most sites, the public roadways are becoming ever more important to the broader functioning of recreational sites and facilities.

For a copy of the entire Arkansas SCORP it can be found at:
http://www.recpro.org/assets/Library/SCORPs/ar_scorp_2009.pdf

Missouri SCORP Data (2013-2017):

A telephone survey of Missouri residents was conducted in July 2011. A total of 768 surveys were completed, half in urban and half in rural regions of the state, providing a 95% (+/- 5%) confidence interval for each. Results were combined and weighted based on the 70%/30% urban/rural ratio of the state's population. The survey focused on residents who had participated in outdoor recreation at a public facility at least once in the past year; those who had not participated in the past year were screened out of the survey.

Availability of Outdoor Recreation

Available Activities

Residents are satisfied with the availability of outdoor recreation activities in Missouri overall, and more than a third are very satisfied. They are less satisfied, however, with the availability of organized and supervised outdoor recreation programs and only one in five residents are "very satisfied." In particular, residents who are not satisfied with programs want more opportunities for walking, biking and youth related activities.

Available Facilities

Most Missourians are satisfied with the number and availability of outdoor recreation facilities in the state, but those who are not satisfied want more walking trails, water parks/pools and parks. One in ten Missourians has limited access to sidewalks, and more than half of those residents would use sidewalks if they were available in their neighborhoods. Young Americans nationwide expressed similar desires for sidewalks during President Obama's America's Great Outdoors (AGO) Initiative, suggesting that communities use sidewalks and pathways to link neighborhoods to parks and green spaces. Missouri residents who visit certain types of facilities at least once a year say more of those are needed -- gardens, trails, outdoor swimming pools, camping sites, outdoor aquatic complexes, target shooting sites, ATV/ORV riding areas, outdoor basketball courts, tennis courts and Frisbee golf courses.

Popularity of Outdoor Recreation

Popular Activities

The most popular outdoor recreation activity among Missourians is walking – more than a third of residents walk daily. More than one in five Missourians enjoy daily gardening, wildlife observation/birding and dog walking. Most Missouri residents walk for recreation, join in outdoor family gatherings, drive for sightseeing, visit local parks and garden at least once a year. More than half enjoy picnicking, outdoor swimming, visiting historic/education sites, wildlife observation/birding, fishing and boating at least annually. Walking, bicycling, playing baseball and playing golf are more popular among urban residents while rural Missourians are more likely to be fishing, boating, target shooting, hunting and ATV riding. Table 2-8 lists the most popular activities from the Missouri SCORP Data.

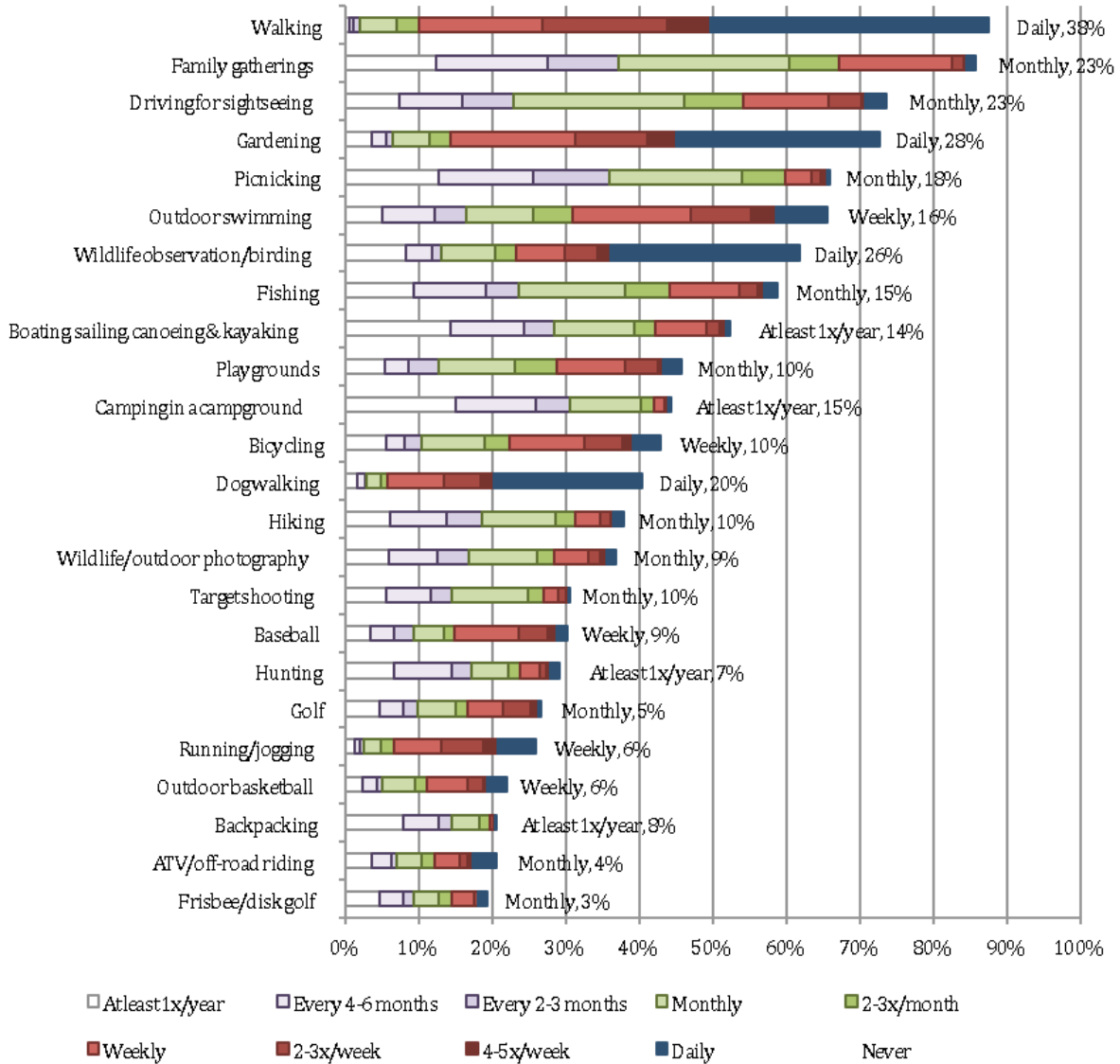
Popular Facilities

Walkable streets/sidewalks, local parks, gardens, fishing sites and outdoor swimming pools are the most popular facilities used by Missourians at least monthly. More than one in five residents visit playgrounds, lakes, trails, boat access sites, rivers, picnic areas and historic/education sites at least once a month. Three out of four Missourians use local parks and walkable streets/ sidewalks at least once a year. More than half of Missourians visit

historic/education sites, lakes, gardens, picnic areas, and/or state parks annually or more often. A recent national study showed that people place a greater priority on having sidewalks and places to take walks than on living within walking distance of specific places in a community, such as stores and restaurants. Not surprisingly, urban residents are more likely to use walkable streets/sidewalks and local parks while rural residents are more likely to use fishing sites, lakes and rivers.

Table 2-8 Popular Outdoor Activities (Missouri)

How often does your household participate in this activity?



For a copy of the entire Missouri SCORP it can be found at:

https://recpro.memberclicks.net/assets/Library/SCORPs/mo_scorp_2013.pdf

(7) Recreational Carrying Capacity

Public Use Areas

Table 2-9

Table Rock Project Occupancy Percentage				
Park Name	# of Sites	Year 2012		
		# of Avail Nights	Occupancy	Percent
AUNTS CREEK	56	7728	2408	31.16%
BAXTER	54	7452	2488	33.39%
BIG M	62	7415	1584	21.36%
CAMPBELL POINT	75	13551	3184	23.50%
CAPE FAIR	83	15189	5518	36.33%
CRICKET CREEK	36	6008	2523	41.99%
EAGLE ROCK	57	7672	1728	22.52%
INDIAN POINT	86	14280	8881	62.19%
LONG CREEK	48	8016	2352	29.34%
MILL CREEK (MISSOURI)	68	12444	7695	61.84%
OLD HWY 86- Closed for Construction				
Viney Creek	46	6302	1556	24.69%
VIOLA	51	7929	2339	29.50%
Total:	722	113986	42256	37.07%

Table 2-9 lists the Occupancy percentages for parks that are operated by the Corps of Engineers. The table represents the percent of occupancy for all 365 days of the year. Camping is largely a weekend recreational activity, which is reflected in these percentages. While the perception of occupancy percentage appears low for Table Rock, the national average for Corps facilities is at 29%.

Recreational Boating Use Survey

The purpose of this study was to assess boaters' *perceptions* and *preferences* for various managerial, social, and physical resource conditions on the lake and to determine boater capacity, density, crowding, and public safety concerns on the lake. In addition, it involved identifying the boaters' most important issues. The boater survey was conducted between May 25th and August 16th, 2009. There were five primary objectives:

- describe the recreational patterns of two boater groups (public launch ramp users and those who are marina slip renters, slip owners or shoreline residents);
- determine the boaters' perceptions of present and past natural, social, and managerial conditions including perceptions of crowding, congestion, and conflict;
- determine the boaters' preferences for natural, social, and managerial conditions;

- quantify the amount and character of recreational boating use occurring during the primary boating season, and;
- test and refine the inventory procedures developed at other lakes.

Key Findings

The primary finding of this recreational boating study is that Class I and II compartments are areas of concern relative to boating safety, boating conflicts, and user enjoyment (see Figures 2-5 and 2-6). These findings are consistent with the higher accident/incident rates found in Class I and Class II management compartments where boaters expressed concern about safety and conflict.

When viewing the management compartment classification maps for the 20 to 100% projected increases in average number of boats, it appears that, at a 60% increase in boats above the number of boats counted in this study, there is a threshold of crossing nearly half of Table Rock Lake's management compartments as being a Class I designation for density/conflict. Therefore, management should strive to conserve use levels to prevent these levels from exceeding this threshold. Without this type of management strategy, opportunities for other classes of experience on the lake will be eliminated and those boaters looking to fish, swim, or relax quietly will likely be displaced elsewhere to seek out their recreational experiences.

Problematic areas identified as areas to avoid and that are unsafe by boaters in these Class I compartments include Kimberling City, the dam area, the main channel, the state park, and Aunt's Creek among others. To mitigate the negative attributes cited by boaters for why they avoid those locations, management will need to consider increasing law enforcement strategies to curb unsafe boating behavior and illegal behaviors associated with alcohol consumption, enforce or post speed limits, and remove debris hazards from the water.

Class II management compartments were, generally, highly variable in their density and conflict levels. These management compartments such as Joe Bald, Lower White, Shell Knob- Campbell Point, Central White, and Holiday Island should be examined more closely to determine the cause of conflicts. For example, although Holiday Island had very low density, conflict levels were high. The reason for the high conflicts in this management compartment is related to the developed, resort setting of this small wooded island where activities such as smaller craft rentals are commonly conflicting with other boat traffic.

Visitors also cited crowding and boat traffic as primary reasons for avoiding the unsafe locations mentioned above. Social condition strategies to reduce crowding/density may include reducing parking, slips, leases, or concessions or other development near the above locations on the lake. Other strategies to mitigate the above social impacts that could be considered include dispersion strategies or temporary closures of areas to rehabilitate the resource and redirect traffic to other locations.

Despite having some select areas where boaters are raising safety and crowding concerns, the majority of boaters perceived that the ramps and lake were moderately to extremely safe. Therefore, the overall condition of law enforcement and regulations appear to be effective in

providing perceptions of Table Rock Lake as a safe lake to boat. In fact, many of the respondents listed the increased patrols and law enforcement as being very beneficial to their experience.

Mail-back survey respondents appear to be more sensitive than ramp users to social impacts as indicated by their relatively higher ratings of crowding and concerns for safety. In fact, the majority of mail-back survey respondents responded that the lake was at least moderately crowded to extremely crowded. Perhaps these boaters have more of a sense of ownership or investment in the resource both physically and financially causing them to perceive impacts more than ramp users.

Overall, crowding perceptions were lower than expected by the researchers of this study. The moderate crowding scores among ramp users are likely related to the fact that most ramp boaters on Table Rock Lake are in groups of three to four people already and come to the lake for the social setting and experience of watching other boaters, many of whom they might already know since local, regular boaters comprised the majority of the ramp user sample.

The comments to open-ended questions made by ramp users included multiple references to the lake having had an increase in “bigger boats,” suggesting some negative concerns for the larger pontoon boats and other large vessels on the lake. Boats on Table Rock Lake did average 19.4 feet for ramp and 23.4 for mail-back survey respondents. Therefore, as the number of larger boats on the lake increases, negative concerns may heighten among those with smaller boats. Many negative references were made about the unsafe behavior of jet skiers (PWCs) as reported in the additional comments section of the surveys. Many boaters also noted negative changes in resources, such as increased traffic and dirtier water. Positive changes listed included comments about the clean water, little garbage and a very visible law enforcement presence.

With cruising being the primary activity of both ramp and mail-back survey respondents, it heightens the potential for future conflict and safety concerns since an increasing number of moving boats are always more intrusive and of more risk to swimmers, skiers, and fishermen. Furthermore, with mail-back survey respondents listing their secondary activity as relaxing, this group may be more sensitive to louder boats and the sheer number of boats as an interruption of this activity.

The high frequency of swimming on the lake among both ramp users and mail-back survey respondents suggests that water quality is high on the list of concern; many respondents’ perceptions were that water quality has been improving and that it appears to be a lot cleaner than it once was. However, many respondents also mentioned a decrease in water quality, so there appears to be a split decision on the improvement of water quality.

Some locations were much more important to boaters such as Cape Fair, Cow Creek, Aunt’s Creek, and Long Creek. Ramp users and mail-back survey respondents, as a majority, cited that their favorite location was close and familiar, provided solitude, was relaxing, provided good fishing, had good facilities, and included calm waters and beautiful scenery.. To manage for these qualities, it appears that these favorite locations should contain low speed or no wake zones to allow for calmer water, better fishing, and quieter solitude for relaxing.

A number of comments were made about the need to improve facilities; however, many boaters also listed negative concerns about increasing developments on the shoreline. The survey data indicated that some additional boat ramps, campgrounds, and parking areas should be considered but it does not support other substantial developments, such as marinas.

Based on the above key findings, the researchers of the recreational boating study recommend the following to USACE management:

1. Preventing a substantial increase in existing use levels;
2. Preserving opportunities to escape existing heavy boat traffic and high wakes; and
3. Reducing conflicts through increased and improved boater education, on-water law enforcement and patrol, and by limiting density levels through dispersion or allocation strategies.

Table Rock Lake Management Compartment Classification Maps

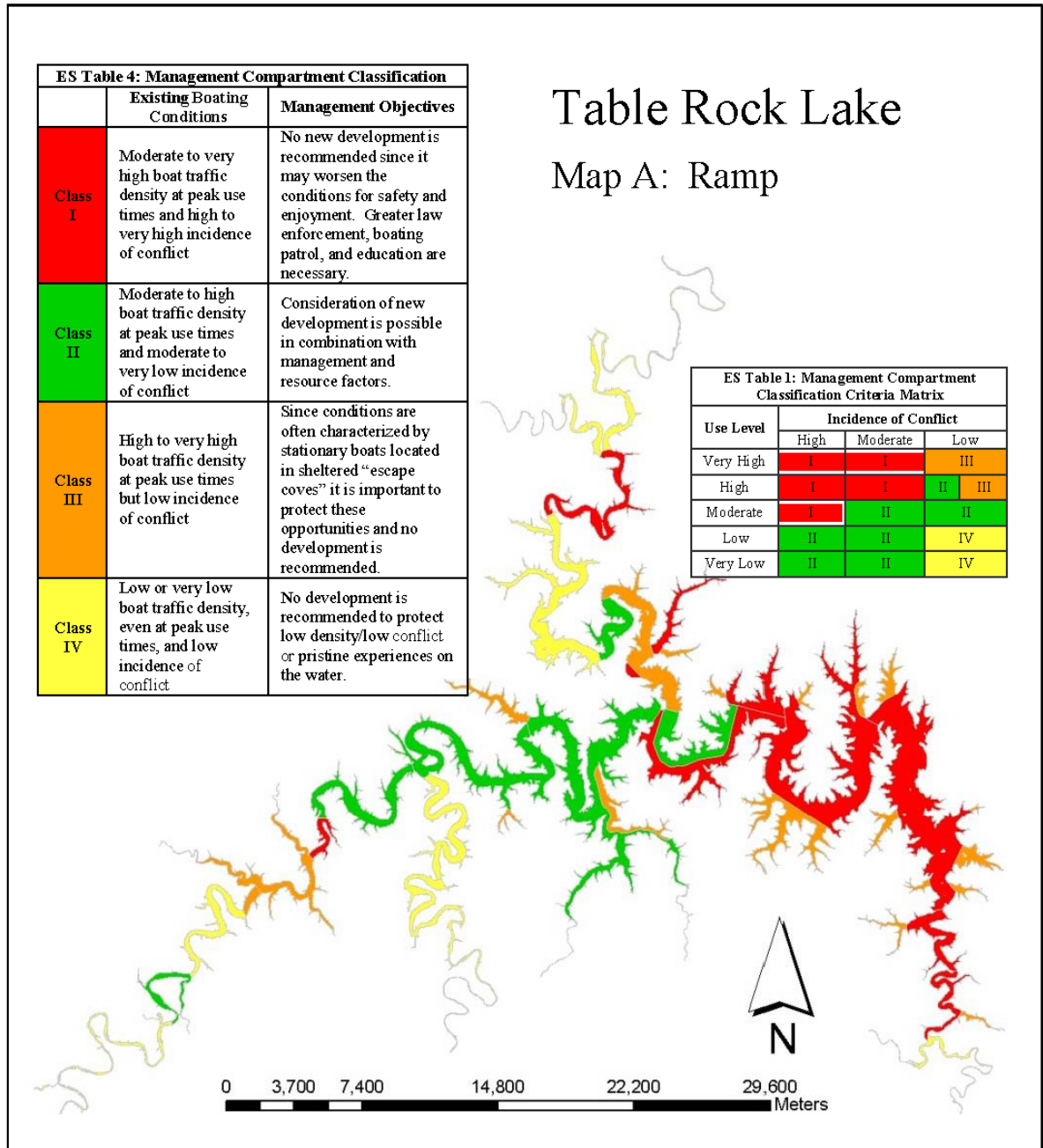


Figure 2-5. Table Rock Lake Management Compartment Classification for Ramp Boaters (Map A)

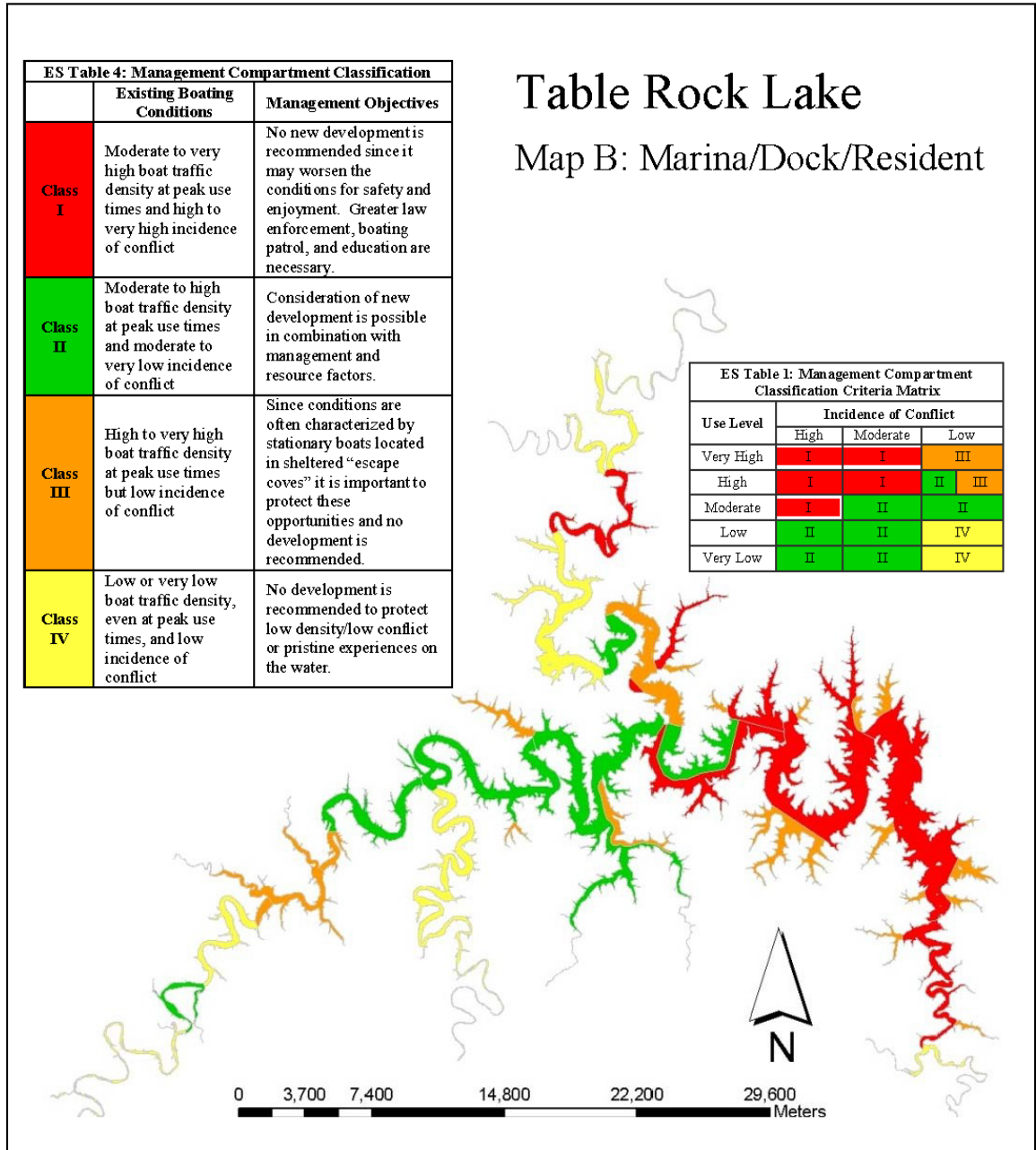


Figure 2-6. Table Rock Lake Management Compartment Classification for Marina, Dock and Resident Boaters (Map B)

I. Real Estate

(1) Acquisition Policy

The Flood Control Act of June 28, 1938, (Public Law No. 76, 75th Congress, 3rd Session) approved a comprehensive plan for flood control and other purposes in the White River Basin. This comprehensive plan was modified by the Flood Control Act of August 18, 1941 (Public Law 228, 77th Congress, 1st Session). A Design Memorandum was completed identifying all land and interests in land that would be necessary for the operation, maintenance and control of the reservoir. This report identified the “guide” elevation 936-foot contour necessary for this project. The authorized acquisition for land was to a minimum elevation of 923’ msl. It was further identified that lands would be purchased by blocked out lines in increments of 5 and 2 ½ acre tracts along regular sectional subdivision breakdowns to encompass the guide contour for fee acquisition. In areas where the blocked-out line did not encompass lands needed for occasional flooding (elevation 936), an additional flowage easement was acquired between the fee acquisition line and elevation 936’ msl. Additionally, areas were identified above elevation 936 for acquisition of lands to account for islands, inaccessible lands, steep ravines and bluffs and up to elevation 945 near the upstream reservoir limits, along with additional lands identified for public use and access areas. Acquisition by “blocking out” was authorized within the 1953 “Real Estate Land Acquisition Policy for Civil Works Projects,” as revised. The Real Estate Design Memorandum outlining all lands identified above was submitted and approved through our Division Offices to Headquarters.

(2) Management and Disposal Policy

The Real Estate Management and Disposal program for Table Rock is administered by the Little Rock District Real Estate Division in accordance with all applicable laws, regulations, and policies. All requests for real estate related actions must be received via a written request made to the Table Rock Lake Operations Manager, who makes a recommendation through the Little Rock District Chief of Operations to the Chief of Real Estate.

m. Pertinent Public Laws

Application of Public Laws.

Development and management of Federal reservoirs are regulated by a number of statutes and guided by USACE documents. The following sections provide a summary of the relevant policies and Federal statutes.

Recreation

The policies and public laws listed below address development and management of recreational facilities on public lands and are pertinent to the Table Rock Lake project.

PL 78-534, Flood Control Act of 1944(22 December 1944), authorized the Chief of Engineers to provide facilities in reservoir areas for public use, including recreation and conservation of fish and wildlife.

PL 79-526, Flood Control Act of 1946 (24 July 1946), amends PL 78-534 to include authority

to grant leases to nonprofit organizations at recreational facilities in reservoir areas at reduced or nominal charges.

PL 83-780, Flood Control Act of 1954 (3 September 1954), further amends PL 78-534 and authorizes the Secretary of the Army to grant leases to Federal, State, or governmental agencies without monetary considerations for use and occupation of land and water areas under the jurisdiction of the Department of the Army for park and recreational purposes when in the public interest.

PL 87-874, Flood Control Act of 1962, broadened the authority under PL 78-534 to include all water resource projects.

Joint Land Acquisition Policy for Reservoir Projects (Federal Register, Volume 27, 22 February 1962) allows the Department of the Army to acquire additional lands necessary for the realization of potential outdoor recreational resources of a reservoir.

PL 88-578, Land and Water Conservation Fund Act of 1965 (1 September 1964), prescribes conditions under which USACE may charge for admission and use of its recreational areas.

PL 89-72, Federal Water Project Recreation Act of 1965 (9 July 1965), requires sharing of financial responsibilities in joint Federal and non-Federal recreational and fish and wildlife resources with no more than half of the cost borne by the Federal Government.

PL 90-480, Architectural Barriers Act of 1968 (12 August 1968), as amended, requires access for persons with disabilities to facilities designed, built, altered, or leased with Federal funds.

PL 101-336, Americans with Disabilities Act of 1990 (ADA) (26 July 1990), as amended by the ADA Amendments Act of 2008 (PL 110-325), prohibits discrimination based on disabilities in, among others, the area of public accommodations and requires reasonable accommodation for persons with disabilities.

PL 102-580, Water Resources Development Act of 1992 (31 October 1992), authorizes the USACE to accept contributions of funds, materials, and services from non-Federal public and private entities to be used in managing recreational facilities and natural resources.

PL 103-66, Omnibus Budget Reconciliation Act—Day Use Fees (10 August 1993), authorized the USACE to collect fees for the use of developed recreational sites and facilities, including campsites, swimming beaches, and boat ramps.

PL 104-333, Omnibus Parks and Public Lands Management Act of 1996 (12 November 1996), created an advisory commission to review the current and anticipated demand for recreational opportunities at lakes and reservoirs managed by the Federal Government and to develop alternatives to enhance the opportunities for such use by the public.

PL 104-303 (the Water Resources Development Act of 1996). Authorized recreation and fish and wildlife mitigation as purposes of the project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of the project.

PL 98-63. Authorized the Corps' Volunteer Program. ER 1130-2-500, Chapter 10 (dated 13 March 2013) further outlines the program.

Water Resource Protection and Flood Risk Management

A number of public laws address water resources protection and flood risk management and integration of these goals with other Project purposes such as recreation. The following are pertinent to Table Rock Lake:

PL 75-761, Flood Control Act of 1938 (28 June 1938), authorizes the construction of civil engineering projects such as dams, levees, dikes, and other flood risk management measures

through the USACE.

PL 77-228, Flood Control Act of 1941(18 August 1941), amended the Flood Control Act of 1938 and appropriated \$24M to support construction of multiple-purpose reservoir projects in the White River Basin.

PL 78-534, Flood Control Act of 1944 (22 December 1944), specifies the rights and interests of the states in water resources development and requires cooperation and consultation with State agencies in planning for flood risk management.

PL 79-14, Rivers and Harbors Act of 1945 specifies the rights and interests of the states in watershed development and water utilization and control, and the requirements for cooperation with state agencies in planning for flood control and navigation improvements.

PL 85-500, Water Supply Act of 1958 (3 July 1958), authorizes the USACE to include municipal and industrial water supply storage in multiple-purpose reservoir projects.

PL 87-88, Federal Water Pollution Control Act Amendments of 1961 (20 July 1961), requires Federal agencies to address the potential for pollution of interstate or navigable waters when planning a reservoir project.

PL 89-80, Water Resources Planning Act of 1965 (22 July 1965), provides for the optimum development of the Nation's natural resources through coordinated planning of water and related land resources. It provides authority for the establishment of a water resources council and river basin commission.

PL 89-298, Flood Control Act of 1965 (27 October 1965), authorizes the Secretary of the Army to design and construct navigation, flood risk management, and shore protection projects if the cost of any single project does not exceed \$10 million.

PL 92-500, Federal Water Pollution Control Act (Clean Water Act) (October 18, 1972) Establishes a national goal of eliminating all discharges into U.S. waters by 1985 and an interim goal of making the waters safe for fish, shellfish, wildlife and people by July 1, 1983. Also provides that in the planning of any Corps reservoir consideration shall be given to inclusion of storage for regulation of streamflow.

PL 95-217, Clean Water Act of 1977 (15 December 1977), amends PL 87-88 and requires the Environmental Protection Agency (EPA) to enter into written agreements with the Secretaries of Agriculture, the Army, and the Interior to provide maximum utilization of the laws and programs to maintain water quality.

PL 99-662, Water Resource Development Act of 1986 (17 November 1986), establishes cost sharing formulas for the construction of harbors, inland waterway transportation, and flood risk management projects.

Fish and Wildlife Resources

A number of public laws address protection and maintenance of fish and wildlife resources. The following are pertinent to the Table Rock Lake project:

PL 79-732, Fish and Wildlife Coordination Act (10 March 1934), provides authority for making project lands available for management by interested State agencies for wildlife purposes.

Title 16 U.S. Code (U.S.C.) §§ 668-668a-d, Bald and Golden Eagle Protection Act of 1940 (8 June 1940) as amended, prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles (*Haliaeetus leucocephalus*), including their nests or eggs.

PL 85-624, Fish and Wildlife Coordination Act (12 August 1958), states that fish and wildlife

conservation will receive equal consideration with other project purposes and be coordinated with other features of water resources development programs.

The Federal Water Project Recreation Act of 1965 (PL 89-72) requires consideration of opportunities for fish and wildlife enhancement in planning water resources projects. Non-Federal bodies are encouraged to operate and maintain the project fish and wildlife enhancement facilities. If non-Federal bodies agree in writing to administer the facilities at their expense, the fish and wildlife benefits are included in the project benefits and project cost allocated to fish and wildlife. Fees may be charged by the non-Federal bodies to repay their costs. If non-Federal bodies do not so agree, no facilities for fish and wildlife may be provided.

PL 91-190, National Environmental Policy Act of 1969 (NEPA) (1 January 1970), establishes a broad Federal policy on environmental quality stating that the Federal government will assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings, and preserve important historic, cultural, and natural aspects of our national heritage.

PL 93-205, Conservation, Protection, and Propagation of Endangered Species (28 December 1973), requires that Federal agencies will, in consultation with the U.S. Fish and Wildlife Service (USFWS), further conservation of endangered and threatened species and ensure that their actions are not likely to jeopardize such species or destroy or modify their critical habitat.

PL 95-632, Endangered Species Act Amendments of 1978 (10 November 1978), specifies a consultation process between Federal agencies and the Secretaries of the Interior, Commerce, or Agriculture for carrying out programs for the conservation of endangered and threatened species.

PL 101-233, North American Wetland Conservation Act (13 December 1989), directs the conservation of North America wetland ecosystems and requires agencies to manage their lands for wetland/waterfowl purposes to the extent consistent with missions.

PL 104-303 (the Water Resources Development Act of 1996). Authorized recreation and fish and wildlife mitigation as purposes of the project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of the project.

PL 106-147, Neo-tropical Migratory Bird Conservation Act (20 July 2000) promotes the conservation of habitat for neo-tropical migratory birds.

Forest Resources

The following law pertains to management of forested lands and is pertinent to the Table Rock Lake project:

PL 86-717, Conservation of Forest Land Act of 1960 (6 September 1960), provides for the protection of forest cover in reservoir areas and specifies that reservoir areas of projects developed for flood risk management or other purposes that are owned in fee and under the jurisdiction of the Secretary of the Army and the Chief of Engineers will be developed and maintained so as to encourage, promote, and ensure fully adequate and dependable future resources of readily available timber through sustained yield programs, reforestation, and accepted conservation practices.

The stewardship management concept derives primarily from Public Law 86-717, The Forest Cover Act, which was written specifically to address the conservation and management of trust resources at Corps projects. Section 1 of the Act states in part... "reservoir areas...owned in fee

and under the jurisdiction of the Secretary of the Army and Chief of Engineers, shall be developed and maintained so as to encourage, promote, and assure fully adequate and dependable future resources of readily available timber, through sustained yield programs, reforestation, and accepted conservation practices, and to increase the value of such areas for conservation, recreation, and other beneficial uses: Provided, that such development and management shall be accomplished to the extent practicable and compatible with other uses of the project.” Section 2 of the Act further states in part that the, ”Chief of Engineers, under the supervision of the Secretary of the Army, shall provide for the protection and development of forest or other vegetative cover and the establishment and maintenance of other conservation measures on reservoir areas under his jurisdiction, so as to yield the maximum benefit and otherwise improve such areas.”

Cultural Resources

A number of public laws mandate protection of cultural resources on public lands. The following are pertinent to USACE project lands at the Table Rock Lake project:

PL 59-209, Antiquities Act of 1906 (8 June 1906), applies to the appropriation or destruction of antiquities on federally owned or controlled lands and has served as the precedent for subsequent legislation.

PL 74-292, Historic Sites Act of 1935 (21 August 1935), declares that it is a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States.

PL 86-523, Reservoir Salvage Act of 1960 (27 June 1960), provides for the preservation of historical and archaeological data that might otherwise be lost as the result of the construction of a dam and attendant facilities and activities.

PL 89-665, National Historic Preservation Act of 1966 (NHPA) (15 October 1966), establishes a national policy of preserving, restoring, and maintaining cultural resources. It requires Federal agencies to take into account the effect an action may have on sites that may be eligible for inclusion on the National Register of Historic Places.

PL 93-291, Archaeological and Historic Preservation Act of 1974 (24 May 1974), amends PL 86-523 and provides for the Secretary of Interior to coordinate all Federal survey and recovery activities authorized under this expansion of the Reservoir Salvage Act of 1960. The Federal construction agency may expend up to 1 percent of project funds on cultural resource surveys.

PL 96-95, Archaeological Resources Protection Act of 1979 (31 October 1979), updates PL 59-209 and protects archaeological resources and sites on public lands and fosters increased cooperation and exchange of information among governmental authorities, the professional archaeological community, and private individuals.

PL 101-601, Native American Graves Protection and Repatriation Act (16 November 1990), requires Federal agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples.

Leases, Easements, and Rights-of-Way

A number of laws and regulations govern the granting of leases, easements, and rights-of-way on Federal lands. The following are pertinent to USACE project lands at the Table Rock Lake project:

16 U.S.C. § 663, Impoundment or Diversion of Waters (10 March 1934), for wildlife resources management in accordance with the approved general plan.

10 U.S.C. § 2667, Leases: Non-excess Property of Military Departments and Defense Agencies (10 August 1956), authorizes the lease of land at water resource projects for any commercial or private purpose not inconsistent with other authorized project purposes.

U.S.C. Titles 10, 16, 30, 32, and 43 address easements and licenses for project lands;

16 U.S.C. § 460d authorizes use of public lands for any public purpose, including fish and wildlife, if it is in the public interest.

16 U.S.C. §§ 470h-3, Lease or Exchange of Historic Property (15 October 1966), for historic properties.

PL 91-646, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (2 January 1971), establishes a uniform policy for fair and equitable treatment of persons displaced as a result of Federal or federally assisted programs.

PL 94-579, Federal Land Policy and Management Act of 1976 (21 October 1976) establishes a policy that the Federal Government receives fair market value for the use of the public lands and their resources unless otherwise provided for by statute. Provides for the inventory of public land and land use planning. It also establishes the extent to which the executive branch may withdraw lands without legislative action.

Chapter 3 Goals and Objectives

a. The Table Rock Lake Master Plan Revision Vision Statement

The Table Rock Master Plan Revision Project Delivery Team (PDT) developed the following vision statement to help guide the process of revising the Table Rock Lake Master Plan:

“Balanced public use of the lake while sustaining the natural, cultural, and socio-economic resources of the area.”

b. Policy and Master Plan Revision Schedule

Recreation and natural resource management policy and guidance are set forth in Corps regulations ER and EP 1130-2-550 and EP 1130-2-540. Included in these guidance documents is the process by which Master Plans are revised as well as broadly stated management principles for recreation facilities and programs, and stewardship of natural and cultural resources. Of particular importance in the formulation of recreation goals and objectives are the policies governing the granting of park and recreation and commercial concession leases (outgrants) which dictate that such outgrants must serve recreational needs and opportunities created by the project and are dependent on the project’s natural or other resources. Other important guidance for management of all resources is the policy governing non-recreational outgrants such as utility easements as well as the guidance in ER and EP 1130-2-540 to adhere to ecosystem management principles.

The Table Rock Master Plan Revision began in June 2012 and the process was divided by the Project Delivery Team (PDT) into five phases:

Phase 1 – Initiate Master Plan Revision Process. (June – December 2012)

1. Internal PDT coordination.
 - a. Educate PDT/District Leadership/Vertical Team on Master Plans and proposed process
 - b. Develop Project Management Plan (PMP) (update as needed)
 - c. Assign PDT Roles/Responsibilities and begin developing MP background information, MP outline/format and GIS database and Mapping needs.
 - d. Id and engage Vertical Team. Develop appropriate In Progress Review (IPR) schedule.
2. Scope and evaluate NEPA requirements (EA/EIS/Cat Excl.) and develop/approve sequence and timing of implementation. Incorporate decisions into PMP.
3. Develop Communication Plan. Incorporate into PMP.

- a. Email/ mailing distribution list—options for contracting if we send a general initiation postcard out. Email is preferred method for distribution for updates.
 - b. Web page (coordination of info among PDT, reviewed and posted by PAO)
 - c. Other Social Media (Facebook, Twitter, etc)—District has FB page; PAO can add project specific new releases and MP updates to this page
 - d. News release and newsletter (by mail, computer and direct distribution).
 - e. Correspondence to agency partners, stakeholders and political interests.
4. Data Inventory.
 - a. ID data needed or required
5. Scoping Workshops
 - a. Educate public on what a master plan is (it is not a SMP or OMP)—30,000 ft view. Include this information in public notices about scoping workshops, on website page, on any social media
 - b. Agency, Partner, Stakeholder scoping workshops.
 - c. Conduct public orientation/input/scoping workshops.
6. Public Comment period. Collect comments. Comment analysis—develop scoping report.

Phase 2 – Develop Draft Master Plan. (January-August 2013)

1. Initiate Chapter Development (Chapters 1 and 2)
2. Scoping Report—take information from this and ‘digest’—what is the public telling us?
3. Formulate Chapter 3, 4, 5, 6, 7, 8, and 9.
4. Meet with Focus Groups
5. DQC draft document
6. Conduct In Progress Reviews with Vertical Team.
7. News release and newsletter about draft Master Plan public review and input.
8. Correspondence to key partners and political interests explaining draft MP with their comments from scoping.
9. Conduct agency workshop(s) explaining draft MP with their comments from scoping.
10. Conduct Partners and stakeholders workshop(s) explaining draft MP with their comments from scoping.
11. Conduct public workshop(s) explaining draft MP with their comments from scoping.

Phase 3 – Develop Final Master Plan. (September 2013-January 2014)

1. Address Vertical Team, DQC, and ATR, comments.
2. Address agency, partner, stakeholder and public comments.

Phase 4 – Receive approval of Final Master Plan (February – March 2014)

1. Coordinate plan internally for approval.
2. Send out correspondence to key partners/stakeholders and political interests about final plan approval.
3. Do news releases/newsletter about final plan approval—also explain what happens next.
4. Conduct workshops unveiling final Master Plan and answer questions.
5. Distribute hard copies and/or CD's of approved Master Plan Update to appropriate offices, partners and stakeholders. Make approved plan available at Corps websites.

Phase 5—Implement Final Master Plan (March 2014)

1. Supplements as necessary.
2. Plan for next review in 2019. The review does not mean a revision process will take place; rather, the review will determine if the document is still current.
3. Project Closeout.

c. Goals and Objectives

(1) Goals

The terms “goal” and “objective” are often defined as synonymous, but in the context of this Master Plan, goals express the overall desired end state of the Master Plan whereas resource objectives are the specific task-oriented actions necessary to achieve the overall Master Plan goals.

The following excerpt from EP 1130-2-550, Chapter 3, express the goals for the Table Rock Lake Master Plan.

GOAL A. Provide the best management practices to respond to regional needs, resource capabilities and suitabilities, and expressed public interests consistent with authorized project purposes.

GOAL B. Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.

GOAL C. Provide public outdoor recreation opportunities that support project purposes and public demands created by the project itself while sustaining project natural resources.

GOAL D. Recognize the particular qualities, characteristics, and potentials of the project.

GOAL E. Provide consistency and compatibility with national objectives and other State and regional goals and programs.

(2) Resource Objectives

Resource objectives are defined as clearly written statements that respond to identified issues and that specify measurable and attainable activities for resource development and/or management of the lands and waters under the jurisdiction of the Little Rock District, Table Rock Lake Project Office. The objectives stated in this Master Plan support the goals of the Master Plan, Environmental Operating Principles (EOPs), and applicable national performance measures. They are consistent with authorized project purposes, Federal laws and directives, regional needs, resource capabilities, and take public input into consideration. Recreational and natural resources carrying capacities are also accounted for during development of the objectives found in this Master Plan. Both the Missouri and Arkansas State Comprehensive Outdoor Recreation Plans (SCORP) were considered as well. The objectives in this Master Plan to the best extent possible aim to maximize project benefits, meet public needs, and foster environmental sustainability for Table Rock Lake.

Recreational Objectives

- Evaluate the demand for improved recreation facilities and increased public access on Corps-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, boating, hunting, fishing, wildlife viewing, etc.) and facilities (i.e. campsites, picnic facilities, overlooks, all types of trails, boat ramps, courtesy docks, interpretive signs/exhibits, and parking lots). Goal A, C
- Monitor current public use levels (i.e. with a special focus on boating congestion) and evaluate impacts from overuse and crowding. Take action to prevent overuse, conflict, and public safety concerns. Goal A, C
- Evaluate recreational use zoning and regulations for designated quiet water or no-wake areas with emphasis on natural resource protection, quality recreational opportunities, and public safety concerns. Goal A
- Follow the Environmental Operating Principles associated with recreational use of waterways for all water-based management activities and plans. Goal B, C, E
- Increase universally accessible facilities on Table Rock Lake. Goal A, C, E
- Evaluate demand for commercial facilities on public lands and waters. Goal A, C
- Consider flood/conservation pool to address potential impact to recreational facilities (i.e. campsites, docks, etc.); Note that water level management is not within the scope of the Master Plan. Goal A, B, C, D
- Ensure consistency with USACE Recreation Strategic Plan. Leverage opportunities to partner through leasing and/or other means to continue to provide recreational services where funding is constrained. Goal E
- Reference the Missouri Statewide Comprehensive Outdoor Recreation Plan (SCORP) and the Arkansas Statewide Comprehensive Outdoor Recreation Plan to ensure consistency in achieving recreation goals. Goal E

Natural Resource Management Objectives

- Consider flood/conservation pool levels to optimize habitat conditions, as long as there is no interference with the Project's other authorized purposes, i.e. flood risk management and hydroelectric power generation. Note that water level management is not within the scope of the Master Plan. Goal A, B, D

- Actively manage and conserve fish and wildlife resources, especially special status species, by implementing ecosystem management principles. Goal A, B, D, E
- Consider watershed approach during decision-making process. Goal E
- Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats. Goal B, E
- Optimize resources, labor, funds, and partnerships for the prevention of exotic and invasive species in Table Rock Lake. Goal B.
- Minimize activities which disturb the scenic beauty and aesthetics of the lake. Goal A, B, C, D
- Continually evaluate erosion control and sedimentation issues at Table Rock Lake. Goal A, B, E
- Identify and protect unique or sensitive habitat areas. Goal A, B, D, E
Stop unauthorized uses of public lands such as agricultural trespass, timber theft, unpermitted docks and other structures, clearing of vegetation, unauthorized roadways, off-road vehicle (ORV) use, trash dumping, poaching, and placement of advertising signs that create negative environmental impacts. Goal A, B, C, D, E

Environmental Compliance Objectives

- Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and avoid negative effects to public water supply, ensuring public health and safety. Goal A, B, C, D, E
- Consider both point and non-point sources of water quality problems during decision making. Goal A, B, D, E
- Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems. Goal A, B, D, E
- Ensure compliance with Environmental Review Guide for Operations (ERGO) at all Table Rock Lake recreational facilities. Goal A, B, E

Visitor Information, Education, and Outreach Objectives

- Provide more opportunities (i.e. town hall meetings) for communication between agencies, special interest groups, and the general public. Goal A, D, E
- Implement more educational and outreach programs on the lake. Topics to include water quality, history, cultural resources, water safety, recreation, nature, and ecology. Goal A, B, C, D, E
- Establish a network among local, state, and federal agencies concerning the exchange of lake-related information for public education and management purposes. Goal A, D, E
- Increase public awareness of special use permits or other authorizations required for special activities, organized special events, and commercial activities on public lands and waters of the lake. Goal A, B, C
- Capture trends concerning boating accidents and other incidents on public lands and waters and coordinate data collection with other public safety officials. Goal A, C, D, E
- Promote Corps Water Safety message. Goal A, C, D, E
- Educate adjacent landowners on difference between shoreline cleanup policies and vegetation modification. Goal A, B, C, D, E

Economic Impacts Objectives

- Balance economic and environmental interests involving Table Rock Lake. Goal A, B, C, D, E
- Evaluate the type and extent of additional commercial development that is compatible with national Corps policy on both recreation and non-recreational outgrants and that may be sustained on public lands classified for High Density Recreation. Goal A, B, C, D, E
- Work with local communities to promote tourism and recreational use of the lake to favorably impact socioeconomic conditions surrounding the lake. Goal A, B, C, D, E

General Management Objectives

- Resurvey and maintain the public lands boundary lines to ensure it is clearly marked and recognized in all areas. Goal A, B, D
- Secure sustainable funding and footprint for the shoreline management program. Goal A, B, C, D, E
- Ensure consistency with USACE Campaign Plan (national level), IPlan (regional level), OPlan (District level). Goal E
- Reference Recreation Adjustment Plan if funding levels change in future years. Maximize the use of partnerships to reduce impacts to the public due to funding changes. Goal E
- Ensure consistency with Executive Order 13148, 'Greening the Government Through Leadership in Environmental Management' (21 April 2000). Goal E
- Ensure consistency with Executive Orders 13423 and 13514, 'Strengthening Federal Environmental, Energy, and Transportation Management (24 January 2007) and 'Federal Leadership in Environmental, Energy, and Economic Performance (5 October 2009), respectively, to guarantee compliance with Leadership in Energy and Environmental Design (LEED) criteria for government facilities. Goal E
- Carefully manage non-recreation outgrants, such as utility easements, in accordance with national guidance set forth in ER 1130-2-550. Recognize opportunities to mitigate through work-in-kind arrangements. Goal A, B, E

Cultural Resources Management Objectives

- Monitor and better coordinate lake development and the protection of cultural resources with State Historic Preservation Offices and federally recognized Tribes. Goal A, B, D, E
- Complete an inventory of cultural resources. Goal A, B, D, E
- Increase public awareness and education of regional history. Goal B, D, E
- Maintain full compliance with Section 106 and 110 of the National Historic Preservation Act; the Archeological Resources Protection Act; and the Native American Graves Protection and Repatriation Act on public lands surrounding the lake. Goal B, D, E
- Stop unauthorized use of public lands as it pertains to the illegal excavation and removal of cultural resources. Goal B, D, E

Chapter 4 Land Allocation, Land Classification, Water Surface, and Project Easement Lands

a. Introduction

Table Rock Lake is a multipurpose project constructed primarily for flood control and generation of hydroelectric power. Recreation is a third project purpose resulting primarily from the impoundment of water and the presence of public land. Management of recreational resources must not conflict with the regulation of the lake for the two primary purposes for which it was authorized. Environmental stewardship of project lands and waters is also an important project purpose and must be taken into consideration in all project management activities. The principal concept in planning Table Rock Lake was for public use and benefit. This concept has been implemented, and first among priorities for public use are stringent standards for public health, safety and sanitation. The Resource Plan in Chapter 5 considers these standards in land use classification and in planning for the recreational activities and stewardship of the lands and waters associated with the project.

To provide the greatest possible recreational/outdoor experience, safeguards have been implemented over the use of Government-owned land adjacent to the lakeshore. At Table Rock Lake, much of the shoreline is being retained in its rugged, natural state. Forest management practices are implemented to maintain existing vegetation in a healthy state while juvenile plant material is being planted to revegetate open spaces.

Ownership of land adjacent to Government-owned land does not convey any rights to the adjacent landowner(s) that would allow private and exclusive access to the lake across Government-owned land. To satisfy public demand for access to the lake, access roads and docks of quasi-public nature are permitted provided that the nature and extent of these facilities satisfy a valid public need that is in harmony with the overall development of the lake and not in conflict with management practices as determined by the District Engineer.

The existing lands required for project operation purposes and recreation have been indicated on land classification Plates (LC-1 through LC-26) The lands described in the various designations throughout the lake are very similar in general characteristics of soil, topography, and vegetative cover typical of the foothills of the Ozark Mountains.

Project lands and water total 62,207 acres. In addition, there are 2,576 acres of flowage easement lands. These easement lands lie above or landward of the fee acquisition line but below the 936 elevation and are indicated by the light purple color on the land classification maps. There are also 50 acres of Operation easement lands and those are indicated by the dark purple color on the land classification maps.

All lands in the Table Rock Lake project are classified as project operations lands acquired and allocated to provide for safe, efficient operation of the project. Project operations lands reserved for recreational purposes and lands reserved for preservation of natural resources are indicated by color coding on the land classification maps. Land use allocations are discussed as follows:

a. Land Allocation. Lands are allocated by their congressionally authorized purposes for which the project lands were acquired. There are four land allocation categories applicable to Corps projects:

(1) Operations. These are the lands acquired for the congressionally authorized purpose of constructing and operating the project. Most project lands are included in this allocation.

(2) Recreation. These lands were acquired specifically for the congressionally authorized purpose of recreation. These lands are referred to as separable recreation lands. Lands in this allocation can only be given a land classification of “Recreation”.

(3) Fish and Wildlife. These lands were acquired specifically for the congressionally authorized purpose of fish and wildlife management. These lands are referred to as separable fish and wildlife lands. Lands in this allocation can only be given a land classification of “Wildlife Management”.

(4) Mitigation. These lands were acquired specifically for the congressionally authorized purpose of offsetting losses associated with development of the project. These lands are referred to as separable mitigation lands. Lands in this allocation can only be given a land classification of “Mitigation”.

b. Land Classification. Land classification designates the primary use for which project lands are managed. Project lands are zoned for development and resource management consistent with authorized project purposes and the provisions of the National Environmental Policy Act (NEPA) and other Federal laws.

The acreage amounts shown below under each classification are the number of acres from the 1976 Table Rock Lake Master Plan. Updated acreage amounts from the Selected Alternative can be found in Chapter 5.

(1) Project Operations. This category includes those lands required for the dam, spillway, switchyard, levees, dikes, offices, maintenance facilities, and other areas that are used solely for the operation of the project.

Acreage: 393 acres

(2) High Density Recreation. Lands developed for intensive recreational activities for the visiting public including day use areas and/or campgrounds. These could include areas for concessions (marinas, comprehensive resorts, etc), and quasi-public development.

Acreage: 1,984 acres

(3) Mitigation. This classification will only be used for lands with an allocation of Mitigation and that were acquired specifically for the purposes of offsetting losses associated with development of the project.

(4) Environmentally Sensitive Areas. Areas where scientific, ecological, cultural or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act or applicable State statutes. These areas must be considered by management to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration. These areas are typically distinct parcels located within another, and perhaps larger, land classification, area.

Acreage: 4,639 acres (*from 1976 plan, this area was called 'Natural Areas')

(5) Multiple Resource Management Lands. This classification allows for the designation of a predominate use as described below, with the understanding that other compatible uses described below may also occur on these lands. (e.g. a trail through an area designated as Wildlife Management.) Land classification maps must reflect the predominant sub-classification, rather than just Multiple Resource Management.

(a) Low Density Recreation. Lands with minimal development or infrastructure that support passive public recreational use (e.g. primitive camping, fishing, hunting, trails, wildlife viewing, etc.)

Acreage: 7,798 acres

(b) Wildlife Management. Lands designated for stewardship of fish and wildlife resources.

Acreage: 232 acres

(c) Vegetative Management. Lands designated for stewardship of forest, prairie, and other native vegetative cover.

(d) Future/ Inactive Recreation Areas. Areas with site characteristics compatible with potential future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources.

(6) Water Surface. If the project administers a surface water zoning program, then it should be included in the Master Plan.

(a) Restricted. Water areas restricted for project operations, safety, and security purposes.

Acreage: 29 acres

(b) Designated No-Wake. To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety.

(c) Fish and Wildlife Sanctuary. Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

(d) Open Recreation. Those waters available for year round or seasonal water-based recreational use.

Acreage: 42,640 acres

c. Project Easement Lands. All lands for which the Corps holds an easement interest, but not a fee title. Planned use and management of easement lands will be in strict accordance with the terms and conditions of the easement estate acquired for the project. Easements were acquired for specific purposes and do not convey the same rights or ownership to the Corps as other lands.

(1) Operations Easement. Corps retains rights to these lands necessary for project operations

(2) Flowage Easement. Corps retains the right to inundate these lands for project operations.

(3) Conservation Easement. Corps retains rights to lands for aesthetic, recreation and environmental benefits.

Chapter 5 Resource Plan

This chapter describes in broad terms how project lands and water surface will be managed. For Table Rock Lake, the PDT chose the Management by Classification approach as set forth in EP 1130-2-550.

A draft Master Plan was released to the public in July/August 2013. The draft Master Plan contained land classifications proposed for Alternative 2, which was the Corps' "Preferred Alternative" at that time. The accompanying draft Environmental Assessment evaluated 8 alternatives: Alternative 1, the No Action alternative; Alternative 2, Balanced Use alternative; Alternative 2a, the Slow Growth alternative; Alternative 2b, the Maintain High Density alternative; Alternative 2c, the No New High Density alternative; Alternative 2d, the No Vegetative Management alternative; Alternative 3, the Conservative alternative; and Alternative 4, the High Development alternative.

A brief description for each alternative is as follows (a more detailed description is provided in the accompanying Environmental Assessment, Appendix D to this document):

Alternative 1 – No Action

Under the No Action Alternative, the land use classifications would stay the same and none of the 19,536 acres of land around the lake would be reclassified. The No Action Alternative would maintain the existing resource management practices, no shoreline areas would be designated as Vegetative Management, and there would be no changes made to respond to changed conditions.

Alternative 2 – Balanced Use

Alternative 2 decreases the amount of Low Density Recreation and increases the acres classified as Environmentally Sensitive and Wildlife Management. The lands that currently have no classification would primarily be Environmentally Sensitive and the lands received from the US Forest Service in the Cow Creek area would primarily be Wildlife Management. Project Operations lands would be reduced by about 160 acres. A 50-foot Vegetative Management classification would be added along many shoreline areas and would overlay other land classifications.

Alternative 2a – Slow Growth

Similar to Alternative 2, but would classify 232 acres near existing subdivisions to Low Density Recreation rather than to the Environmentally Sensitive land classification.

Alternative 2b – Maintain High Density

Similar to Alternative 2, but would maintain 74 acres as High Density Recreation for potential future development (33 acres would not be classified as Low Density Recreation and 41 acres would not be classified as Wildlife Management as proposed under Alternative 2).

Alternative 2c – No New High Density

Similar to Alternative 2, but would reduce High Density Recreation by 95 acres (94 acres would be classified as Low Density Recreation and 1 acre as Environmentally Sensitive). Existing destination resorts land classifications would not be converted to high density.

Alternative 2d – No Vegetative Management Area

Similar to Alternative 2, but would not include the proposed 50-foot Vegetative Management area around the lakeshore.

Alternative 3 – Conservative

Alternative 3 would reduce High Density Recreation lands by 78 acres and would reclassify all Low Density Recreation lands to Environmentally Sensitive Areas (14,146 acres). A Vegetative Management overlay would not be necessary as the Environmentally Sensitive classification provides similar protection. Existing permitted shoreline uses would be grandfathered but there would be no new permits issued.

Alternative 4 – Extreme Development

Alternative 4 would reclassify all Environmentally Sensitive Areas from Alternative 3 to Low Density Recreation, resulting in over 14,000 acres classified for potential development and only a small portion of this area (approximately 4,000 acres) would have a Vegetative Management overlay.

After the public comment period ended in August 2013, the comments were organized and analyzed. Together with the public comment analysis and the Corps' resource management goals and objectives, the PDT selected a hybrid of 2d (Alternative 2 with No Vegetation Management Area) with minor modifications to the high and low density land classifications. This hybrid alternative is now the "Selected Alternative" for the Master Plan and Environmental Assessment.

The following sections in this Final Master Plan describe how project lands and waters will be classified and managed under the Selected Alternative. The Selected Alternative is further described in the EA. The revised land classification and easement maps/plates can be found in Appendix A.

Classification and Justification

Project Operations land classification includes those lands required for the dam, spillway, switchyard, levees, dikes, offices, maintenance facilities, and other areas that are used solely for the operation of the project.

Justification: On Table Rock the lands classified as Project Operations have been classified by definition. Areas adjacent to the dam, auxiliary spillway, maintenance compound, Lake Taneycomo below the dam, and storage areas have remained project operations. Some lands that were previously classified for appurtenant works were reclassified to other classifications as they are no longer used for project operations purposes.

Resource Objectives: General Management
(Acreage = 232; 1% of Corps land)

High Density Recreation land classification is for those lands intended to be developed or are currently developed for intensive recreational activities for the visiting public including day use areas and/or campgrounds. These could include areas for commercial concessions (marinas, comprehensive resorts, etc.), and quasi-public development.

Justification: On Table Rock the lands classified as high density recreation in this Revised Master Plan are primarily lands that were similarly classified in the previous Master Plan as supplemented. A portion of the lands added to this classification are for lands associated with Big Cedar Lodge, Indian Point Resorts, and Still Waters Resort, which are considered ‘destination’ resorts. The Chateau on the Lake also falls in this category of resorts; however, the land covered by their lease was classified high density in the previous Master Plan.

Limited motel/resorts are quasi-private recreational facilities located on public land, but owned and operated by individuals for commercial purposes. Leases for limited motel/resorts are unique to Little Rock District within Southwestern Division. The resort is located on private property and is operated along with the supporting facilities on outgranted public land. The facilities on public land are open to registered overnight resort guests only. Therefore, all current activities related to limited motel/resorts must comply with the lease and follow the Project's approved Shoreline Management Plan (SMP) and Master Plan to the maximum extent possible. For more information on this type of lease, please refer to SWLR 405-1-16, Real Estate Outgrants, Limited Motel/Resort Leases.

Destination Resorts are pre-existing resorts that have grown to the point that they now appear to be operating in a commercial nature, although they are currently under a limited motel resort lease. They are defined in this Master Plan as those resorts that are primarily located on private property, but authorized to provide limited commercial services on government property in support of water based recreation to include: the selling of gas, food, beverage, and sundry items; boat rentals; and boat cruises. A real estate instrument will be developed by Corps personnel to facilitate these activities at Destination Resorts, once the conversion to a high density is implemented and if a waiver of competition is granted by Headquarters, USACE. The expansion in lease operations to include more commercial concession-type activities *must be* accomplished either through competitive means or by a waiver of such requirements. Long-term boat slip rentals, high dry storage, and boat sales will not be authorized at Destination Resorts. The real estate instrument will further detail and specify the terms of the agreement and will follow the review and approval process, including coordination with Operations and Real Estate. The real estate instrument will be issued in accordance with all applicable laws and regulations. Significant actions will follow similar public outreach opportunities (i.e. public comment periods) to ensure public input is received prior to decisions being made.

In the draft Master Plan presented to the public in July/August 2013 under Alternative 2 (the “Preferred Alternative”), additional acres were to be added to the High Density land classification because either a request was made for the classification, or the land adjacent to Federal property was going to be developed for recreational use.

During the public review period of the draft plan, numerous comments were received that indicated most people were content with the level of development around the lake, no new additional high density land classification was necessary, and charged the Corps with maintaining the facilities and recreational opportunities currently present on the lake.

In response to the public comments received and to reach resolution with those that had made high density classification requests, the Corps will only allow additional conversion to the High Density land classification on lands that are associated with Destination Resorts as follows:

1. Still Waters: 3 areas were under consideration for high density conversion; only the existing lease areas for this resort will convert to high density.
2. Indian Point Resorts: only the existing lease areas will convert to high density.
3. Big Cedar Resort:
 - o The Outdoor Academy: Only existing LDA area will convert to high density.
 - o Stonecroft Properties: Only existing LDA area will convert to high density.
 - o Paradise Point: Only existing lease area will convert to high density.
 - o Dogwood Canyon: Only LDA area will convert to high density.
 - o Big Cedar-Thunderhead: Only existing lease area will convert to high density.
 - o Big Cedar East: Only existing lease area and LDA area will convert to high density.
4. Chateau at the Lake: Only existing lease area will remain as high density.

A total of 69 acres has been added to this classification by converting the area around the Dewey Short Visitor Center and Project Office from Project Operations classification to High Density Recreation.

There is a total net loss of high density acreage around the lake to what is currently classified as high density (1,984 acres to 1,927 acres). This is due to the change of high density to low density in areas that no longer function or have the capability to function as high density (this was Alternative 2b). The change in land classification includes areas like Jellystone, Christ in Youth, Swiss Villa, and Sunset Cove.

An acreage matrix that further describes the acreage amount changes from each land classification is located at the end of this chapter (Table 5-1).

No new future public requests for Limited Development Areas (LDA) in a High Density classification will be granted based upon guidance received to keep private/community use separated from commercial use activities. Currently there is LDA zoning in the areas classified as High Density for The Outdoor Academy, Dogwood Canyon, and a portion of Big Cedar; these LDA areas will not be considered for the placement of private/community docks.

Resource Objectives: Recreation, Economic Impacts, General Management
(Acreage = 1,927; 10% of Corps land)

Mitigation land classification allows for lands with an allocation of Mitigation and that were acquired specifically for the purposes of offsetting losses associated with development of the project. When Table Rock Lake was created, no mitigation lands were purchased because it was not a requirement at that time. Therefore, there are currently no lands classified as mitigation land at the Table Rock project.

Environmentally Sensitive Area (ESA) land classification is for those land areas where scientific, ecological, cultural or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act or applicable State statutes. These areas must be considered by management to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands currently; examples of permits that could be issued are unimproved walking paths, specific erosion control measures, and removal of invasive species. Right-of-ways for public utilities in the ESA land classification will be considered on a case by case basis. At Table Rock Lake, approximately 0.004% of ESA lands have permitted residential amenities that will be considered for renewal on a case by case basis. These areas include 4 outgrants and 3 vegetation permits. No agricultural, grazing, or mowing for residential/commercial uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration.

Justification: ESA lands are classified as such to preserve the scenic, historical, archaeological, scientific, water quality, or ecological value of the overall project. Lands classified as ESA include some parcels that were a part of the land exchange that took place in 1999 between the US Forest Service and the Corps and areas adjacent to US Forest Service land. Classification of lands as ESAs is responsive to public comment seeking to keep the lake natural, scenic and to ensure that water quality is maintained for future generations. In making ESA classification decisions areas that were previously classified as Natural Area and currently have no active shoreline use permits were retained as ESA. Areas that were previously classified as Natural Area and currently have active shoreline use permits and/or with LDA zoning have been classified as Low Density Recreation. To maintain contiguous land classifications, if small portions of land were previously classified as low density, this land was re-classified to ESA. Areas located in the back of coves were changed to ESA for the purpose of protecting water quality due to run off. If adjacent housing was located far from the shoreline or if the shoreline was too steep and/or located on a bluff, the land was classified as ESA. Lands adjacent to major tributaries were converted to ESA.

This process resulted in a net loss of acreage that was previously classified as Natural Area. To balance this loss, some lands that were classified as Low Density Recreation in the previous Master Plan have been classified as ESA if those lands had no active permits and no adjacent residences.

Past classification lines, edges of zoning, property boundary line monuments, and terrain such as ditch lines were used as boundaries for this classification..

Resource Objectives: Environmental Compliance, Cultural Resource Management, Natural Resource Management

(Acreage = 6,871; equals 35% of Corps land)

Multiple Resource Management land classification allows for the designation of a predominate use as described below, with the understanding that other compatible uses described below may also occur on these lands (e.g. a trail through an area designated as Wildlife Management.) Land classification maps must reflect the predominant sub-classification, rather than just Multiple Resource Management. Right-of-ways for public utilities in Multiple Resource Management land classifications will be considered and reviewed on a case by case basis.

- **Low Density Recreation** land classification includes lands with minimal development or infrastructure that support passive public recreational use (e.g. primitive camping, fishing, hunting, trails, wildlife viewing, shoreline use permits etc.). Low Density Recreation lands may contain in Limited Development Area within the context of the Shoreline Management Plan (SMP) (Note: Distribution of shoreline areas to Limited Development status requires revision of the SMP to include an intense public involvement process and possible additional documentation pursuant to NEPA).

Justification: With the advancement of technology available, the low density recreation land has been adjusted accordingly to accommodate existing recreational development. This accommodation allowed for modifying low density areas to capture developed areas and met the opportunity of adjacent land development. In areas which were previously low density recreation land with no active permits, no limited development area, and undeveloped lots, these areas were changed to environmentally sensitive in an effort to preserve the scenic, historical, archaeological, scientific, water quality, or ecological value of the overall project. In areas which were previously low density, with adjacent development such as housing, these areas remained low density unless existing land was not suitable for this classification. (e.g. ecological, aesthetic, environmental, or cultural resources present).

Areas that will be converting from High Density to Low Density because they no longer function or have the capability to function as High Density include:

1. Jellystone
2. Christ in Youth
3. Kimberling Cove Resort
4. Sunset Point
5. Swiss Villa

Past classification lines, edges of zoning, monuments, and terrain such as ditch lines were used as boundaries for this classification.

Resource Objectives: Recreation, Economic Impact, Natural Resource Management, Environmental Compliance, Cultural Resource Management, Visitor Information and Education (Acreage = 7,256 acres 37% of Corps lands).

- **Wildlife Management** land is designated for stewardship of fish and wildlife resources.

Justification: On Table Rock Lake, areas which have been classified as wildlife management lands consist of large tracts of land and shoreline areas where food plots can be established to supplement and enhance the existing wildlife forage. The areas classified have been determined to contain suitable habitat for native wildlife and will be protected for this purpose. The majority of these areas have been established in locations that are accessible by road or by water for the public. If these areas are developed as wildlife management in the future, hunting will be allowed, unless otherwise posted. The majority of the lands classified as wildlife management in this Master Plan were acquired by the Corps of Engineers thru the 1999 U.S. Forest Service Land Exchange. In addition, the James River recreation area proposed in the 1976 Master Plan will convert to Wildlife Management lands.

Resource Objectives: Natural Resource Management, Recreation, Environmental Compliance
Acreage = 3,249 acres (17% of Corps lands)

- **Vegetative Management** land is designated for stewardship of forest, prairie, and other native vegetative cover.

Justification: The Vegetative Management Land classification was a direct opportunity to respond to the public's demand during the Scoping phase for ensuring water quality conservation in future years. The Vegetative Management Land classification on Table Rock could have established a platform to the Shore Line Management Plan, allowing flexibility of the management of various vegetative species to ensure a healthy riparian vegetation buffer. Riparian vegetation plays a key role in water quality conservation. Specifically, a riparian buffer provides bank stabilization, acts as a natural filter, captures sediment and pollutants from runoff, and provides habitat protection.

In the draft Master Plan presented to the public in August 2013 under Alternative 2 (the Balanced Use alternative), it was proposed that the Vegetative Management Area be land classified along the entire shoreline of the lake adjacent to Low Density (with the exception of existing resort lease areas), ESA, and Wildlife Management lands. It would have been a 50 linear foot area measured from 915 msl.

The intent of the Vegetative Management area was to allow for cooperative management and avenue of communication between the Corps and the adjacent landowner. Proposed measures such as selective tree limbing, grass/shrub pruning, non-native species removal, and re-planting of native species were actions that could have been done in this area. The objective was for the Corps and adjacent landowners to come to an understanding of how to best manage Federal lands adjacent to the lake to ensure future generations would be able to appreciate the natural resources of the lake just as many generations have done in the past.

In response to the overwhelming public comments against implementation of this classification, the Corps will not implement a Vegetative Management Area land classification during this Master Plan revision. The Selected Alternative is a hybrid of Alternative 2d, the No Vegetative Management Area alternative. However, we believe that the intent of this classification remains valid and encourage further development and discussion of this concept in cooperation with other agencies, stakeholders, and the general public.

Resource Objectives: Natural Resource Management, Recreation, Environmental Compliance, Economic Impact
(Acreage = 0)

-Future or Inactive Recreation Areas land classification is for those land areas with site characteristics compatible with potential future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources. Table Rock project has no land areas in this classification category. The project has no developed recreation areas that have been completely closed. The area previously listed as the “Future James River Recreation Area” has been classified as a Wildlife Management Area by this Plan. This plan suggests that if future recreation development is needed, this development will be accommodated either within the existing High Density classified land areas or on private property.

Water Surface is for those waters classified for particular purposes when the project administers a surface water zoning program. Table Rock Lake did not have water surface classifications in prior master plans.

-Restricted surface waters are restricted for project operations, safety, and security purposes.

Justification: Restricted water surface classifications are areas restricted due to Corps policy for safety and security. These areas include immediately above and below the dam and immediately above the auxiliary spillway.

Resource Objectives: General Management
(Acreage = 29; less than 1% of surface water)

In addition, it is generally understood that areas near designated swim beaches are considered ‘restricted’ for swimmer safety.

-Designated No Wake surface waters are established protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety. Table Rock project has no water surface area in this classification category; however, it is generally understood that areas near USACE boat ramps are considered ‘no wake’ for boater safety.

There are “no wake/no ski” buoys located on the lake; this is determined by the Missouri State Highway Patrol upon request and consideration with the Corps of Engineers Table Rock Project Office. New requests for buoys will only be considered at commercial concessions or upon request by the Missouri State Highway Patrol.

- Fish and Wildlife Sanctuary surface waters are areas where annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and or spawning are present. Table Rock project has no water surface areas in this classification category.

-Open Recreation Areas classification is for those waters available for year round or seasonal water based recreation use.

Justification: On Table Rock Lake all water surface acres are classified as open recreation, with the exception of restricted areas immediately above and below the dam and immediately above the auxiliary spillway. This classification is not meant to usurp the authority of the Missouri State Water Patrol to actively enforce activities on the lake.

Resource Objectives: Recreation, Natural Resources Management, Economic Impact, General Management

(Acreage = 42,643; more than 99% of the surface water)

Project Easement land classification is for those lands for which the Corps holds an easement interest, but not fee title. Planned use and management of easement lands will be in strict accordance with the terms and conditions of the easement estate acquired for the project. Easements were acquired for specific purposes and do not convey the same rights or ownership to the Corps as other lands. The following types of easements were acquired for the Table Rock Project:

- **Operations Easement.** The Corps retains rights to these lands necessary for project operations (access, etc.).

Justification: Table Rock Project operations easements are generally for road right-of-ways that provide access to project facilities. Road right-of-ways purchased for the relocation of roads inundated by the creation of the project have been disposed of to the appropriate operating authority.

Resource Objectives: General Management, Recreation, Economic Impact, Natural Resource Management

Acreage: 50 Acres

- **Flowage Easement.** The Corps retains the right to inundate these lands for project operations.

Justification: The easements acquired for the operation of the Table Rock Project are typically applicable to that portion of the described property lying between elevation 936 feet, National Geodetic Vertical Datum, and the Government Fee Take Line. The typical flowage easement estate grants the Government the perpetual right to occasionally overflow the easement area, if necessary, for the operation of the reservoir; and specifically provides that, “No structures for human habitation shall be constructed or maintained on the land [...]”; and provided further that, “No other structures of any other type shall be constructed or maintained on the land except as may be approved in writing by the representative of the United States in charge of the project.” All flowage easement deeds should be checked for exact rights acquired prior to proceeding in any action on the easement.

Resource Objectives: General Management
 Acreage: 2,576 Acres

- **Conservation Easement.** The Corps retains the rights to lands for aesthetic, recreation, and environmental benefits. There are currently no lands classified as conservation easement lands on Table Rock Lake.

<u>ALTERNATIVE ONE</u>	<u>CONVERTED TO</u>	<u>SELECTED ALTERNATIVE</u>	<u>ACRES</u>	<u>% of Selected Alt.</u> <u>LandClass</u>	<u>SELECTED ALTERNATIVE</u>	
NO ALLOCATION		LOW DENSITY	621.1	8.6%	Low Density	7,256.2
		ENVIRONMENTALLY SENSITIVE	1,126.0	16.4%	Environmentally Sensitive	6,871.0
		HIGH DENSITY RECREATION	10.6	0.6%	High Density	1,926.7
		WILDLIFE MANAGEMENT	2,734.4	84.2%	Wildlife Management	3,249.1
		PROJECT OPERATIONS	NONE	0.0%	Project Operations	232.0
						Total
LOW DENSITY		LOW DENSITY	5,456.6	75.2%		
		ENVIRONMENTALLY SENSITIVE	2,214.9	32.2%		
		HIGH DENSITY RECREATION	50.4	2.6%		
		WILDLIFE MANAGEMENT	74.9	2.3%		
		PROJECT OPERATIONS	NONE	0.0%		
ENVIRONMENTALLY SENSITIVE		LOW DENSITY	1,022.2	14.1%		
		ENVIRONMENTALLY SENSITIVE	3,497.7	50.9%		
		HIGH DENSITY RECREATION	0.6	0.0%		
		WILDLIFE MANAGEMENT	118.8	3.7%		
		PROJECT OPERATIONS	NONE	0.0%		
HIGH DENSITY RECREATION		LOW DENSITY	50.0	0.7%		
		ENVIRONMENTALLY SENSITIVE	18.0	0.3%		
		HIGH DENSITY RECREATION	1,782.7	92.5%		
		WILDLIFE MANAGEMENT	92.8	2.9%		
		PROJECT OPERATIONS	38.0	16.4%		
WILDLIFE MANAGEMENT		LOW DENSITY	17.0	0.2%		
		ENVIRONMENTALLY SENSITIVE	14.0	0.2%		
		HIGH DENSITY RECREATION	NONE	0.0%		
		WILDLIFE MANAGEMENT	183.8	5.7%		
		PROJECT OPERATIONS	17.6	7.6%		
PROJECT OPERATIONS		LOW DENSITY	89.3	1.2%		
		ENVIRONMENTALLY SENSITIVE	0.4	0.0%		
		HIGH DENSITY RECREATION	82.4	4.3%		
		WILDLIFE MANAGEMENT	44.3	1.4%		
		PROJECT OPERATIONS	176.5	76.1%		
		Total=	19,535.1			

Table 5-1 Acreage Matrix

Chapter 6 Special Topics/Issues/Considerations

This chapter discusses the special topics, issues, and considerations the Project Delivery Team identified as critical to the future management of Table Rock Lake. Special topics, issues, and considerations are defined in this context as any problems, concerns, and/or needs that could affect or are affecting the stewardship and management potential of the lands and waters under the jurisdiction of the Little Rock District, Table Rock Lake Project Office Area of Responsibility (AOR). For simplicity, the topics are discussed below under generalized headings.

a. Vegetative Management Area

The Vegetative Management Land Classification was proposed as an opportunity to respond to the public's demand of ensuring good water quality for the lake in the future. Water quality was the number one issue for lake users by an overwhelming majority as discovered during the public scoping meetings. The Vegetative Management Land classification on Table Rock could have established a platform to the Shore Line Management Plan, allowing flexibility of the management of various vegetative species to ensure a healthy riparian vegetation buffer. Riparian vegetation plays a key role in water quality conservation. Specifically, a riparian buffer provides bank stabilization, acts as a natural filter, captures sediment and pollutants from runoff, and provides habitat protection.

In the draft Master Plan presented to the public in August 2013 under Alternative 2 (the "Preferred Alternative"), it was proposed that the Vegetative Management Area be land classified along the entire shoreline of the lake adjacent to Low Density (with the exception of existing resort lease areas), ESA, and Wildlife Management lands. It would have been a 50 linear foot area measured from 915 msl.

The intent of the Vegetative Management area was to allow for cooperative management and avenue of communication between the Corps and the adjacent landowner. Proposed measures such as selective tree limbing, grass/shrub pruning, non-native species removal, and re-planting of native species were actions that could have been done in this area. The objective was for the Corps and adjacent landowners to come to an understanding of how to best manage Federal lands adjacent to the lake to ensure future generations would be able to appreciate the natural resources of the lake just as many generations have done in the past.

In response to the overwhelming public comments against implementation of this classification, the Corps will not implement a Vegetative Management Area land classification during this Master Plan revision (this was Alternative 2d). However, we believe that the intent of this classification remains valid and encourage further development of this concept in cooperation with other agencies and civic groups in the area.

b. Shoreline Moratorium

The Little Rock District implemented a moratorium on shoreline activity requests, including private dock and vegetation modification requests, in December 2012. The moratorium was put into place so that a baseline number of permits and docks could be determined for the master plan revision. During the process of the revision, new facilities/permits were not allowed on the project so that the number of permits would remain constant, allowing the team to complete the new revision without changing conditions on the lake and to prevent processing actions which may not align with the revised master plan.

The moratorium was a controversial issue with the public. However, it was a necessary element of the process and enabled the team to perform shoreline activity analysis of the lake while it was in a static condition.

The shoreline moratorium at Table Rock Lake was lifted at the start of 2014 with the Final Master Plan nearing completion. The Project Office began accepting shoreline requests on January 2, 2014 with the understanding that permit requests would be processed as funding would allow.

c. Corps Partnership with Ozark Rivers Heritage Foundation (ORHF)

The Ozarks Rivers Heritage Foundation (ORHF), a non-profit 501(c)(3) corporation registered with the Missouri Secretary of State's office, was developed in early 2010 for the purpose of providing support for recreational facilities and projects involving the general public. In 2011, the Little Rock District entered into a Cooperative Agreement and Cooperative Lease with ORHF through which ORHF provides special events, educational programs, volunteer opportunities, advocacy, technical assistance, stewardship, land/lake access improvements and research in support of the Corps mission at the Table Rock Project.

At the drafting of this final Master Plan, the foundation seasonally operates the gift shop in the Dewey Short Visitor Center, and provides tours of the Table Rock Dam. ORHF provides support for the Table Rock's recreational facilities and projects involving the general public. Funding for ORHF is provided through product sales and donations. The Corps feels that partnerships, such as the one with ORHF, are important to ensure the public will continue to be served to the level they are accustomed as funding becomes constrained. It is the intent of the Corps to continue to work to find ways to leverage these partnerships in the future.

d. Table Rock Lake Shoreline Management Plan (SMP)

During the initial public involvement phase of the Master Plan revision, high public interest in the status of the Shoreline Management Plan was frequently encountered, especially regarding any planned revisions of the SMP.

Every effort was made to explain that the revision of the SMP will not take place concurrently with the Master Plan revision due to (1) increased cost; (2) increased timing of the revision process; (3) the consideration that the Master Plan is the 'overarching' document and should be

updated first, with the other management documents to follow suit (and to be brought into compliance with the Master Plan).

In cases where the MP conflicts with the current SMP, the MP is the overriding document until such time the SMP is updated.

It is the Corps intention to update the SMP when appropriate funding is available.

e. Encroachments and Trespasses

Encroachments, including trespasses, are a long-standing issue in the management of Table Rock Lake. The relatively small land base acquired for project construction (note: the land base is small when compared to other comparably sized lakes) allows for home construction near the water. This proximity of development to the water's edge has resulted in buildings frequently being constructed on Federal lands and easements as well as frequent acts of trespass involving unauthorized removal of trees, mowing, trail constructions, and placement of personal property on public land. The Corps will continue to pursue removal of all encroachments and to prosecute those engaged in acts of trespass.

Table Rock Lake's Operation Management Plan (OMP) further describes the process of how encroachments/trespass issues are processed.

For the purpose of this master plan revision, and following existing encroachment and trespass policies and regulations, no individual permits will be issued in to permittees that have active encroachments or trespass concerns.

f. Cow Creek Land Exchange

Under the authorization of Public Law 804 (84th Congress, July 26, 1956) a land exchange was completed on Table Rock Lake between the US Forest Service, Department of Agriculture (USFS) and the Department of Army, Corps of Engineers (USACE) on April 28, 1999.

This exchange included 68.32 acres conveyed from USACE to USFS near Piney Creek Wilderness Area, this land totaled 42.82 acres in fee and 25.5 acres in flowage easement. The USFS conveyed to USACE 4,556.81 acres in Stone and Barry counties in Missouri. Some parcels of the lands transferred were permanently inundated with the impoundment of the reservoir.

At the time this action was completed, it was in the best public interest because it consolidated Department of the Army and Department of Agriculture lands into a more effective and efficient administrative pattern. All public uses of these areas are better served without overlapping or duplicating activities of the USFS and USACE. This exchange has improved management, coordination, and utilization of federal lands in the area.

For more information regarding this land exchange you may visit the Federal Register Vol. 64, No. 81 Wednesday, April 28, 1999. Transfer of Administrative Jurisdiction; Table Rock Lake

g. Low Density to ESA Classification Changes

Using the methodology described in Chapter 5 for determining the Environmentally Sensitive Area land classification, there were some areas around the lake that were once classified as low density under the 1976 Master Plan but under the revised Master Plan, would convert to ESA.

During the public review process of the draft Master Plan, some of these areas were identified for ongoing or future development by the public and by adjacent landowners. Subsequently, the PDT took this under consideration during the formulation of the final Master Plan and to reach a compromise, allowed for smaller portions to remain as low density rather than convert to ESA. The remaining portion would convert to ESA.

Should other areas be identified with similar circumstances, the Master Plan can undergo a supplement revision process for the requested change; substantial revisions/changes will have to undergo a public review process or the change will have to wait until the next master plan revision process.

h. Rezoning Requests

Rezoning requests at Table Rock Lake are a part of the Shoreline Management Program and as such, the PDT recommended that rezoning requests should belong with a SMP update.

The PDT had set methodologies for formulating and developing the land classifications identified in the Master Plan revision. The team felt that addressing rezoning requests now could undermine the methodology and thought process for the MP revision.

Because the Master Plan is the overarching document that sets guidance for the project's OMP and SMP documents, the PDT also recommended that new zoning requests should not be accepted until all current LDA zones have reached capacity.

i. Updated Threatened and Endangered Species List/Cultural Resource Sites

An updated T&E list was provided by the State of Missouri to the PDT after the release of the draft Master Plan/draft EA in July 2013. Based on this updated list and information provided by the State of Arkansas, the PDT recommended that a couple areas that were proposed to convert to low density will remain ESA for protection of the species.

Due to the sensitive nature of the T&E list (i.e. exact location of the species and/or species habitat), this information cannot be publicly released in this document.

If a new discovery of species or species habitat (T&E or State Species of Concern) is discovered in High Density or Low Density land classifications post implementation of this Final Master Plan, this will be reviewed on a case by case basis and could go through a supplement process.

If a significant cultural resource site is discovered in High Density or Low Density land classifications post implementation of the Final Master Plan, these sites will be reviewed on a case by case basis and could go through a supplement process.

j. Current Shoreline Use Permits in ESA

There are currently 3 active vegetative modification permits in ESA and 10 active path permits currently in ESA. Unimproved walking paths are already an allowed feature in ESA; however, vegetative modification permits are not.

The PDT recommended the 3 current permit holders be notified of their status and would be allowed to continue and/or renew their existing permit as long as it remained active and in good standing. These permits would not be transferrable to a new landowner should the property be sold or transferred.

k. Commercial Remote Service Dock Policy

Commercial Remote Service Docks (CRSD) were originally authorized to provide additional boat mooring facilities for adjacent communities and/or property owners. CRSDs were authorized only on Table Rock Lake.

The need to limit expansion of the CRSD concept is a result of increasing objections from the public related to vehicular and pedestrian traffic in communities adjacent to the lake and the impression that management favored commercialism over public use. Initially, the CRSD program was implemented to protect park shoreline from increasing expansion of the commercial prime lease site, to sustain public park use and to reduce non-park related vehicular traffic. Early results were desirable, but an increasing number of adjacent landowners and members of the general public raised valid objections to the practice of placing boat docks in areas near their homes when private docks were prohibited.

Currently there are 25 authorized CRSDs on Table Rock Lake, operated by 6 commercial concessions: Port of Kimberling- 12, Indian Point- 5, Baxter- 4, Campbell Point-2, Long Creek- 1, Big M- 1.

At the drafting of the final Master Plan, the policy has been rescinded due to an increasing number of comments from the general public and adjacent landowners with valid objections. Authorized Commercial Remote Service Docks will be allowed to remain in place under the terms of the Real Estate instrument. Any and all requests for changes to existing Commercial Remote Service Docks must comply with all requirements of the lake's approved Shoreline Management Plan.

l. SWEPCO

During the release of the draft Master Plan/draft EA, several public comments were made concerning a proposed Southwestern Electric Power Company (SWEPCO) transmission line.

The exact location of the transmission line has yet to be determined, but one of the proposed sites crossed the upper portions of Table Rock Lake.

Easements for public utilities across Federal lands are discouraged unless there is no viable alternative route or the easement is of direct benefit to the Government. The Corps recognizes that there may be no viable alternative route for some large cross-country utility lines and if such a utility line is proposed it will be evaluated with respect to the goals and objectives of this Master Plan and through a separate NEPA documentation process. Right-of-ways for public utilities are considered in all land classifications, because these utilities serve the greater good of the community as a whole. Requests for rights of way will be reviewed on a case by case basis.

At the time of this Final Master Plan drafting, an administrative law judge with the Arkansas Public Service Commission, the entity responsible for deciding the transmission route, recommended the proposed Route 109, noting the route, "...has lower residential proximity and visibility, crosses fewer parcels and fewer major roads." SWEPCO will now have to apply for approval from the Missouri Public Service Commission and must also apply to be a public utility in the state.

m. Limited Development Area Zoning Impacts

There were several LDAs adjacent to U.S. Forest Service lands that will be located in ESA with this Master Plan revision; no one from the PDT knows why these lands originally had LDA zoning. The PDT recommended keeping the ESA land classification with this Master Plan revision and during an SMP update, removal or relocation of the LDA zoning.

No new future public requests for LDA in a High Density classification will be granted based upon guidance received to keep private/community use separated from commercial use activities. Currently there is LDA zoning in the areas classified as High Density for The Outdoor Academy, Dogwood Canyon, and a portion of Big Cedar; These LDA areas will not be considered for the placement of private/community docks.

n. Future of Joe Bald Park

The US Army Corps of Engineers closed Joe Bald Recreation Area to camping in the late 1990s due to funding constraints and low park efficiency reviews. The area has remained open for day use, including boat launching. The area also contains areas where boat dock contractors can build and/or disassemble boat docks. Unfortunately, due to the remote nature of the site, there has been an increasing problem with vandalism and other illegal activities, as noted by local law enforcement agencies and brought to light during the Master Planning process. As a result, the Corps initiated a discussion with the Table Rock Lake Chamber of Commerce (Chamber) about possible future uses for the sites that might make the area more suitable for public use. The Chamber initiated a team of local interested parties to discuss future uses of the park. The team decided to gauge public input through the use of group of students from Drury University, Springfield, Missouri. The students hosted a series of public meetings and from those meeting has developed a vision for the Joe Bald Recreation Area. At the drafting of this Master Plan, the students' public meetings report and vision is slated to be presented to the Chamber's team for further discussion; however, the Corps has no funding to implement any changes to the operation of the area at this time.

o. Expansion in the Kimberling City Area

During the public comment period for this Master Plan, the Corps received numerous comments against the establishment of any further high density land classification in the Kimberling City area. A majority of these comments requested no further development in the area and cited already crowded lake conditions as the reason for their concern. Additionally, the Boating Use Survey, addressed in Chapter 2 of this plan, identified the Kimberling City area as problematic for boaters. Based upon the findings of both the Boating Use Study and the compilation of the Master Plan public comments, the Master Plan PDT suggests that any future approvals for development, both for private uses and commercial uses outside current leaseholds, be carefully considered on a case by case basis using cumulative information obtained through the master plan revision process. The Master Plan PDT does not suggest rescinding any prior approvals for development in this area.

p. Sedimentation

While Table Rock Lake is perceived as having exceptionally clear water some issues with sedimentation exist at points along the lake. During the scoping process, the area around the dam was noted to have an issue with sedimentation. This poses a problem for the water intake structure for the MDC's Shepherd of the Hills Fish Hatchery located just downstream of the Table Rock Lake Dam. It was also noted during scoping that increased sedimentation could be linked with adverse water quality issues. While drafting the Master Plan, the PDT discussed this issue and had the following recommendations for potential resolution:

Determine rate of sedimentation (i.e. how much sediment is already there; what is the rate of sedimentation).

Every year during the budget cycle, a request is made for sedimentation surveys to be completed at Corps lakes. The information from these surveys would help in determining both the amount of sedimentation present and the rate of sedimentation.

Monitor sediment deposits.

Consider implementing policies for boat dock owners to improve the existing roadways to their docks and launch ramps to allow the capture of gravels and sediments.

Consider a cost-sharing partnership with other agencies to find resolutions to sedimentation issues.

q. Water Supply

Table Rock Lake has no municipal/ industrial users or contracts for water supply at this time. However, during the master plan revision process, the PDT noted another ongoing study, the Southwest Missouri Water Demand Planning Assistance to States (PAS) study, within the Little Rock District. This study will investigate potential water supply sources for areas located in Missouri, Kansas, and Oklahoma. This PAS is being done in partnership with the Tri-State Water Resource Coalition and the Missouri Department of Natural Resources.

The PDT took the ongoing PAS study into consideration and an indication there would be a future water reallocation request with the intention of completing a water supply contract and construction of a water supply intake structure on Table Rock Lake. Coordination and communication took place between the two teams as to potential locations for an intake structure around the lake. This information helped the Master Plan PDT in determining the proposed land classification uses mentioned in Chapter 5. As noted in Chapter 5, Rights-of-way for public utilities can be found in any land classification and would be reviewed/approved on a case by case basis.

r. Public Safety

One of the top three concerns identified through the scoping process was the safety of the public, including the size and speed of boats on the lake. The PDT discussed how to resolve the public's concern with perceived safety issues on Table Rock Lake and have following recommendations for potential resolution:

- Pro-active communication with the Missouri State Highway Patrol.
 - a. Buoy placement
 - b. Incident response
- Recommend limiting boat dock slip size on community, marina, and resort docks.
- Recommend increasing officer presence on the lake (i.e. leverage partnership opportunities).
- Consider Water Safety Partnership/Coalition with other agencies/groups/communities to promote Corps Water Safety message.

s. Public Outreach

The Table Rock Lake area encompasses a substantial amount of land and water in southwest Missouri and parts of northern Arkansas. Within this area comes numerous resources and responsibility for those resources often intertwine and overlap among various agencies (federal, state, and local) and interest groups. The PDT recognized this issue from the beginning of this master plan revision process and, after consideration, has the following recommendation for potential resolution:

- Organize a 'steering committee' made up of the key resource agencies and interests groups.
- Educate the general public about the resources of the lake and what agency responsibilities are at the lake (i.e. specifically, what are Corps responsibilities for Table Rock Lake).

Some of the topics identified for further discussion amongst the steering committee include the following:

- Clean Marina Initiative
 - c. At the end of December 2013, it was announced that the "Clean Marina" program was launched at Table Rock Lake with at least 10 interested marinas. The

program is a joint effort by the nonprofit Missouri Stream Team Watershed Coalition and Ozarks Water Watch. More information about the program can be found at www.mocleanmarina.org

- Creating a strategic vision among agencies, partners, and stakeholders
- Table Rock National Fish Habitat Initiative (NFHI)
- Future development adjacent to Table Rock Lake
- Table Rock Lake and surrounding area as a high tourist destination—how to maximize capture of economic benefits
- Continue to promote Corps Water Safety message.
- Invasive Species Prevention

t. Boat Dock Building

Boat dock building is a million dollar industry at Table Rock Lake. The Corps recognizes dock building and repair businesses are necessary on Table Rock Lake, as the SMP allows for issuing of boat dock permits. However, dock builders have historically operated, and continue to operate, without a lease or license. Boat dock builders on Table Rock Lake have traditionally constructed docks wherever they could find a suitable location; at the end of a county road, nearby their business or home on the lake, or at a public launching facility. The Corps has had numerous complaints throughout the years of boat dock builders crowding and blocking launching ramps, leaving construction debris behind including metal and nails, creating noise disturbances, etc. The Corps has had a difficult time finding lands for this industry to operate. There is not enough land within commercial marinas lease areas or within developed recreation areas to allow for their operation. Community residents in areas where public launching facilities are located have expressed their concerns with allowing dock builders to “take over” these areas. In an effort to somewhat alleviate this problem, in 2007 Table Rock implemented a requirement that boat dock builders build docks only at “shared” designated locations around the lake or on-site. There were 4 designated areas identified, all of which were within partially closed parks (Coombs Ferry, Joe Bald, Big Indian, and Kings River). Prior to constructing, all builders were required to sign an Agreement with the Corps establishing terms and conditions of using the shared sites. This requirement has been beneficial in regard to lessening the number of complaints. However, these dock companies are still operating on Government property without an official lease or license. The Table Rock Project Office will pursue establishing a requirement for any dock builders to be under a valid Real Estate instrument to construct (including repair/replacement work) docks on public lands and/or waters.

u. Dry Storage Operations

As the popularity of boat storage on Table Rock Lake increased, the need to minimize the impact to the environmental and aesthetic integrity of Table Rock’s shoreline became apparent. One apparent solution came in the form of dry storage operations at commercial marinas: a large storage building is constructed on land near the water with boat ramp and courtesy dock nearby to support the use of the boats kept in the dry storage. It was determined that a building storing 120 boats only needed a 12-slip courtesy dock and launching ramp, whereas wet slips for the same number of boats would disturb a substantially larger area of shoreline. In 1999 the Corps developed a policy for dry storage operations on Table Rock that allows dry storage operation lease consideration for residential developments on lands contiguous to projects lands zoned as

Limited Development. The PDT recognizes the continuing need to minimize the impact to environmental and aesthetic integrity of the lake's shoreline and regulations and policies should be developed to encourage and promote dry storage over wet storage, unless the physical and/or socio-economic attributes of the location are prohibitive to the feasibility of a dry storage operation.

v. Water Management and Flood Risk Management

Six White River Basin lakes are operated together as a system to reduce the frequency and severity of floods. These lakes are Beaver, Table Rock, Bull Shoals, Norfolk, Greers Ferry and Clearwater. Beaver, Table Rock and Bull Shoals lakes are in a row along the main stem of the White River in Arkansas and Missouri. Norfolk Lake is on the North Fork River, which empties into the White River near the town of Norfolk in north central Arkansas. Clearwater Lake is on the Black River near Piedmont, Missouri. The Black River's confluence with the White River is near Jacksonport, Arkansas. Greers Ferry Lake is on the Little Red River near Heber Springs, Arkansas. The Little Red's confluence with the White River is near Georgetown, Arkansas.

Flood Risk Management is a primary purpose of the White River Basin lakes. These lakes were among dozens Congress authorized the Corps of Engineers to build in the Mississippi River Valley to reduce flood damage and loss of life. This was primarily in response to the great flood of 1927, which swelled rivers across the entire Mississippi River Valley. That year incessant rainfall soaked 31 states and two Canadian provinces. This and subsequent floods in the 1930s and 1940s prompted legislation that led to construction of the Corps dams in the White River Basin. These lakes also work in conjunction with a system of levees, which provide additional reduction in flood damages. Since they were constructed, the White River Basin lakes and levees have prevented an estimated \$1 billion in flood losses.

Flood risk management lakes work by capturing runoff in their 'flood pools' during heavy rain. After rivers downstream begin receding, water is released in a controlled fashion following pre-determined 'operating plans'. Without the lakes, all that water would roll downriver at one time. Flood crests would rise higher and spread over more land, thus causing more damage and possibly loss of life. The water stored in the flood pool must be evacuated in preparation for the next storm as quickly as downstream conditions permit without creating additional flooding. The difficulty with repeated rain is engineers are not always able to release all the water captured in the flood pool between rains. This can cause lake levels to rise with each new rainfall. When that occurs, it can sometimes take many months to empty the huge volumes of water from the flood pools and return all the lakes to their 'conservation pools'.

It is worth noting the lakes are not intended to prevent all flooding. The lakes have limitations that Mother Nature can exceed, and from time to time does. Therefore, downstream property owners should be judicious in how they develop land within the flood plains. Floods are not as frequent because of the dams, and when they do occur, they are typically not as severe as they were before the dams were built. But there will still be occasions when significant floods occur downstream of these dams. Planting crops on land that floods on occasion might be profitable in the long run. Building a home or business on that same land might not be. Farming, running a business, or having a home in the flood plain of a river is a risk that each landowner accepts.

When Congress instructed the Corps to build the White River Basin lakes, they also told the Corps to include storage for hydroelectric power generation at five of them; Clearwater Lake does not have hydropower. Water supply storage was also included at Beaver Lake, and Congress gave the Corps authority to reallocate limited amounts of storage in each lake for additional water supply. The storage space that holds water for hydropower generation and water supply primarily comprises what is referred to as the 'conservation pool'. Basically, the conservation pool creates the lakes and provides the ancillary recreational opportunities. In recognition of these opportunities, Congress also instructed the Corps to provide public access at each lake, which led to the construction of Corps parks.

While Congress and the Corps recognize the value in recreation, the White River Basin lakes were built to store water for hydropower and water supply during average weather and to store floodwater during wet weather. Therefore, the lake levels are weather dependent. Levels can range from very high during abnormally wet weather to very low during drought. This is how the lakes were designed, and it is how they provide benefits to repay the taxpayer investment in them. Just this decade, weather patterns have created both drought (2005-2007, 2012) and flood conditions (2008, 2009, and 2011).

The Corps has had many requests to keep the lake levels more steady during the recreation season, but the Corps does not have the legal authority to manage lake levels for recreation. The Corps is bound under the law to follow the White River Water Control Plan, which dictates how the system is operated.

The White River Water Control Plan has a lengthy history. In 1942, the Basis of Design for Definite Project Report was developed, which included the original studies for the method of operation for Bull Shoals and Norfolk. This report helped establish the size of the flood and conservation pools in each lake. In 1952, the Plan of Flood Regulation for Bull Shoals and Norfolk Reservoirs was developed. This report described the proposed plan of regulation for Bull Shoals and Norfolk. In 1954, the Master Manual for Reservoir Regulation of the White River Basin was first developed. This described the operating criteria for Bull Shoals, Norfolk, and Greers Ferry. In 1963, the Reservoir Regulation Manual for Beaver, Table Rock, Bull Shoals, and Norfolk Reservoirs was developed. This was revised in 1966. In 1993, the Master Manual for Reservoir Regulation for White River Basin was developed. No changes to the Water Control Plan were made, only basin conditions were updated. The economic analysis showed that changing the allocation of storage for purposes other than flood control, hydropower, or water supply was not economically justified. After years of additional study, a revision was made in 1998 to the water control plan that lowered the regulating stages on the White River during the growing season.

Rainfall amounts and consumer electricity demand are the keys that dictate the releases from a White River dam, which are made primarily through power generation, and, if needed, through spillway gates, or conduits. At times, water may be released through all three. In 2005, 2006, 2007, and again in 2012, the basin had below normal rainfall resulting in significant drought. Because there was less water coming into the lakes, there was less water released from the dams, but some power generation was still necessary to meet consumer demands for electricity. Therefore, most lakes experienced lower lake levels. By comparison, 2008, 2009, and 2011

were wet, flood-producing years, and with so much water coming into the lakes, lake levels remained high much of the time until all the stored floodwater could be released in a controlled fashion according to the Water Control Plan.

Conditions in the lake and conditions downstream of the dam also help dictate releases. When a lake is in its conservation pool, Southwestern Power Administration (SWPA) determines the releases within certain limits. They are subjected to 7-day and 28-day drawdown limits, along with having a minimum release requirement to ensure survival of fish species downstream during the warm months. SWPA is also subject to maximum release limits based on downstream conditions during high water. The maximum release is determined by the Corps' Water Control Plan. Since the lakes are operated as a system, it gets still more complex. For instance, Beaver Lake releases are determined by conditions in Table Rock and Bull Shoals lakes downstream. Below Bull Shoals, Norfolk and Greers Ferry lakes, releases are determined based on river levels miles downstream of the dams. The Corps will release water stored in the flood pools of Bull Shoals and Norfolk based on the White River stage at Newport to empty the lakes as quickly as possible. Both the Corps and SWPA are following the missions entrusted to them under the law.

The water control plan, simply stated, says releases from Beaver are dependent upon the elevation in Table Rock and Bull Shoals Lakes; releases from Table Rock are dependent upon the elevation in Bull Shoals Lake; and releases from Bull Shoals and Norfolk are dependent upon the seasonal regulating stage at Newport, Arkansas. Release criteria for the lakes were developed more specifically based upon the pool elevation, pool elevation of downstream lakes, the time of year, and downstream river conditions. Bull Shoals and Norfolk releases are sized based on the following criteria:

From 1 December through 14 April - Regulate to 21 feet except, if a natural rise exceeding 21 feet occurs, regulate to the lesser of the observed crest or 24 feet.

From 15 April through 7 May - Regulate to 14 feet except, regulate to 21 feet, from 15 April through 30 April, and 18 feet, from 1 May through 14 May, if the four-lake system storage exceeds 50% full.

From 8 May through 30 November - Regulate to 12 feet except, regulate to 14 feet from 15 May through 30 November, if the 4-lake system storage exceeds 70% full.

Release a minimum of firm power and in extreme cases zero if a significant reduction in critical immediate downstream flood conditions is possible.

Prorate the flood control releases between Bull Shoals and Norfolk to maintain equal percentages of available flood control storage in NF and the BV-TR-BS.

Release a maximum of 32,500 cfs from BS and 10,500 cfs from NF subject to a 50,000 cfs flow limit at Batesville.

Curtail secondary power generation 'releases exceeding firm power' until six days after the crest at Newport. Secondary power releases should provide that stages above the regulating stage continue to recede until the regulating stage is reached.

While lowering lake levels in the winter to prepare for spring rains does in effect increase the size of the flood pool, at the same time it takes away from hydropower and water supply storage. The Corps does not have legal authority to do this. The current allocation of storage for flood risk management was approved by Congress. Changing that allocation would require Congressional action.

Also, that is a very risky action because there is no way to forecast long-range how much or how little rain will fall. If the Corps artificially lowered lake levels in the winter and spring rains did not come, a shortage of water to generate electricity, meet the needs of water utilities or provide viable recreation opportunities could ensue. The water supply and power users pay for that storage. If the drought progressed, instead of recovering, lake levels could continue to drop and cause an extreme water shortage.

Regulation during storm periods is based on runoff predicted from the rain that has occurred and can be measured. Rainfall forecasts are not sufficiently accurate to base operational decisions on them. Because rainfall forecasts are inaccurate, pre-releasing would put downstream users at risk if rain developed in the uncontrolled areas instead of upstream of the dam. Conversely, we are also asked by some users to stop releases from the dams before a rainfall begins. This can also cause issues since we would be holding water in the flood pool, which lessens our ability to reduce peak downstream flows from large rainfall events.

Analysis of over 60 years of hydrologic data has proven that major floods develop from the accumulation of storage in the lakes from persistent, repeated rain storms that do not allow enough time in between to evacuate flood storage. In other words, flood storage is most always filled at the lakes by several smaller storms rather than by one large storm. So using that long-term perspective, the Corps prepares for the future by making releases whenever possible any time flood storage is in use.

As the White River basin has developed, the request for operations keyed to specific interests has intensified, and at times these requests are for conflicting operations. Farmers request lower river stages; navigation interests request sustained rivers stages; downstream fisheries want sustained cold water releases; hydropower interests would like sustained high pool levels; those concerned with downstream flood control would like low pool levels; still others would like constant pool levels. The water control plan managed by the Corps is a compromise to distribute the benefits fairly among all stakeholders.

It is a matter of balancing flood storage among the lakes in this interconnected system to best prepare for a variety of scenarios if more rain falls. This is a key part of the water control plan. It helps to understand that Bull Shoals Lake has more than twice the flood storage capacity of Beaver and Table Rock combined. The flood pool at Bull Shoals is 41 feet deep. By comparison, the flood pool at Table Rock is only 16 feet deep, and Table Rock Lake is much smaller than Bull Shoals. Let's say we've had heavy rain and Bull Shoals is 15 ft high. It still

has more than two-thirds of its flood storage capacity available to capture more rain runoff. When Table Rock Lake is 15 feet high, it is 99 percent full and a fairly small rain event could cause it to spill and flood homes and businesses downstream. So we would allow Table Rock Lake to release some of its flood pool first.

The Corps attempts to balance the percentage of flood storage available in the three lakes on the main stem of the White River (Beaver, Table Rock, and Bull Shoals) with the percentage of flood storage available in Norfolk. This better ensures the full use of available flood storage when needed. Computer simulations of 60 years of river data show that maintaining equal percentages of available flood storage between the 3-lake sub-system and Norfolk Lake best provides flood risk management to the lower White River valley.

What do we mean by balance? If Norfolk is using 85 percent of its flood storage capacity, we make releases trying to balance the average flood storage capacity in use at 85 percent across Beaver, Table Rock and Bull Shoals. This does not mean we try to hold each of these three lakes at 85 percent full, it is the average among these three lakes. Keep in mind, Beaver provides supplemental storage for Table Rock and is much smaller. Table Rock protects homes and businesses immediately downstream of the dam. Bull Shoals Lake is larger than Beaver and Table Rock combined and has more than double the flood storage capacity. Bull Shoals works with Norfolk Lake to reduce flood peaks in the lower White River Valley. For example, holding flood water in Beaver's flood pool when there is flood control storage in use at Table Rock and/or Bull Shoals provides the additional flood storage for Table Rock. The result is generally that Beaver Lake fills first and empties last. The releases from Beaver Lake are limited to 1,000 cubic feet per second daily average release when either Table Rock or Bull Shoals is more than 2 feet into the flood pool. Once the current pool elevations for both Table Rock and Bull Shoals are within 2 feet of their conservation pool elevation, releases can be increased from Beaver Lake. Evacuating storage from Table Rock provides the maximum downstream protection and ensures that if rain continues, Table Rock and Bull Shoals will be in balance as both begin reaching their maximum capacities.

The Corps has a water management Website at www.swl-wc.usace.army.mil. Real-time data, project operating data, and daily reports are a few of the items available. Also, the White River Water Control Plan is available on this site. In addition, our personnel make annual presentations to local elected officials and emergency managers from jurisdictions along the rivers. At other times, presentations are made to various stakeholder groups at their request. The Reservoir Control staff also fields numerous phone calls from the general public, media, and congressional staffs throughout the year.

During the large floods in 2008 and 2011, the six lakes working in conjunction with levees downstream in the river basins prevented an estimated \$230 million in flood damage, working exactly as they were designed. Even though some of the lakes filled to record levels during either of both events, peak discharges downstream were actually tempered by operating the spillway gates. When the spillway gates were opened, they temporarily created or induced additional flood storage because water could be stored to a higher level. Since the flow coming into the lake was greater than the amount released, the lake rose while the downstream flood peak was reduced.

For instance at Beaver Lake in 2008, the peak flow coming into the lake was 110,000 cubic feet per second, but the peak flow released at the dam was only 92,400 c.f.s. During the flooding in 2011 at Table Rock, the flow coming into the lake was over 200,000 cubic feet per second for 36 consecutive hours. The peak flow released from Table Rock was 69,000 c.f.s. The 2011 event set a couple of records at Bull Shoals Lake with record pool of 696.5' and a record release rate of 53,000 c.f.s. Maximum inflow into Bull Shoals for 6 hours was over 340,000 c.f.s and maximum 1 hour inflow was over 436,000 c.f.s. Norfolk Lake made a large spillway release in 2008. Peak inflow to Norfolk was about 115,000 cubic feet per second and the peak flow released was 81,700 c.f.s.

Although the releases from each dam were many more times larger than the 'typical' hydropower release, the dams performed exactly as designed by reducing the peak flow released into the White River basin, which lessened the extent of downstream flooding and undoubtedly contributed to saving lives.

w. Population Increase/Generational Analysis

Several generations have passed since the last Master Plan revision was completed in 1976 and the general population of the area surrounding the lake has increased over time. The PDT discussed these two inter-related points and the impacts they would have on the resources around lake.

With generational analysis, the PDT discussed how the older generations (i.e. Traditionalists and Baby Boomers) viewed and 'used' the lake versus how the younger generations (i.e. Gen X, Gen Y, and Millennials) viewed and used the lake. While the PDT could not complete a full analysis on this topic due to time and funding constraints, the perception is that the older generations typically are more conservative and traditional in their uses of the resources around the lake (i.e. they stick to traditional camping, swimming, hiking, wildlife viewing etc. and have a need/desire to 'unplug' from technology like cell phones, WiFi, etc.); the younger generations can also be conservative in the uses of the resources around the lake, but are also interested in more innovative and improved technology when it comes to resource use (i.e. looking for new recreational activities like kayak trails, paddleboards, etc. and have a need/desire to stay 'connected' to the world through cell phones, the internet, etc.).

Generational analysis shall be included when considering future development proposals around the lake.

x. Symbiotic relationship between Table Rock Lake and Branson

Near the eastern end of Table Rock Lake lies Branson, Missouri. Branson is a popular tourist destination in the region that attracts millions of guests every year with its numerous theaters along Highway 76 and their line-up of major recording artists, as well as other family oriented entertainment offerings. Being so close to Table Rock Lake, it is clear that visitors to both the lake and Branson enjoy the benefits of having the other nearby. In November 2010, the US Army Corps of Engineers Engineering Research and Development Center (USACE ERDC) released a study characterizing the visitors of not only Table Rock Lake but also two other nearby Corps

lakes, Norfolk Lake and Bull Shoals Lake. The ERDC report sheds some light on the mutually beneficial relationship between Table Rock Lake and Branson, Missouri.

The ERDC report identified a few different characteristics of visitors to Table Rock Lake that illustrates the symbiotic relationship between Table Rock Lake and Branson, Missouri. The three most telling characteristics are average spending per visitor, the percent of non-local visitors, and visitor frequency.

Average spending and spending categories are useful in telling which activities guests might have participated in while visiting Table Rock Lake. The most consistent difference between visitors to Table Rock Lake and the other lakes in the report was spending on attractions by non-local visitors. At Table Rock, the average spending on attractions by motel users was \$108, \$53 for those who camped, and \$92 for other overnight visitors. These amounts are 3-10 times higher than the same visitor segments at Norfolk Lake and 10-50 times greater than those at Bull Shoals Lake. The report attributes this large difference to the proximity of Table Rock Lake to Branson.

The percent of non-local visitors also helps illustrate the Table Rock-Branson relationship. Table Rock Lake experienced 38% of recreation trips made by local visitors (within 30 miles) and 62% made by non-local visitors (more than 30 miles). The other two lakes in the study experienced rates for local and non-local visitors opposite that of Table Rock Lake -- which indicates that something else in the Table Rock Lake area is helping pull in visitors from farther away. The ERDC report attributes this difference to the proximity of the lake to Branson and a multi-lane US Highway running near the lake.

Table Rock Lake experienced a rate of 20% first trip visitors while Norfolk and Bull Shoals received 6% and 10% respectively. This also helps indicate that there is something else helping bring visitors from farther away to Table Rock Lake. This is most likely due to the attractions provided in Branson. The most obvious indication that some visitors to Table Rock Lake are there for another reason are the approximately 13% of visitors that stated their visit was associated with travel to Branson. All of this evidence shows that Table Rock Lake and Branson, Missouri, both benefit from the recreational opportunities the other provides. While it is clear that without Branson Table Rock Lake would receive fewer visits, it is unclear how many fewer visits would occur.

The PDT recommends consideration of this relationship between the City of Branson and Table Rock Lake when reviewing future development around the lake.

Chapter 7 Agency and Public Coordination

a. Introduction

No single agency has complete oversight of stewardship activities on the public lands and waters surrounding Table Rock Lake. Responsibility for natural resource and recreation management falls to several agencies that own or have jurisdiction over these public lands and waters.

Increasingly, competition for the use of these lands and waters and their natural resources can create conflicts and concerns among stakeholders. The need to coordinate a cooperative approach to protect and sustain these resources is compelling. Many opportunities exist to increase the effectiveness of Federal programs through collaboration among agencies and to facilitate the process of partnering between government and non-government agencies. To sustain healthy and productive public lands and water with the most efficient approach requires individuals and organizations to recognize their unique ability to contribute to commonly held goals. The key to progress is building on the strengths of each sector, achieving goals collectively that could not be reasonably achieved individually. Given the inter-jurisdictional nature of Table Rock Lake, partnering opportunities exist and can promote the leveraging of limited financial and human resources. Partnering and identification of innovative approaches to deliver justified levels of service defuse polarization among interest groups, and lead to a common understanding and appreciation of individual roles, priorities, and responsibilities.

To the extent practical, this Master Plan and a proactive approach to partnering will position Table Rock Lake to aggressively leverage project financial capability and human resources in order to identify and satisfy customer expectations, protect and sustain natural and cultural resources and recreational infrastructure, and programmatically bring Corps management efforts and outputs up to a justified level of service.

Public involvement and extensive coordination within the Corps of Engineers and with other affected agencies and organizations is a critical feature required in developing or revising a Project Master Plan.

Agency and public involvement and coordination has been a key element in every phase of the Table Rock Lake Master Plan revision.

b. Scoping

One agency and three public scoping workshops were held in late November and early December 2012 with over 2,000 people in attendance. To prepare for the scoping workshops, the Corps contracted with CDM-Smith. An after action Memorandum for Record (MFR) is included in the Environmental Assessment (under Appendix D) that details the preparation and work prior to, during, and after the public scoping workshops held in the fall of 2012. From the scoping process, a Scoping Report was finalized on 4 February 2013. The report summarizes the

public participation process for, and the public comments resulting from, the Table Rock Lake MP Revision public scoping workshops and comment period. “Scoping” is the process of determining the scope, focus, and content of a NEPA document. Scoping workshops are a useful tool to obtain information from the public and governmental agencies. For a planning process such as the MP revision, the scoping process was also used as an opportunity to get input from the public and agencies about the vision for the MP update and the issues that the MP should address where possible. The Scoping Report is located on the Table Rock Lake Master Plan website, <http://www.swl.usace.army.mil/Missions/Planning/TableRockMasterPlanUpdate.aspx>

c. Focus Groups

The PDT made the decision to work with focus groups during the scoping process, in part due to the high interest in the Master Plan revision process from other agencies and the public. The focus groups were formed in response to the top three concerns heard from the public during the scoping process: Water Quality, Safety, and Recreation.

The initial focus group meetings were held on the 8th and 9th of May 2013 at the Dewey Short Visitors Center Theater. An informal icebreaker session was held the evening of Tuesday, May 7th, 2013 from 4:00PM to 6:00PM also at the Dewey Short Visitors Center. The icebreaker session provided the opportunity for all three focus groups to meet together, share ideas, and talk with the Corps Master Plan PDT on an informal basis. Ground rules and expectations for the focus group meetings were set during this time.

A second recreation focus group meeting was held on the 29th of May 2013 because of the three focus groups, this was the largest group member-wise and they requested more time to talk about issues related to recreation for consideration in the MP.

A ‘cross talk’ focus group meeting, which included team leaders chosen from each of the three focus groups, was held on the 5th of June 2013. The idea behind this meeting was to allow all three focus groups to hear from each other on feedback and comments given to that point on the preliminary draft master plan.

A final focus group meeting was held on June 26, 2013. This final meeting with the focus group allowed the PDT to discuss their feedback and comments were included into the draft MP.

d. Draft Master Plan/Draft Environmental Assessment

The Draft Master Plan/Draft Environmental Assessment was released to the public on July 26, 2013. A public review period was held from July 26 through August 30, 2013.

Similar to the Scoping workshops, a contract with CDM-Smith was established to help with facilitation of the draft Master Plan/Draft EA release. Comparable workshop support documentation was developed, such as post card notification, comment cards, News articles, News Releases, Fact sheets, and posterboards.

Public workshops were held the week of August 12; in total, four public workshops were held around Table Rock Lake including at the Dewey Short Visitors' Center (twice), Kimberling City, and Shell Knob. The workshops were scheduled during the day and evening hours to accommodate public attendance. A short movie (10-minute video) was shown to attendees that provided background information about Table Rock Lake and the Master Plan revision process. The video briefly described the 8 alternatives that were formulated during the process. Attendees were then free to move on to an adjoining room where maps were available to look at and Corps representatives were on hand to ask questions and discuss key issues. Copies of the draft Master Plan/draft EA, fact sheet, comment card, and video are available on the Table Rock Master Plan website, <http://www.swl.usace.army.mil/Missions/Planning/TableRockMasterPlanUpdate.aspx>

During the draft release, over 1,200 attendees participated in the public workshops held around the Branson/Table Rock Lake area. Post public review period, the Corps received a total of 878 comments (Comment cards, Fax, Letters, Email, Oral comments). The overwhelming comment received was the subject of the Vegetative Management Area. The majority of the public were opposed to the new land classification. However, the Corps believes that the intent of this classification remains valid and would encourage further development of this concept in cooperation with other agencies and civic groups in the area.

The public comments, in their entirety, are located within the EA as an appendix.

e. Final Master Plan/Final EA

The Final Master Plan will be completed by February 2014. The revision process experienced a delay due to the Government shutdown in October 2013.

A series of workshops will be held by mid-March 2014 to unveil the final Master Plan and answer any questions the public may have about the plan. No comments will be accepted as this is the final version.

A similar public workshop format will be used for the Final Master Plan unveiling.

Chapter 8 Summary of Recommendations

a. Summary Overview

The proposals made in previous chapters of this MP are for the courses of action necessary to manage Table Rock Lake's current and future challenges. Actions set forth in this plan can ensure the future health and sustainability of Table Rock Lake's natural resources while still allowing for continued use and development. The factors considered cover a broad spectrum of issues including, but not limited to public use, environmental, socioeconomic, and manpower. Information on each one of these topics was thoroughly researched and discussed before any proposals were made.

This master plan is considered to be a living document, establishing the basic direction for development and management of the Table Rock project consonant with the capabilities of the resource and public needs. The plan is also flexible in that supplementation can be achieved through a formal process to address unforeseen needs. The master plan will be periodically reviewed to facilitate the evaluation and utilization of new information as it becomes available.

This MP for Table Rock Lake will continue to provide for and enhance recreational opportunities for the public, improve the environmental quality and create a management philosophy more conducive to existing staffing levels at the Table Rock Project.

b. Land Classifications

As described in detail in Chapter 5, the PDT strived to achieve a 'balanced' approach in making the land classification decisions. The team took numerous factors and expressed public concerns into consideration when determining land classification for the 2014 Table Rock Lake Master Plan revision, which included but are not limited to: how lands were previously classified in 1976; what kind of development or non-development was taking place adjacent to Corps property; if there are existing shoreline use permits and what SMP zoning existed in the prior land classification; and what kinds of activities are currently taking place in those areas.

c. Recommendation

This revised Master Plan presents an inventory of land resources and how they are classified, existing park facilities, an analysis of resource use, anticipated influences on project operation and management, and an evaluation of existing and future needs (required to provide a balanced management plan for cultivating the value of the land and water resources). It is recommended that this Master Plan be approved as the basis for future development and management of the Table Rock land and water resources. Approval of the master plan is conveyed by the signing of the Finding of No Significant Impact, located with the Environmental Assessment.

Chapter 9 Bibliography

Arkansas, Arkansas State Water Plan. <http://www.arwaterplan.arkansas.gov/>

Arkansas Department of Parks and Tourism. 2009. Statewide Comprehensive Outdoor Recreation Plan. January 2009 through December 2013.

Bush, Shane. Telephone Interview. 2012.

Casaletto, David. Ozarks Water Watch. 2012.

Chapman, Carl. 1986. Archeological Assessments Report No. 49, Cultural Resources Survey at Selected Locations, Table Rock Lake, Missouri and Arkansas.

Chapman, Carl. 1993. Archeological Assessments Report No. 167, Archeological Investigations at 3CR238.

Cherokee CRC, LLC. Recreational Boating Use Study, Table Rock Lake, Missouri. April 2010.

Executive Order No. 13112. Invasive Species. 3 February 1999.

Executive Order No. 11987. Exotic Organisms. 24 May 1977.

Executive Order No. 13148. Greening the Government Through Leadership in Environmental Management. 21 April 2000.

Executive Order No. 13423. Strengthening Federal Environmental, Energy, and Transportation Management. 24 January 2007.

Executive Order No. 13514. Federal Leadership in Environmental, Energy, and Economic Performance. 5 October 2009.

Kasul, Richard, Daniel Stynes, Lichu Lee, Wen-Huei Chang, R. Scott Jackson, Christine Wibowo, Sam Franco, and Kathleen Perales. Characterization of Park Visitors, Visitation Levels, and Associated Economic Impacts of Recreation at Bull Shoals, Norfolk, and Table Rock Lakes. November 2010.

Missouri Department of Conservation. 1997. "Missouri Water Shed Protection Practice"

Missouri Department of Natural Resources. State Water Plan.
<http://www.dnr.mo.gov/env/wrc/statewaterplanMain.htm>

Table Rock Lake Water Quality Incorporated. 2012. Table Rock Lake Watershed Management Plan. Accessed at: <http://trlwq.org/whats-happening/table-rock-lake-watershed-management-plans/table-rock-lake-water-quality-conditions>

Tennessee Valley Authority (TVA). 2010. Table Rock Project Forebay Oxygen Diffuser System Report Update.

U.S. Army Corps of Engineers (USACE). 1976. Table Rock Dam and Reservoir, White River, Missouri and Arkansas, Updated Master Plan for Reservoir Development and Management, Design Memorandum 17-E.

USACE. 2013. Engineer Regulation 1130-2-550, Project Operations, Recreation Operations and Maintenance, Guidance and Procedures. HQUSACE.

USACE. 2013. Engineer Pamphlet 1130-2-550, Project Operations, Recreation Operations and Maintenance, Guidance and Procedures. HQUSACE.

USACE. 2008. ER 1130-2-540, Environmental Stewardship Operations and Maintenance Guidance and Procedures. HQUSACE.

USACE. 2008. EP 1130-2-540, Environmental Stewardship Operations and Maintenance Guidance and Procedures. HQUSACE.

USACE. 2013. USACE Dam Safety Program. Accessed at: www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram/ProgramActivities.aspx

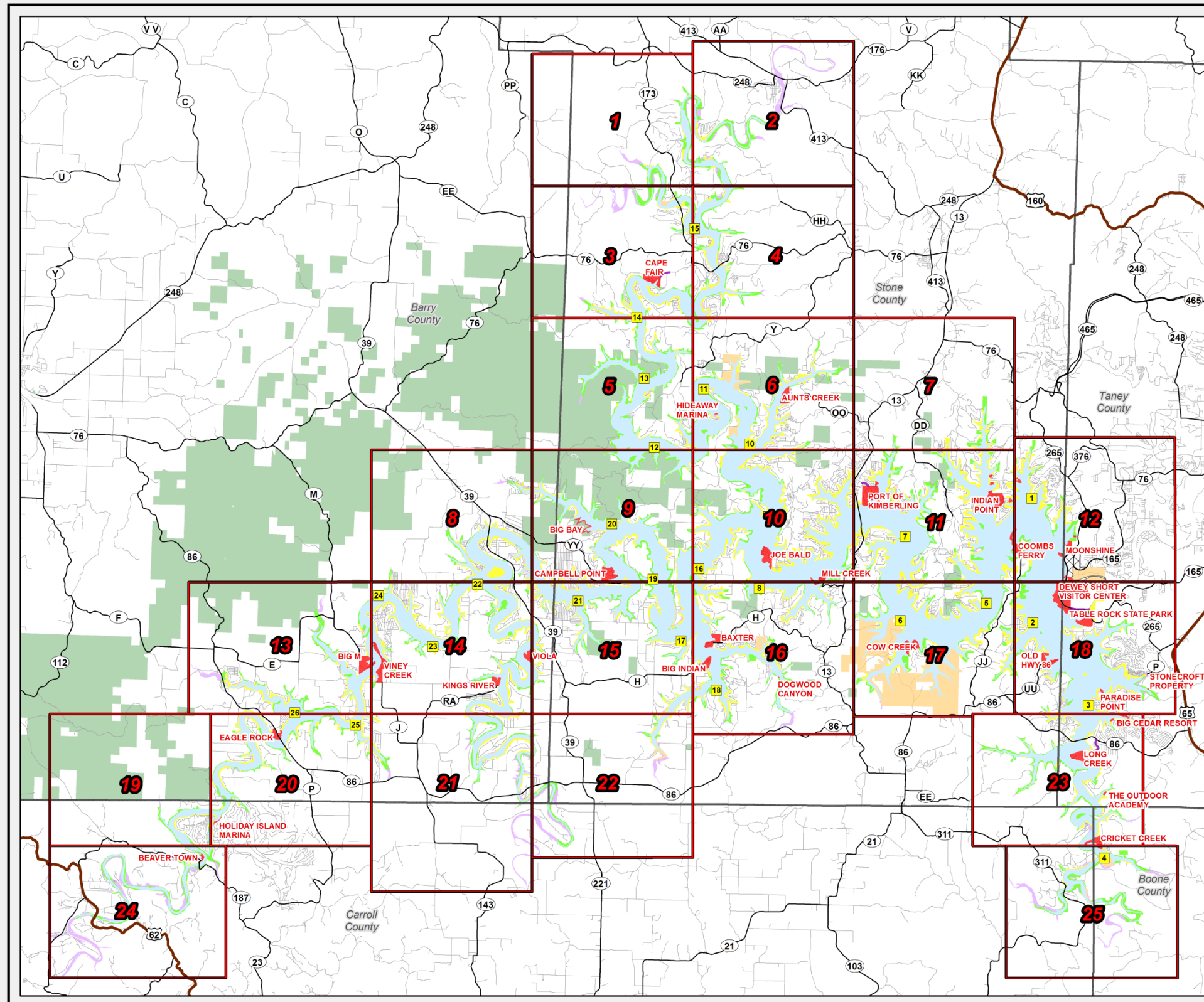
USACE. 1993. White River Basin, Arkansas and Missouri, Water Control Master Manual.

USACE. 2007. Table Rock Operational Action Plan for 2007 Low Dissolved Oxygen Season.

USACE. 2013. Little Rock District Water Management website. Accessed at: www.swl-wc.usace.army.mil

United States Census Bureau. 2013. Easy Facts Website. Accessed at: <http://www.census.gov/easystats/>

Appendix A
Land Classification and Easement Plates



MAP SHEET INDEX LAND CLASSIFICATIONS AND EASEMENTS

MAP SHEET INDEX

Legend

- Point Markers
- Roads
- State Highway
- US Highway
- Counties
- USDA Forest Service
- Flowage Easement
- Operation Easement

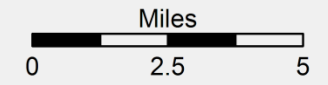
LAND CLASSIFICATIONS

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION



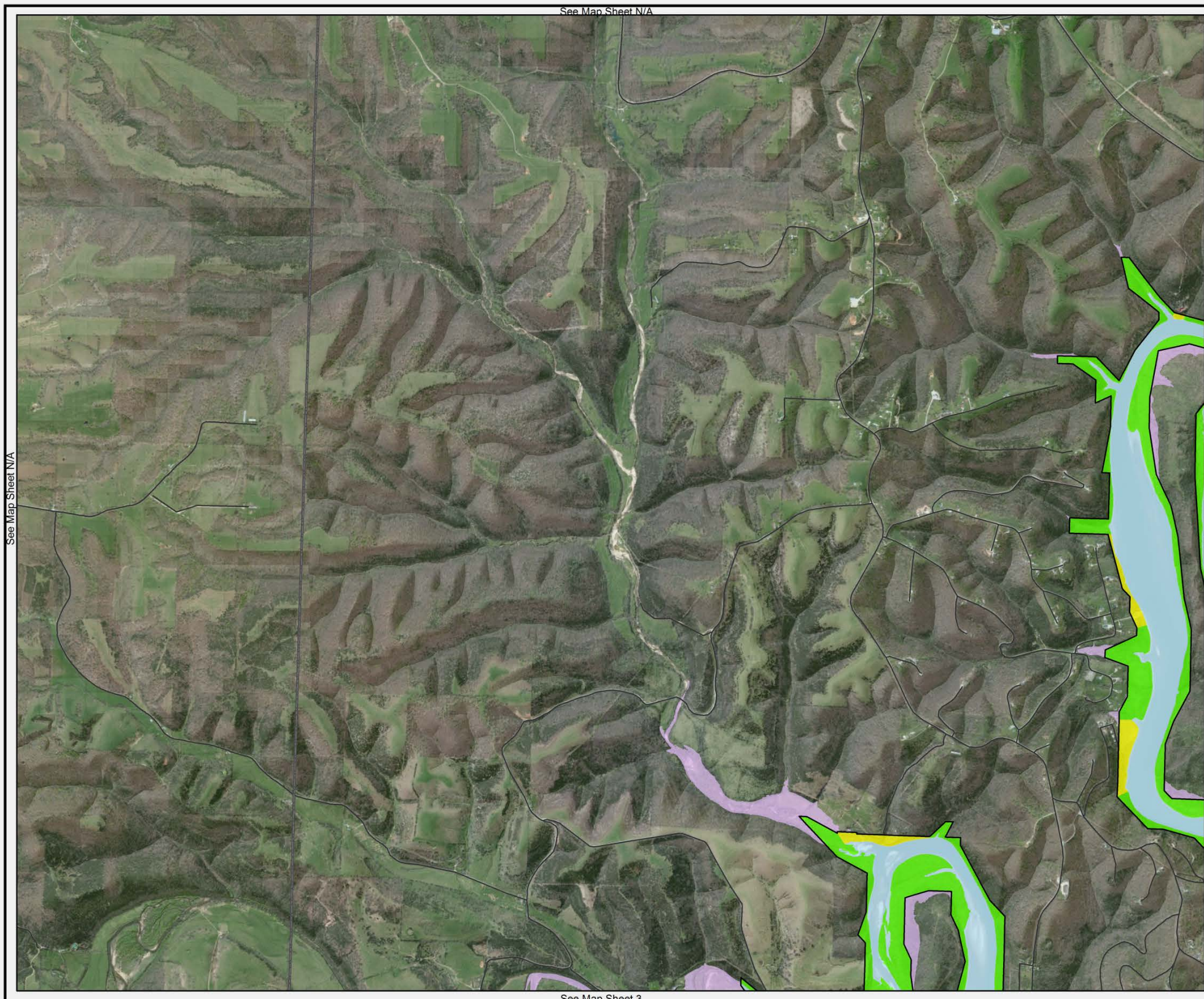
UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014



US ARMY CORPS
OF ENGINEERS
Little Rock District
Table Rock Lake





See Map Sheet N/A

See Map Sheet N/A

See Map Sheet 2

See Map Sheet 3

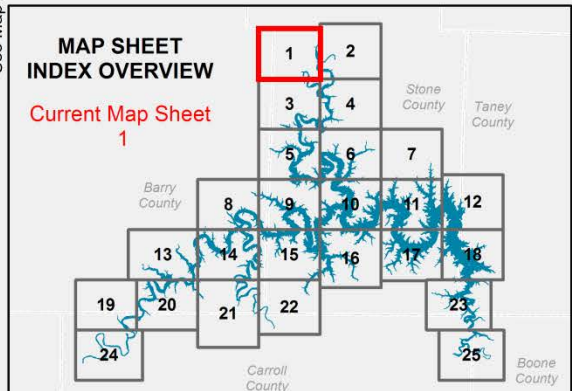
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

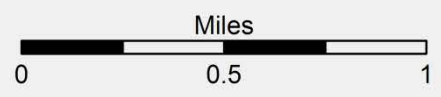
- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

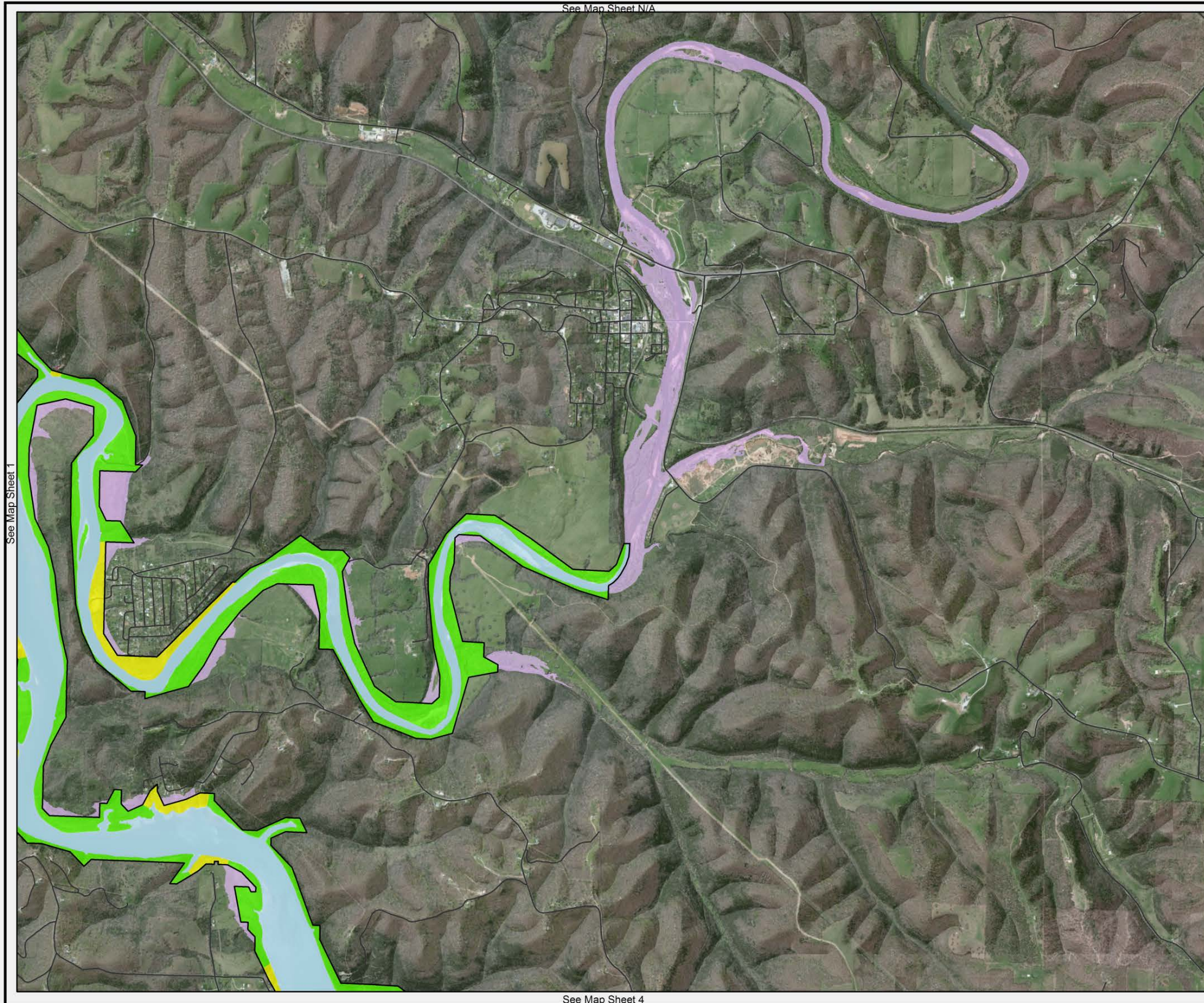
Date: February, 2014

Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake





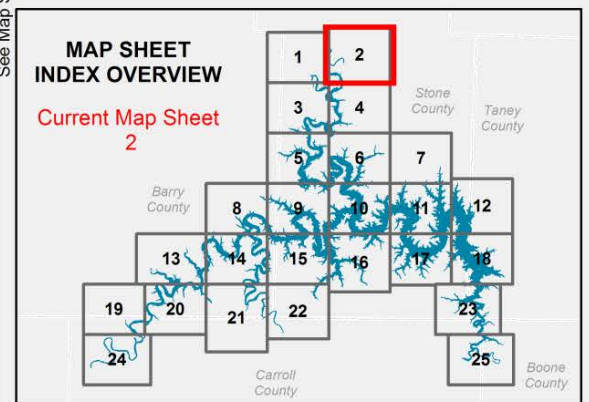
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

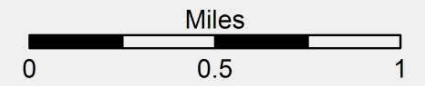
Legend

- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

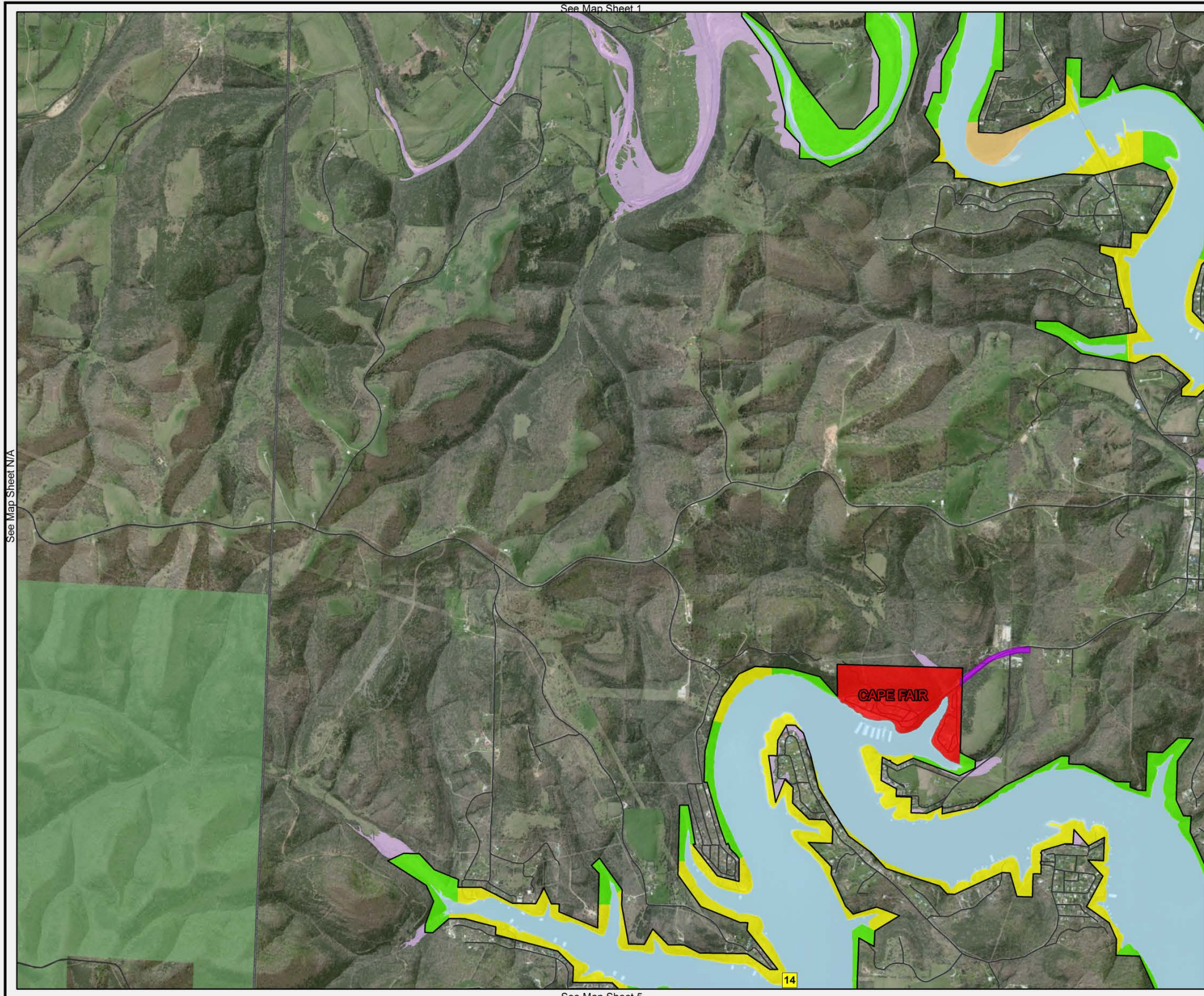


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014
Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake



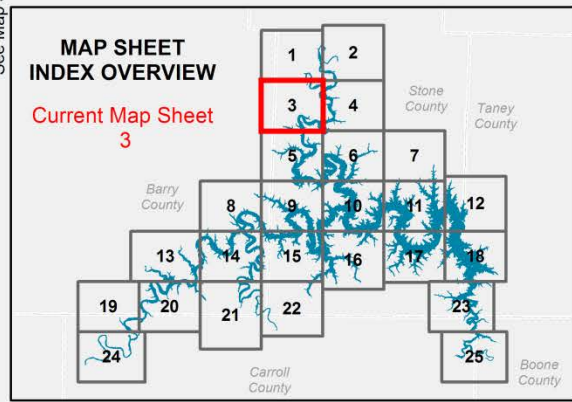
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

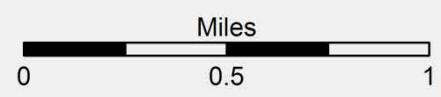
- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

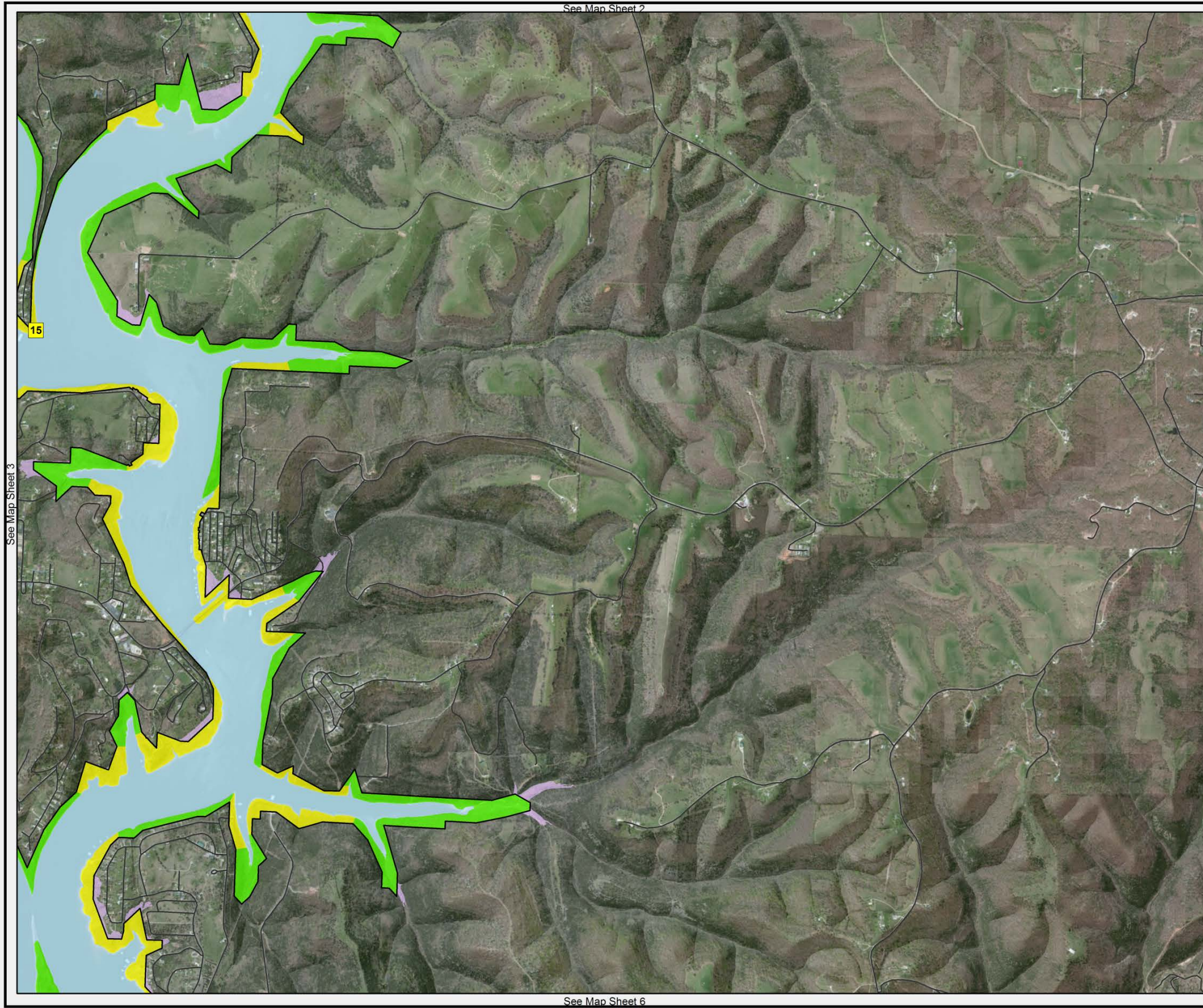
Date: February, 2014

Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake





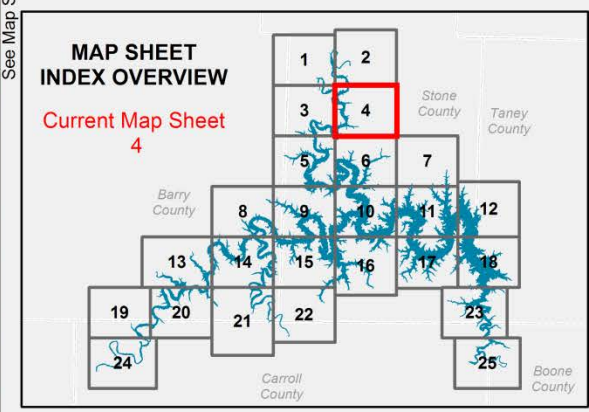
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

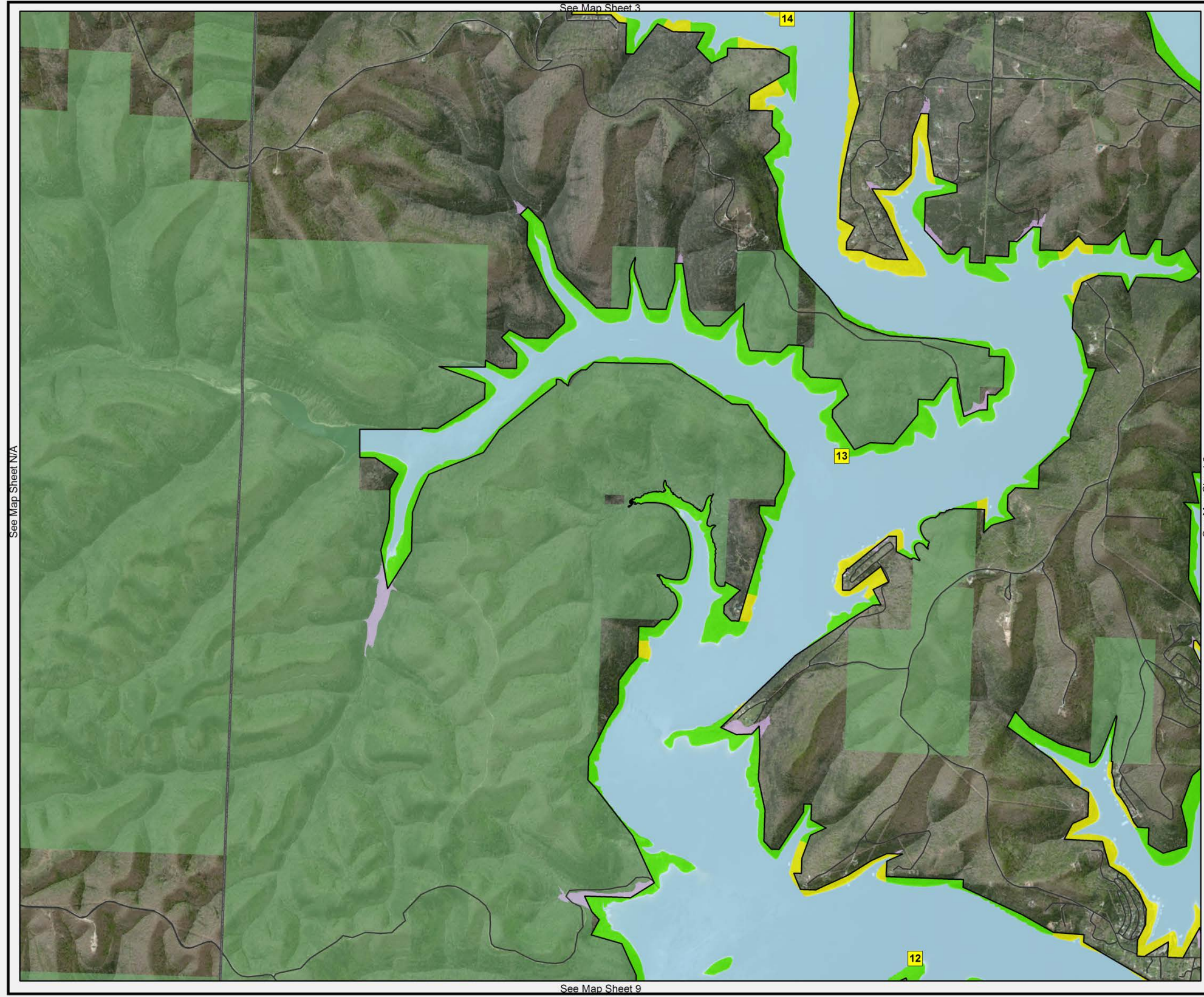


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





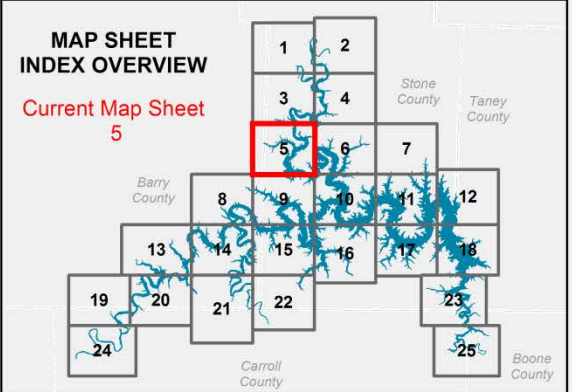
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

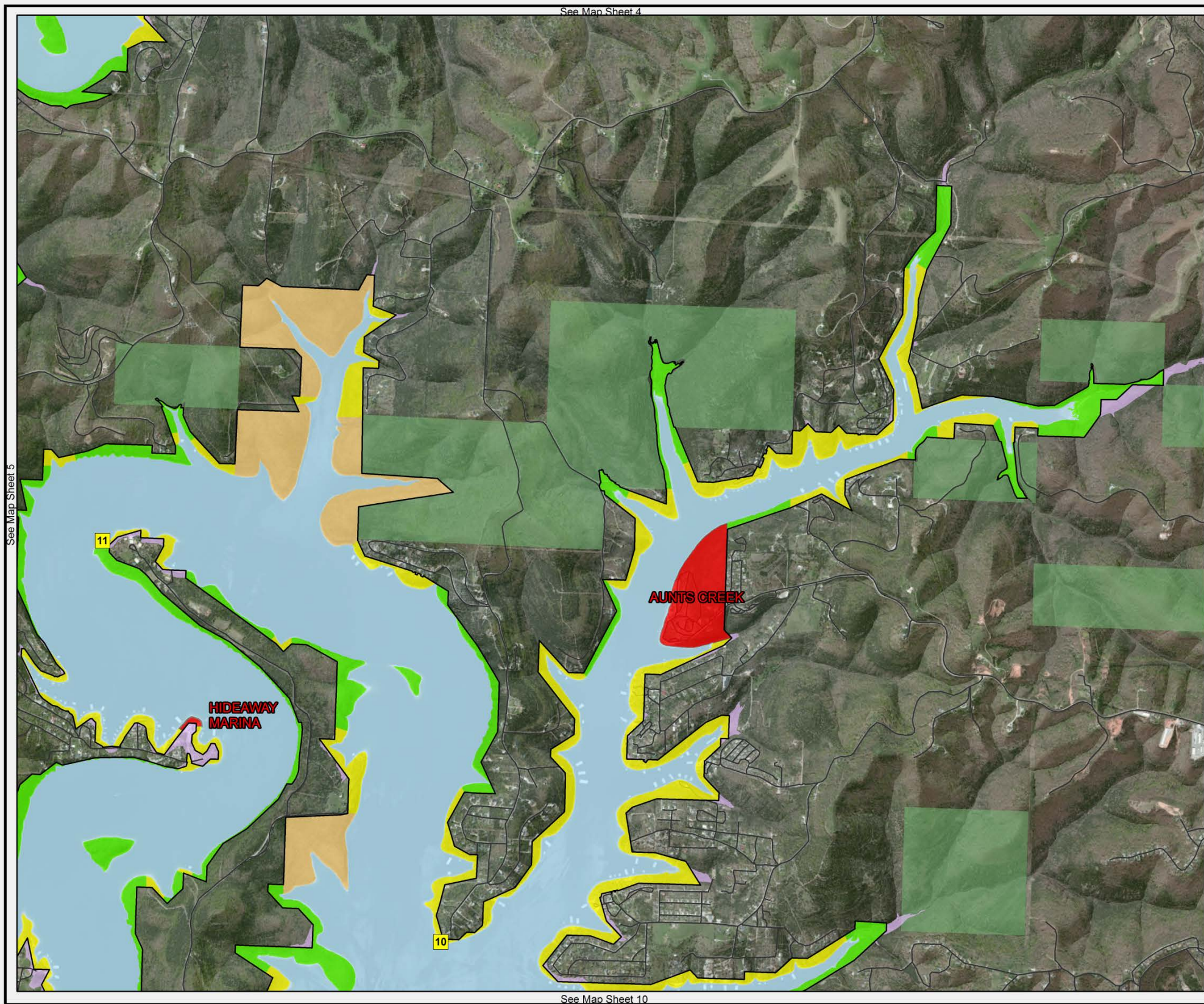


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





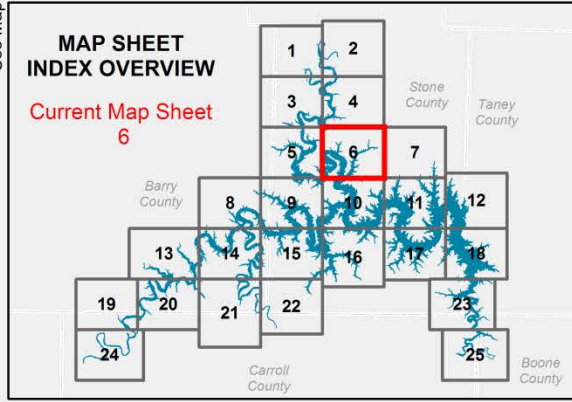
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

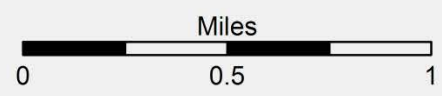
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

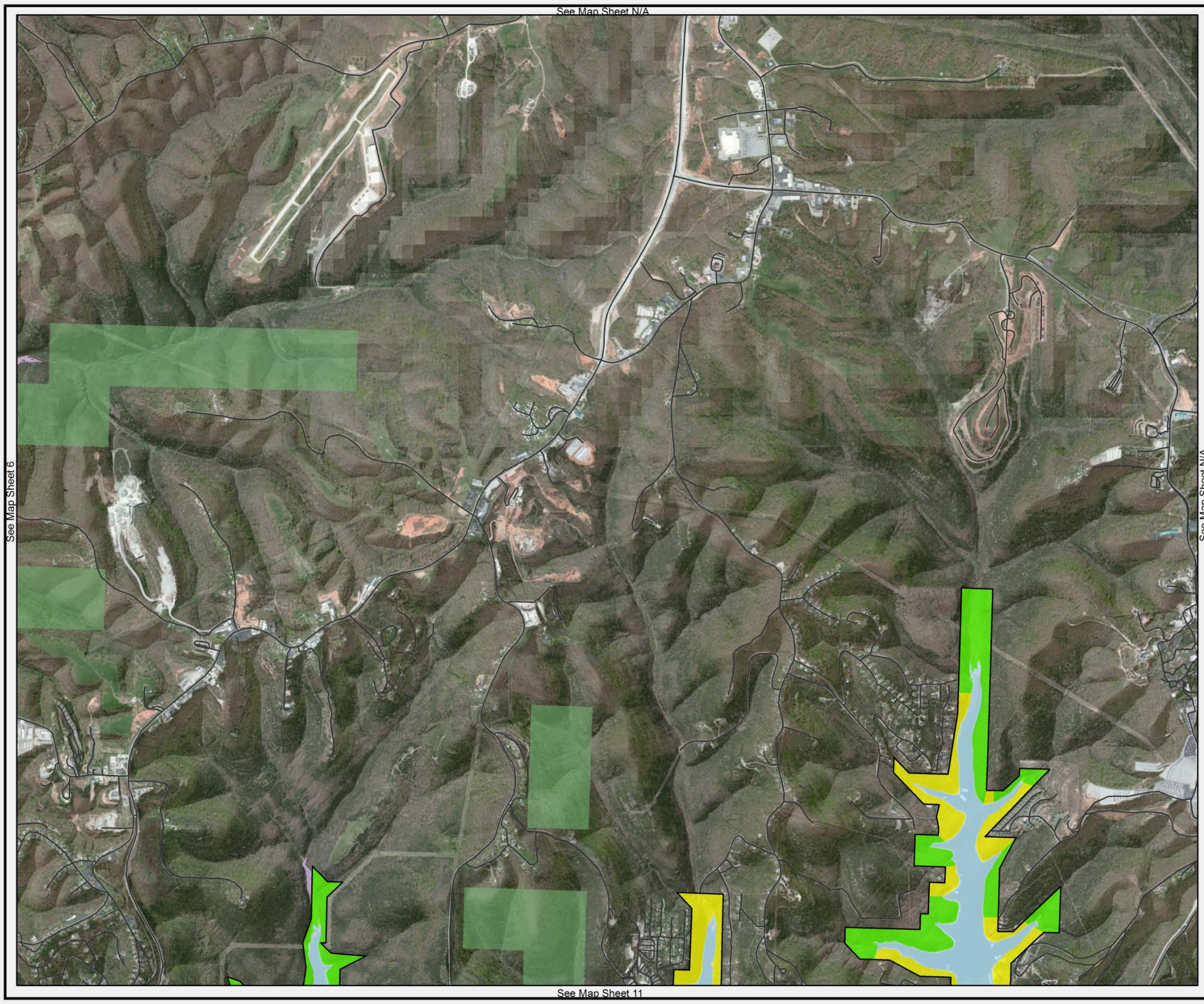


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

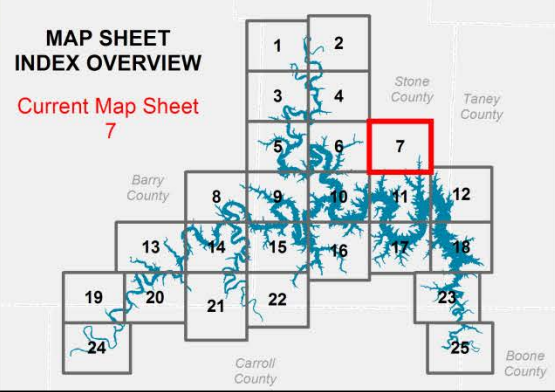




LAND CLASSIFICATIONS AND EASEMENTS

- LAND CLASSIFICATION**
- HIGH DENSITY RECREATION
 - LOW DENSITY RECREATION
 - ENVIRONMENTALLY SENSITIVE
 - WILDLIFE MANAGEMENT
 - PROJECT OPERATIONS
 - RESTRICTED
 - OPEN RECREATION

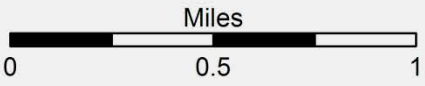
- Legend**
- Point Markers
 - Roads
 - ▭ Counties
 - USDA Forest Service
 - Operation Easement
 - Flowage Easement
 - ▭ USACE Boundary

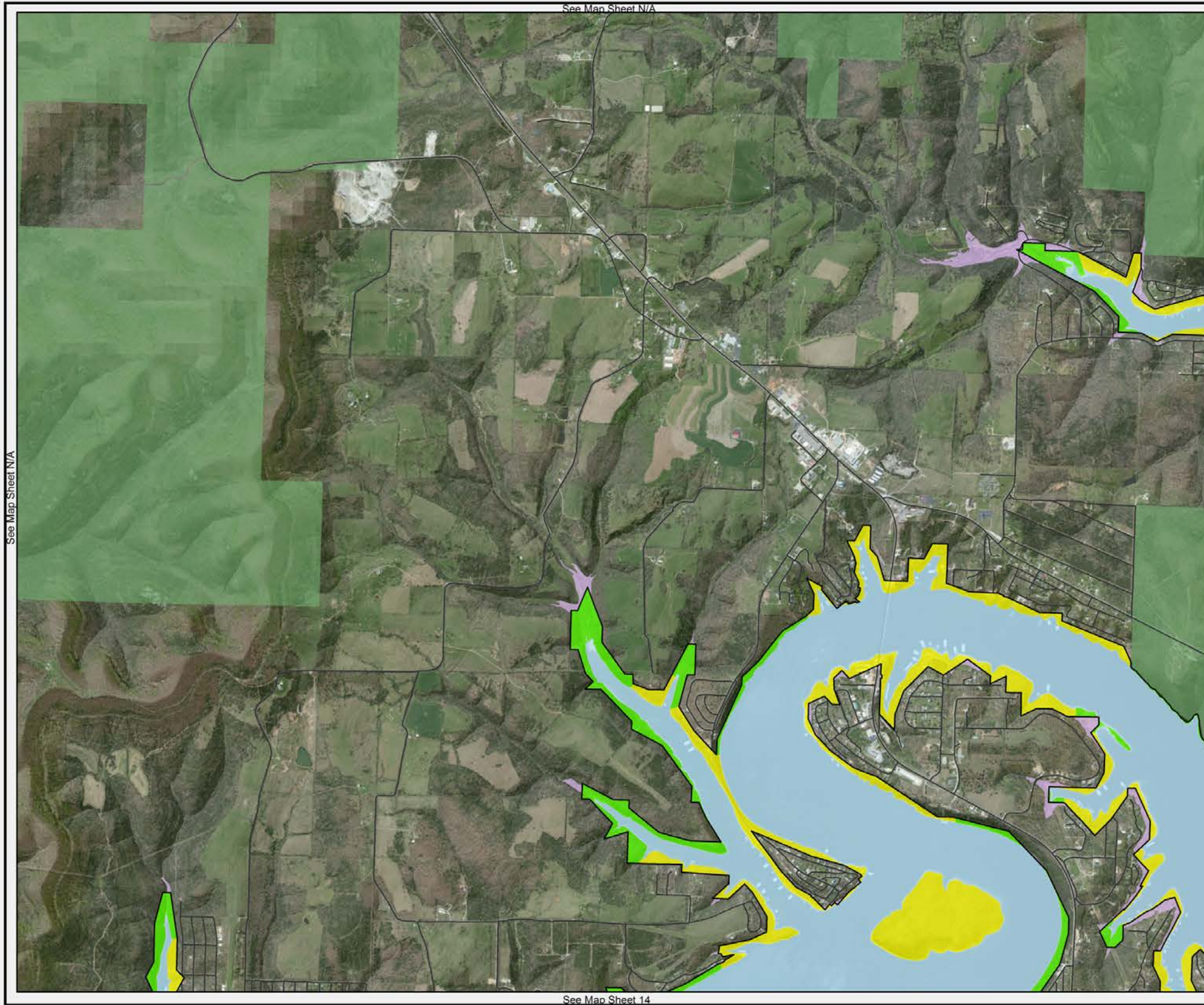


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





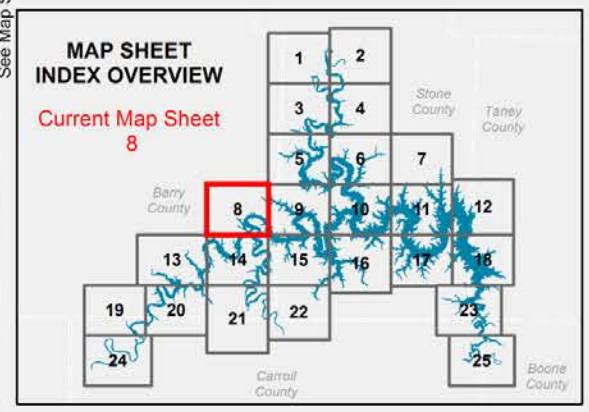
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

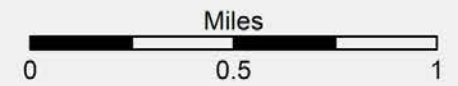
- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

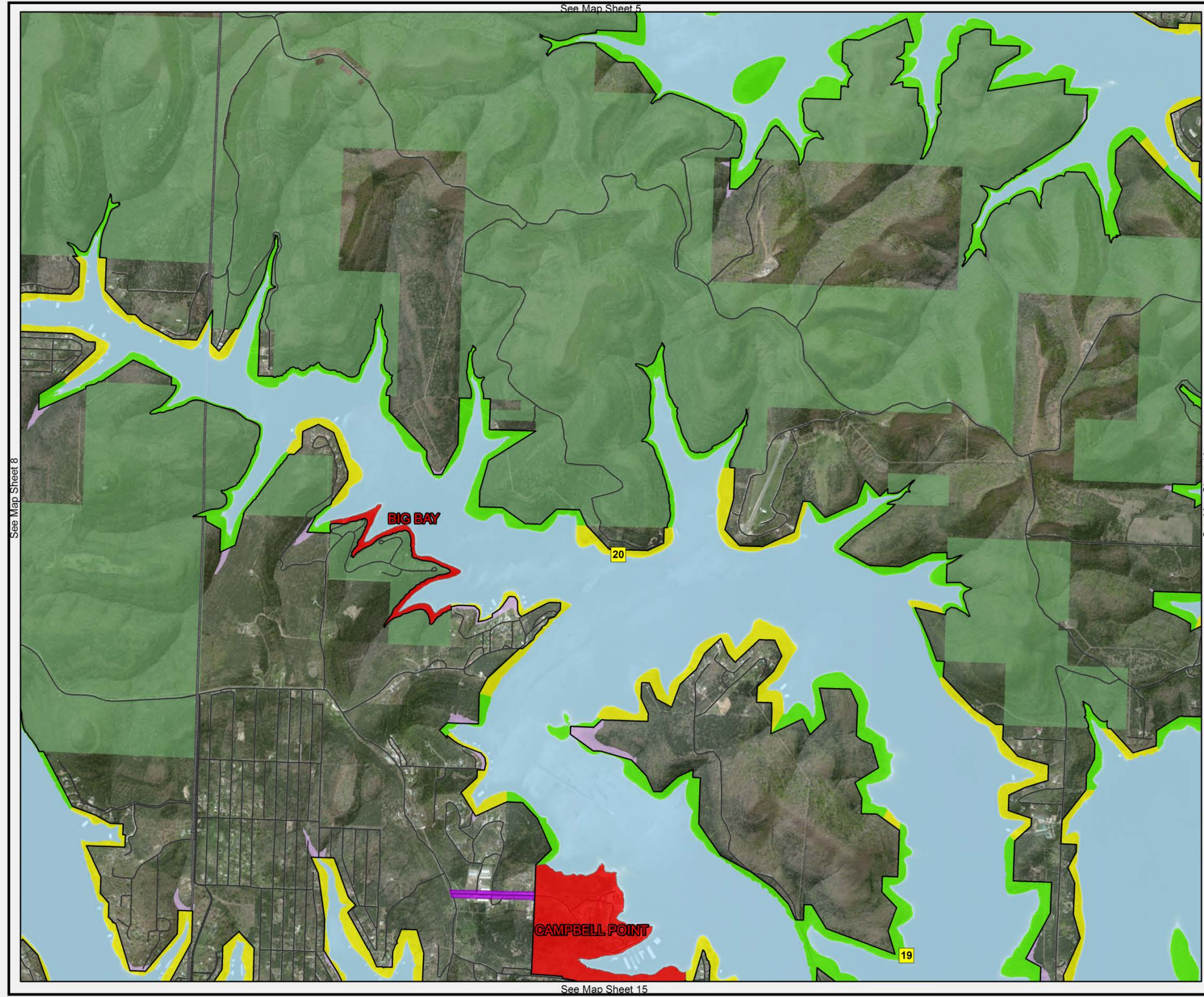


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





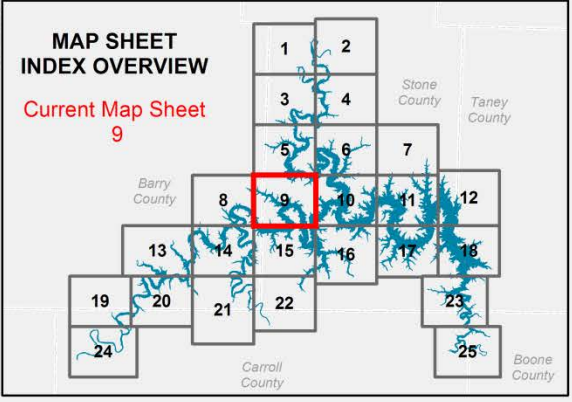
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

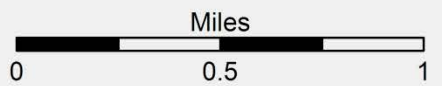
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

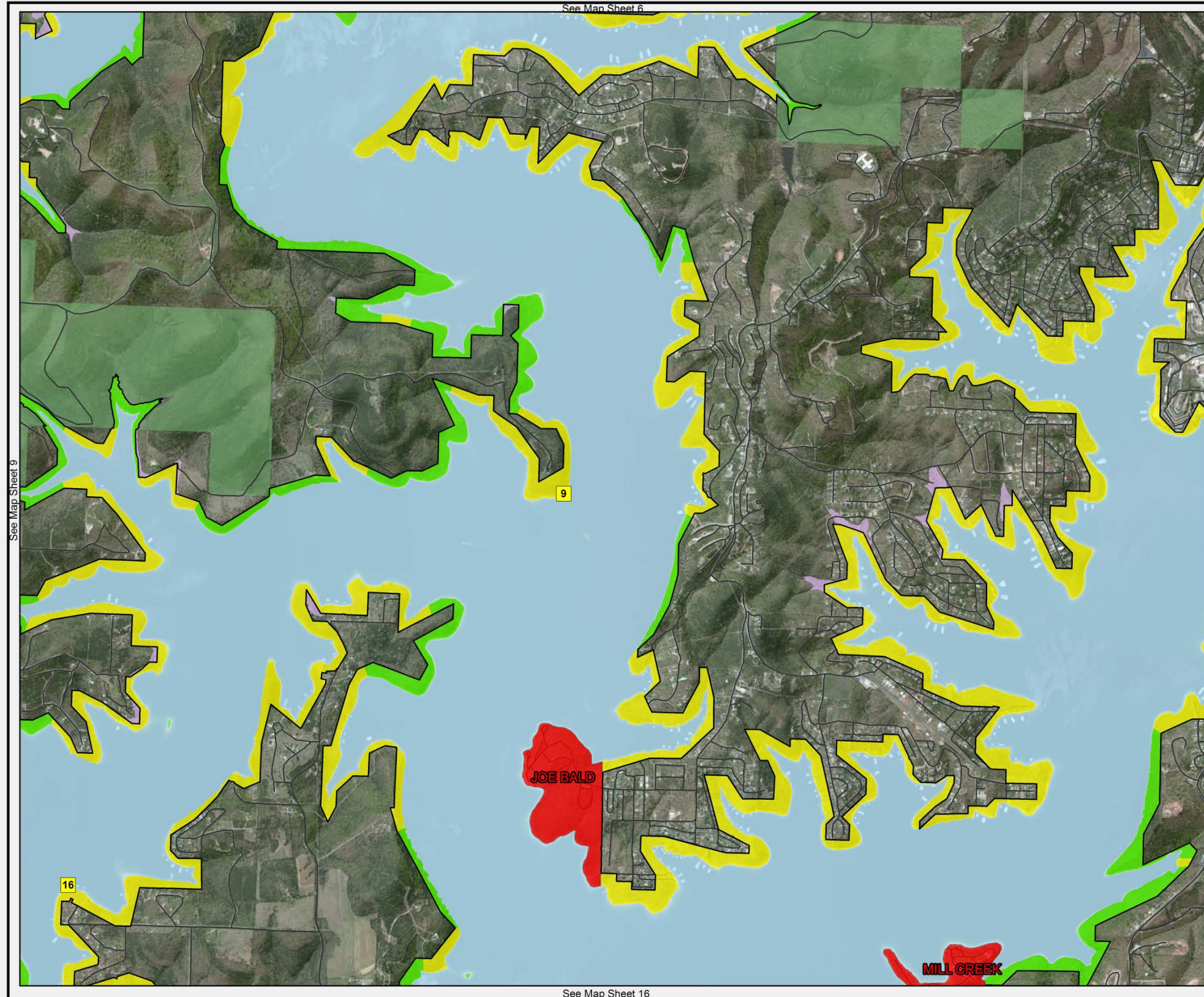


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

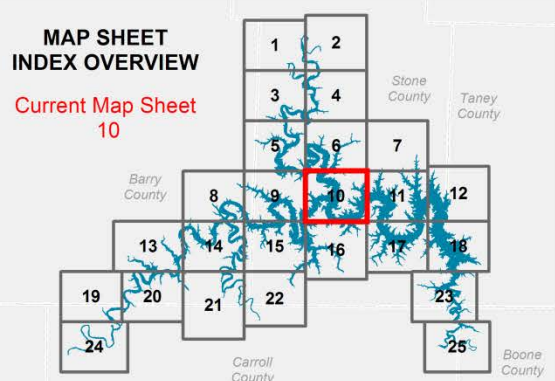




LAND CLASSIFICATIONS AND EASEMENTS

- LAND CLASSIFICATION**
- HIGH DENSITY RECREATION
 - LOW DENSITY RECREATION
 - ENVIRONMENTALLY SENSITIVE
 - WILDLIFE MANAGEMENT
 - PROJECT OPERATIONS
 - RESTRICTED
 - OPEN RECREATION

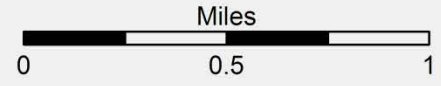
- Legend**
- Point Markers
 - Roads
 - ▭ Counties
 - USDA Forest Service
 - Operation Easement
 - Flowage Easement
 - ▭ USACE Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

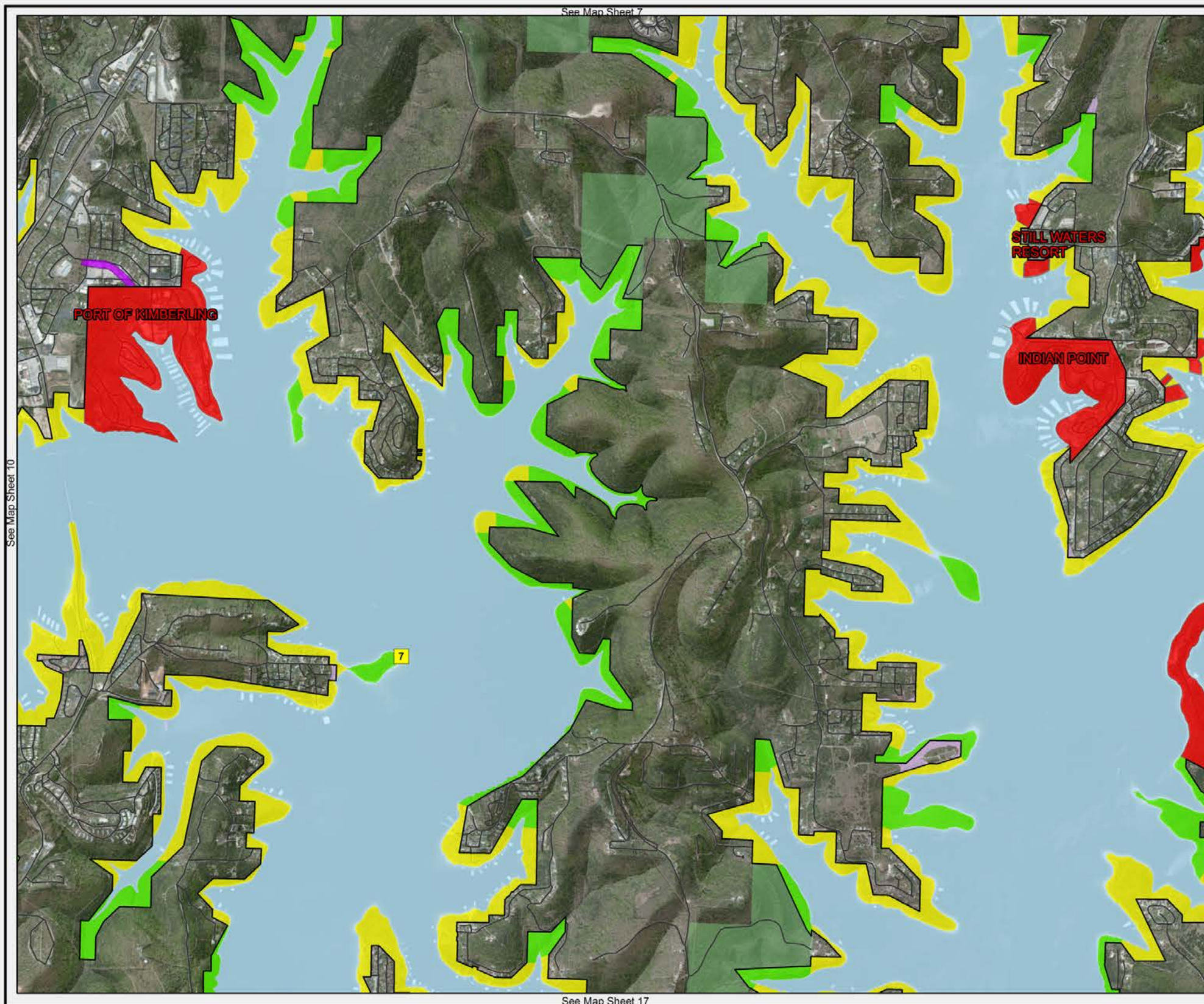
Date: February, 2014

Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake





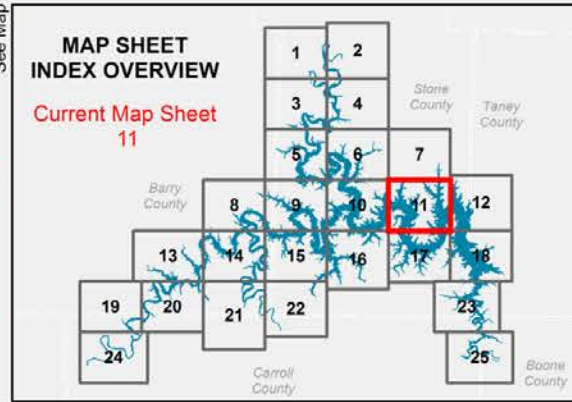
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

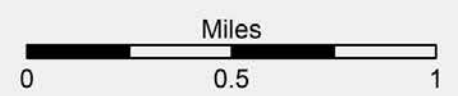
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

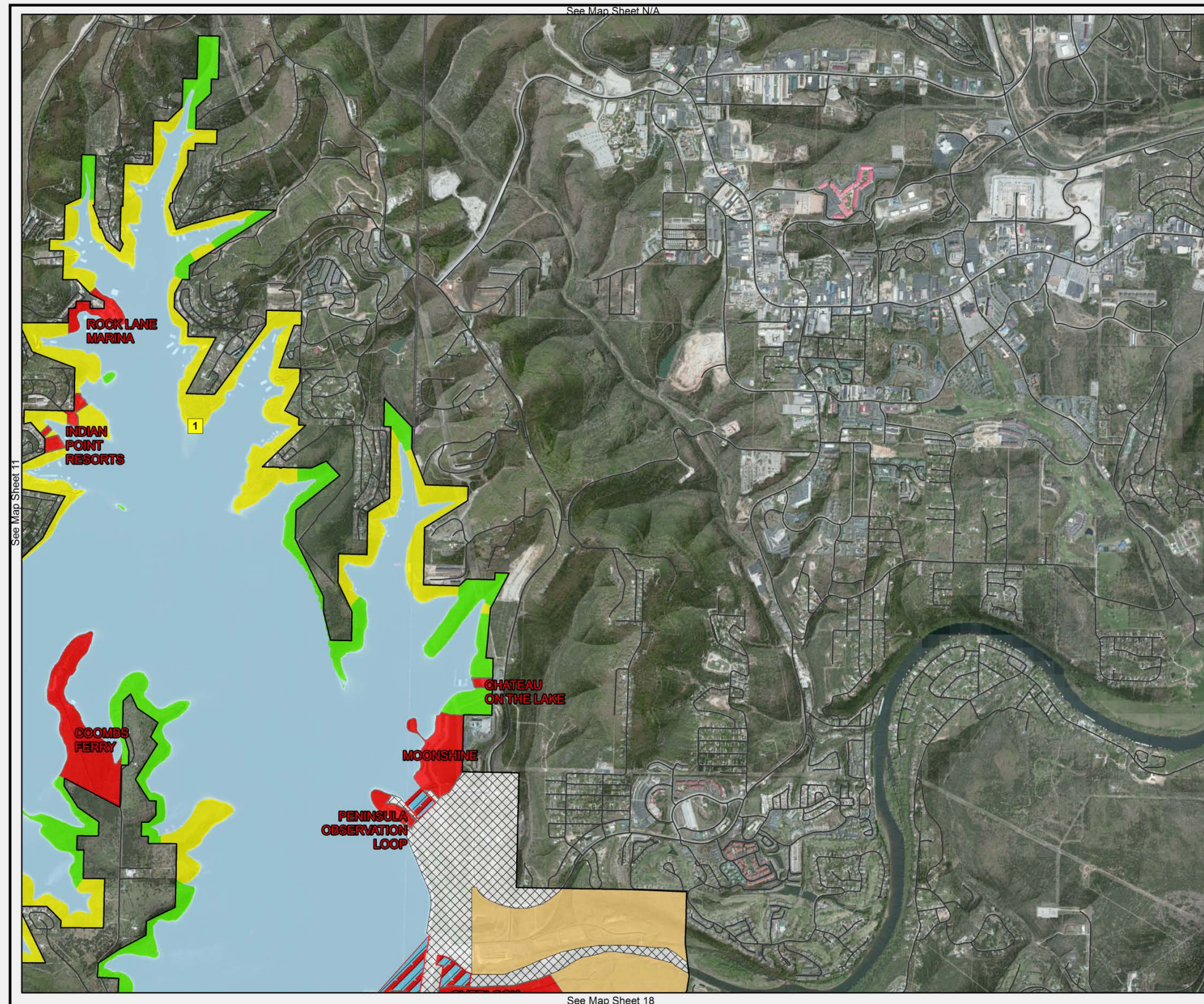


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





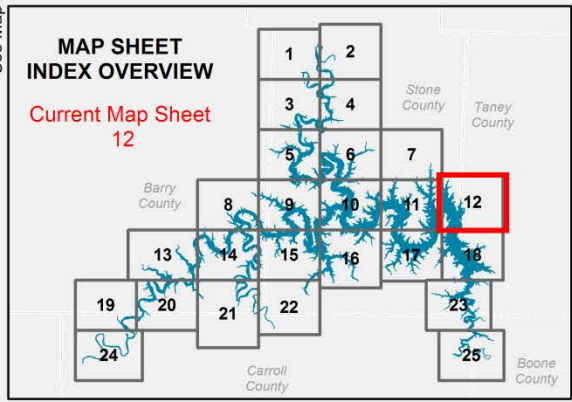
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

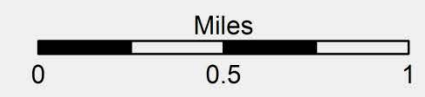
Legend

- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

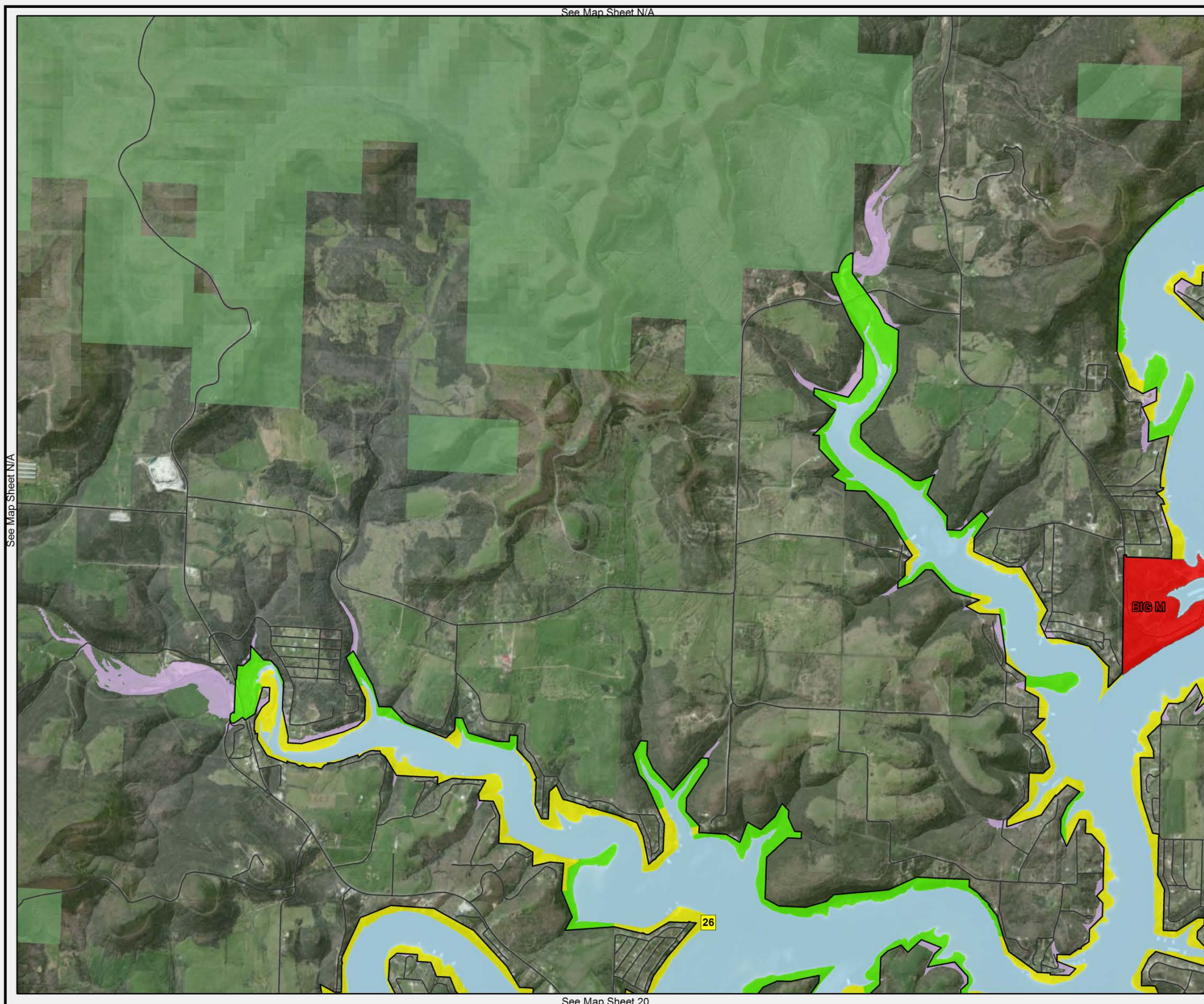


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014
Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake



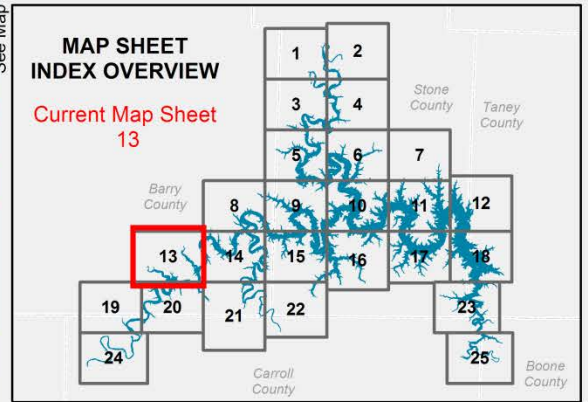
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

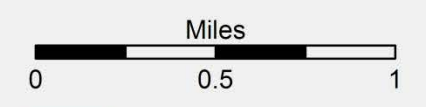
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary



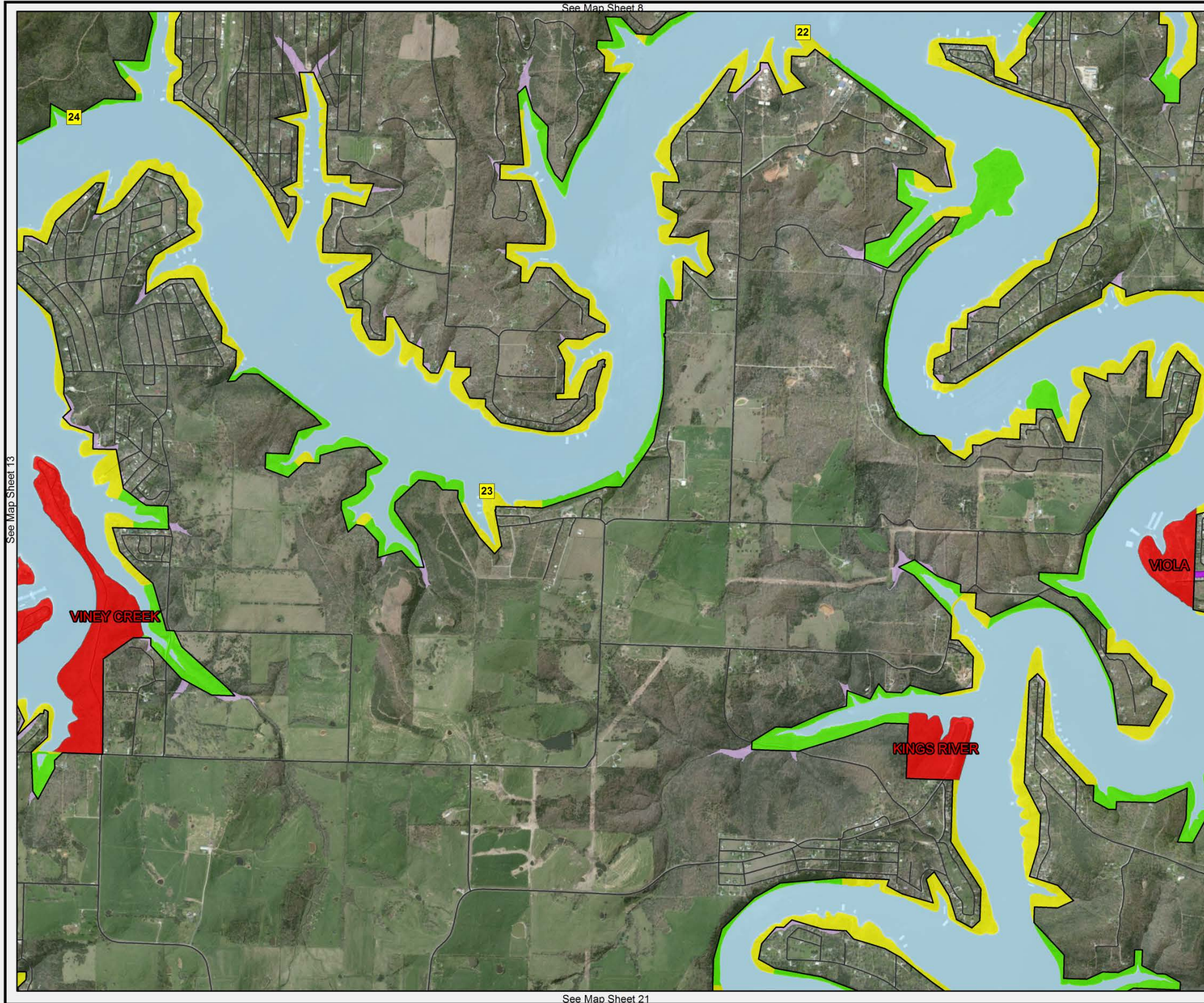
UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



US ARMY CORPS OF ENGINEERS
Little Rock District
Table Rock Lake



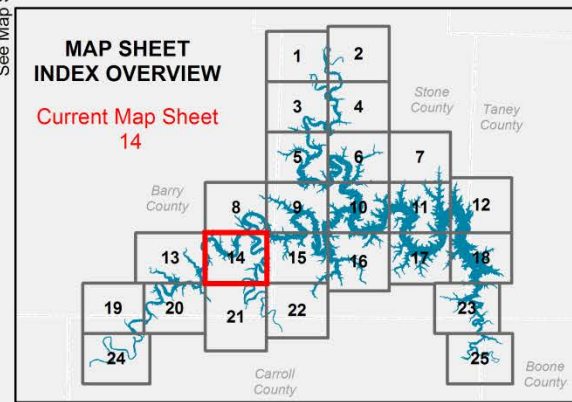
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

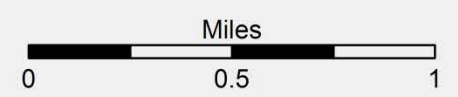
- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

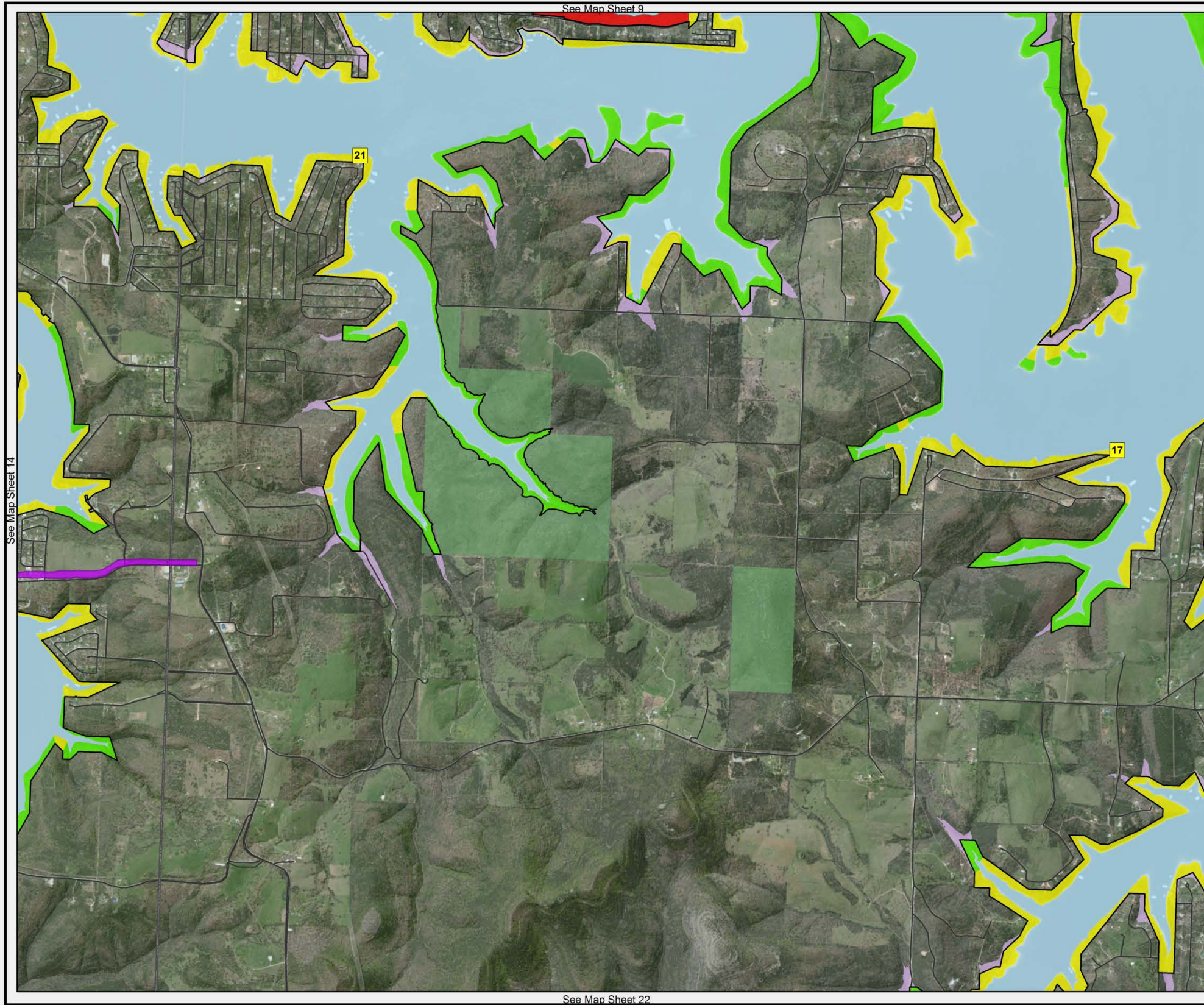


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





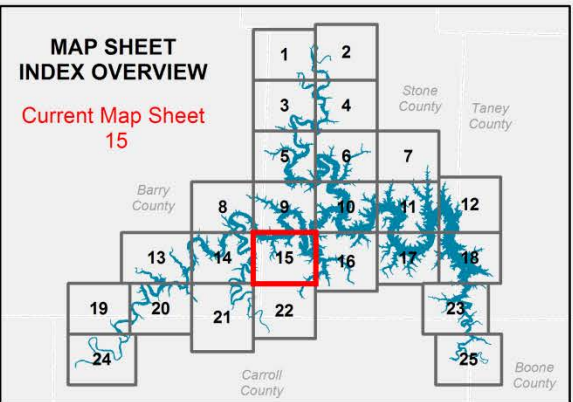
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

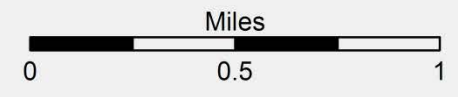
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

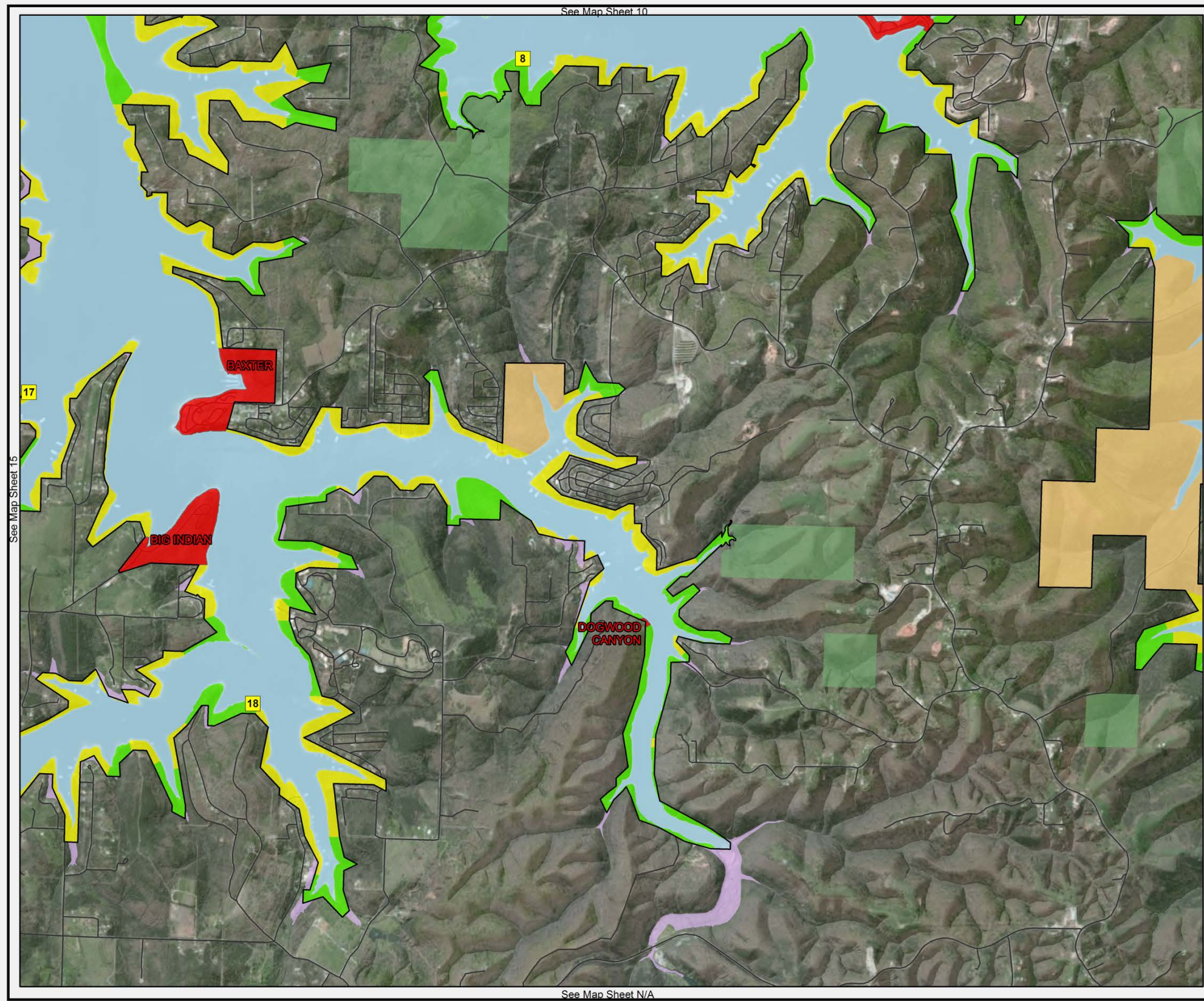


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





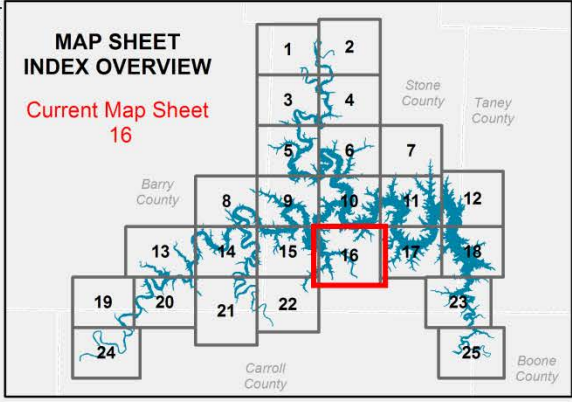
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

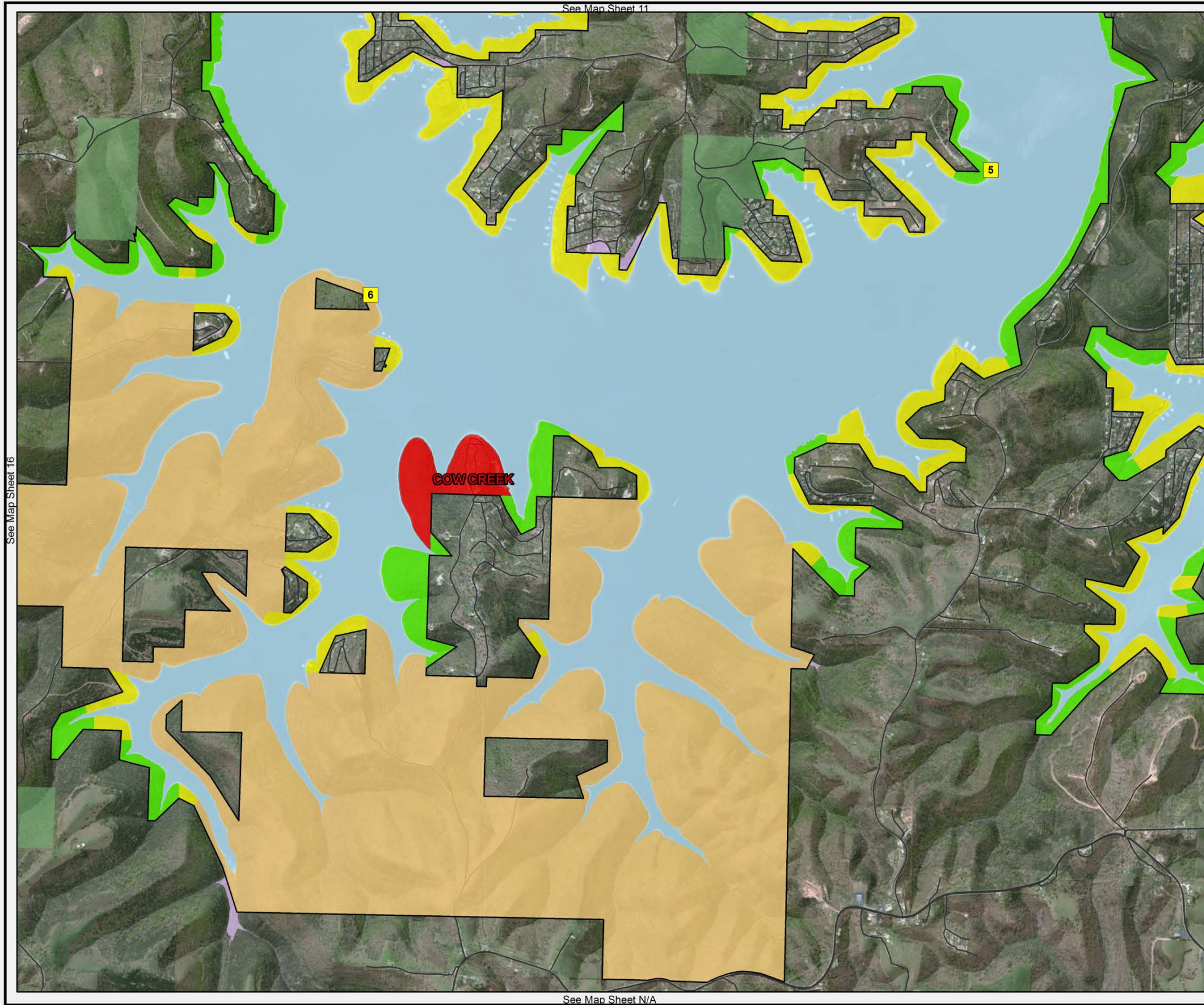


UPDATED MASTER PLAN TABLE ROCK LAKE

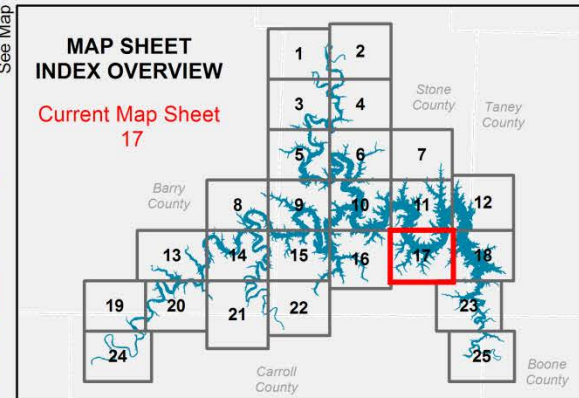
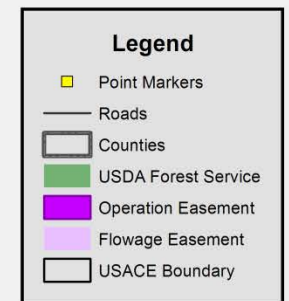
Date: February, 2014

Imagery Date: 2011





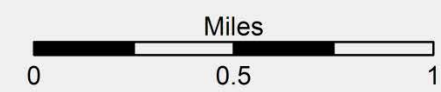
LAND CLASSIFICATIONS AND EASEMENTS

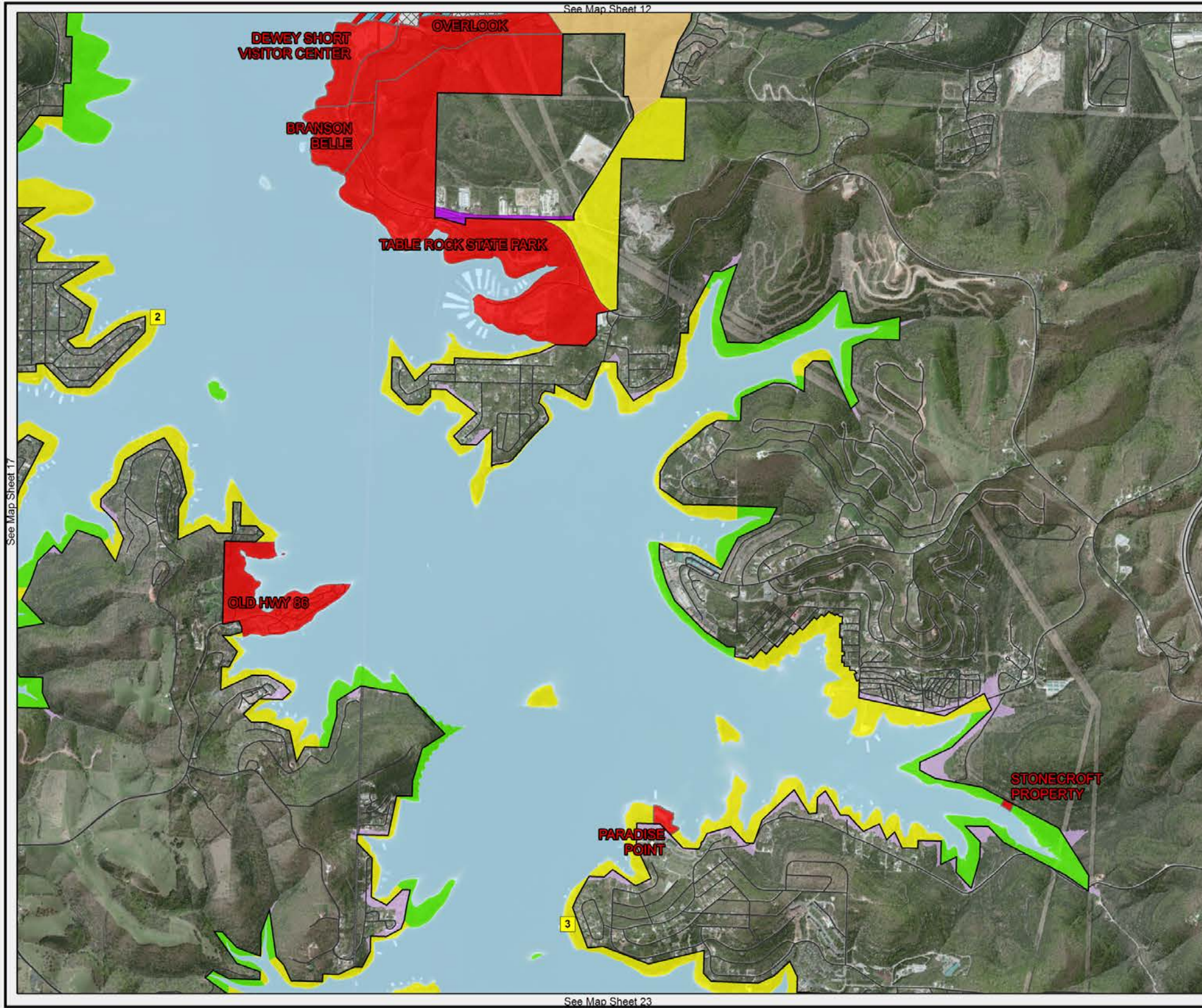


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





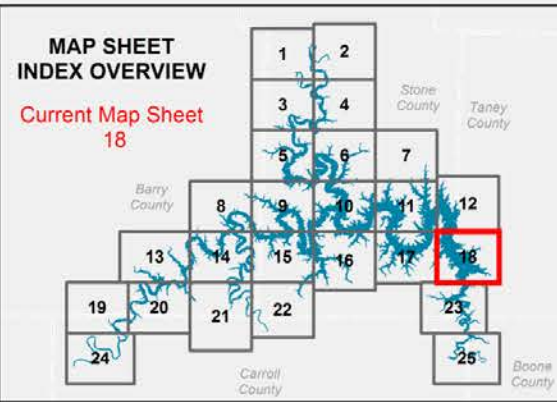
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





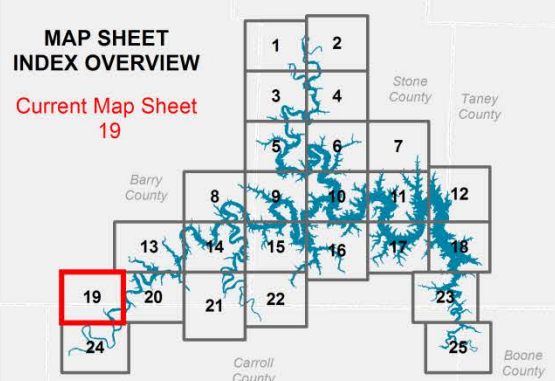
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

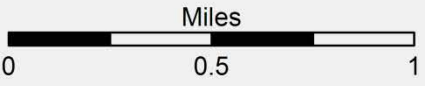
Legend

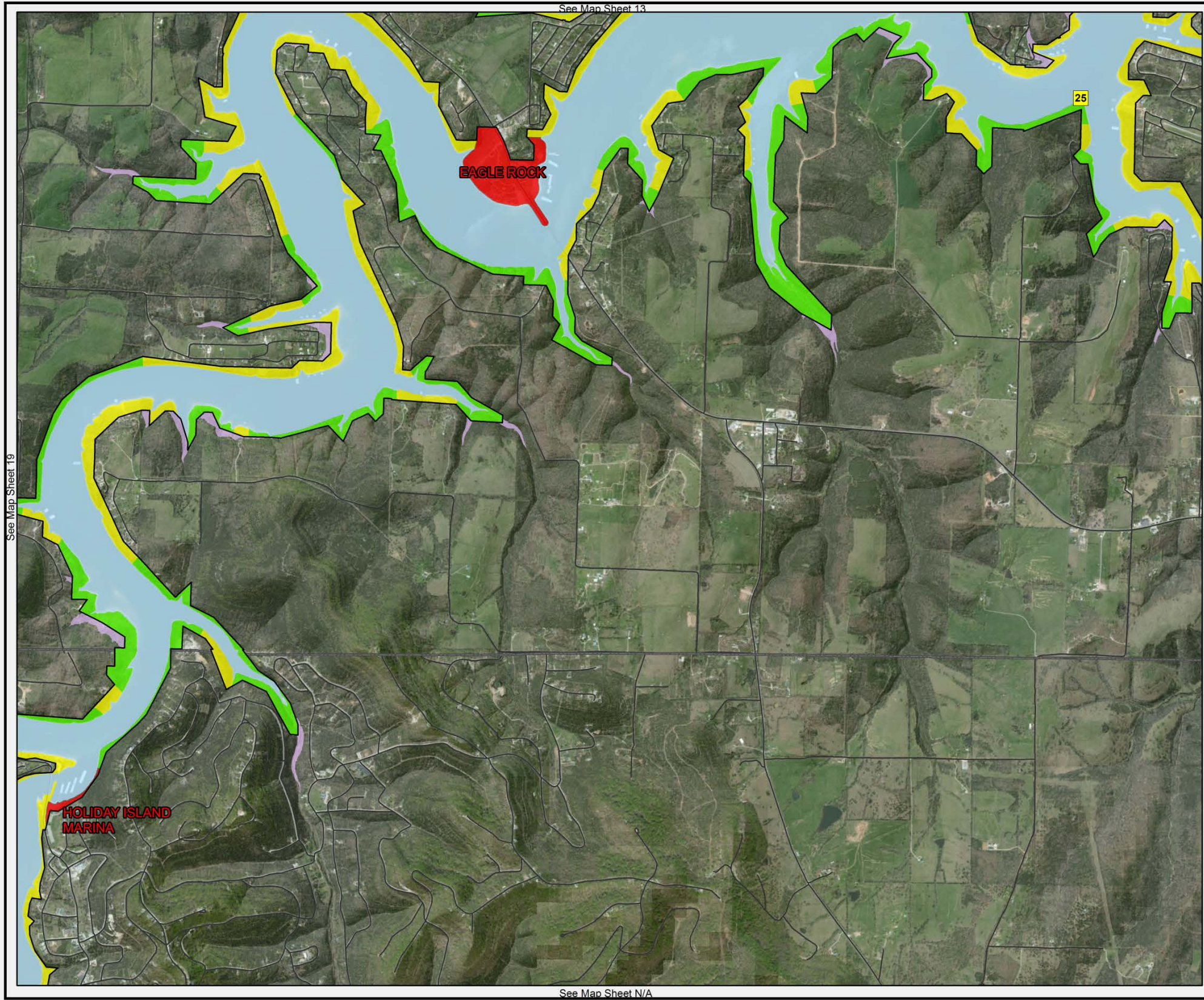
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014
Imagery Date: 2011





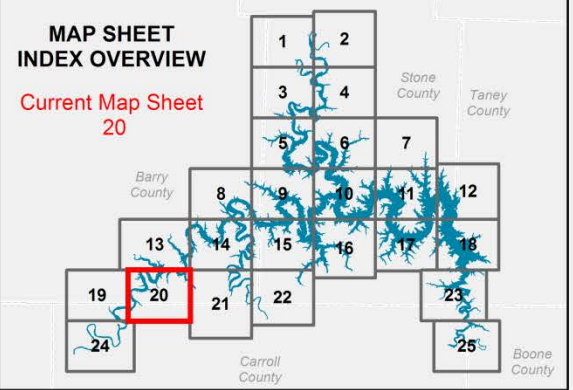
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

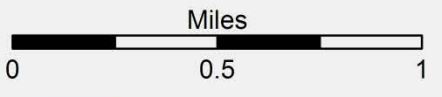
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

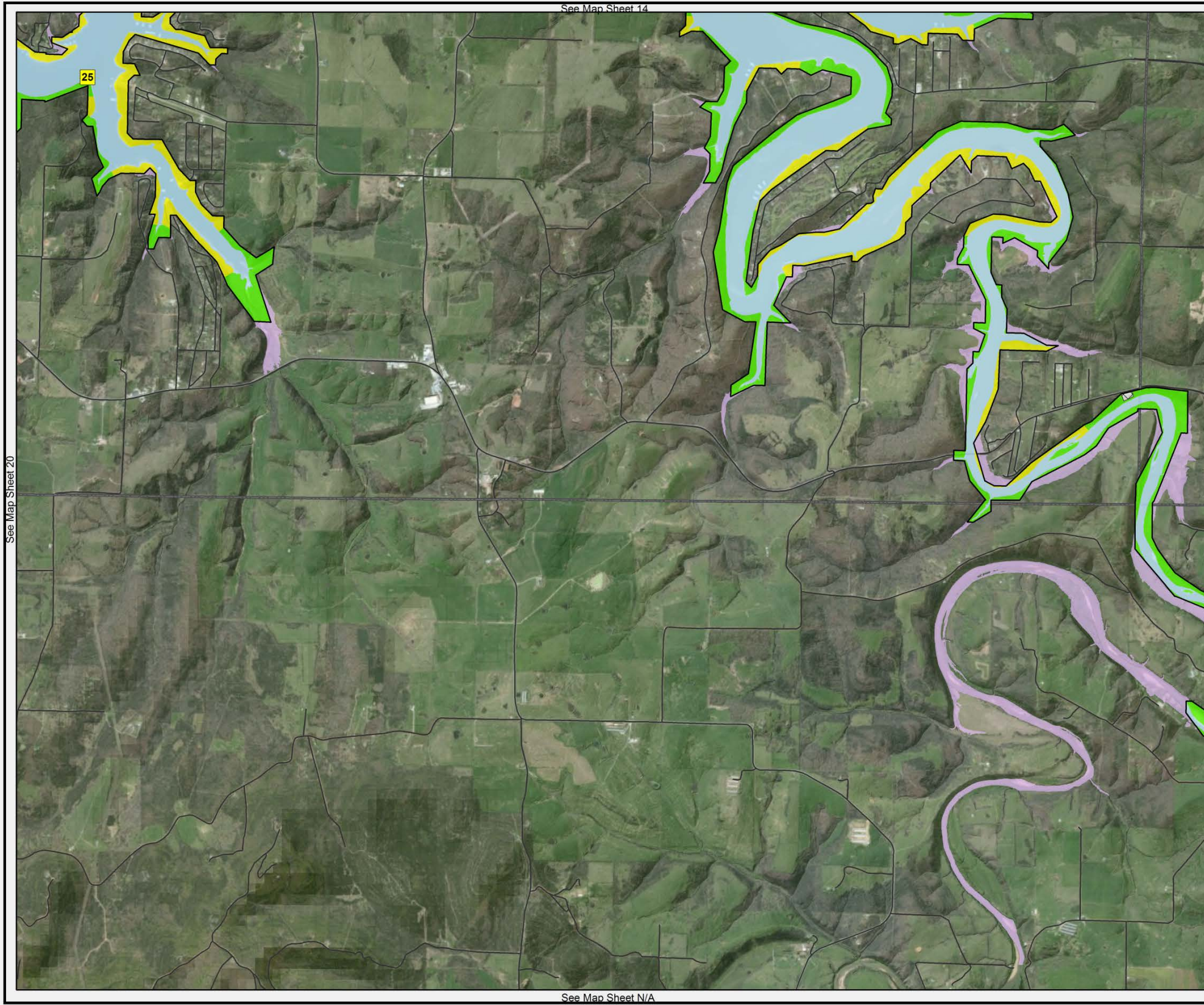


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

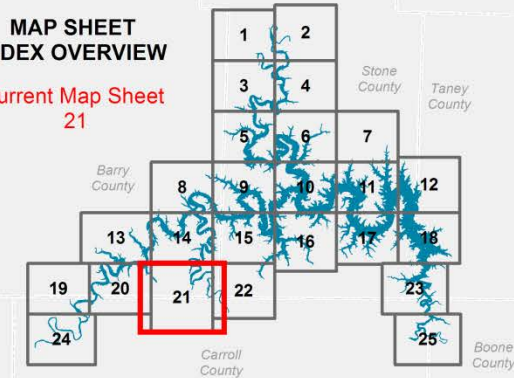
- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

MAP SHEET INDEX OVERVIEW

Current Map Sheet
21

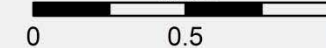


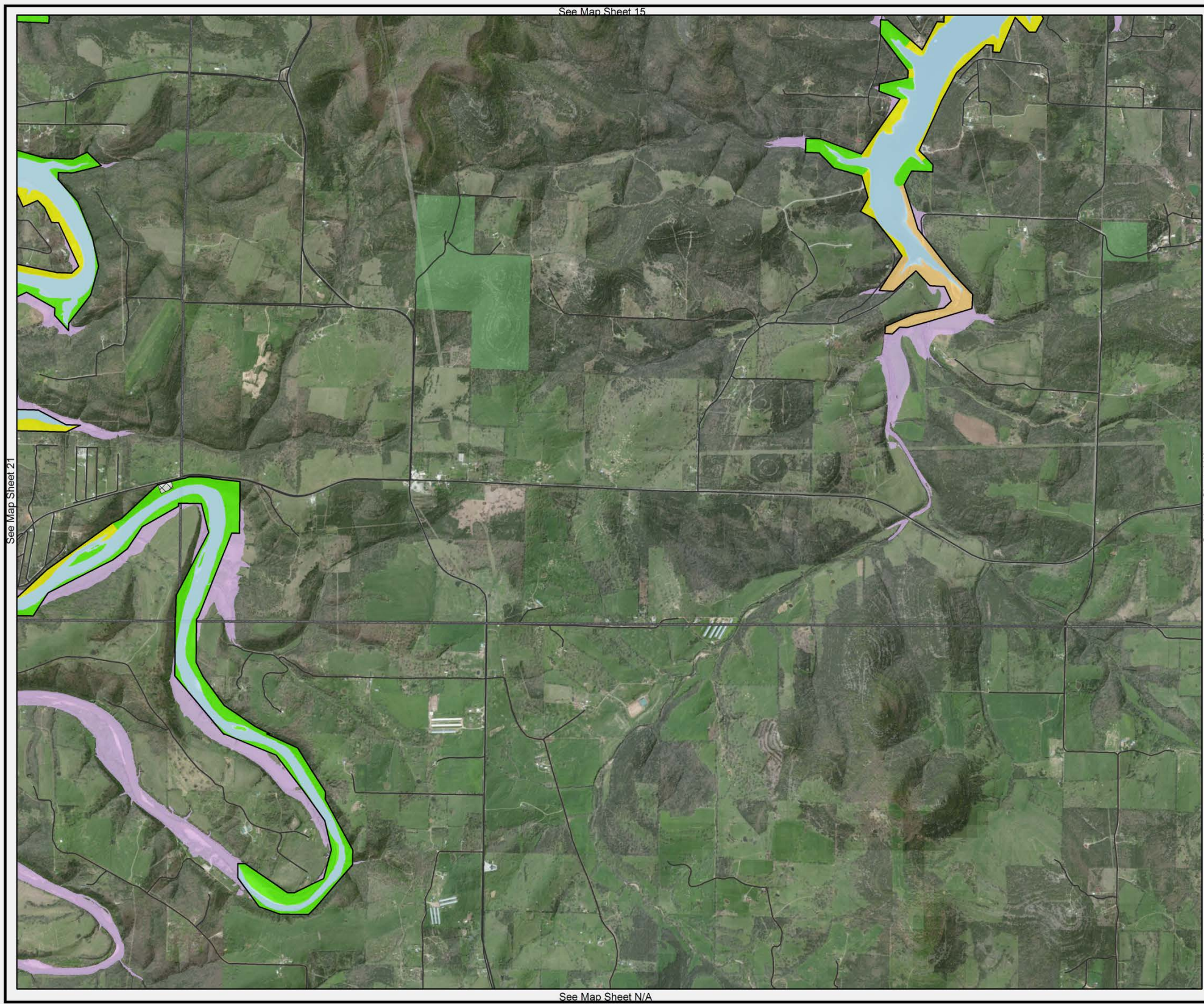
UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

Miles





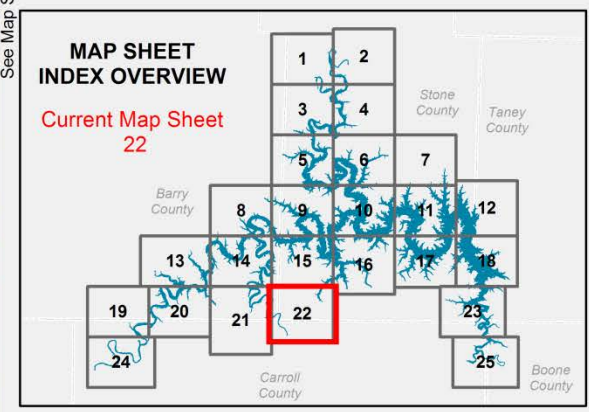
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

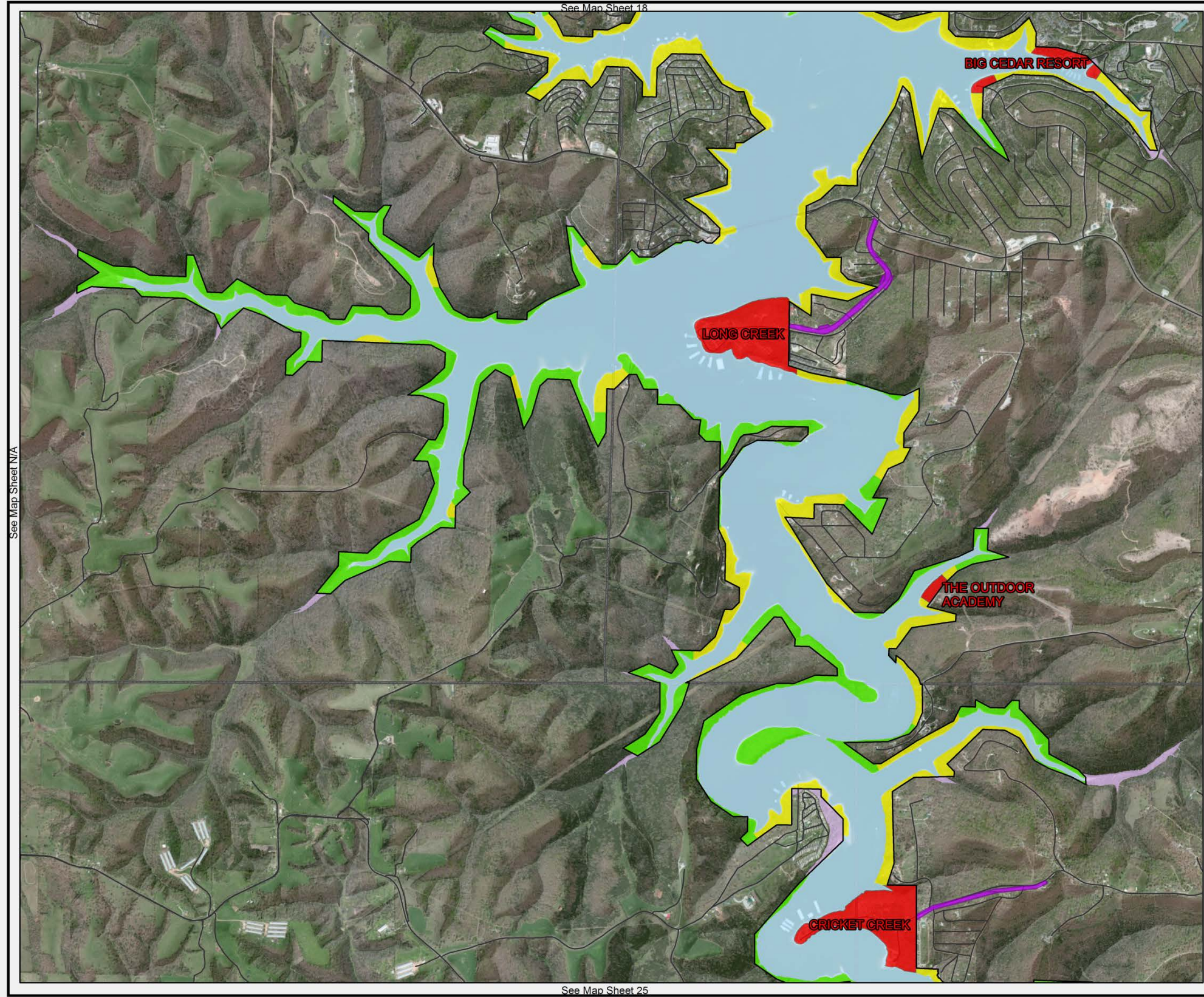


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





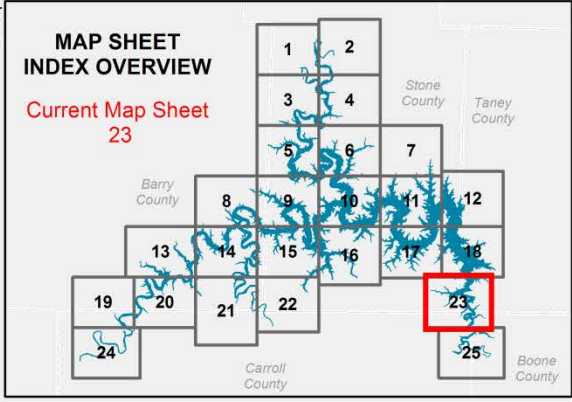
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary

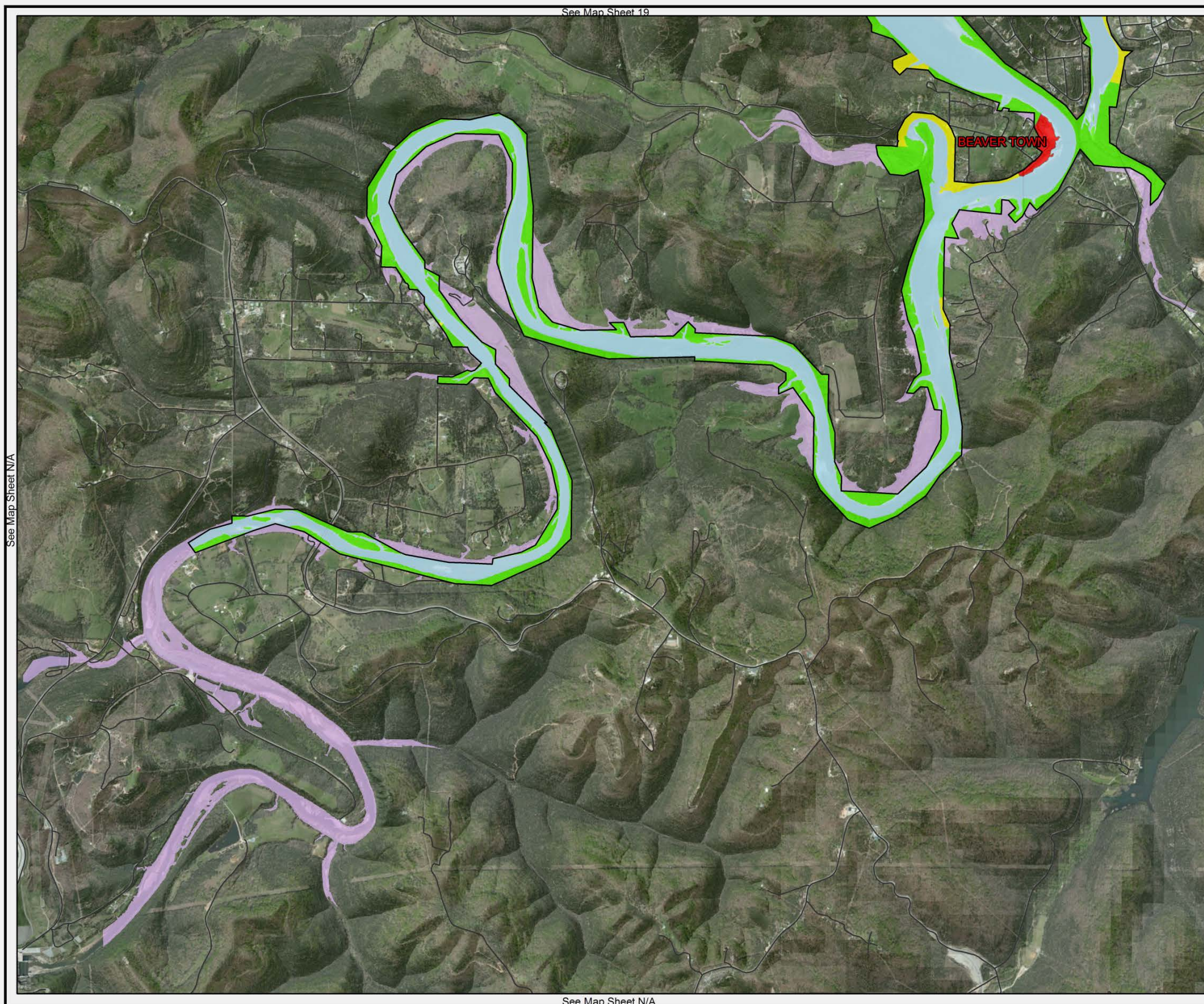


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





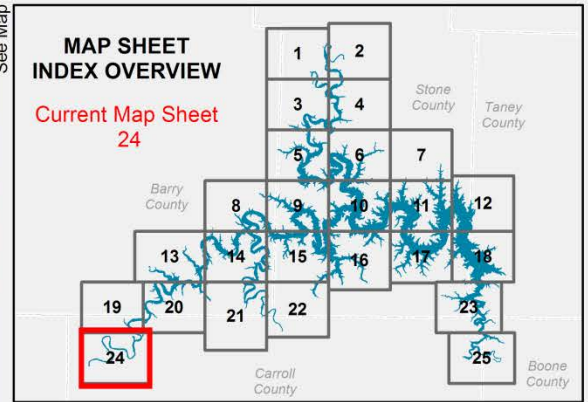
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

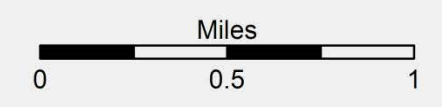
- Point Markers
- Roads
- ▭ Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- ▭ USACE Boundary

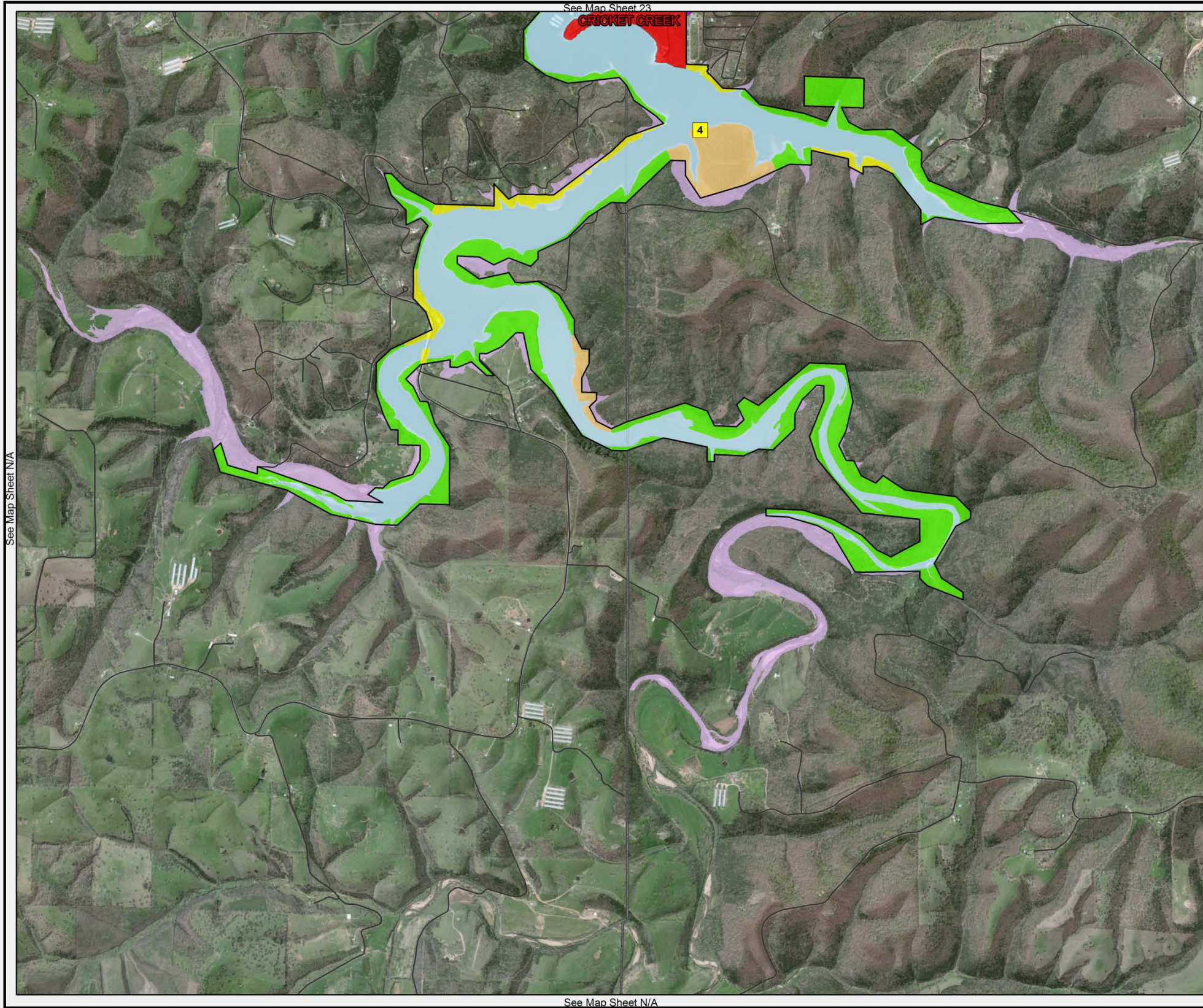


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011





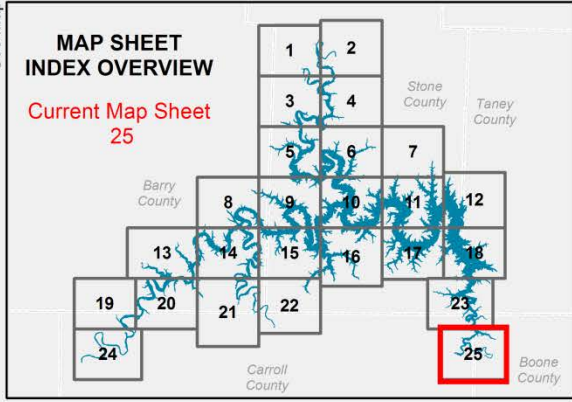
LAND CLASSIFICATIONS AND EASEMENTS

LAND CLASSIFICATION

- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- ENVIRONMENTALLY SENSITIVE
- WILDLIFE MANAGEMENT
- PROJECT OPERATIONS
- RESTRICTED
- OPEN RECREATION

Legend

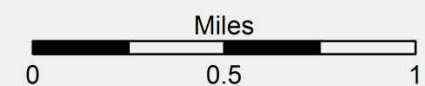
- Point Markers
- Roads
- Counties
- USDA Forest Service
- Operation Easement
- Flowage Easement
- USACE Boundary



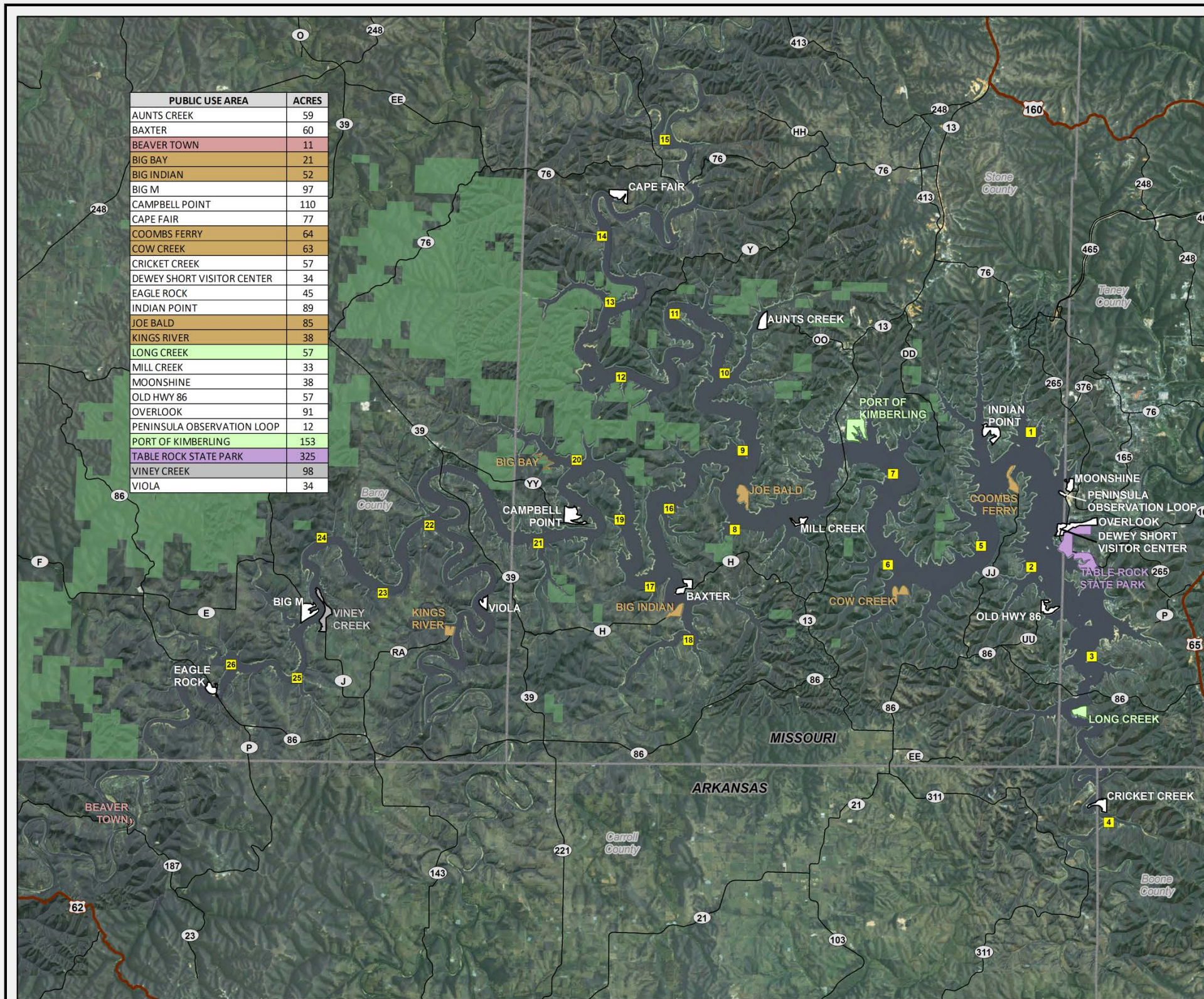
UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



Appendix B
Park Map Plates



RECREATION AREAS OVERVIEW

PUBLIC USE AREAS	
	Corps Operated
	Corps Temporary Closed
	State Operated
	City Operated
	Privately Operated
	Lake Access Only

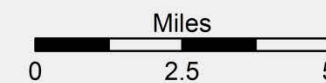
Legend	
	Point Markers
	State Highway
	US Highway
	Counties
	USDA Forest Service



UPDATED MASTER PLAN TABLE ROCK LAKE

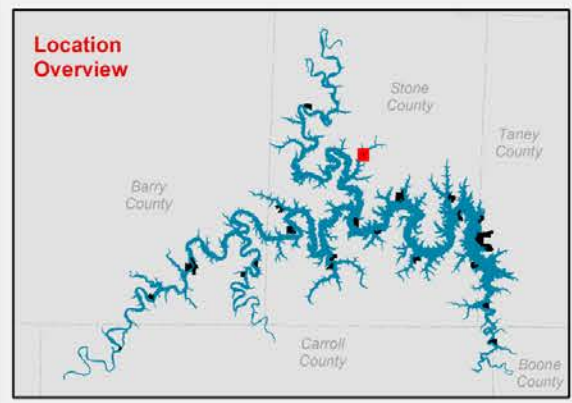
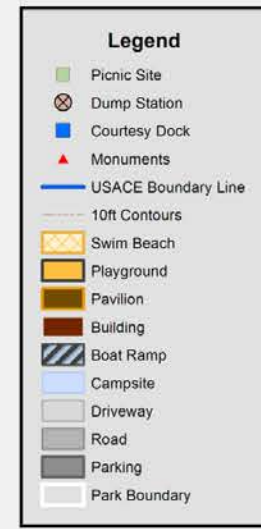
Date: February, 2014

Imagery Date: 2011





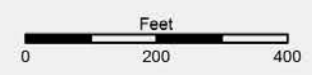
AUNTS CREEK

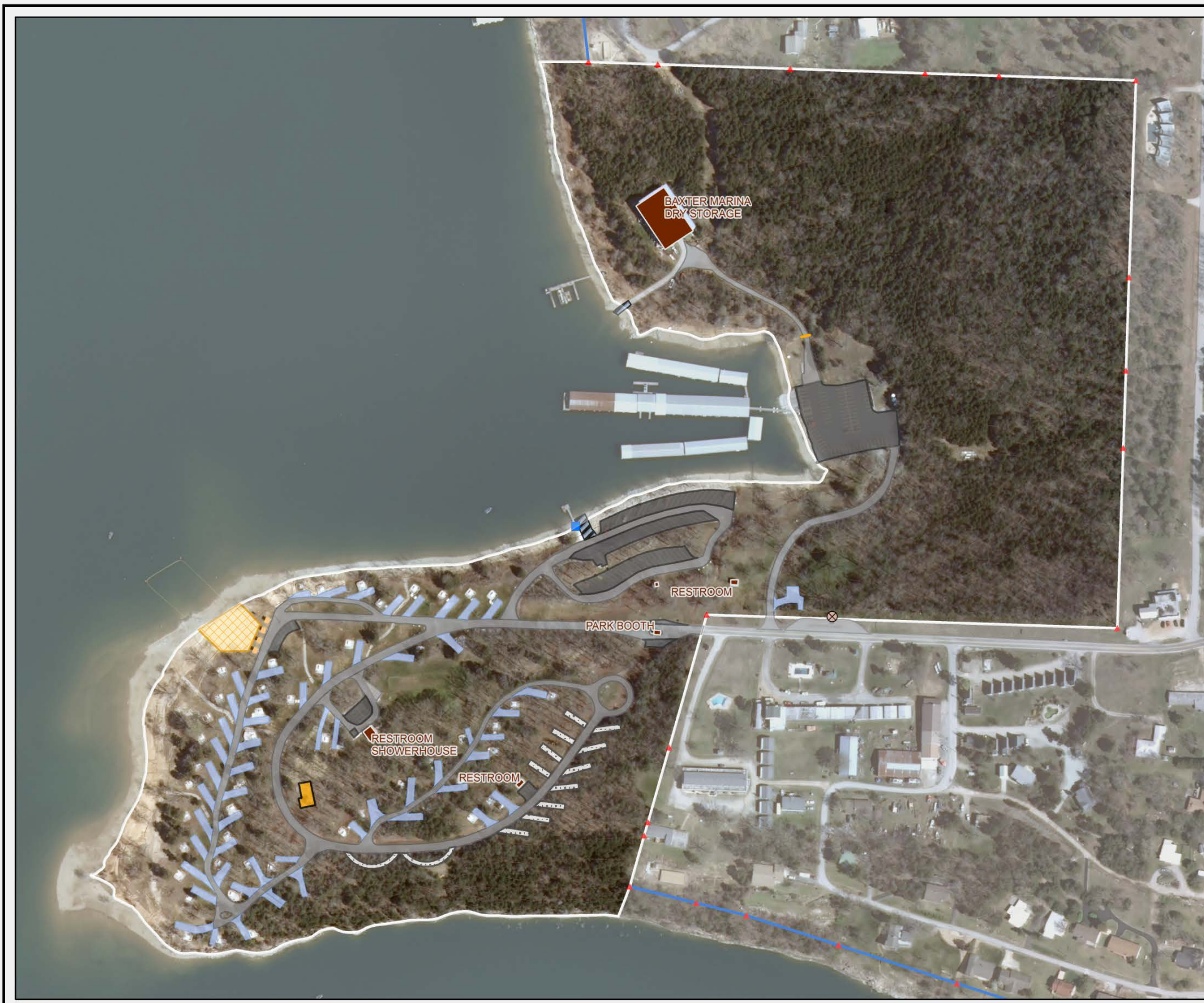


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

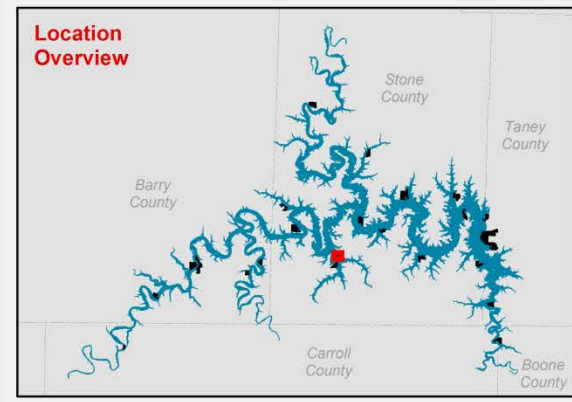
Imagery Date: 2011





BAXTER

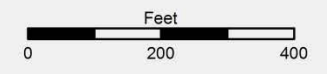
- Legend**
- Courtesy Dock
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - 10ft Contours
 - Gate
 - Swim Beach
 - Playground
 - Mini Shelter
 - Building
 - Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Campsite
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

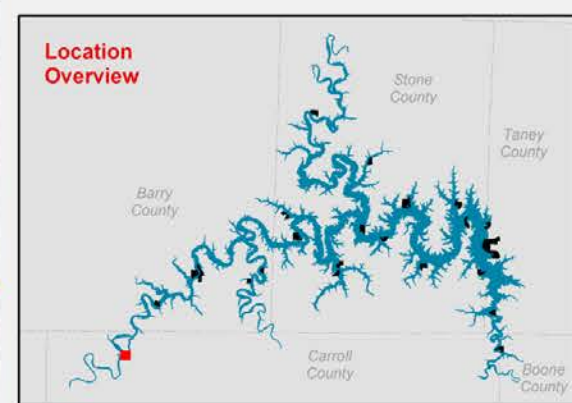
Imagery Date: 2011





BEAVER TOWN

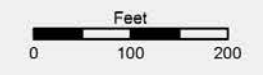
- Legend**
- Picnic Site
 - Campsite
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - - - Hiking Trail
 - Swim Beach
 - Playground
 - Pavilion
 - Building
 - Boat Ramp
 - Road
 - Parking
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

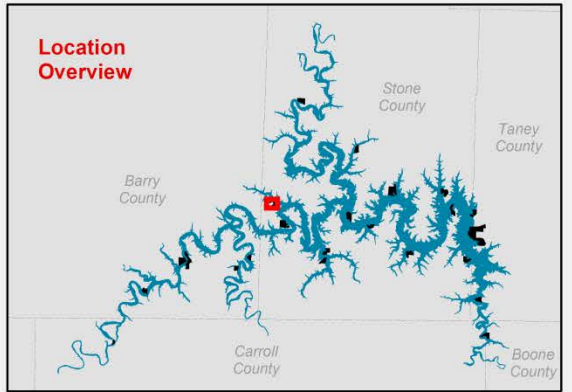




BIG BAY

Legend

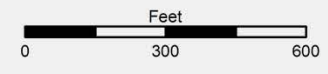
- ▲ Monuments
- USACE Boundary Line
- - - 20ft Contours
- Roads
- ▨ Boat Ramp
- Parking
- USDA Forest Service Land
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

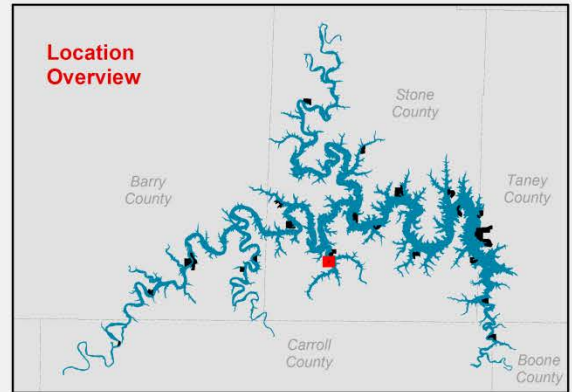




BIG INDIAN

Legend

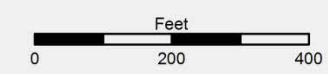
- Courtesy Dock
- ▲ Monuments
- USACE Boundary Line
- 10ft Contours
- Boat Ramp
- Driveway
- Road
- Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

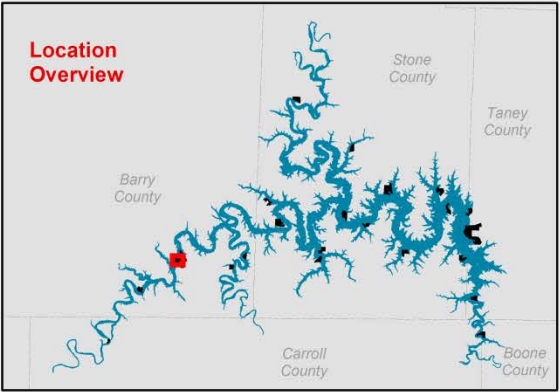
Imagery Date: 2011





BIG M

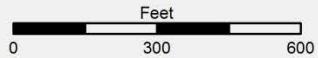
- Legend**
- Picnic Site
 - Courtesy Dock
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - Gate
 - 10ft Contours
 - ▭ VolleyBall Court
 - ▭ Swim Beach
 - ▭ Playground
 - ▭ Mini Shelter
 - ▭ Building
 - ▭ Boat Ramp
 - ▭ Campsite
 - ▭ Driveway
 - ▭ Road
 - ▭ Parking
 - ▭ Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

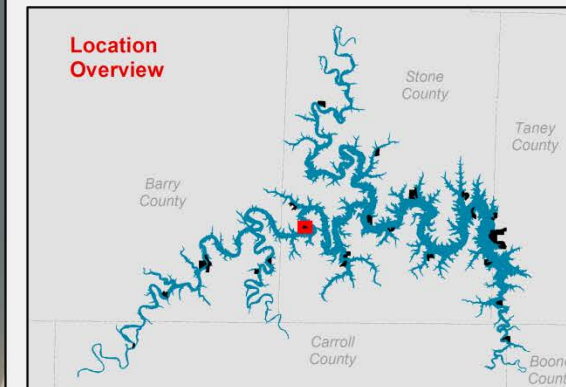
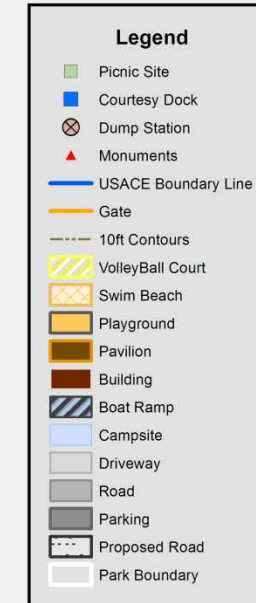
Date: February, 2014

Imagery Date: 2011





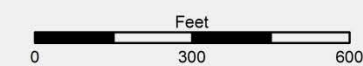
CAMPBELL POINT



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

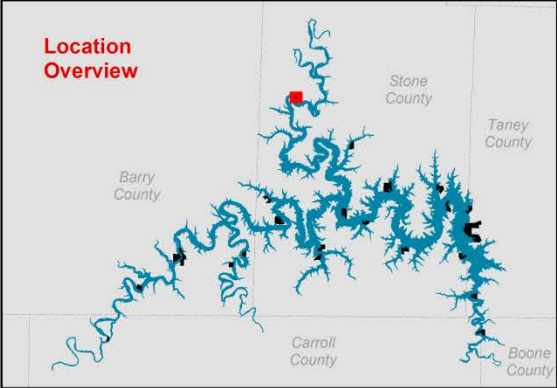




CAPE FAIR

Legend

- Picnic Site
- Courtesy Dock
- ⊗ Dump Station
- ▲ Monuments
- USACE Boundary Line
- 10ft Contours
- Swim Beach
- Playground
- Pavilion
- Building
- Boat Ramp
- Campsite
- Driveway
- Road
- Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

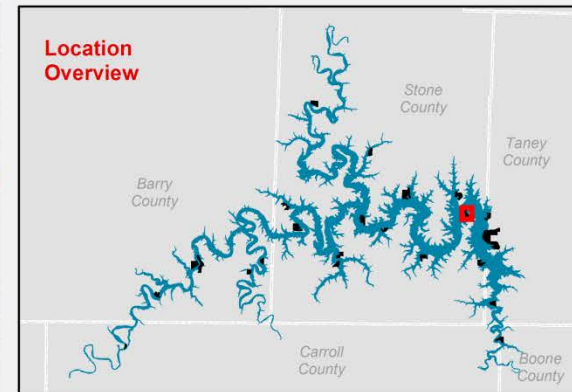




COOMBS FERRY

Legend

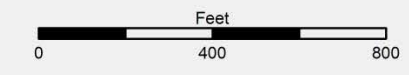
- ▲ Monuments
- USACE Boundary Line
- Gate
- - - 10ft Contours
- ▨ Boat Ramp
- Driveway
- Road
- Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



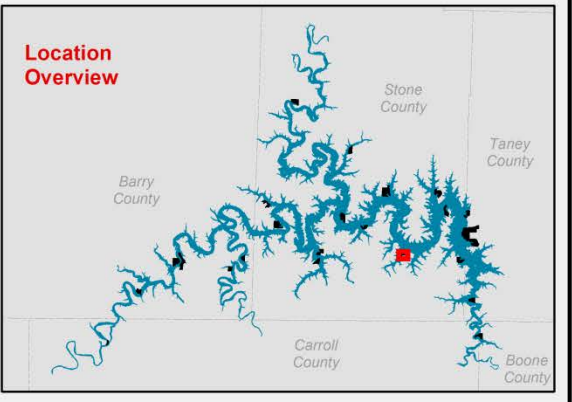
US ARMY CORPS
OF ENGINEERS
Little Rock District
Table Rock Lake



COW CREEK

Legend

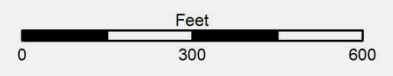
- ▲ Monuments
- USACE Boundary Line
- Gate
- 10ft Contours
- Pavilion
- Building
- ▨ Boat Ramp
- Driveway
- Road
- Parking
- ☼ Proposed Cub Scout Fire Ring
- ⊙ Proposed Amphitheater
- Proposed Trail
- ▭ Proposed Fishing Dock
- ▭ Proposed Storage
- ▭ Proposed Restroom
- ▭ Proposed Cabin
- ▭ Proposed Campsite
- ▭ Proposed Road
- ▭ Proposed Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

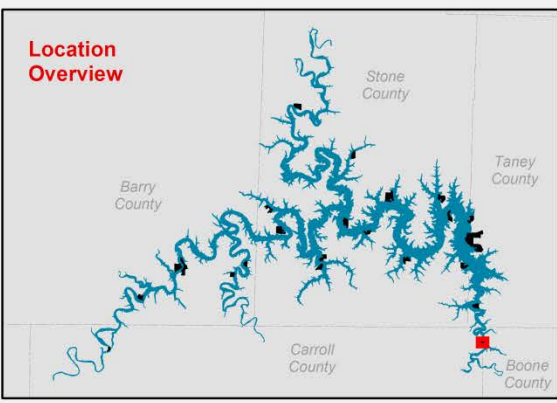


US ARMY CORPS
OF ENGINEERS
Little Rock District
Table Rock Lake



CRICKET CREEK

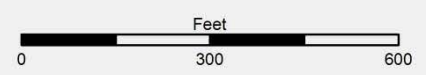
- Legend**
- Picnic Site
 - Courtesy Dock
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - 10ft Contours
 - ▨ Swim Beach
 - Playground
 - Building
 - ▨ Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - ▨ Proposed Campsite
 - ▭ Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



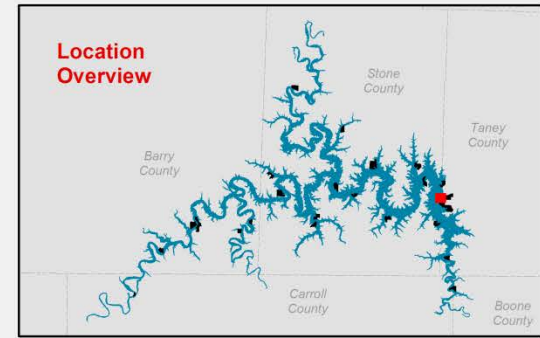
**US ARMY CORPS
OF ENGINEERS**
Little Rock District
Table Rock Lake





DEWEY SHORT VISITOR CENTER AND PROJECT OFFICE

- Legend**
- Courtesy Dock
 - Bench
 - Bike Rack
 - Trail Head
 - Lakeshore Trail
 - 10ft Contours
 - Gate
 - Mini Shelter
 - Bridge
 - Building
 - Stairs
 - Pedestrian Pathway
 - Driveway
 - Road
 - Parking
 - Volunteer Campsite
 - Proposed Wildlife Observation
 - Proposed Outdoor Classroom
 - Proposed Pedestrian Crossway
 - Proposed Pedestrian Pathway
 - Proposed Fishing Dock
 - Proposed Observation Platform
 - Proposed Eco Playground
 - Proposed Pavilion
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

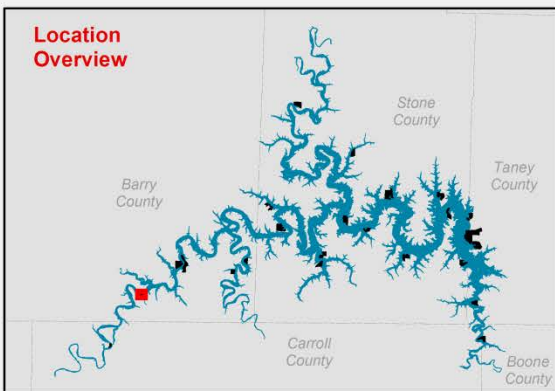
Date: February, 2014
Imagery Date: 2011





EAGLE ROCK

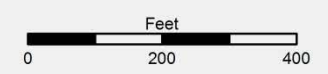
- Legend**
- Picnic Site
 - Courtesy Dock
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - 10ft Contours
 - Cemetery
 - VolleyBall Court
 - Swim Beach
 - Playground
 - Building
 - Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Pavilion
 - Proposed Site Relocation
 - Proposed Road
 - Proposed Campsite
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

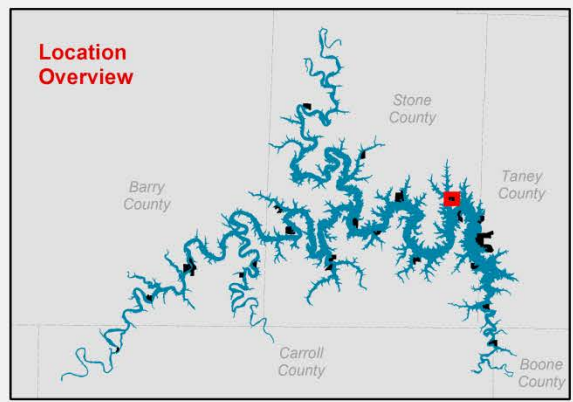
Imagery Date: 2011





INDIAN POINT

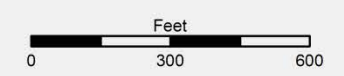
- Legend**
- Courtesy Dock
 - Picnic Site
 - ⊗ Dump Station
 - ⊙ Group Camp Area
 - ▲ Monuments
 - USACE Boundary Line
 - Gate
 - - - 10ft Contours
 - Swim Beach
 - Playground
 - Pavilion
 - Building
 - Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Road
 - Proposed Campsite
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

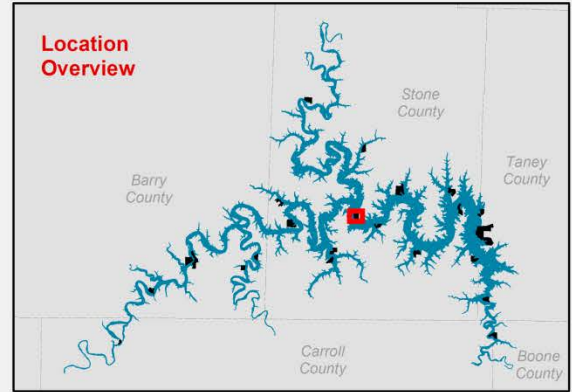




JOE BALD

Legend

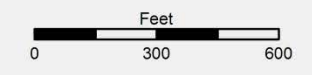
- ▲ Monuments
- USACE Boundary Line
- Gate
- - - 10ft Contours
- ▨ Boat Ramp
- Campsite
- Driveway
- Road
- Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



**US ARMY CORPS
OF ENGINEERS**
Little Rock District
Table Rock Lake

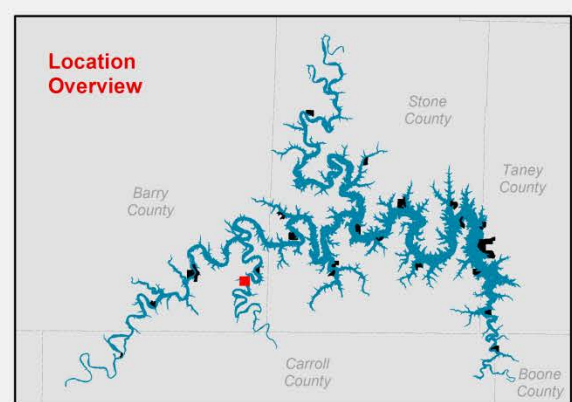




KINGS RIVER

Legend

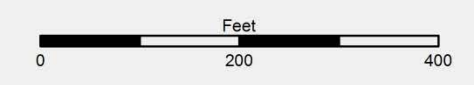
- ▲ Monuments
- USACE Boundary Line
- - - 10ft Contours
- Building
- ▨ Boat Ramp
- Driveway
- Road
- Parking
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



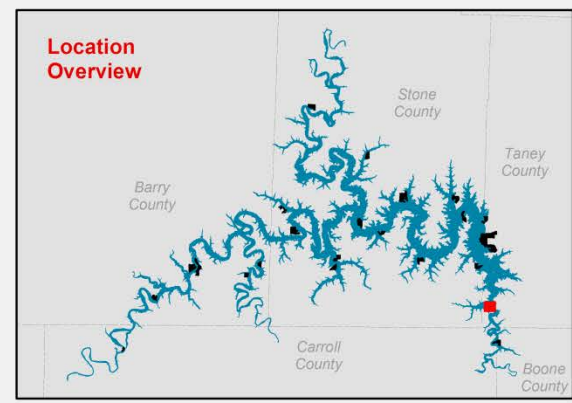
**US ARMY CORPS
OF ENGINEERS**
Little Rock District
Table Rock Lake





LONG CREEK

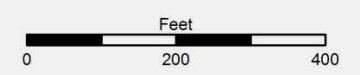
- Legend**
- Courtesy Dock
 - Picnic Site
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - - - 10ft Contours
 - Swim Beach
 - Playground
 - Pavilion
 - Building
 - Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

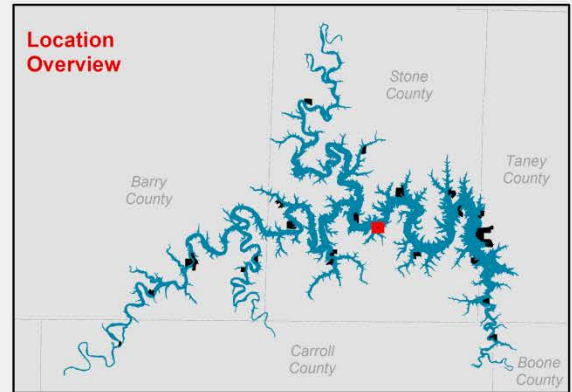
Imagery Date: 2011





MILL CREEK

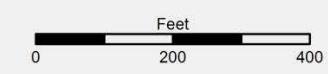
- Legend**
- Courtesy Dock
 - Basketball Goal
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - 10ft Contours
 - ▨ VolleyBall Court
 - ▨ Swim Beach
 - ▨ Playground
 - ▨ Mini Shelter
 - ▨ Pavilion
 - ▨ Building
 - ▨ Boat Ramp
 - ▨ Campsite
 - ▨ Driveway
 - ▨ Road
 - ▨ Parking
 - ▨ Proposed Fish Weigh In Station
 - ▨ Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

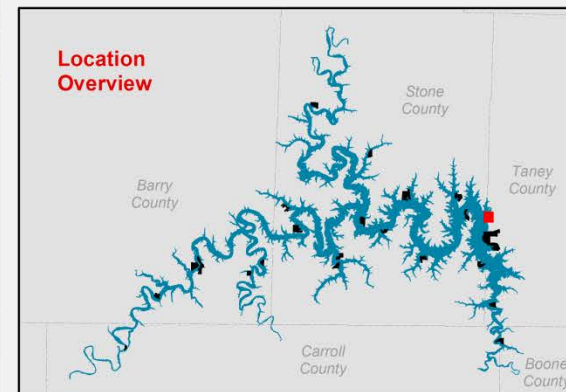
Imagery Date: 2011





MOONSHINE BEACH

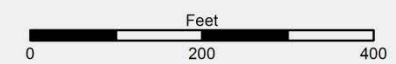
- Legend**
- Courtesy Dock
 - ▲ Monuments
 - USACE Boundary Line
 - Gate
 - 10ft Contours
 - Swim Beach
 - Playground
 - Mini Shelter
 - Pavilion
 - Building
 - Boat Ramp
 - Road
 - Parking
 - Attendant Campsite
 - Proposed Pavilion
 - Proposed Road
 - Proposed Parking
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

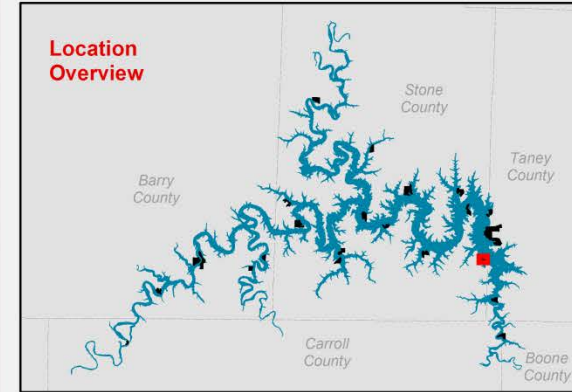
Imagery Date: 2011





OLD HIGHWAY 86

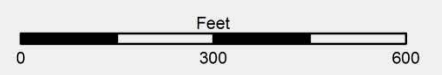
- Legend**
- Picnic Site
 - Basketball Goal
 - Courtesy Dock
 - ⊗ Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - 10ft Contours
 - ▨ VolleyBall Court
 - ▨ Swim Beach
 - Playground
 - Building
 - Mini Shelter
 - Pavilion
 - ▨ Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Campsite
 - Proposed Road
 - Proposed Parking
 - Proposed Restroom-Showerhouse
 - Park Boundary

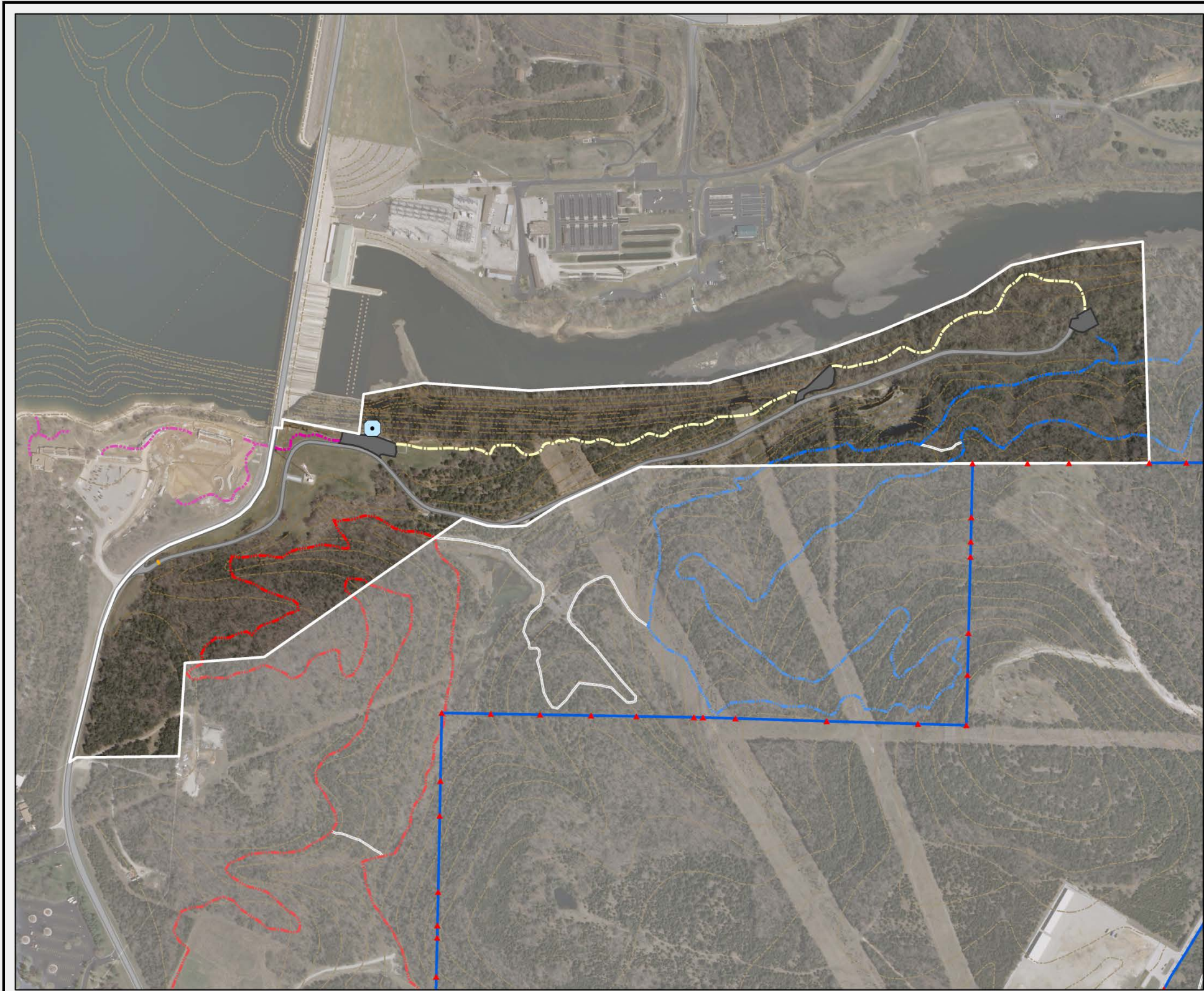


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

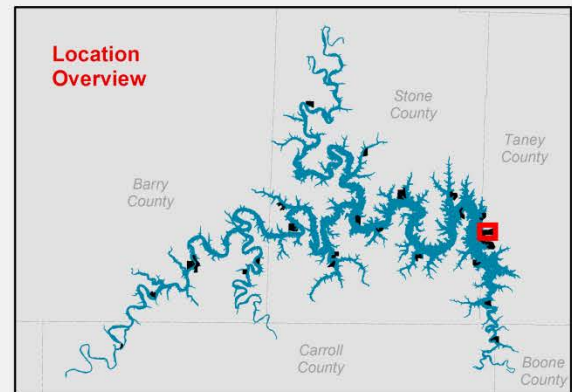




OVERLOOK

Legend

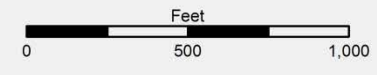
- ▲ Monuments
- USACE Boundary Line
- - - Gate
- - - 20ft Contours
- - - State Park Trail Red Loop
- - - State Park Trail Blue Loop
- - - State Park Trail Connectors
- Driveway
- Road
- Parking
- Proposed Observation Platform
- - - Proposed Trail
- - - Proposed Pedestrian Pathway
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

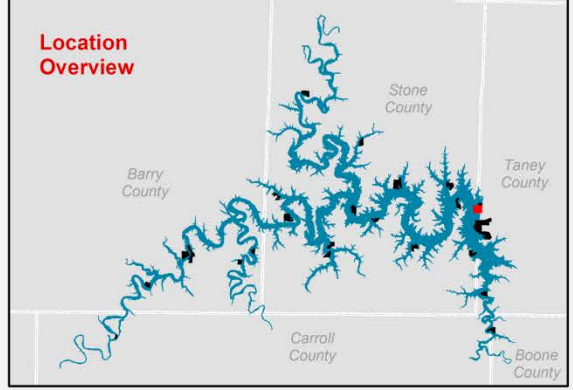




PENINSULA OBSERVATION LOOP

Legend

- Gate
- - - 10ft Contours
- Road
- Parking
- Proposed Restroom
- Proposed Fishing Dock
- Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

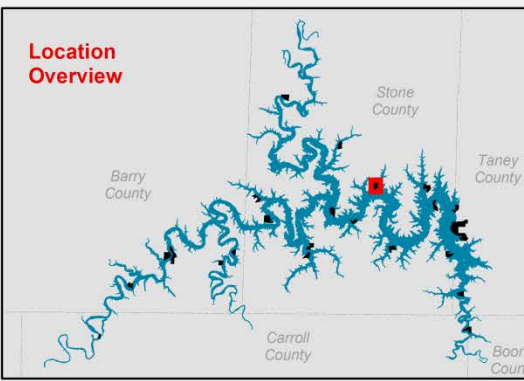




PORT OF KIMBERLING

Legend

Courtesy Dock	Proposed Camp/Cabin Areas
Dump Station	Proposed Pedestrian/Cart Path
Group Camp Area	Proposed Entrance Gate
Monuments	Proposed Showerhouse Expansion
USACE Boundary Line	Proposed Dry Storage Expansion
Gate	Proposed Game Room
10ft Contours	Proposed Playground
Pavilion	Proposed Campsite
Dog Walk Area	Proposed Employee Campsite
Tennis Court	Proposed Parking
Baseball Field	Proposed Road
Basketball Court	Proposed Entrance Road
VolleyBall Court	Proposed Store/Check-In Building
Swim Beach	Park Boundary
Playground	
Building	
Boat Ramp	
Campsite	
Driveway	
Road	
Parking	



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011

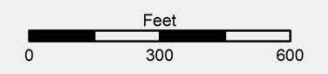
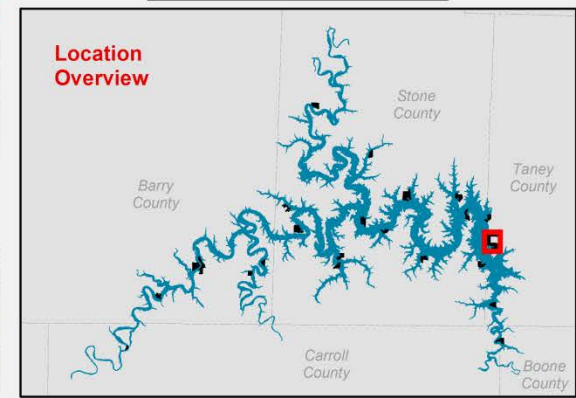




TABLE ROCK STATE PARK

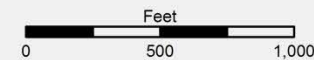
- Legend**
- Courtesy Dock
 - ▲ Monuments
 - USACE Boundary Line
 - Gate
 - 20ft Contours
 - ▲ Trail Bridge
 - ▲ Trail Head
 - Lakeshore Trail
 - State Park Trail
 - ▨ VolleyBall Court
 - Playground
 - Pavilion
 - Building
 - Campsite
 - Driveway
 - Road
 - Parking
 - ▨ Boat Ramp
 - ▲ Existing Entrance
 - ▲ Proposed Entrance
 - Proposed Road
 - Proposed Lodging
 - ▨ Proposed Service Area
 - Proposed Administrative Office
 - Park Boundary

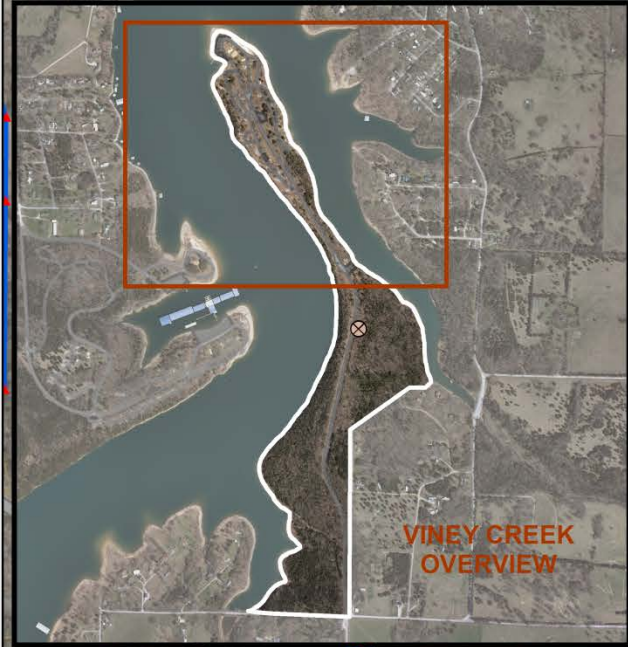


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

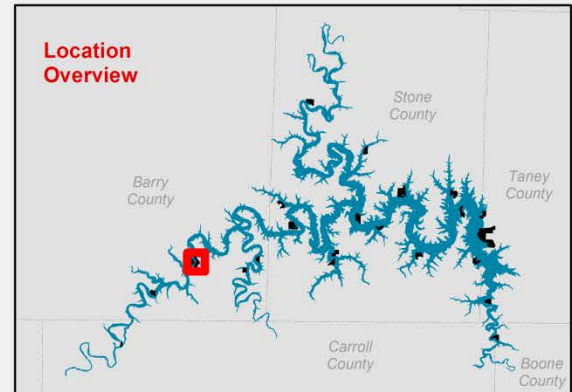
Imagery Date: 2011





VINEY CREEK

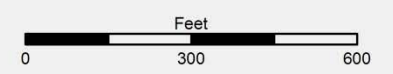
- Legend**
- Picnic Site
 - Courtesy Dock
 - Dump Station
 - Monuments
 - USACE Boundary Line
 - 10ft Contours
 - VolleyBall Court
 - Swim Beach
 - Playground
 - Mini Shelter
 - Building
 - Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Pavilion
 - Proposed Parking
 - Park Boundary

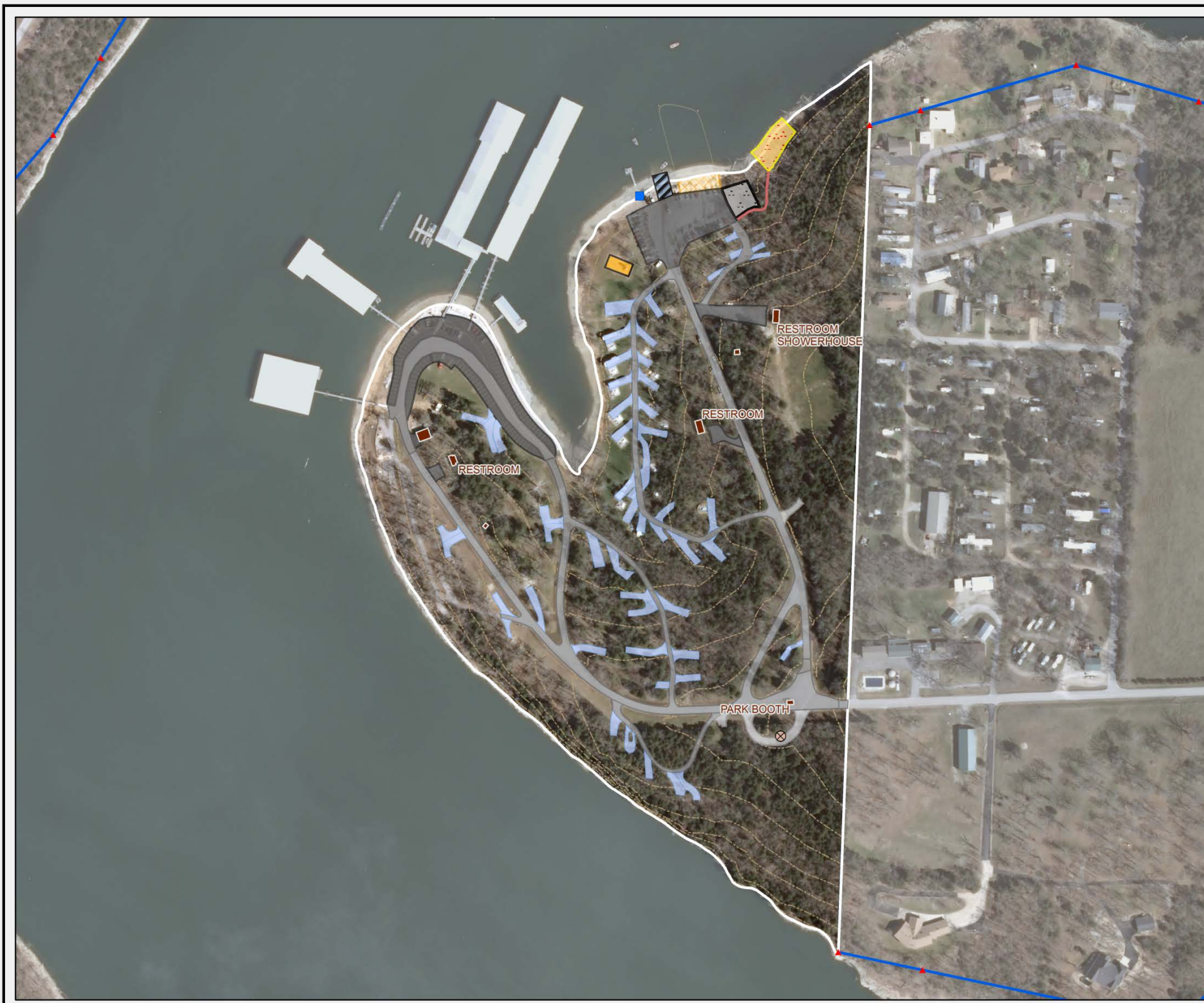


UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

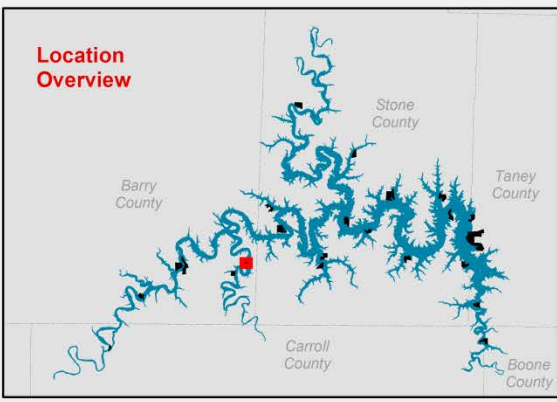
Imagery Date: 2011





VIOLA

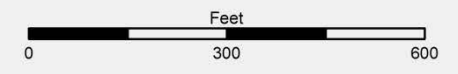
- Legend**
- Courtesy Dock
 - X Dump Station
 - ▲ Monuments
 - USACE Boundary Line
 - - - 10ft Contours
 - ▨ Swim Beach
 - Playground
 - Building
 - ▨ Boat Ramp
 - Campsite
 - Driveway
 - Road
 - Parking
 - Proposed Path
 - Proposed Beach Relocation
 - Proposed Parking
 - Park Boundary



UPDATED MASTER PLAN TABLE ROCK LAKE

Date: February, 2014

Imagery Date: 2011



Appendix C
Design Memorandum and Prior Supplements

Memo No.	Subject	Date Submitted	Date Approved
1	Access Facilities	1 Jul 52	5 Aug 52
2	Office, Service Buildings, and Utilities	3 Jul 52	9 Sep 52
3	Power Features	9 Jul 52	2 Oct 52
4	Spillway, Conduits, and Stilling Basin	24 Jul 52	13 Oct 52
5	Source of Aggregate for Concrete Works	12 Aug 52	16 Sep 52
6	Foundations – Preparation and Treatment	22 Aug 52	17 Oct 52
7	Embankment Design (Supplement)	23 Dec 54	9 Feb 55
8	Hydrology	6 Aug 52	9 Dec 52
9	Temperature and Stress Control for Concrete	11 May 53	15 Jun 53
10	Concrete Properties for Dam	23 Feb 54	5 May 54
11-1	Relocations – Cemeteries	10 Sep 54	19 Oct 54
11-2A	Relocations – State Highways	23 Nov 54	4 Mar 55
11-2B	Relocations – Local Roads	30 Dec 54	8 Jun 55
11-3A	Relocations – Utilities	6 Apr 55	10 Jun 55
11-3B	Relocations – Railroad (Revised)	7 Jan 58	10 Apr 58
12	Reservoir Clearing (Supplement)	6 Mar 57	1 Apr 57
13-1		26 Feb 53	18 Mar 53
Thru		Thru	Thru
13-15	Power Plant Design	2 Mar 56	22 Oct 56
14	Sediment Ranges	26 Jan 53	24 Nov 53
15	Instrumentation Program	8 Jun 53	22 Jul 53

Memo No.	Subject	Date Submitted	Date Approved
16-1	Real Estate – Dam Site, Work Area, and Access Road	25 Jul 52	20 Aug 52
16-2	Real Estate – Quarry Area	9 Apr 54	27 May 54
16-3	Real Estate – Reservoir Area	8 Nov 54	18 Feb 55
16-4	Real Estate – Access Roads to Public-Use Areas	6 Nov 58	24 Nov 58
17	Table Rock Dam and Reservoir, White River, Missouri and Arkansas, Design Memorandum No. 17, Reservoir Management	26 Sep 55	19 Jan 56
-	Table Rock Dam and Reservoir, White River, Missouri and Arkansas, Master Plan for Reservoir Development and Management	24 Dec 57	29 Jun 59
-	Supplement No. 1, Table Rock Dam and Reservoir, White River, Missouri and Arkansas, Master Plan for Reservoir Development and Management	3 Aug 62	6 Sep 62
17-C	Table Rock Dam and Reservoir, Updated Master Plan for Reservoir Development and Management	8 Oct 65	19 Aug 66
17-D	Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	16 Mar 70	30 Sep 70

Memo No.	Subject	Date Submitted	Date Approved
-	Supplement No. 1, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	14 Apr 71	Not approved
-	Supplement No. 2, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	2 Mar 73	23 Apr 73
-	Supplement No. 3, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	28 Aug 73	2 Oct 73
-	Supplement No. 4, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	5 Jul 74	31 Oct 74
-	Supplement No. 5, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	28 Feb 75	21 Mar 75
-	Supplement No. 6, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	2 Feb 76	8 Mar 76
-	Supplement No. 7, Table Rock Dam and	15 Jul 76	19 Aug 76

Memo No.	Subject	Date Submitted	Date Approved
	Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir		
-	Supplement No. 8, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	30 Jul 76	26 Nov 76
18	Dam and Appurtenant Works	26 Jan 56	* Summarizes previous submissions and approvals
19	Operational Facilities	29 Oct 59	6 Jun 60
19	Enhancement of Public Areas of the Powerhouse	6 Sep 72	15 Feb 73
20	Resident Office and Visitor Center	31 Aug 72	16 Nov 73
17-E	Table Rock Lake, Updated Master Plan for Development and Management of Table Rock Lake	13 Oct 76	23 Dec 76
-	Supplement No. 1, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	3 Feb 77	15 Mar 77
-	Supplement No. 2, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	26 Apr 77	16 May 77
-	Supplement No. 3, Table Rock Dam and Reservoir, Updated Master Plan for	13 Feb 79	13 Mar 79

Memo No.	Subject	Date Submitted	Date Approved
	Development and Management of Table Rock Reservoir		
-	Supplement No. 4, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	8 Jul 81	23 Jul 81
-	Supplement No. 5, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	10 Sep 81	15 Oct 81
-	Supplement No. 6, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	26 Oct 81	3 Nov 81
-	Supplement No. 7, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	27 Jun 84	6 Nov 84
-	Supplement No. 8, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	21 Nov 84	24 Dec 84
-	Supplement No. 9, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table	20 Dec 84	18 Apr 85

Memo No.	Subject	Date Submitted	Date Approved
	Rock Reservoir		
-	Supplement No. 10, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	31 Jan 85	22 Mar 85*Disapproved
-	Supplement No. 11, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	28 Mar 85	16 Apr 85
-	Supplement No. 12, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	19 Nov 85	4 Dec 85
-	Supplement No. 13, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	5 Mar 86	2 Apr 86
-	Supplement No. 14, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	23 May 86	12 Jun 86
-	Supplement No. 15, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	30 Jun 86	18 Jul 86
-	Supplement No. 16,	4 Apr 88	19 Apr 88

Memo No.	Subject	Date Submitted	Date Approved
	Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir		
-	Supplement No. 17, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	11 May 88	7 Jun 88
-	Supplement No. 18, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	10 Apr 89	24 Apr 89
-	Supplement No. 19, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir		
-	Supplement No. 20, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	31 Jan 90	28 Feb 90
-	Supplement No. 21, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	16 Mar 90	5 Apr 90
-	Supplement No. 22, Table Rock Dam and Reservoir, Updated	13 Aug 90	30 Aug 90

Memo No.	Subject	Date Submitted	Date Approved
	Master Plan for Development and Management of Table Rock Reservoir		
-	Supplement No. 23, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	1 Nov 90	26 Nov 90*Action Suspended
-	Supplement No. 24, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	19 Mar 92	8 Apr 92
-	Supplement No. 25, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	9 Mar 93	31 Mar 93
-	Supplement No. 26, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	22 Feb 94	1 Mar 94
-	Supplement No. 27, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	7 Jul 94	21 Jul 94
-	Supplement No. 28, Table Rock Dam and Reservoir, Updated Master Plan for Development and	27 Mar 95	13 Apr 95

Memo No.	Subject	Date Submitted	Date Approved
	Management of Table Rock Reservoir		
-	Supplement No. 29, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	26 Apr 95	28 Jul 95
-	Supplement No. 30, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	20 Sep 95	16 Oct 95
-	Supplement No. 31, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir		
-	Supplement No. 32, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	8 Nov 99	18 Feb 00
-	Supplement No. 33, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	3 Aug 99	23 Mar 00
-	Supplement No. 34, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	28 Mar 00	10 May 00

Memo No.	Subject	Date Submitted	Date Approved
-	Supplement No. 35, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	25 Feb 00	4 May 00
-	Supplement No. 36, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	27 Aug 02	24 Sep 02
-	Supplement No. 37, Table Rock Dam and Reservoir, Updated Master Plan for Development and Management of Table Rock Reservoir	25 Jul 02	4 Sep 02

Appendix D
NEPA Documents

