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ENVIRONMENTAL REPORT

RECOGNITION OF DEEDED ACCESS RIGHTS IN THREE TENNESSEE VALLEY AUTHORITY RESERVOIR LAND MANAGEMENT PLANS

Guntersville Reservoir, Alabama; Norris Reservoir, Tennessee; and Pickwick Reservoir, Alabama

PREPARED BY:
TENNESSEE VALLEY AUTHORITY

MARCH 2010

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TENNESSEE VALLEY AUTHORITY

MARCH 2010

Issue

The Tennessee Valley Authority (TVA) uses a land planning process to allocate individual parcels on its reservoir lands to one of six land use zones. After approval of a reservoir land management plan (LMP) by the TVA Board of Directors (TVA Board), all future uses of TVA lands on that reservoir must then be consistent with the allocations within that LMP. TVA's Land Policy (TVA 2006) states that TVA may consider changing a land use designation outside of the normal planning process only for the purposes of providing water access for industrial or commercial recreation operations on privately owned back-lying land or to implement TVA's Shoreline Management Policy (SMP). A change in allocation of any parcel is subject to approval by the TVA Board or its designee.

Recent research of deeds shows that on certain TVA reservoir land tracts, the current land management zone allocations, particularly Zone 5 (Industrial) and Zone 6 (Developed Recreation), have the potential to conflict with egress and ingress rights of the adjacent property owners if the current back-lying land use were to change. The resolution of these potential conflicts could result in the TVA Board receiving a large number of requests for minor changes to land allocations in several LMPs.

Background

TVA manages its public lands to protect the integrated operation of the TVA reservoir and power systems, to provide for appropriate public use and enjoyment of the reservoir system, and to provide for continuing economic growth in the Tennessee Valley. TVA completed environmental impact statements (EISs) and LMPs for 40,236 acres of TVA-managed land on Guntersville Reservoir (September 2001) and 19,238 acres on Pickwick Reservoir (August 2002). Similarly, an environmental assessment (EA) and LMP for 27,927 acres on Norris Reservoir were completed in September 2001.

The LMPs are designed to guide land use approvals, the permitting of private water use facilities, and resource management decisions on these reservoirs. In the LMPs, land parcels are allocated into broad categories or "zones", which include Project Operations (Zone 2), Sensitive Resource Management (Zone 3), Natural Resource Conservation (Zone 4), Industrial/Commercial Development (Zone 5), Developed Recreation (Zone 6), and Residential Access (Zone 7). Land along the reservoir that is privately-owned or owned by

a public entity other than TVA is labeled Zone 1 (Non-TVA Shoreland) for better understanding and evaluation of impacts during the planning process.

Marginal strips are the narrow band of TVA land around the rim of the reservoir between the water and the boundary of former TVA land that was sold to a specific contour elevation. For example, TVA sold back-lying property on Wheeler Reservoir to the 560-foot contour, leaving a strip of TVA land between the normal summer pool elevation of 556 feet and the sale contour of 560 feet. Current owners of former TVA land often have rights of ingress and egress across the TVA marginal strip that were granted in their property deeds. Although most back-lying parcels have been developed for residential purposes, many of the sale deeds have very general ingress and egress language that would allow a variety of uses. Consequently, some marginal strip parcels have back-lying commercial recreation or industrial land uses, and owners of these back-lying properties may have land use agreements with or Section 26a agreements issued by TVA.

Under the Land Planning Guidelines, those parcels committed to a particular use are typically allocated to the zone that supports that use. Under this practice, marginal strip parcels are allocated to a zone that reflects the current use of the back-lying former TVA property. If the back-lying use is residential, TVA allocates the marginal strip parcel to Zone 7 (Shoreline Access, formerly Residential Access). If the use of the adjacent former TVA property is commercial recreation, TVA would normally allocate the marginal strip to Zone 6 (Developed Recreation). Similarly, if the adjacent land use is industrial, the parcel would be allocated to Zone 5 (Industrial/Commercial).

However, adjacent land uses can change without any involvement by TVA. This practice could lead to misalignments in situations where the back-lying property owner proposes to use the property for a purpose that is consistent with the owner's deeded rights but inconsistent with TVA's zoning of the marginal strip. For example, a developed recreation area on a privately owned back-lying property could be converted (without TVA approval) to a residential subdivision. The new lot owners are eligible to apply for private water use facilities because of the ingress/egress rights TVA placed in the original sale deeds. However, because the marginal strip parcel was allocated to a different use zone (e.g., Developed Recreation) in a TVA Board-approved LMP, TVA could not permit private water use facilities that would only be appropriate under a residential access zone.

Other Environmental Reviews and Documentation

- *Guntersville Reservoir Final Environmental Impact Statement and Land Management Plan* (TVA 2001a)
- *Norris Reservoir Final Environmental Assessment and Land Management Plan* (TVA 2001b)
- *Pickwick Reservoir Final Environmental Impact Statement and Land Management Plan* (TVA 2002)
- *Shoreline Management Initiative: An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley*, *Final Environmental Impact Statement* (TVA 1999)

Proposal

To recognize the existing deeded landrights of adjoining landowners with respect to access to TVA reservoirs, TVA proposes to modify the existing Guntersville, Norris, and Pickwick reservoirs LMPs by allowing allocation changes under certain circumstances. Specifically, TVA proposes to change the allocation of all or parts of 52 marginal strip parcels on TVA-managed public land from Zones 5 (Industrial/Commercial) or Zone 6 (Developed Recreation) to Zone 7 (Residential Access) on request from adjoining landowners having the necessary deeded access rights. TVA must determine whether the potential environmental impacts of these potential future changes to the land use allocation fall within the scope of the existing environmental reviews.

Scope of Evaluation

In total, TVA identified 52 marginal strip parcels on Guntersville, Norris, and Pickwick reservoirs, all or a portion of which meet the criteria described above. These parcels have adjoining landowners with ingress and egress rights. Some parcels have multiple adjoining landowners where some of the adjoining landowners have deeded access rights and some may not. The parcels that meet the deeded rights criteria occupy about 522 acres and 33.5 miles of shoreline. See attached maps of parcels.

Norris Reservoir (see attached Table 1) has 16 planned marginal strip parcels that front 25 back-lying sales tracts. These 16 parcels with deeded access rights across all or part of them comprise are composed of approximately 326 acres of Zone 6 (Developed Recreation) land and have a total shoreline length of 114,650 feet (21.7 miles). Because some of the back-lying property owners have necessary deeded landrights, the allocation of the relevant portions of these 16 marginal strip parcels could be changed to Zone 7 (Residential Access).

A total of 26 planned marginal strip parcels on Guntersville Reservoir (see attached Table 2) with deeded rights across all or part of them have a cumulative shoreline footage of 55,602 linear feet (10.5 miles). These parcels adjoin 36 back-lying sales tracts. Approximately 122.3 acres of Zone 6 land and 14.4 acres of Zone 5 (Industrial/Commercial) land comprise the portions of these 26 parcels with deeded access rights. Because some of the back-lying property owners have necessary deeded landrights, the allocation of the relevant portions of these 26 marginal parcels could be changed to Zone 7.

On Pickwick Reservoir, there are 10 planned marginal strip parcels fronting 10 back-lying sales tracts (see attached Table 3). These 10 parcels with deeded access rights across all of part of them comprise approximately 26.9 acres of Zone 6 land and 32.4 acres of Zone 5 land and have a total shoreline footage of 26,982 linear feet (5.1 miles). Because some of the back-lying property owners have necessary deeded landrights, the allocation of the relevant portion of these 10 marginal parcels could be changed to Zone 7.

All of the three environmental reviews for the three LPMs state that additional environmental reviews would occur on a case-by-case basis when future changes to zone allocations are proposed.

Discussion of Impacts

Although the relevant portions of all of the 52 parcels (see attached Table 4) could be subject to an allocation change to Zone 7 (Residential Access), the need to change the

allocation for all of them over the life of the LMPs is unlikely. There may be requests for an allocation change for some parcels to Zone 7 in the near term. However, changing the allocation of other parcels in the foreseeable future is unlikely, as many of the back-lying owners have long-term commitments and investments based on the current allocations or they may be unwilling to invest in the cost and time needed on some parcels to resolve potential sensitive resource issues.

The back-lying private property landowners that have deeded rights on the relevant portions of these 52 parcels may request permits for water use facilities and implementation of vegetation management plans on TVA public land. Any permit request would be reviewed to assess potential impacts to protected terrestrial wildlife and plant species. All requests must follow TVA's SMP standards. SMP standards were developed to minimize impacts to terrestrial ecology on residential access land. These standards were evaluated in *TVA's Shoreline Management Initiative* (SMI) *Final EIS* (TVA 1999).

The above potential allocation changes to Zone 7 would impact parcels totaling about 522 acres of TVA-managed public land on Guntersville, Norris, and Pickwick reservoirs, which is about 0.6 percent out of a total of the combined 87,401 acres of TVA land on these three reservoirs. However, because portions of some parcels would not be involved, the actual area potentially impacted would be less.

Any action as a consequence of an allocation change would have potential environmental impacts. Parcels allocated to Zones 5, 6, or 7 are subject to potential adverse effects because portions of the land in these zones could be devoted to land-disturbing activity uses such as industrial development, developed recreation, or residential access.

The greatest potential adverse impacts to land resources would occur on those parcels allocated to Zone 5 (Industrial/Commercial), where major soil disturbances would be likely when industrial facilities are constructed. Once these facilities are established, they often remain intact for long periods, and large tracts of land may remain impacted.

Major soil disturbances could also occur in specific locations on those parcels allocated to Zone 6 (Developed Recreation) in specific locations if recreation facilities are constructed. Conversely, large areas could be left unaffected for more dispersed recreation management.

In most situations, allocation of parcels to Zone 7 (Residential Access) would result in minor soil disturbances to narrow corridors providing access to private water use facilities. Additionally, construction of shoreline erosion-control structures could cause some soil disturbance.

<u>Aquatic Resources</u>
The parcels currently allocated to Zones 5 or 6 (industrial or recreation) would be the likely areas of future impacts, depending on changes to current practices at the sites. Changing the allocation to Zone 7 would likely have fewer future impacts to aquatic resources as compared to Zone 5 where the site disturbance is greatest and remain about the same if changed to Zone 6 where many similar activities could occur. Changing these parcels to Zone 7 would likewise have the same or lesser potential to affect aquatic listed species. The potential environmental impacts of future changes from a Zone 5 (Industrial/Commercial) or Zone 6 (Developed Recreation) allocation to a Zone 7 (Residential Access) allocation have been evaluated within the scope of the existing

environmental documents. Appropriate environmental reviews would occur when future changes to zone allocations are proposed.

Wetlands

Many of the parcels under consideration for future allocation changes to Zone 7 contain small areas of scattered wetlands. However, none of these parcels contain significant wetlands as described in the environmental reviews. Any future request for an allocation change for a parcel associated with a water access project (e.g., docks, ground disturbance, etc.) would be subject to a separate project review as described in the environmental reviews for the LMPs. Consequently, potential effects to wetlands would be evaluated under such reviews, and any impacts could be avoided or mitigated. As a result, the potential environmental impacts to wetlands by future modification of the existing LMPs to change allocations from Zones 5 (Industrial/Commercial) or Zone 6 (Developed Recreation) to Zone 7 (Residential Access) on request from adjoining landowners with deeded access rights have been evaluated within the scope of the existing LMPs and their environmental reviews.

Terrestrial Plants

To verify the original data of the environmental reviews, a TVA Natural Heritage database review was conducted for records of state- and federally listed plant species reported from within 5 miles of the 52 parcels. The resultant information is provided as Table 5 for those parcels on Guntersville Reservoir, Table 6 for Norris Reservoir, and Table 7 for Pickwick Reservoir.

The federal candidate species, Georgia rockcress, is reported from within 5 miles of Pickwick Parcel 59. Records show that the population has been possibly extirpated from the state. Historic records of monkey-face orchid, a federal candidate species, indicate this plant species has been reported from within 5 miles of Pickwick Parcels 140, 141, and 150 in the Yellow Creek area. This population is also thought to have been extirpated from this area of Mississippi. In addition, a historic record of the monkey-face orchid was known to occur within 5 miles of Guntersville Parcel 158. No other federally listed plant species was reported from within 5 miles of the Pickwick or Norris reservoir parcels under consideration.

One federally listed as threatened species, Price's potato bean, was reported to occur within 5 miles of Guntersville Parcels 20a, 65, 102, 108, 109, and 110. Habitat to support this federally listed species is not present within or in the immediate vicinity of these parcels.

Alabama state-listed species are known to occur within one mile of Guntersville Parcels 29, 43, 49, 61, 186, 216, 218, and 229. Norris Parcels 66 and 77 have Tennessee state-listed species occurring within 1 mile of the area. The Alabama state champion tree, Deodara cedar, is found near Guntersville Parcel 249. Allocation changes to these parcels would not affect the viability of this special tree.

The effects on the federally and state-listed plants near the parcels proposed for allocation changes would not differ from the effect s identified in the existing LMPs and environmental reviews, and no adverse impacts are expected.

Terrestrial Animals

To verify the original data of the environmental reviews for the LMPs, a TVA Natural Heritage database review was conducted for state- and federally listed animal species

within 3 miles of the 52 parcels. This information is provided in Table 8 for those parcels on Guntersville Reservoir, Table 9 for Norris Reservoir, and Table 10 for Pickwick Reservoir.

No federally listed terrestrial animal species occur on any of the subject TVA parcels; however, there are records of occurrence for federally listed gray bats (*Myotis grisescens*) near nine parcels, and for Indiana bats (*Myotis sodalis*) near six parcels. There are records of a bald eagle (*Haliaeetus leucocephalus*), a federally protected species, nest near at least 17 of the parcels. Caves potentially with unique habitats occur near seven parcels. In addition, there are several state-listed animal species near parcels on all three reservoirs. However, potential impacts of future land use allocation changes to listed terrestrial animals and their associated habitats have been evaluated within the scope of the existing environmental documents and LMPs. Generally, impacts under a current Zone 5 allocation may be more detrimental than those attributed to Zone 7 and about the same as under Zone 6, depending on construction plans.

Based on a review of these parcels and the current environmental reviews for the three environmental reviews and LMPs, the proposed Zone 7 allocation changes would be covered by the scope of the environmental reviews. The environmental reviews indicate that any proposed shoreline construction on these parcels would be evaluated in an appropriate project-specific environmental review. This review would take into account changes over time to the terrestrial habitat on these parcels and would evaluate any potential impacts to listed terrestrial species or their habitats at the time of the proposed project. Consequently the evaluations in the previous environmental reviews remain valid.

Cultural Resources

As described in the environmental reviews for the LMPs and since the reviews occurred, the shoreline has been surveyed for cultural resources on a portion of the 52 parcels (see Tables 8, 9, and 10). Four archaeological sites have been previously identified on the Guntersville Reservoir parcels; 30 sites have been located on the Norris Reservoir parcels; and six sites on the Pickwick Reservoir parcels. There may be potential historical structures on or near some of the parcels. Neither the remainder of the TVA parcels nor the back-lying property has not been surveyed for cultural resources. Therefore, there is a potential for more archaeological resources to be identified on the unsurveyed shoreline and back-lying property. Generally, potential impacts to cultural resources from activities anticipated under Zone 7 would be less than those expected under a Zone 5 or Zone 6 allocation because of the reduced potential for ground disturbance.

Programmatic Agreements (PAs) have been executed between TVA, the Advisory Council on Historic Preservation, and the respective Alabama and Tennessee State Historic Preservation Officers (SHPOs) regarding the implementation of TVA reservoir LMPs for identification, evaluation, and treatment of historic properties that are eligible for inclusion on the National Register of Historic Places (NRHP). A commitment in the EIS for the Pickwick Reservoir LMP for TVA land in Mississippi would incorporate a phased identification and evaluation procedure to take into consideration the effects on historic properties. NRHP eligibility will be evaluated in consultation with the Alabama and Tennessee SHPOs according to stipulations of the PAs and the requirements of Section 106 of the *National Historic Preservation Act*. Necessary mitigation of adverse effects to any historic property by future modification of the existing LMPs to change the specified parcels or portions of parcels from Zones 5 and 6 to Zone 7 would be conducted according to the stipulations in the PAs and other requirements within the existing LMPs and their

respective environmental reviews. Consequently the evaluations in the previous environmental reviews remain valid.

Visual and Historical

Parcels that are currently allocated for Zone 5 (Industrial/Commercial Development) and Zone 6 (Developed Recreation) are assumed to have a scenic value class and visual absorption capacity suitable for a change in allocation to Zone 7 (Residential Access). Generally, potential impacts to visual or historic resources from activities anticipated under Zone 7 would be less than those expected under a Zone 5 or Zone 6 allocation because of the reduced potential for disturbances to the natural environment.

A cursory review of buildings and structures that may be reviewed for eligibility for listing in the NRHP appears in Tables 8, 9, and 10. However, Norris Parcel 310 is noted in the Norris Reservoir LMP as having historic house(s) near it. Similarly, Norris Parcel 310 also is located at or near Mt. Pleasant United Methodist Church and Cemetery, as well as (potentially) an access road to a white frame 1888 church building. No direct impacts to potentially eligible buildings or structures were identified in the Guntersville Reservoir LMP or the Pickwick Reservoir LMP. Consequently the evaluations by the previous environmental reviews remain valid.

Socioeconomics

On Guntersville and Pickwick reservoirs, there are 10 parcels of land allocated as Zone 5 (Industrial/Commercial) with deeded access rights over a portion of them. The relevant portions of these 10 parcels occupy about 46.8 acres and have about 5.6 miles of shoreline. Most of these parcels have industrial or commercial developments in place except for Guntersville Parcel 20a and Pickwick Parcel 140.

The allocation of parcels with existing facilities is not likely to change because of the reluctance to abandon the large commitments and investments in industrial and commercial developments. Changing the allocation to Zone 7 from Zone 5 would undoubtedly lead to lesser environmental impacts because of the lesser degree of ground disturbance and other direct effects to the surrounding environment. Some of the socioeconomic value lost by changing an allocation to Zone 7, such as jobs, income, and economic activity, would be part of new residential developments. The future reviews required by the LMPs and their respective environmental reviews would take into account changes to socioeconomic conditions resulting from the reallocation of these parcels and would evaluate any potential impacts at the time of the proposed project. Consequently, the evaluations by the previous environmental reviews are not changed and remain valid.

Recreation

All or portions of 42 parcels of land allocated as Zone 6 (Developed Recreation) on Norris, Guntersville, and Pickwick reservoirs have deeded access rights across them. These parcels comprise 475.3 acres and provide about 31.7 miles of shoreline. Changing the land use allocation from recreation (Zone 6) to shoreline access (Zone 7) likely continues to result in some type of water based recreation. For example, if the back-lying private property were subdivided into lots or multi-dwelling facilities were constructed, there could be multiple private or community docks instead of a commercial marina or other facility.

On Norris Reservoir, all or portions of 16 planned parcels could be subject to reallocation to Zone 7 due to appropriate deeded rights held by back-lying landowners. There are 25 back-lying sales tracts adjacent to these parcels. The 16 parcels occupy approximately

326 acres of Zone 6 land and have a total shoreline footage of 114,650 linear feet (21.7 miles). Examination and review of these parcels revealed that should reallocation occur, recreation resources would still be provided in this area of the reservoir.

Portions of 19 planned parcels allocated as Zone 6 on Guntersville Reservoir could be subject to reallocation to Zone 7. The relevant portions of these parcels total approximately 122.3 acres and have a total shoreline footage of 44,281 linear feet (8.4 miles). Examination and review of these parcels revealed that should reallocation occur, recreation resources would still be provided in this area of the reservoir.

Portions of 7 planned parcels on Pickwick Reservoir front seven back-lying sales tracts with appropriate deeded access rights to request a change to a Zone 7 allocation. The TVA parcels occupy approximately 27 acres of Zone 6 land with a total shoreline footage of 8,683 linear feet (1.6 miles). Examination and review of these parcels revealed that should changes in allocation occur, recreation resources would still be provided in this area of the reservoir.

Summary

Potential environmental effects from any shoreline access by back-lying landowners would be considered in future environmental reviews. These reviews would be initiated when TVA considers requests for Section 26a approvals or land use actions. Furthermore, mitigation, such as the use of best management practices (BMPs) and the imposition of TVA's General and Standard Conditions, as stipulated in the environmental reviews, would tend to decrease environmental impacts.

According to the original environmental reviews (TVA 2001a, 2001b, 2002) for the LMPs, TVA would manage the residential shoreline in accordance with the requirements of the SMI (TVA 1999). The SMP protection requirements which implement SMI would require an individual vegetation management plan for all new shoreline development included as Zone 7 (Shoreline Access). In addition, TVA's Section 26a regulations and SMP specify access corridors, dock size, and buffers, and these requirements would further reduce potential environmental impacts. These measures would reduce water quality/aquatic ecological impacts, as well as impacts to wildlife and visual resources. TVA would require construction-related BMPs to further reduce potential water quality and aquatic biota impacts to insignificant levels.

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Attachments

<u>Reservoir Property Parcels</u>

Table 1. Norris Reservoir Parcels

Table 2. Guntersville Reservoir Parcels

Table 3. Pickwick Reservoir Parcels

Table 4. Potential Changes to Zone 7 (Residential Access)

Sensitive Plant Species

Table 5. Pickwick Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Table 6. Norris Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Table 7. Guntersville Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Resource Comments

Table 8. Guntersville Reservoir Resource Comments

Table 9. Norris Reservoir Resource Comments

Table 10. Pickwick Reservoir Resource Comments

Maps of Parcels

Figure No.	**Norris Reservoir**
1.	Norris Reservoir Parcel 21
2.	Norris Reservoir Parcel 66
3.	Norris Reservoir Parcel 77
4.	Norris Reservoir Parcel 80
5.	Norris Reservoir Parcel 84
6.	Norris Reservoir Parcel 87
7.	Norris Reservoir Parcel 109
8.	Norris Reservoir Parcel 118
9.	Norris Reservoir Parcel 124
10.	Norris Reservoir Parcel 140
11.	Norris Reservoir Parcel 209
12.	Norris Reservoir Parcel 293
13.	Norris Reservoir Parcel 297
14.	Norris Reservoir Parcel 301
15.	Norris Reservoir Parcel 310
16.	Norris Reservoir Parcel 315

Figure No.	**Guntersville Reservoir**
17.	Guntersville Reservoir Parcel 20a
18.	Guntersville Reservoir Parcel 21
19.	Guntersville Reservoir Parcel 29
20.	Guntersville Reservoir Parcel 32
21.	Guntersville Reservoir Parcels 43 and 49
22.	Guntersville Reservoir Parcel 61
23.	Guntersville Reservoir Parcel 65
24.	Guntersville Reservoir Parcel 102
25.	Guntersville Reservoir Parcel 114
26.	Guntersville Reservoir Parcel 139
27.	Guntersville Reservoir Parcel 158
28.	Guntersville Reservoir Parcel 186
29.	Guntersville Reservoir Parcel 204
30.	Guntersville Reservoir Parcel 207

31. Guntersville Reservoir Parcel 214
32. Guntersville Reservoir Parcels 216 and 218
33. Guntersville Reservoir Parcels 227 and 249
34. Guntersville Reservoir Parcels 228 and 229
35. Guntersville Reservoir Parcel 231
36. Guntersville Reservoir Parcel 236
37. Guntersville Reservoir Parcel 248
38. Guntersville Reservoir Parcel 276

Figure No. Pickwick Reservoir

39. Pickwick Reservoir Parcel 12
40. Pickwick Reservoir Parcel 19
41. Pickwick Reservoir Parcel 59
42. Pickwick Reservoir Parcel 89
43. Pickwick Reservoir Parcel 91
44. Pickwick Reservoir Parcel 103
45. Pickwick Reservoir Parcel 112
46. Pickwick Reservoir Parcels 140 and 141
47. Pickwick Reservoir Parcel 150

Attachments

Table 1. Norris Reservoir Parcels

Parcel Number	Current Zone	Acres	Feet of Shoreline	Current Use
21	6	3.1	1,551	This parcel is licensed to Twin Cove for commercial recreation.
66	6	7.0	4,752	This parcel has three sections: (1) shoreline fronting XNR-655, Whitman Hollow Dock has a license for commercial recreation; (2) portion transferred to the Tennessee Wildlife Resources Agency, and has a concrete launching ramp and gravel parking lot; and (3) portion fronting TVA retained fee land (NR-721). Section 2 and 3 do not have private access rights.
77	6	14.7	3,613	This parcel fronts a Blue Ridge Council of the Boy Scouts of America camp.
80	6	8.2	3,309	Rainbow Marina and Resort is located on this parcel.
84	6	5.8	2,301	This parcel fronts the Ministers and Orphanage Camp.
87	6	6.9	5,075	Shanghai Resort is located on this parcel.
109	6	19.2	4,493	This parcel is licensed to the Powell Valley Resort.
118	6	6.6	4,632	Flat Hollow Marina is located on this parcel.
124	6	7.4	6,814	Blue Springs Boat Dock is located on the right bank of this parcel.
140	6	0.5	764	This parcel fronts Greasy Hollow Boat Dock.
209	6	65.4	9,529	This parcel has three sections: (1) 30-year recreation easement was conveyed to Claiborne County (now expired); (2) a small tract transferred to the Tennessee Wildlife Resources Agency; and (3) portion licensed for mooring rights for Lone Mountain Dock. Sections 1 and 2 have no private access rights.
293	6	10.5	7,523	This parcel has a license agreement for mooring rights for Hickory Star Boat Dock, portion of parcel fronting Big Ridge State Park does not have private access rights.
297	6	132.6	39,551	This parcel fronts the Tanasi Girl Scout Camp, which has a license agreement to provide security and protection camp.
301	6	8.7	2,540	This parcel is licensed to Andersonville Boat Dock for mooring rights and harbor limits.
310	6	24.2	16,030	This parcel has a license agreement to Stardust Resort and Marina providing mooring rights and harbor limits.
315	6	5.3	2,173	Sequoyah Lodge and Marina Inc., has a license agreement providing mooring rights and harbor limits.
	Totals	**326.1**	**114,650**	

Table 2. Guntersville Reservoir Parcels

Parcel Number	Current Zone	Acres	Feet of Shoreline	Current Use
20a	5	1.6	677	Parcel would accommodate anticipated commercial development.
21	6	4.6	2,502	This parcel is used for recreation because it fronts the old Snug Harbor Marina site and because of deeded access rights due to transfer of land (XTGR-5) to the State of Alabama for public recreation purposes.
29	6	5.2	1,564	This parcel is used by Alred Marina for commercial recreation.
32	6	3.9	2,074	Marshall County has deeded access rights across this parcel for public recreational use due to transfer of back-lying land (XTGR-75). Additionally there is a sales tract within the parcel that is currently used by the Lake Guntersville Yacht Club.
43	6	1.9	839	Parcel 43 is used for commercial recreation because it fronts Lakeside Sailing Center.
49	6	4.5	1,583	This parcel is used by Marshall Baptist Camp for developed recreation.
61	6	3.4	1,660	Parcel 61 fronts Ney-A-Ti Church Camp and is currently used for developed recreation.
65	6	1.0	510	Parcel 65 fronts Clay's Marina and is currently used for commercial recreation.
102	6	7.9	3,990	This parcel is used by Camp Maranantha for developed recreation.
114	6	17.3	6,543	Parcel 114 is licensed to the City of Scottsboro for Scottsboro Municipal Park.
139	6	0.4	391	This parcel is used for recreation; a public boat ramp, dock, and parking lot maintained by Alabama Department of Conservation and Natural Resources are present.
158	5	0.2	704	This parcel is used by the Alabama State Docks for industrial access.
186	6	2.7	2,811	Parcel 186 is used for recreation; a public boat ramp, dock, and parking lot maintained by Alabama Department of Conservation and Natural Resources are present.
204	6	8.9	2,358	This parcel is used by South Sauty Resort Inc. for commercial recreation.
207	6	23.4	6,028	Parcel 207 is used by Little Mountain Marina and Mountain Lakes Resorts for commercial recreation purposes.
214	6	2.5	1,391	This parcel is used by Signal Point Marina for commercial recreation.
216	5	4.1	3,264	Parcel fronts multiple industrial sites.
218	5	2.1	847	Parcel 218 is used by Continental Tire and Rubber Company Inc. for industrial purposes.
227	5	4.7	4,296	This parcel is used by back-lying landowners (Goldkrist, Inc., Cargill, Inc., and Continental Grain Co.)for industrial purposes.
228	5	0.9	818	Parcel 228 is licensed to the back-lying land owner (Powel Harbor) for commercial recreation purposes.
229	6	5.2	2,257	This parcel is used by the City of Guntersville as a city

Parcel Number	Current Zone	Acres	Feet of Shoreline	Current Use
				park.
231	6	2.7	1,702	This parcel is used by Covenant Cove Marina for commercial recreation.
236	6	5.0	2,402	Parcel 236 is licensed to Vaughn's Recreation Marina.
248	6	1.3	532	This parcel is proposed for use as a commercial marina by Cisco Steel, which would convert its existing industrial operation.
249	5	0.8	715	This parcel is used by several commercial/industrial companies (Amoco, Port of Guntersville Terminal, Cargill, Nashville, and Chattanooga and St. Louis Railroad) for water access.
276	6	20.5	3,144	A portion of this parcel is licensed for Riverview Campground, and the remainder is under easement to Marshall County as a Marshall County Park #2.
	Total	**136.7**	**55,602**	

Table 3. Pickwick Reservoir Parcels

Parcel Number	Current Zone	Acres	Feet of Shoreline	Current Use
12	6	13.0	3,740	This parcel fronts Waterloo City Park.
49	5	13.5	8,407	This parcel fronts Black Eagle Minerals and is used for a barge terminal.
59	5	14.0	9,199	This parcel fronts Cherokee Nitrogen and is used for a barge terminal.
89	6	0.8	479	This parcel fronts Johnson's Fish Camp.
91	6	1.5	996	This parcel fronts the Buzzard Roost Recreation area.
103	6	1.0	15	This portion of this parcel is a sale tract that mostly fronts land transferred to the State of Alabama for Public Recreation.
112	6	6.6	1,662	This parcel fronts Mill Creek
140	5	4.9	693	This parcel was previously planned/allocated as an Industrial site for Yellow Creek Port.
141	6	0.8	0	This parcel fronts the former TCDF recreation development.
150	6	3.2	1,791	This parcel fronts Grand Harbor Marina
	Total	**59.3**	**26,982**	

Table 4. Parcels with Potential Changes to Zone 7 (Residential Access)

Reservoir	Total Parcel Acres by Zone		
	Zone 5 Industrial/ Commercial	Zone 6 Developed Recreation	Total
Guntersville	14.4	122.3	136.7
Pickwick	32.4	26.9	59.3
Norris	0.0	326.1	326.1

Total	**46.8**	**475.3**	**522.1**

Table 5. Pickwick Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
Alabama snow-wreath	*Neviusia alabamensis*	--	S1	SLNS	140/141, 150
Allegheny-spurge	*Pachysandra procumbens*	--	S3	SLNS	12, 112, 140/141, 150*
American columbo	*Frasera caroliniensis*	--	S2	SLNS	103
American bladdernut	*Staphylea trifolia*	--	S3	SLNS	12, 112, 140/141, 150
American ginseng	*Panax quinquefolius*	--	S3	SLNS	140/141, 150
Appalachian golden-rod	*Solidago flaccidifolia*	--	S1S2	SLNS	12, 112
Autumn goldenrod	*Solidago sphacelata*	--	S1S2	SLNS	140/141, 150
Big shellbark hickory	*Carya laciniosa*	--	S2S3	SLNS	140/141, 150
Black bugbane	*Cimicifuga racemosa*	--	S1S2	SLNS	12, 112, 140/141, 150
Black-stem spleenwort	*Asplenium resiliens*	--	S1	SLNS	12, 112, 140/141, 150
Blue ash	*Fraxinus quadrangulata*	--	S2	SLNS	140/141, 150*
Canada moonseed	*Menispermum canadense*	--	S3	SLNS	12. 112
Canada wild-ginger	*Asarum canadense*	--	S2S3	SLNS	140/141, 150
Canadian milkvetch	*Astragalus canadensis*	--	S2	SLNS	150
Carolina tassel-rue	*Trautvetteria caroliniensis*	--	S1	SLNS	150
Crested fringed orchid	*Platanthera cristata*	--	S3	SLNS	140/141, 150
Downy yellow violet	*Viola pubescens* var. *eriocarpa*	--	S1S2	SLNS	140/141, 150
Dutchman's breeches	*Dicentra cucullaria*	--	S2	SLNS	59, 112, 140/141, 150
Dwarf larkspur	*Delphinium tricorne*	--	S2	SLNS	140/141, 150
Eastern cottonwood	*Populus deltolides*	--	Alabama Champion Tree		49
Eastern leatherwood	*Dirca palustris*	--	S2	SLNS	140/141, 150
Ernest's spider-wort	*Tradescantia ernestiana*	--	S1	SLNS	140/141, 150
False rue-anemone	*Enemion biternatum*	--	S2	SLNS	59
Giant alumroot	*Heuchera villosa* var. *macrorhiza*	--	S1	SLNS	140/141, 150*
Giant chickweed	*Stellaria pubera*	--	S2S3	SLNS	140/141, 150*
Greek valerian	*Polemonium reptans*	--	S2S3	SLNS	140/141, 150
Green violet	*Hybanthus concolor*	--	S2	SLNS	12, 112, 140/141, 150
Hairy lipfern	*Cheilanthes lanosa*	--	S2	SLNS	12, 112, 140/141, 150*
Harper's umbrella-plant	*Eriogonum longifolium* var. *harperi*	--	S1	SLNS	49
Heart-leaved foam-flower	*Tiarella cordifolia*	--	S2	SLNS	140/141, 150

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
Kentucky coffee-tree	*Gymnocladus dioicus*	--	S2	SLNS	140/141, 150
Lovage	*Ligusticum canadense*	--	S1S2	SLNS	12, 112, 140/141, 150*
Mock-orange	*Philadelphus hirsutus*	--	S1	SLNS	140/141, 150*
Mountain holly	*Ilex Montana*	--	S3?	SLNS	89, 91, 103, 112, 150
Muhly	*Muhlenbergia tenuiflora*	--	S1S2	SLNS	140/141, 150
Nodding trillium	*Trillium flexipes*	--	S1	SLNS	140/141, 150
Phacelia	*Phacelia bipinnatifida*	--	S1	SLNS	140/141, 150
Pink turtlehead	*Chelone lyonii*	--	S1	SLNS	12, 112
Purple cliff-brake	*Pellaea atropurpurea*	--	S1S2	SLNS	140/141, 150*
Puttyroot	*Aplectrum hyemale*	--	S1	SLNS	140/141, 150
Sedge	*Carex jamesii*	--	S1S2	SLNS	140/141, 150
Sedge	*Carex prasina*	--	S1	SLNS	89, 91, 103, 112, 140/141, 150
Sedge	*Carex stricta*	--	S2	SLNS	89, 91, 103, 112, 140/141, 150*
Sedge	*Carex picta*	--	S2S3	SLNS	89, 91, 103, 112, 140/141, 150
Shooting star	*Dodecatheon meadia*	--	S2	SLNS	140/141, 150*
Sicklepod	*Arabis canadensis*	--	S2S3	SLNS	140/141, 150
Silver bell	*Halesia Carolina*	--	Alabama Champion Tree		49
Silvery glade fern	*Athyrium thelypterioides*	--	S1S2	SLNS	150
Single-head pussytoes	*Antennaria solitaria*	--	S3?	SLNS	140/141, 150
Slender toothwort	*Dentaria heterophylla*	--	S2S3	SLNS	140/141, 150
Smoother sweet-cicely	*Osmorhiza longistylis*	--	S3	SLNS	140/141, 150
Spotted wintergreen	*Chimaphila maculata*	--	S2	SLNS	140/141, 150
Stonecrop	*Sedum ternatum*	--	S2	SLNS	12, 112, 140/141, 150*
Turk's cap lily	*Lilium superbum*	--	S3	SLNS	140/141, 150
Two-leaf toothwort	*Dentaria diphylla*	--	S1S2	SLNS	140/141, 150
Virginia pine	*Pinus virginiana*	--	S2	SLNS	12, 112, 140/141, 150*
Virginia bluebells	*Mertensia virginica*	--	S1S2	SLNS	140/141, 150
Wahoo	*Euonymus atropurpureus*	--	S2S3	SLNS	12, 112, 140/141, 150
Walking fern	*Asplenium rhizophyllum*	--	S1S2	SLNS	12, 112, 140/141, 150
Waterleaf	*Hydrophyllum appendiculatum*	--	S2?	SLNS	140/141, 150
White trout-lily	Erythronium albidum	--	S1S2	SLNS	49
White turtlehead	*Chelone glabra*	--	S3	SLNS	140/141, 150*
Wild columbine*	*Aquilegia canadensis*	--	S1S2	SLNS	140/141, 150*
Wild hyacinth	*Camassia scilloides*	--	S2S3	SLNS	140/141, 150
Woodrush	*Luzula acuminate*	--	S3	SLNS	140/141, 150*
Yellow trout-lily	*Erythronium rostratum*	--	S1S2	SLNS	140/141, 150*

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
Yellowwood	*Cladrastis kentukea*	--	S2	SLNS	12, 112, 140/141, 150
Historical Records Species					
Alabama glade-cress	*Leavenworthia alabamica*	--	S2	SLNS	49, 59
Alabama lipfern	*Cheilanthes alabamensis*	--	S3	SLNS	49
Allegheny-spurge	*Pachysandra procumbens*	--	S3	SLNS	89, 91, 103
Autumn goldenrod	*Solidago sphacelata*	--	S1S2	SLNS	140/141
Carolina willow	*Salix caroliniana*	--	S3	SLNS	140/141, 150
Dwarf larkspur	*Delphinium tricorne*	--	S2	SLNS	12, 112
Dutchman's breeches*	*Dicentra cucullaria*	--	S2	SLNS	49*
Georgia rock-cress	*Arabis georgiana*	C	S1 (X?)	SLNS	59
Giant chickweed	*Stellaria pubera*	--	S2S3	SLNS	12, 112, 140/141*
Monkey-face orchid	*Platanthera integrilabia*	C (X)	S1	SLNS	140/141, 150
Perideridia	*Perideridia americana*	--	S1S2	SLNS	140/141, 150
Sedge*	*Carex picta*	--	S2S3	SLNS	140/141*
Single-head pussytoes	*Antennaria solitaria*	--	S3?	SLNS	12, 112
Slender toothwort	*Dentaria heterophylla*	--	S2S3	SLNS	12, 112, 140/141*
Virginia pine	*Pinus virginiana*	--	S2	SLNS	89

-- = Not applicable
* Indicates those species that are reported from within 1 mile of the parcel
Federal abbreviations: C = Candidate; C (X) = Candidate extirpated
State status abbreviations: SLNS = No state status
State rank abbreviations: S1 = Critically imperiled, often with five or fewer occurrences; S2 = Imperiled, often with <20 occurrences, S3 = Rare or uncommon, often with <80 occurrences; S4 = Uncommon, but not rare; S#S# = Occurrence numbers are uncertain; S#? = Inexact numeric rank; S# (X?) = Inexact numeric rank possibly extirpated

Table 6. Norris Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
American barberry	*Berberis canadensis*	--	S2	SPCO	272
Appalachian bugbane	*Cimicifuga rubifolia*	--	S3	THR	6/8, 315
American ginseng	*Panax quinquefolius*	--	S3S4	S-CE	6/8, 21, 66, 77*, 80, 84, 87, 209, 272, 297, 301, 310, 315
Canada lily	*Lilium canadense*	--	S3	THR	6/8, 21, 66, 272
Goldenseal	*Hydrastis canadensis*	--	S3	S-CE	21, 66,118, 124, 209, 272, 301
Kentucky rosin-weed	*Silphium wasiotense*	--	S2	END	6/8, 21, 66*, 77*, 80, 84, 87, 301, 310, 310
Large-leaved grass-of-parnassus	*Parnassia grandifolia*	--	S3	SPCO	118, 124, 140
Large roundleaf orchid	*Platanthera orbiculata*	--	S3	THR	209
Leatherleaf meadowrue	*Thalictrum coriaceum*	--	S1	THR	21
Meehania mint(heart-leaf meehania)	*Meehania cordata*	--	S2	THR	6/8, 66, 77*, 80, 84, 87, 293, 297, 301, 310, 315
Mountain honeysuckle	*Lonicera dioica*	--	S2	SPCO	66, 87
Northern bush-honeysuckle	*Diervilla lonicera*	--	S2	THR	6/8, 315
Northern white cedar	*Thuja occidentalis*	--	S3	SPCO	6/8, 21, 66, 77*, 80, 84, 87,118, 124, 140, 315
Ozark bunchflower	*Melanthium woodii*	--	S1	END	6/8, 21, 66, 87
Palamocladium	*Palamocladium leskeoides*	--	S1	THR	6/8, 315
Pink lady-slipper	*Cypripedium acaule*	--	S4	S-CE	6/8, 21, 66, 77*, 80, 84, 87, 209, 293, 297, 301, 310, 315
Rough hawkweed	*Hieracium scabrum*	--	S2	THR	21
Spreading false-foxglove	*Aureolaria patula*	--	S3	SPCO	6/8, 21, 66,109,118, 124, 140, 315
Sullivantia	*Sullivantia sullivantii*	--	S1	END	6/8, 66, 77*, 80, 84, 87, 315
Historical Record Species					
Alderleaf buckthorn	*Rhamnus alnifolia*	--	S1	END	66, 77*, 80, 84, 87
Goldenseal	*Hydrastis canadensis*	--	S3	S-CE	6/8
Horned beakrush	*Rhynchospora capillacea*	--	SH	E-P	66, 77*, 80, 84, 87
Large-leaved grass-of-parnassus	*Parnassia grandifolia*	--	S3	SPCO	6/8, 315
Sharp's homaliadelphus	*Homaliadelphus sharpii*	--	S1	END	6/8, 66, 77*, 80, 84, 87, 315
Spike-rush	*Eleocharis intermedia*	--	S1	END	66*, 80, 84, 87, 272
Swamp lousewort	*Pedicularis lanceolata*	--	S1S2	SPCO	272
Tall larkspur	*Delphinium exaltatum*	--	S2	END	6/8, 315

-- = Not applicable
* Indicates those species that are reported from within 1 mile of the parcel
State status abbreviations: END = Endangered; E-P = Endangered, possibly extirpated; S-CE = Special concern-commercially exploited; SPCO = Species of special concern; THR = Threatened
State rank abbreviations: S1 = Critically imperiled, often with five or fewer occurrences; S2 = Imperiled, often with <20 occurrences; S3 = Rare or uncommon, often with <80 occurrences; S4 = Uncommon, but not rare; SH = State Historic; S#S#=occurrence numbers are uncertain

Table 7. Guntersville Reservoir Plants of Conservation Concern Found Within 5 Miles of the Designated Parcels

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
Alabama lipfern	*Cheilanthes alabamensis*	--	S3	SLNS	20a, 21, 29, 43, 49, 158
Alabama snow-wreath	*Neviusia alabamensis*	--	S2	SLNS	186
American columbo	*Frasera caroliniensis*	--	S2	SLNS	158
American smoke-tree	*Cotinus obovatus*	--	S2	SLNS	102, 108, 109, 110, 114, 186
Appalachian quillwort	*Isoetes engelmannii*	--	S3	SLNS	236
Butler's quillwort	*Isoetes butleri*	--	S2	SLNS	20a, 21, 29*, 32, 43, 49, 61, 186, 214, 216, 218, 227, 228, 229, 248, 249, 267
Carolina silverbell	*Halesia carolina*	--	S2	SLNS	29, 43, 49, 102, 108, 109, 110, 114, 186, 204, 214, 216*, 218*, 227, 228*, 229*, 231, 236, 248, 249, 267
Carolina spring-beauty	*Claytonia caroliniana*	--	S1	SLNS	20a, 21, 29, 43, 49, 61, 65, 214, 216, 218, 227, 228, 229, 249
Chestnut oak	*Quercus montana*	--	Alabama Champion Tree		29, 43, 49, 214, 216, 218, 227, 228, 229*, 231, 236, 248, 249, 267
Cumberland rosinweed	*Silphium brachiatum*	--	S2	SLNS	29, 43, 49, 65, 102, 108, 109, 110, 114, 186, 214, 216, 218, 227, 228, 229, 248, 249
Deodara cedar	*Cedrus deodara*	--	Alabama Champion Tree		29, 43, 49, 214, 216, 218, 227, 228*, 229*, 231, 236, 248, 249, 267
Dutchman's breeches	*Dicentra cucullaria*	--	S2	SLNS	158
Dwarf filmy-fern	*Trichomanes petersii*	--	S2	SLNS	204
False helleborne	*Melanthium parviflorum*	--	S1S2	SLNS	61
Featherfoil	*Hottonia inflata*	--	S2	SPCO	158
Goldenseal	*Hydrastis canadensis*	--	S2	SLNS	186, 236
Granite gooseberry	*Ribes curvatum*	--	S2	SLNS	43, 49, 61
Great yellow wood-sorrel	*Oxalis grandis*	--	S1	SLNS	114, 186
Harper's dodder	*Cuscuta harperi*	--	S2	SLNS	214, 216, 218
Limestone adder's-tongue	*Ophioglossum engelmannii*	--	S2S3	SLNS	20a, 21, 29, 43, 49, 267
Little river canyon onion	*Allium speculae*	--	S2	SLNS	204, 214, 216, 218
Michaux leavenworthia	*Leavenworthia uniflora*	--	S2	SLNS	20a, 21, 29*, 32, 43*, 49*, 61, 186, 214, 216, 218, 227, 228, 229*, 231, 248, 249, 267
Mohr's rosin-weed	*Silphium mohrii*	--	S1	SLNS	29, 43, 49, 214, 216, 218, 227, 228, 229, 248, 249
Nuttall's rayless golden-rod	*Bigelowia nuttallii*	--	S3	SLNS	214, 216, 218, 228, 229
One-flowered broomrape	*Orobanche uniflora*	--	S2	SLNS	204
Ovate catchfly	*Silene ovata*	--	S2	SLNS	29, 43, 49, 214, 216, 218, 227, 228, 229, 248, 249
Pasture glade-cress	*Leavenworthia exigua* var. *lutea*	--	S1	SLNS	20a, 21, 29*, 32, 43, 49, 61, 214, 216, 218, 227, 228, 229*, 231, 248, 249, 267
Pink turtlehead	*Chelone lyonii*	--	S1	SLNS	20a, 21, 29, 267
Price's potato-bean	*Apios priceana*	LT	S2	SLNS	20a, 65, 102, 108, 109, 110
Prickly gooseberry	*Ribes cynosbati*	--	S1S2	SLNS	186

Common Name	Scientific Name	Federal Status	State Rank	State Status	Parcels
Scarlet Indian-paintbrush	*Castilleja coccinea*	--	S1	SLNS	214, 216, 218, 228, 229
Sedge	*Carex purpurifera*	--	S2	SLNS	204
Silky-camellia	*Stewartia malacodendron*	--	S2S3	SLNS	204
Southern red trillium	*Trillium sulcatum*	--	S1	SLNS	204
Sunnybell	*Schoenolirion wrightii*	--	S1	SLNS	214, 216, 218, 228, 229
Sweetflag	*Acorus calamus*	--	S1	SLNS	29, 158, 214, 216, 218, 227, 228, 229*, 231, 236, 248, 249, 267
Tennessee leafcup	*Polymnia laevigata*	--	S2S3	SLNS	108, 109, 110, 114, 186*
Twinleaf	*Jeffersonia diphylla*	--	S2	SLNS	139, 186
Wahoo	*Euonymus atropurpureus*	--	S3	SLNS	186
Waterweed	*Elodea canadensis*	--	S1	SLNS	20a, 21, 29, 43, 49, 61*, 65, 207
Willow oak	*Quercus phellos*	--	Alabama Champion Tree		214, 227, 228, 229, 248, 249
Witch-alder	*Fothergilla major*	--	S2	SLNS	204
Yellow giant-hyssop	*Agastache nepetoides*	--	S1	SLNS	158
Historical Record Species					
Bog goldenrod	*Solidago uliginosa*	--	SH	SLNS	
Dutchman's breeches	*Dicentra cucullaria*	--	S2	SLNS	20a, 65
Granite gooseberry	*Ribes curvatum*	--	S2	SLNS	65, 207
Great yellow wood-sorrel	*Oxalis grandis*	--	S1	SLNS	158
Large whorled pogonia	*Isotria verticillata*	--	S2	SLNS	158
Monkey-face orchid	*Platanthera integrilabia*	C	S2	SLNS	158
Pussy willow	*Salix humilis*	--	S2S3	SLNS	139
Royal catchfly	*Silene regia*	--	SH	E-P	158
Sedge	*Carex purpurifera*	--	S2	SLNS	65
Sweetflag	*Acorus calamus*	--	S1	SLNS	139
Wall-rue spleenwort	*Asplenium ruta-muraria*	--	S2	SLNS	158
White-leaved sunflower	*Helianthus glaucophyllus*	--	SH	SLNS	186

-- = Not applicable
* Indicates those species that are reported from within 1 mile of the parcel.
Federal abbreviations: C = Candidate; LT= Listed threatened
State status abbreviations: E-P = Endangered, possibly extirpated ; SLNS = No state status; SPCO = Species of special concern
State rank abbreviations: S1 = Critically imperiled, often with five or fewer occurrences; S2 = Imperiled, often with <20 occurrences; S3 = Rare or uncommon, often with <80 occurrences; S4 = Uncommon, but not rare; SH = State historic; S#S# = Occurrence numbers are uncertain

Table 8. Guntersville Reservoir Resource Comments

Parcel Number	Resource Comments
20a	• This parcel is forested shoreline bordered by more forested shoreline and a paved road. There are records of gray bats at least 0.85 mile away from the parcel. Conversion of this parcel to Zone 7 would require removal of forested habitat common in the region and would increase boat traffic slightly, as this parcel is small. • There would be no impacts to terrestrial listed species. • There is a potential for deep cultural deposits.
21	• This parcel is a strip of forest area that exists between a marina and the reservoir. It is currently impacted by recreationists. There are records of gray bats greater than 1 mile from the parcel. Rezoning this parcel to Zone 7 may decrease human impacts on this area if the marina is converted to private boat docks. However, human use and impacts may increase if private docks are created in addition to the marina. • Neither outcome will impact any terrestrial listed species. • The shoreline and back-lying area have not been surveyed. The eastern portion is considered to have the potential for deeply buried cultural deposits.
29	• This parcel is a forested area between a marina and private boat docks. There are records of bald eagle nests within 1.5 miles of this parcel. This section is already impacted by commercial recreation. Conversion of this area to more boat docks would increase congestion and human disturbance. • Butler's quillwort, *Michaux leavenworthia*, and pasture glade-cress are three species known to occur on cedar glades and have been reported within 1 mile of the parcel. Due to the current land use, it is unlikely that habitat to support these species is present. • The shoreline and back-lying area have not been surveyed. Farmsteads are depicted on the acquisition map, and there is the potential for buried deposits.
32	• This parcel is already recreationally used and includes the Guntersville Yacht Club with several large docks. • There are records of bald eagle nests over 2 miles away. Rezoning this parcel to Zone 7 would either result in no changes of human disturbance and use of the area or potentially decrease use of the area if converted to private boat docks rather than a large marina. • The shoreline and back-lying area have not been surveyed. The Yacht Club lies on much of the landform, near a cultural site.
43	• Boat traffic is heavy in this area. The parcel is adjacent to Zone 2 and Zone 4. This parcel is in an already congested area with numerous boat docks. Rezoning this parcel to Zone 7 could reduce congestion and human disturbance if this area were converted to private residential boat docks. One community dock would minimize impacts to an already congested shoreline. • Two bald eagle nests are within 3 miles of the parcel, but all are over 1 mile away. • Butler's quillwort, *Michaux leavenworthia*, and pasture glade-cress are three species known to occur on cedar glades and have been reported within 1 mile of the parcel. Due to the current land use, it is unlikely that habitat to support these species is present. • The shoreline and back-lying area have not been surveyed. A marina has likely disturbed much of the area.
49	• This parcel is adjacent to Zone 7 and across from two forested islands that are zoned as Zone 3. This parcel is partially forested with one dock already on it. Rezoning this parcel to Zone 7 could reduce congestion and human disturbance from the camp if this area were converted to private residential boat docks. • Two bald eagle nests are within 3 miles of the parcel, but all are over 1 mile away. • Butler's quillwort, *Michaux leavenworthia*, and pasture glade-cress are three species known to occur on cedar glades and have been reported within 1 mile of the parcel. Due to the current land use, it is unlikely that habitat to support these species is present. • The shoreline and back-lying area have not been surveyed. Acquisition map shows

Parcel Number	Resource Comments
	structures.
61	• This parcel is adjacent to two parcels that are Zone 7 and are already covered in boat ramps. The parcel is a small forested section between developed shoreline. Rezoning this parcel to Zone 7 could reduce congestion and human disturbance from the camp if this area were converted to private residential boat docks. • One bald eagle nest is located 2 miles away. • The submerged aquatic species, Waterweed (*Elodea canadensis*) has been found growing near the parcel. Changes to allocations would not impact populations of waterweed. • The shoreline has been surveyed, but the back-lying area has not. No cultural resources are identified on the shoreline.
65	• Adjacent to two parcels that are Zone 7. This parcel is a marina. Rezoning this parcel to Zone 7 could reduce congestion and human disturbance from the camp if this area were converted to private residential boat docks. • No listed terrestrial species would be impacted. • This parcel is identified as an area with potential buried archeological deposits.
102	• This parcel, which has been partially developed, is adjacent to Zone 3 and Zone 4 parcels. • The upper section of this parcel could potentially be used by nesting bald eagles. A cave with gray bats occurs 2 miles from this parcel. Rezoning this parcel to Zone 7 could reduce boat traffic from the camp. One community dock rather than multiple private docks would minimize impacts to this forested parcel. • The shoreline and back-lying area have not been surveyed. The parcel is unlikely to contain significant deposits due to slope.
114	• This park is used recreationally, and a few small boat docks exist. There is a heron colony 130 feet away and a bald eagle nest 2.5 miles away from the parcel. Rezoning this parcel to Zone 7 may increase use of this parcel, which may disturb this heronry and increase congestion and human disturbance in the area. • The shoreline has been surveyed on the southern portion with no cultural resources identified. The northern portion and back-lying property have not been surveyed. The acquisition map shows structures. A potential for buried deposits exists.
139	• This parcel is a small strip of land under and adjacent to a large bridge. South and east of the parcel are developed areas and small sections of forest. The parcel is already used for recreation and as a public boat dock. Congestion and use of the area may decrease if the area is converted to private versus a public boat dock and parking lot. • There are five records of bald eagle nests within 3 miles of the parcel; the closest one is approximately 1 mile from the parcel. No listed species would be impacted by the rezoning of this area. • The shoreline has been surveyed, and no cultural resources were identified. The back-lying area has not been surveyed.
158	• This parcel is a narrow strip of shoreline between an industrial area and the reservoir. There is a cave with gray bat records 1.7 miles away and a record of a bald eagle nest 3 miles away. Rezoning this parcel may reduce boating traffic if converted to private docks or may increase traffic if public use is allowed in addition to private industrial use. • Neither result would impact any listed terrestrial species. • The parcel has cultural sites recorded. Buried cultural deposits are likely.
186	• This parcel is a strip of shoreline under and on either side of a large bridge. It is already used for recreation and as a public boat ramp. • There is a cave 0.5 mile away that may serve as a transitory gray bat roost. Should this parcel be converted to private boat docks rather than public access, boat traffic and human disturbance may decrease. Otherwise, there would be no change to the current level of disturbance in the area. Neither outcome would impact any listed species. • This parcel is adjacent to B. B. Comer Bridge, and habitat is not present for *Polymnia laevigata*, Tennessee leafcup, an Alabama state species of conservation concern that is

Parcel Number	Resource Comments
	known to occur nearby. • Shoreline and area of B. B. Comer Bridge replacement have been surveyed with no cultural resources identified.
204	• This parcel is highly developed shoreline associated with a resort. Several boat docks already exist on the parcel. • There are two records of bald eagle nests within 3 miles from the parcel; the closest one being 1.2 miles away. Rezoning this parcel to Zone 7 would likely result in no changes to usage or human disturbance in the area. • The shoreline and back-lying area have not been surveyed. The parcel is considered likely for buried deposits.
207	• The majority of this parcel is highly developed with a small northeastern section that remains forested. Several boat docks already exist on the parcel. • A heronry is located on two islands less than 0.25 mile from the parcel. Rezoning of this parcel to Zone 7 could increase human disturbance in the area if more boat docks are created, which could impact the heronry. • The shoreline has not been surveyed. A cultural site is nearby. The parcel is considered likely for buried deposits.
214	• This parcel is a narrow strip of shoreline associated with a marina. There are several large boat docks attached to this parcel. Should the parcel be rezoned to Zone 7, human disturbance and use could decrease if small private docks replace the large marina docks. • There are no state-listed terrestrial animal species within 1 mile of the parcel, and no federal listed species within 3 miles. No impacts to listed terrestrial species are expected. • The shoreline and back-lying area have not been surveyed. The acquisition map shows structures on the parcel.
216	• This parcel consists of thin strips of shoreline that front industrial buildings. Several boat docks exist on the parcel. • There is one cave on this parcel situated on private property. There are no records of terrestrial animal species within this cave. Any construction or development should be avoided within 200 feet of this area. Boating activity and congestion would increase if more docks are created as a result of rezoning this parcel to Zone 7. No listed species are expected to be impacted by rezoning this parcel. • Carolina silverbell occurs within a mile of the parcel. Due to the activities present on site, habitat to support Carolina silverbell is not present. • The shoreline and back-lying area have not been surveyed. The acquisition map shows structures on this parcel.
218	• This parcel fronts a large industrial building with a bridge and small boat docks on either side. Some of the parcel is forested. • The closest record of a state-listed terrestrial animal is greater than 0.4 mile away. No federally listed species records exist within 3 miles of the parcel. This parcel is at the opening of a cove lined with private boat docks. Rezoning this parcel to Zone 7 would increase the amount of boat congestion and human use in the area. • Carolina silverbell occurs within a mile of the parcel. Due to the activities present on site, habitat to support Carolina silverbell is not present. • The shoreline and back-lying area have not been surveyed. The acquisition map shows structures on this parcel.
227	• This parcel consists of mostly forested shoreline with some industrial buildings. Inland lie more industrial buildings. A large dock used for industrial purposes is attached to this parcel. Nearby shorelines are all developed. • The closest record of a state-listed terrestrial animal species is 0.85 mile away. No federal listed species records exist within 3 miles of the parcel. Rezoning this parcel to Zone 7 may increase boating congestion due to the addition of private boat docks if created. • The shoreline and back-lying area have not been surveyed. A cultural site is present, and

Parcel Number	Resource Comments
	structures are shown on the acquisition map.
228	• The parcel is shoreline property adjacent to a bridge and industrial complexes. It is used for recreational purposes. • The closest record of a state-listed terrestrial animal species is 0.5 mile away. No federally listed species records exist within 3 miles of the parcel. Rezoning this parcel to Zone 7 may increase boating congestion due to the addition of private boat docks if created. • The shoreline and back-lying area have not been surveyed. A structure is shown on the acquisition map.
229	• This parcel, used as a city park, is forested shoreline adjacent to a bridge and developed areas with private boat docks. • The closest record of a state-listed terrestrial animal species is 0.75 mile away. No federally listed species records exist within 3 miles of the parcel. Rezoning this parcel to Zone 7 may increase boating congestion due to the addition of private boat docks if created. • The shoreline and back-lying area have not been surveyed. Several structures are shown in the vicinity on the acquisition map.
231	• This parcel is the shoreline access of a marina with existing large docks. • The closest record of a state-listed terrestrial animal species is 0.75 mile away. No federally listed species records exist within 3 miles of the parcel. Rezoning this parcel to Zone 7 may decrease boating congestion and human impacts if small private boat docks were created in place of large ones. • The shoreline and back-lying area have not been surveyed. A cultural site is nearby.
236	• One section of this parcel sits between a marina and large boat docks, while the other is deforested undeveloped shoreline. Adjacent to the parcels are highly developed areas. • The closest record of a state-listed terrestrial animal species is 0.35 mile away. A bald eagle nest exists 2.8 miles away. Rezoning this parcel to Zone 7 may cause a slight increase or decrease in boating congestion and use of the area depending on the creation of private docks and/or removal of large marina docks. • The shoreline and back-lying area have not been surveyed. A historic farmstead lies near the eastern portion of the parcel.
248	• This parcel fronts an industrial area next to a large bridge. Similar industrial lots lay adjacent to the parcel. The parcel consists of early successional habitat next to a structured shoreline (riprap or retaining wall). • The closest record of a state-listed species is 1 mile away, and there are no federally listed species within 3 miles of the parcel. Rezoning this parcel to Zone 7 would increase boating congestion and usage in the area if boat docks were created. • The parcel is not likely to contain intact cultural deposits due to roadway construction.
249	• This parcel fronts an industrial area next to a large bridge. Similar industrial lots lay adjacent to the parcel. The parcel consists of early successional habitat next to a structured shoreline (riprap or retaining wall). • The closest record of a state-listed species is 0.9 mile away, and there are no federally listed species within 3 miles of the parcel. Rezoning this parcel to Zone 7 would increase boating congestion and usage in the area if boat docks were created. • The Alabama state champion tree, Deodara cedar, is within a mile. Allocation changes to these parcels would not affect the viability of this special tree. • The shoreline and back-lying area have not been surveyed. The acquisition map shows multiple structures on this parcel.
276	• This parcel is recreationally used as a forested campground and county park. A few boat docks exist along the shoreline. • The closest record of a state-listed terrestrial animal species is 1.25 miles away. Four bald eagle nests exist 2.5 miles away or greater. Rezoning this parcel to Zone 7 may cause a slight increase in boating congestion and use of the area depending on the creation of boat docks.

Parcel Number	Resource Comments
	• The shoreline and back-lying area have not been surveyed. The acquisition map shows multiple structures on this parcel.

Table 9. Norris Reservoir Resource Comments

Parcel Number	Resource Comments
21	• The parcel is across from an island. • Records for hellbender and two species of shrew exist within 3 miles. Boat traffic/development associated with individual water use facilities would likely be similar or less compared to a commercial marina. • Shoreline has been surveyed, and the back-lying property has not. One archaeological site has been identified on this parcel.
66	• Parcel is marginal strip adjacent to Zone 4 forested tract along a narrow branch and across from a forested tract also in Zone 4. • No records of federally listed terrestrial animal species exist within 3 miles of the parcel. Conversion of the tract from Zone 6 with existing infrastructure and use as a dock and launching ramp to Zone 7 is not likely to result in significantly different impacts to terrestrial animals. • Kentucky rosin weed (*Silphium wasiotense*) is known to occur near the area. However, in the area of the boat dock and boat launch, habitat to support this species is not likely present. • Shoreline has been surveyed, and the back-lying property has not. One archaeological site has been identified on this parcel.
77	• This parcel is along the Clinch River. No water use facilities appear to currently exist here. Parcel and back-lying tract are forested as is the tract across the river. • No records of federally listed species occur within 3 miles. A cave and heron colony are present, but greater than 2 miles away. Conversion to Zone 7 could result in forest clearing, shoreline development, increased human use and congestion, and erosion of the shoreline through clearing and placement of docks. Increased impacts to listed terrestrial animal species or associated habitat as a result of the zone conversion are not likely to be present. • American ginseng, Kentucky rosin weed, and pink lady-slipper are known to occur within 1 mile of this parcel, but none were found within the parcel. • Shoreline has been surveyed, and the back-lying property has not. One archaeological site has been identified on this parcel.
80	• Parcel already has both private water use facilities and commercial use. Conversion to Zone 7 may result in either replacement of the marina with three additional private facilities resulting in a total of five private facilities, assuming the parcel remains as five sections. Impacts to the shoreline including development and human use may either remain the same or decrease slightly. • Records of gray and Indiana bats exist within 3 miles of the parcel and are associated with a cave that is greater than 2 miles away. Impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline has been surveyed, and the back-lying property has not.
84	• Based on the aerial, a single water use facility exists on the parcel. Portions of the shoreline and back-lying land have been cleared, and a portion of the shoreline remains forested. Conversion to Zone 7 could result in subdivision of the tract into multiple lots and associated private water use facilities, which could result in increased clearing, development, and human use impacts in this cove. • Records of gray and Indiana bats exist within 3 miles of the parcel and are associated with a cave that is greater than 2 miles away. Impacts to terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline has been surveyed, and the back-lying property has not.

Parcel Number	Resource Comments
87	• The harbor limits and associated infrastructure (commercial piers) span the full extent of the parcel shoreline boundary. Conversion to Zone 7 and individual private facilities may result in a decrease in the density in human use and associated boat traffic. However, the conversion likely would result in increased clearing of the back-lying property for residential development would likely result in a decrease of human use and associated boat traffic. • Records of Indiana bats and gray bats are associated with a cave that is within 0.25 mile of the parcel. However, impacts to terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline has been surveyed, but the back-lying property has not.
109	• Parcel abuts Zone 7 tracts on either side, where private docks currently exist. The marina has a high density of boathouses fronting the parcel. • Records of federally listed species within 3 miles of the project include Indiana bat. However, impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline and the back-lying property have not been surveyed.
118	• Parcel is developed extensively related to the marina. There also appear to be existing private water use facilities along the shoreline. • Records of federally listed species within 3 miles of the project include Indiana bat and an associated cave. However, impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline and the back-lying property have not been surveyed.
124	• This is a very large marina fronting the shoreline of both sections of the parcel. Conversion to Zone 7 likely would result in equivalent or less impact with respect to human use, density, and related infrastructure (private docks). • There are no records of federally listed species within 3 miles of the project. A cave is present within 3 miles but greater than 0.5 mile from the parcel. Impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline and the back-lying property have not been surveyed.
140	• Conversion from Zone 6 to 7 may result in increased infrastructure along the shoreline, which appears to have nothing fronting the shoreline currently. The parcel is across from a Zone 7 tract. • There are no records of federally listed species within 3 miles of the project. A cave is present within 3 miles but greater than 2 miles from the parcel. Impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline has been surveyed, and the back-lying property has not. One cultural site has been identified on this parcel.
209	• Most of the shoreline inside the Long Branch embayment is undeveloped. Rezoning this portion to Zone 7 could increase boat traffic/congestion and could result in the loss of some forested shoreline. • The section closer to the main stem of the Tennessee River has two state-listed shrews and one bald eagle record occur within 3 miles. The shrews are over 1.5 miles away, and the bald eagle nest is over 2.5 miles away. No records of federally listed species were found within 3 miles of the parcel. Impacts to listed terrestrial animals and associated habitats are not expected to be different under a Zone 7 allocation. • Shoreline has been surveyed, and the back-lying property has not. Five cultural sites have been identified on this parcel.

Parcel Number	Resource Comments
293	• This parcel already contains a boat dock at the mouth of the embayment. Rezoning this parcel to Zone 7 may cause a slight increase or decrease in boating congestion and use of the area depending on the creation of private docks and/or removal of Hickory Star Boat Dock. The southern section of this parcel inside the small embayment is a forested shoreline and could be impacted by increased private boat docks. • Several caves occur within 3 miles of this parcel, but all are over 1.5 miles away and would not be impacted. Terrestrial listed species would not be impacted. • Shoreline has been surveyed, and the back-lying property has not. Eight cultural sites have been identified on this parcel.
297	• This is mostly undeveloped shoreline bordered by Zone 6 and across from Zone 4. Increased boat traffic and congestion could occur as a result of rezoning this parcel as well as some loss of the forested shoreline due to dock construction. • Caves occur within 3 miles of this parcel, but all are over 1.5 miles away and would not be impacted. Terrestrial listed species would not be impacted. • Shoreline has been surveyed, and the back-lying property has not. Twelve cultural sites have been identified on this parcel.
301	• This parcel already contains a boat dock and is bordered by Zone 7 property on either side. Rezoning this parcel to Zone 7 might reduce boat traffic from the current Andersonville Boat Dock. • One record of the Allegheny woodrat occurs over 2.5 miles away. Terrestrial listed species would not be impacted. • Shoreline has been surveyed, but the back-lying property has not.
310	• The western section of the parcel already has numerous docks and is developed. The eastern section of the parcel, however, is not as developed and offers a continuous forested shoreline. The shoreline connects with undeveloped shoreline zoned 4 and is across from a Zone 4 wildlife management area. Rezoning this parcel to Zone 7 could impact the forested shoreline on the eastern portion of this parcel due to an increased number of boat docks. • A cave also occurs on this eastern portion and could be negatively impacted from increased boat dock construction and use. One record of the Allegheny woodrat occurs over 2 miles away. Terrestrial listed species would not be impacted. However a unique habitat (cave) could be negatively impacted if this parcel is rezoned to 7. • Shoreline has been surveyed, and the back-lying property has not.
315	• Parcel contains a marina and is heavily congested. Rezoning this parcel to Zone 7 might reduce congestion. • Records of smoky shrew and Allegheny woodrat occur over 2 miles away. A cave with the federally listed as endangered gray bat occurs over 2.5 miles away. No terrestrial listed species would be impacted. • Shoreline has been surveyed, and the back-lying property has not. One cultural site has been identified on this parcel.

Table 10. Pickwick Reservoir Resource Comments

Parcel Number	Resource Comments
12	• This parcel is across from a forested peninsula allocated as Zone 6. • This parcel contains bald eagle records within 1 mile. If parcel is divided into multiple lots under Zone 7, it may congest/concentrate private water use facilities; alternatively could reduce concentration of human traffic related to currently being a public park. • Four cultural sites are recorded. Numerous structures are shown on the acquisition maps.
49	• This parcel is across from a forested tract allocated as Zone 4. • There are gray bat cave records 0.5 mile away or more. If parcel is allocated to Zone 7, it may increase disturbance for natural resource conservation area across inlet especially with multiple private docks in addition to barge terminal; however, potential development under current Zone 5 allocation may be more detrimental than potential Zone 7 depending on construction plans. • Two cultural sites are recorded.
59	• This parcel is across from a forested island (Koger's Island). • There is a gray bat cave record approximately 1 mile away and bald eagle nest 2.25 miles away. If allocated to Zone 7, it may increase disturbance to island that offers potential roosting habitat for heron colonies or bald eagles, especially with multiple private docks in addition to barge terminal. However, potential development under current Zone 5 allocation may be more detrimental than potential Zone 7 depending on construction plans. • No cultural resources recorded.
89	• The marina is surrounded by other businesses or residential areas. • There are no listed terrestrial animal species within 3 miles; there would be no impacts to terrestrial animal species if this parcel was rezoned to Zone 7. Should this area be converted to private residential boat docks, congestion and human disturbance may decrease. • Back-lying area has not been surveyed. "Negro" cemetery recorded nearby.
91	• This small strip of trees is part of an existing recreation area. • There are no listed terrestrial animal species within 3 miles; if rezoned to 7, human traffic would likely increase due to use of shoreline access in addition to usage of existing recreation area. • Back-lying area has not been surveyed. The acquisition map shows structures on the parcel.
103	• Forested wetland parcel attached to a larger tract of forest along Bear Creek. • There are two state- and no federally listed terrestrial species within 3 miles of the parcel. The closest state-listed species is over 2 miles away. If rezoned to 7, one large dock would impact less forested wetland shoreline habitat than multiple private docks. • Back-lying area has not been surveyed. The acquisition map shows a historic farmstead at the southern edge of the parcel. The potential for cultural deposits is considered high.
112	• This marina is almost 3 miles away from two state-listed species and a documented cave with gray and Indiana bat records. Rezoning this parcel to Zone 7 would not impact any listed terrestrial animal species. • Back-lying area has not been surveyed.

Parcel Number	Resource Comments
140/141	• Sections of the shoreline of these parcels are forested; however, the majority of the area has already been developed. Shoreline access already occurs in these developed areas. • There is a record of a state-listed frog species 90 feet away and a bald eagle nest 2 miles away from these parcels. Rezoning these parcels to Zone 7 would not impact this pond but may result in the loss of sections of forest along the shore. This forested habitat is common regionally. The installation of more boat docks on the parcel would not impact any listed species; however, impacts to habitat could be minimized by using community versus private boat docks. • Back-lying areas have not been surveyed on either parcel.
150	• This parcel is a marina. • There is one record of a bald eagle nest 0.5 mile from the parcel. Rezoning this parcel to Zone 7 could reduce congestion and human disturbance if this area were converted to private residential boat docks. No listed species would be impacted. • There are 155 element occurrence records for plants reported within 5 miles of Parcel 150. In addition, 15 Mississippi state-listed species are located within 1 mile of the area, but no species of special concern were reported from within or directly adjacent to this tract of land. Since this area is a marginal strip fronting an existing marina, there would be limited habitat to support rare species. • Back-lying area has not been surveyed, but the shoreline was surveyed and found to have no cultural resources.

Maps of Parcels – Norris Reservoir

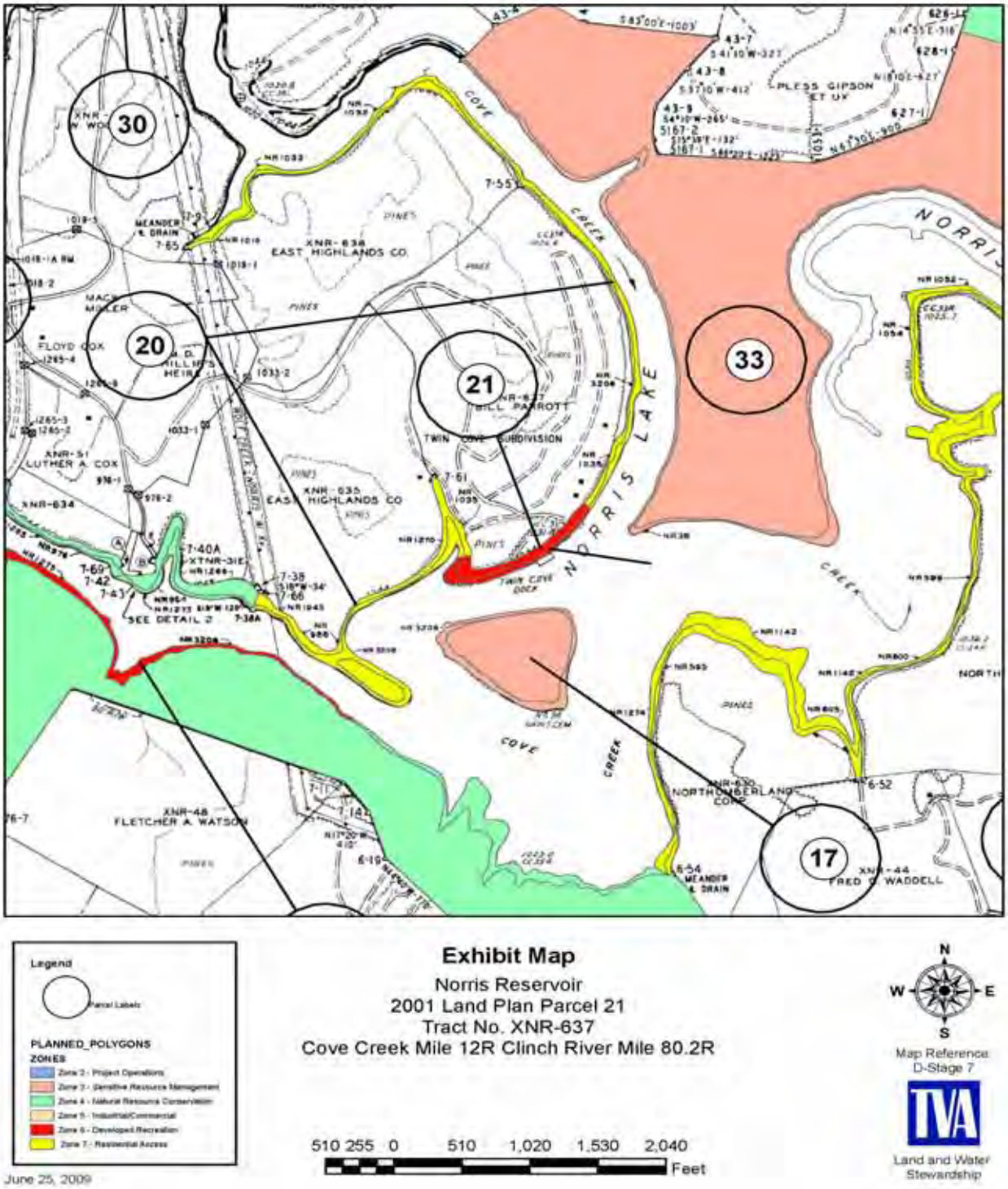


Figure 1. Norris Reservoir Parcel 21

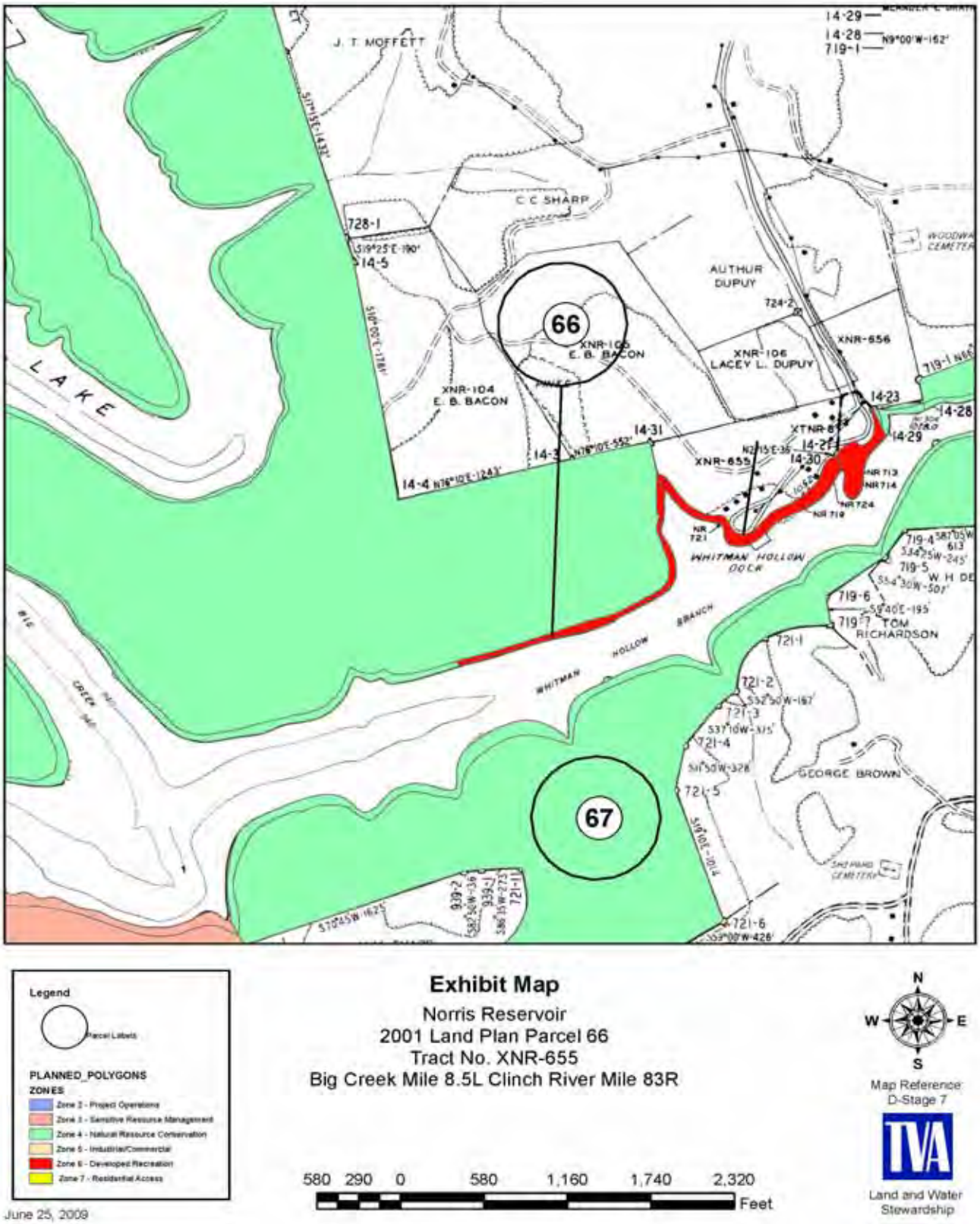


Figure 2. Norris Reservoir Parcel 66

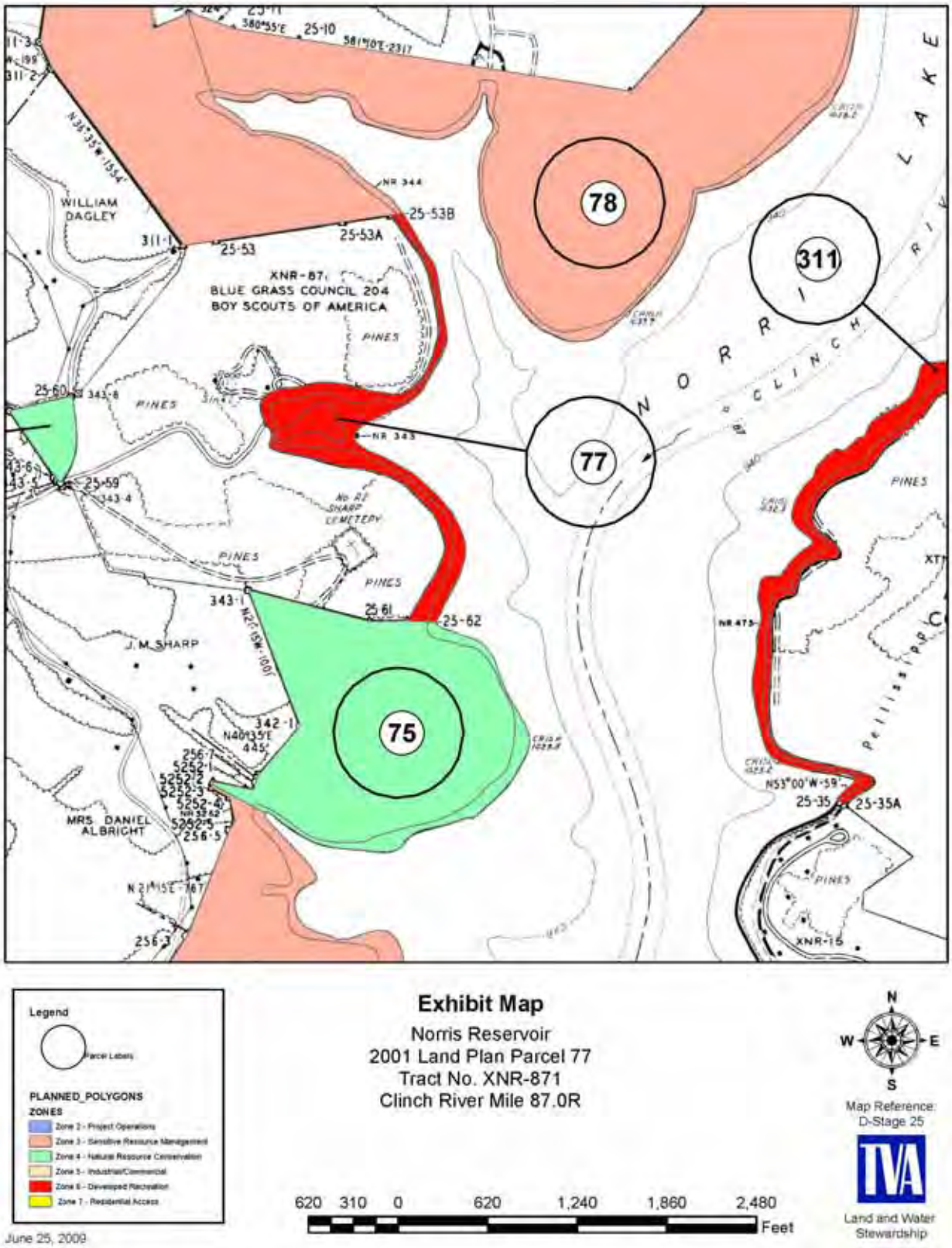


Figure 3. Norris Reservoir Parcel 77

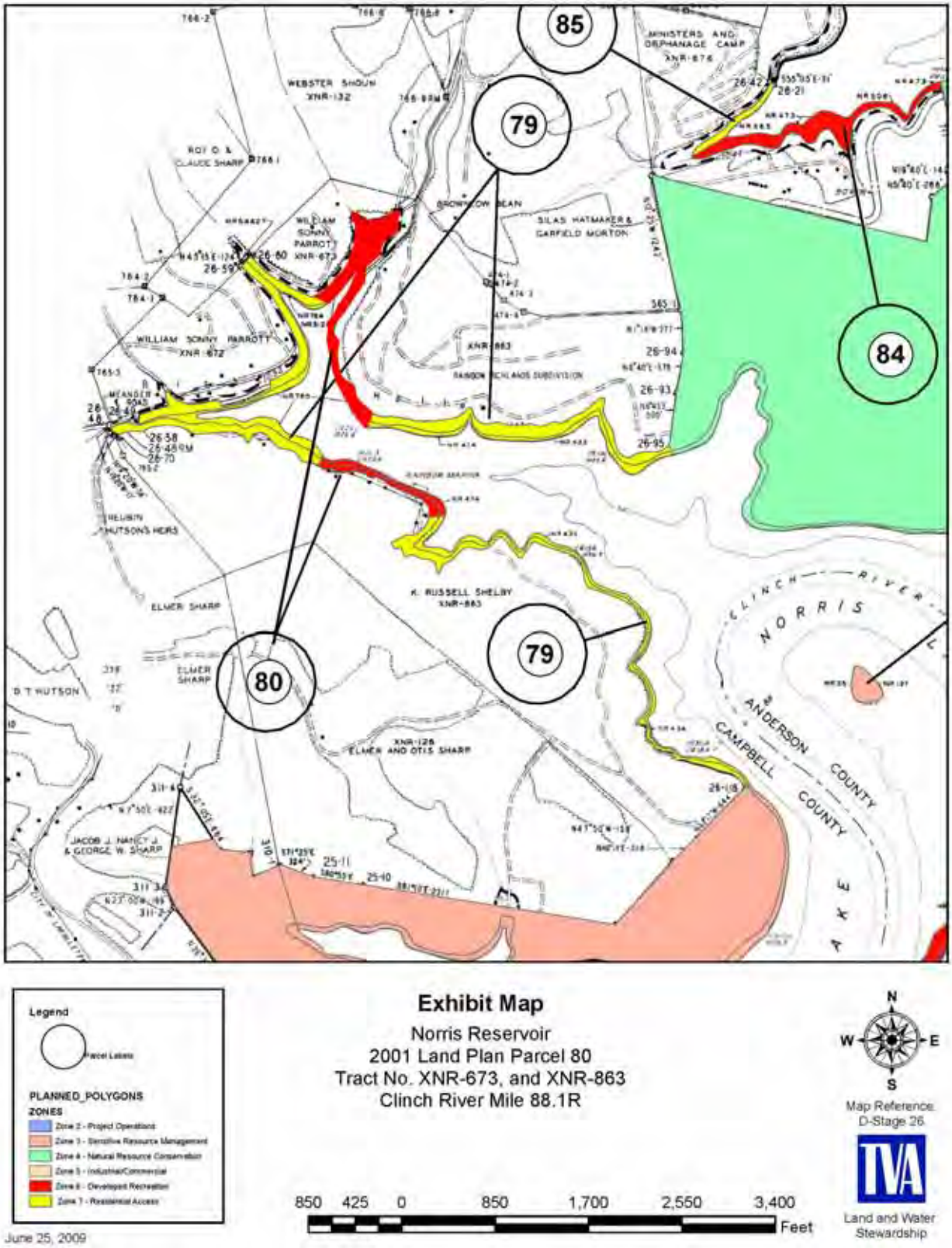
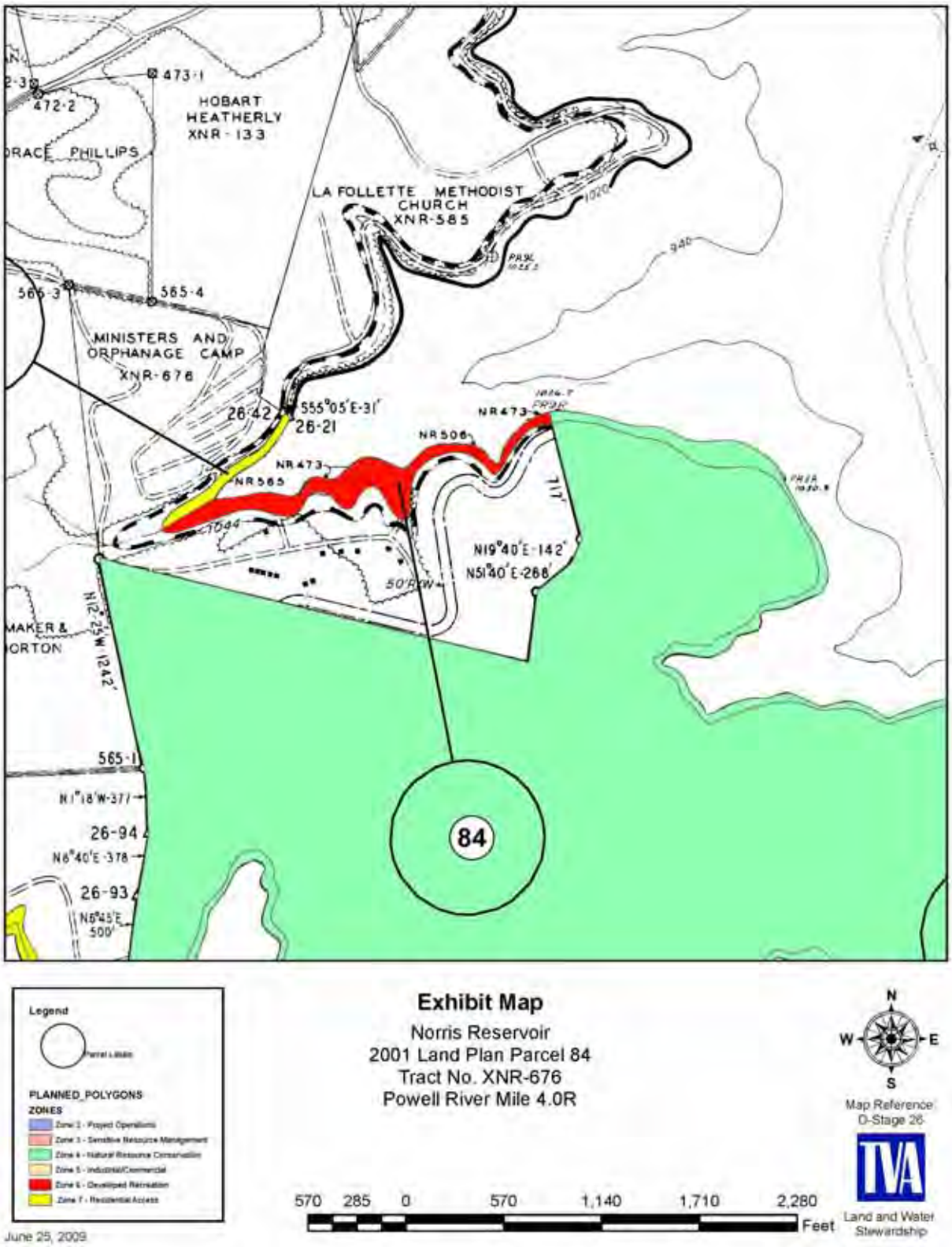


Figure 4. Norris Reservoir Parcel 80



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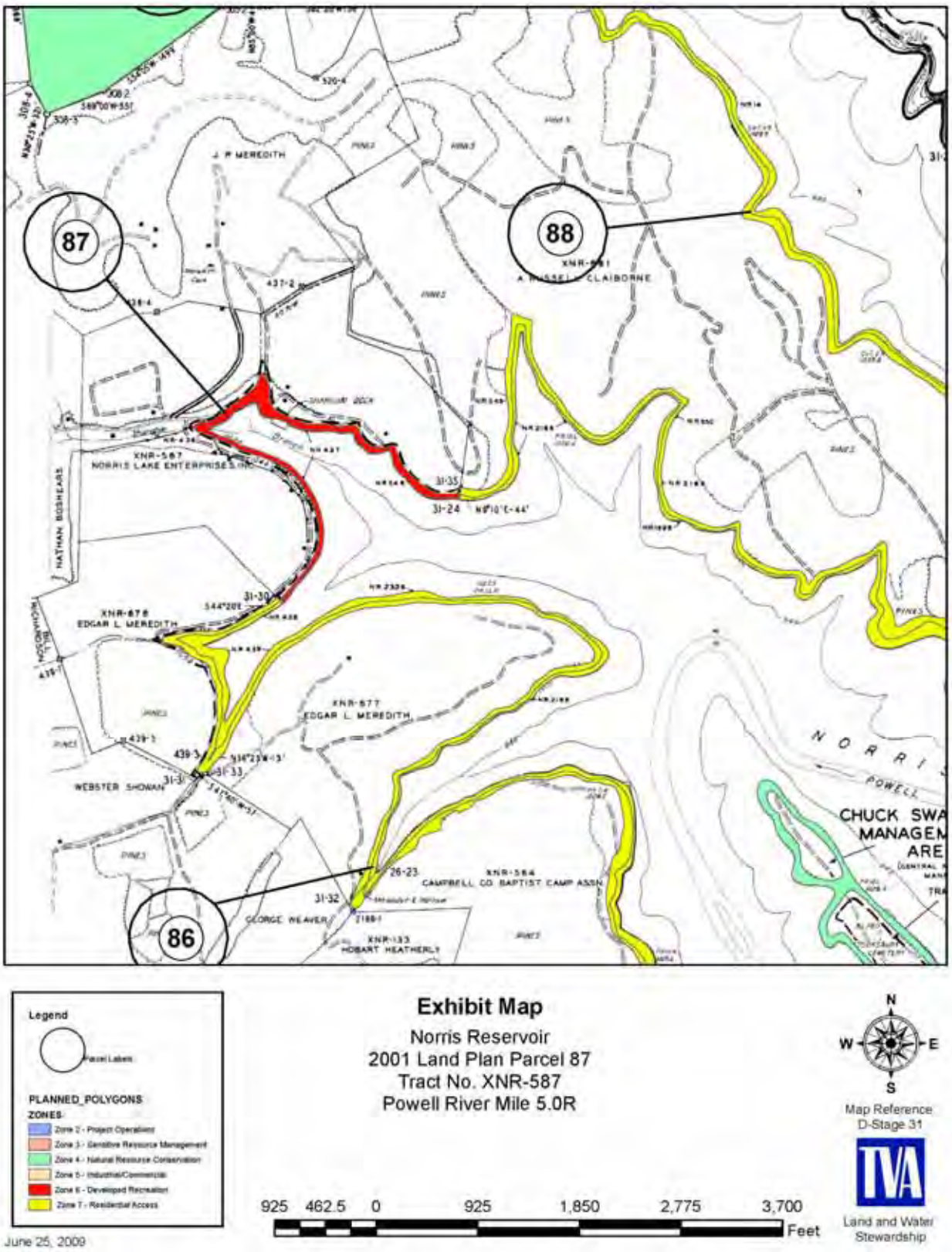

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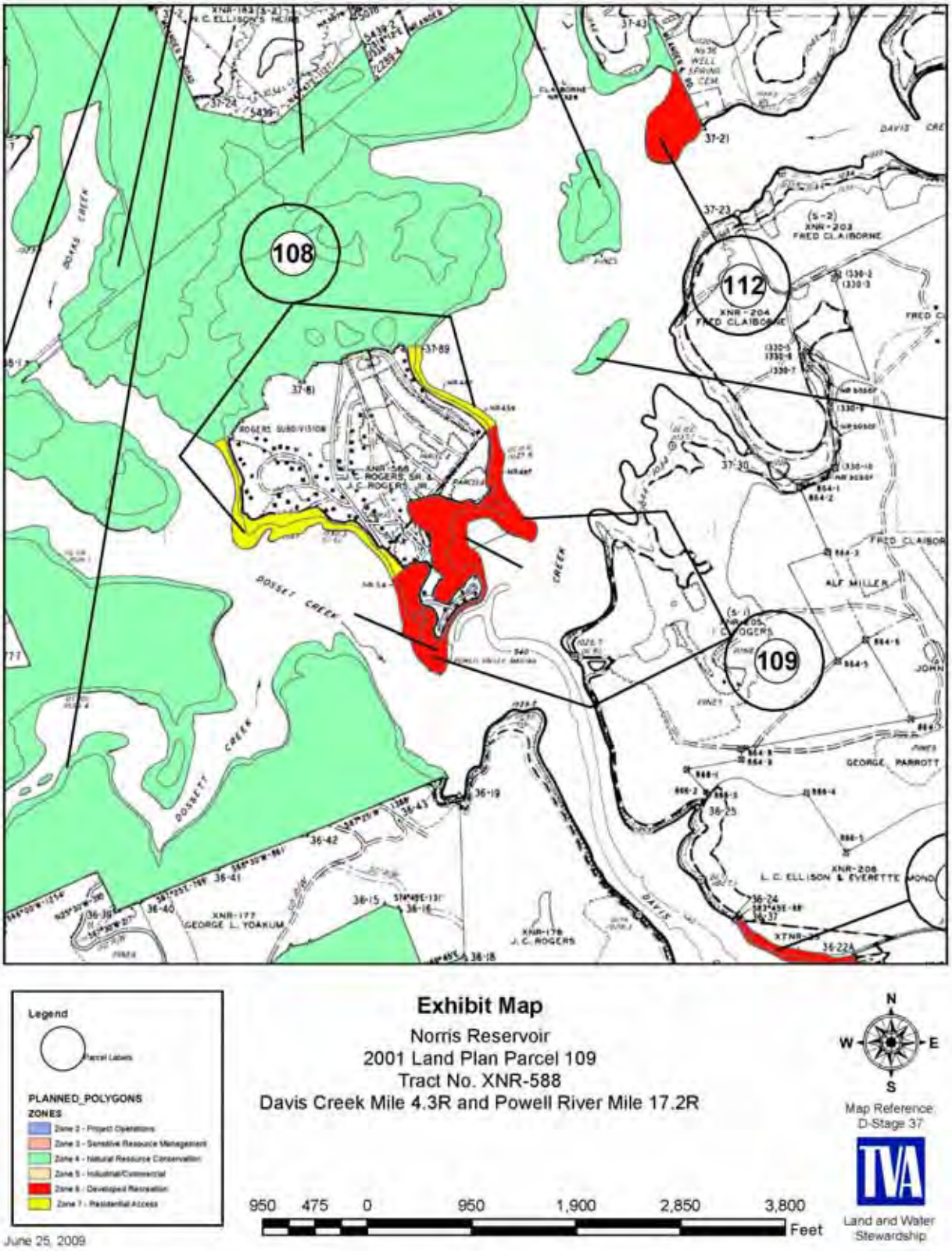
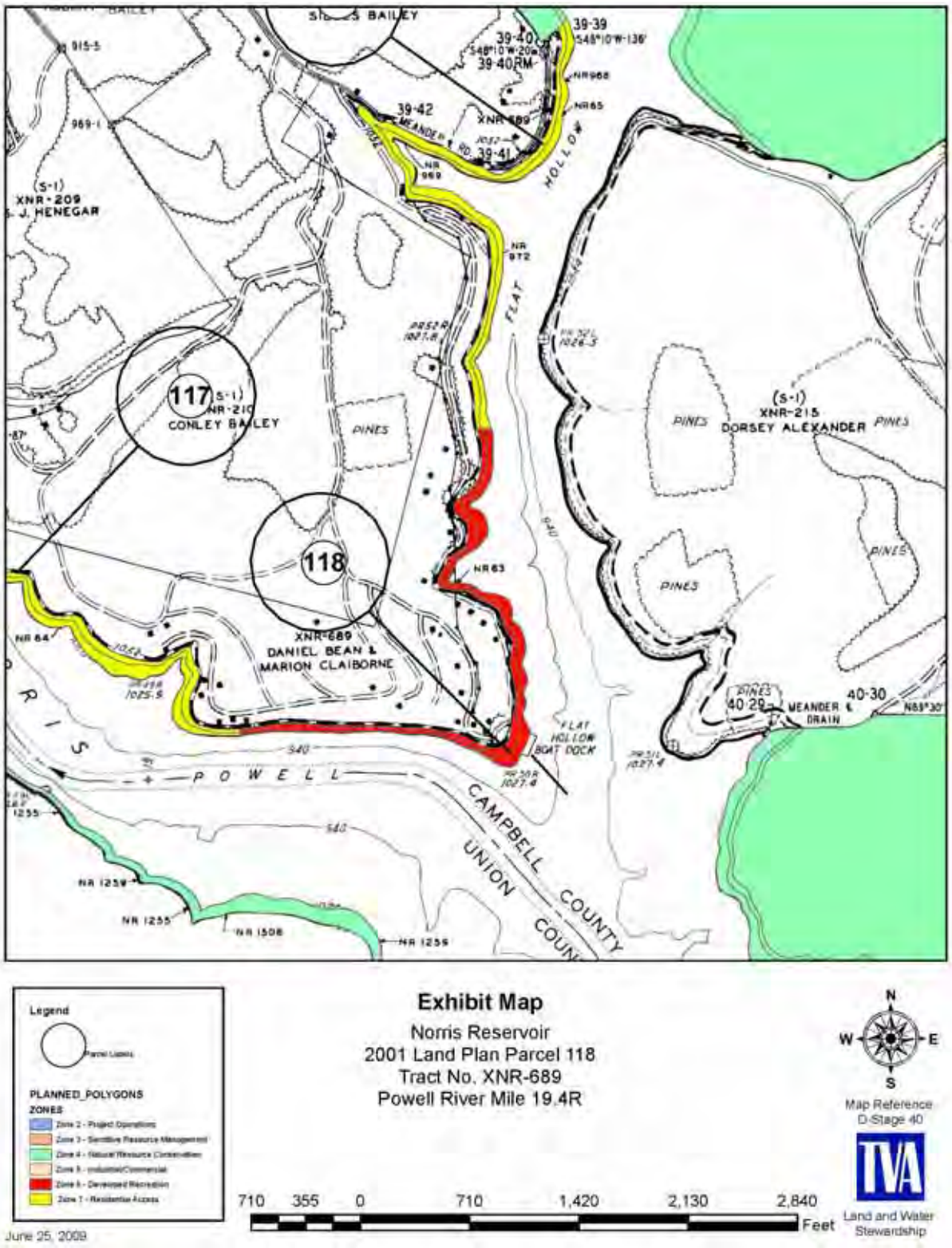


Figure 7. Norris Reservoir Parcel 109



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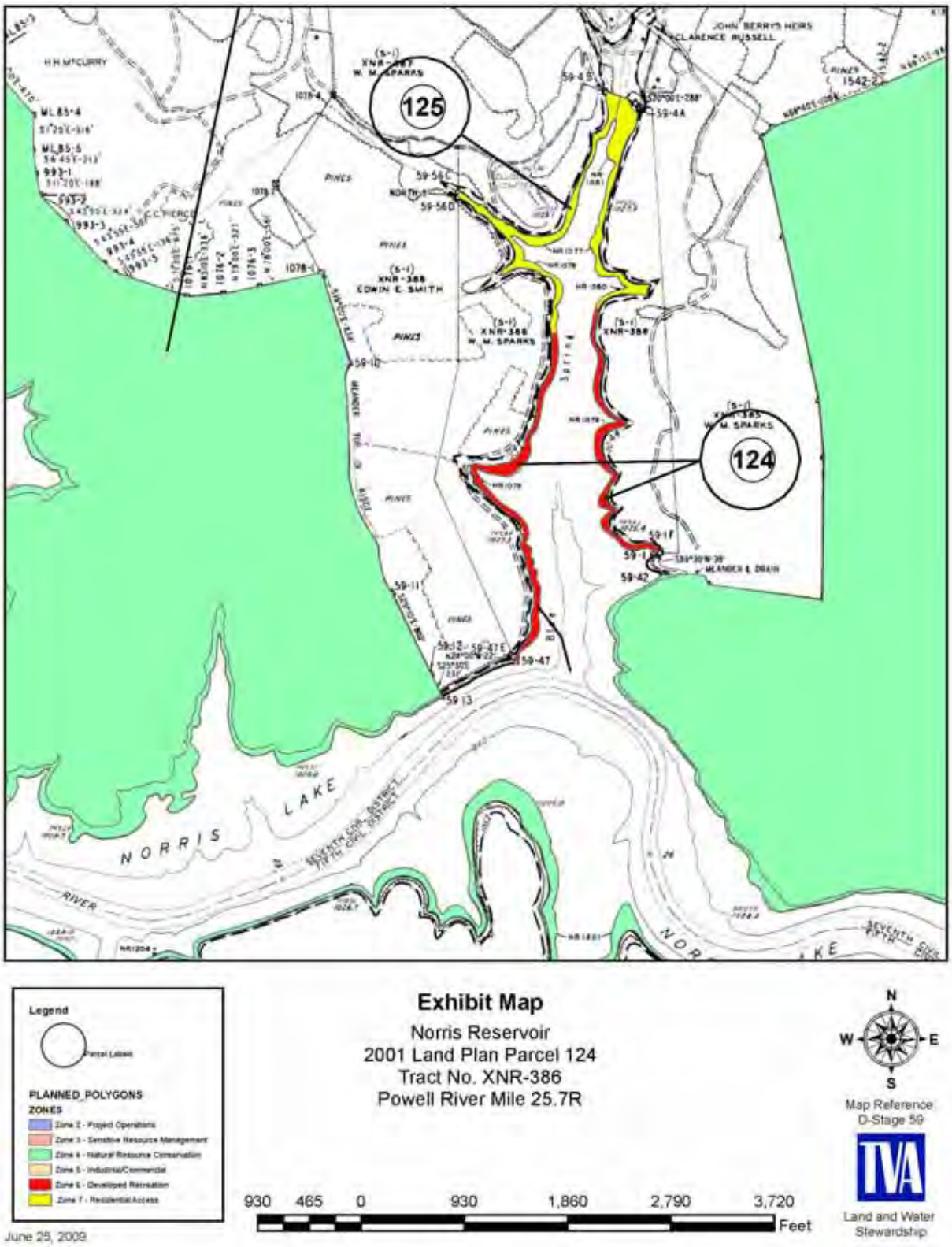

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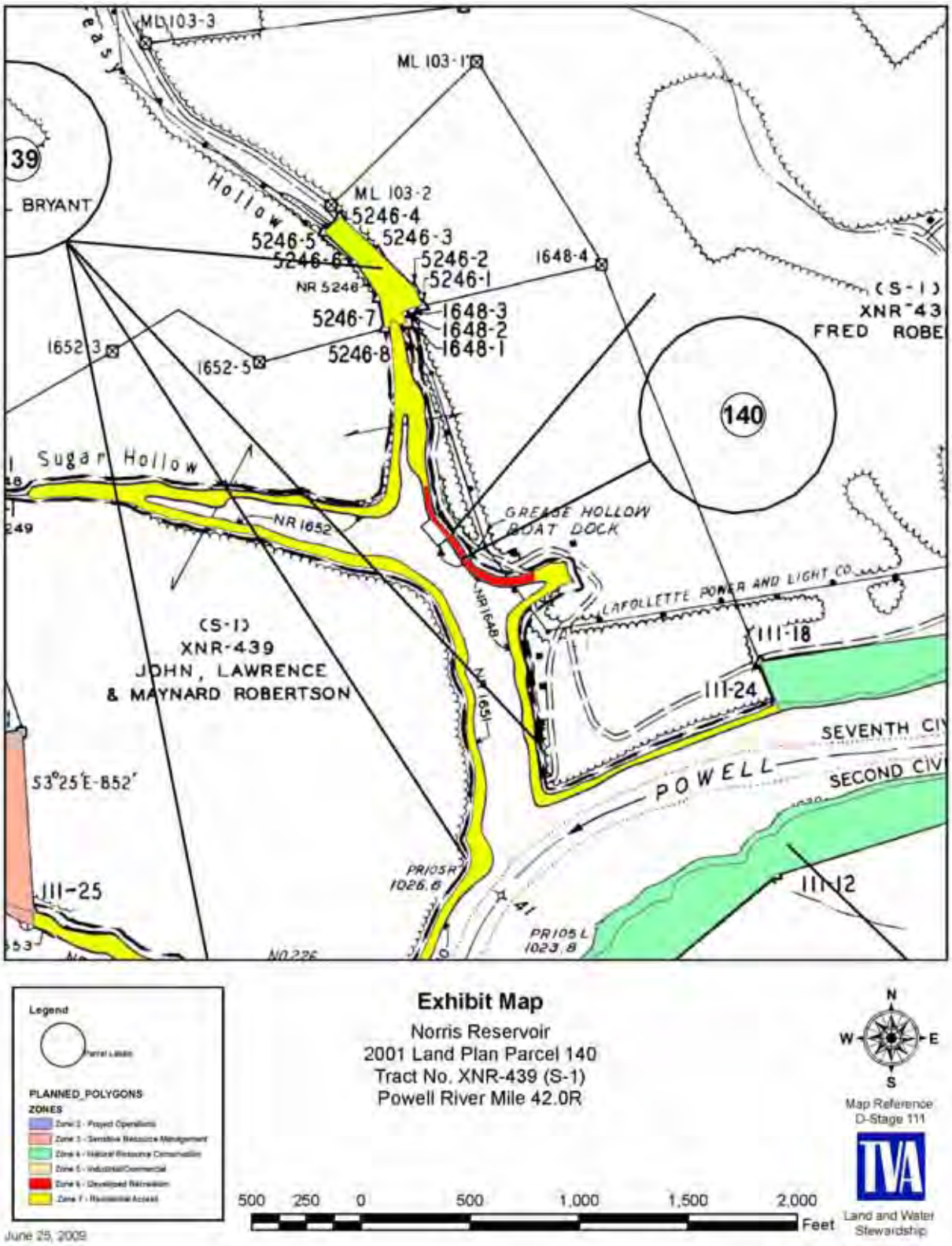

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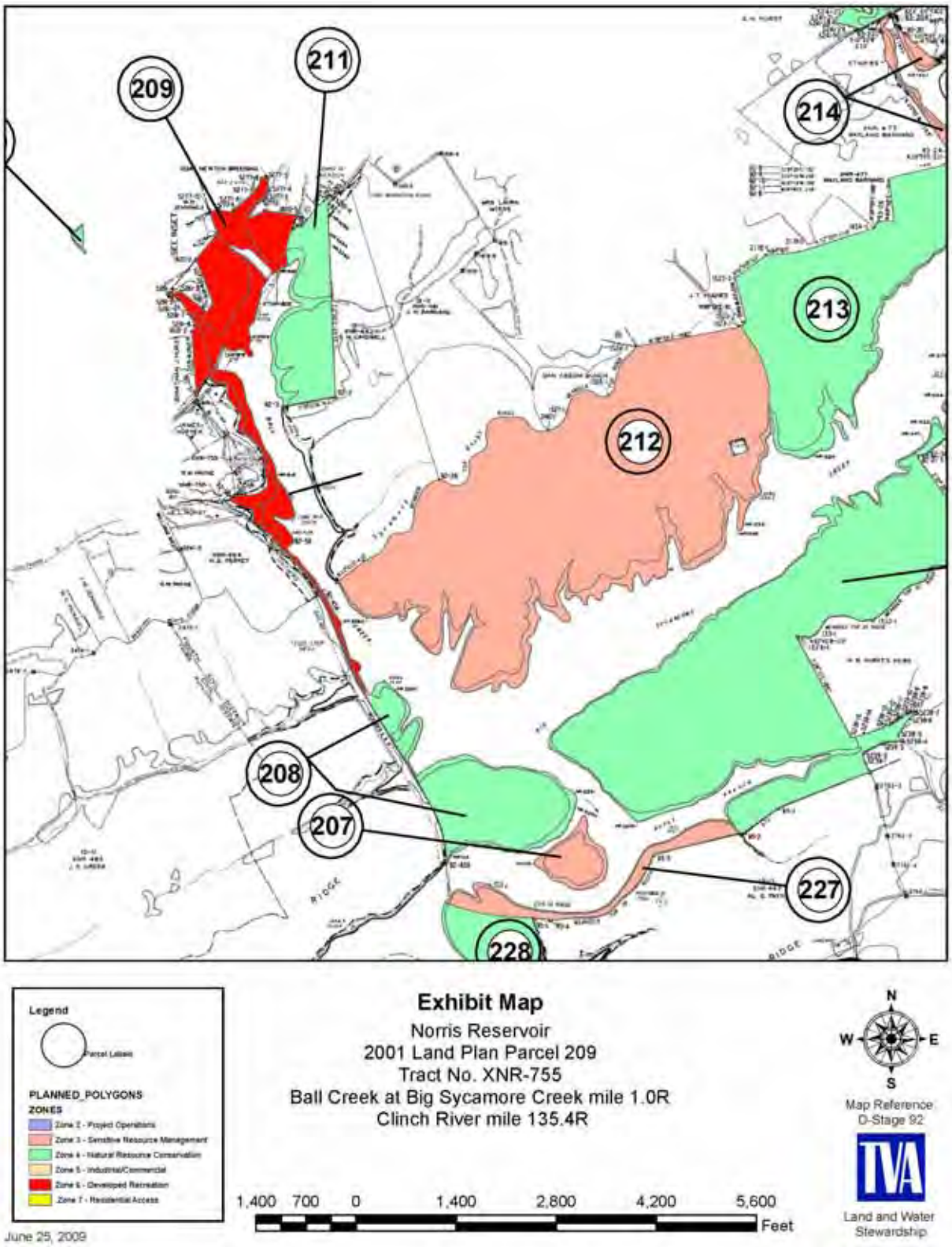

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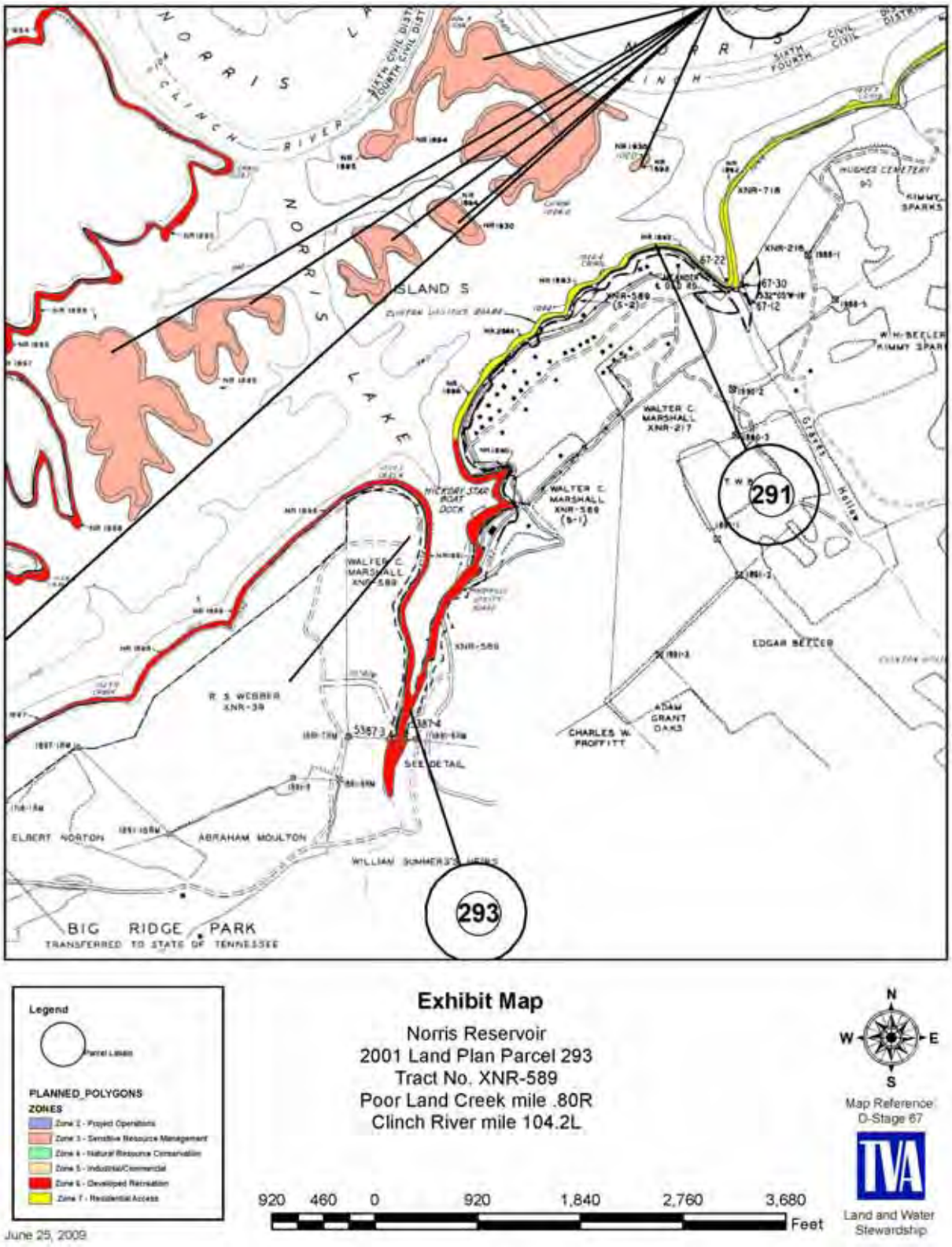
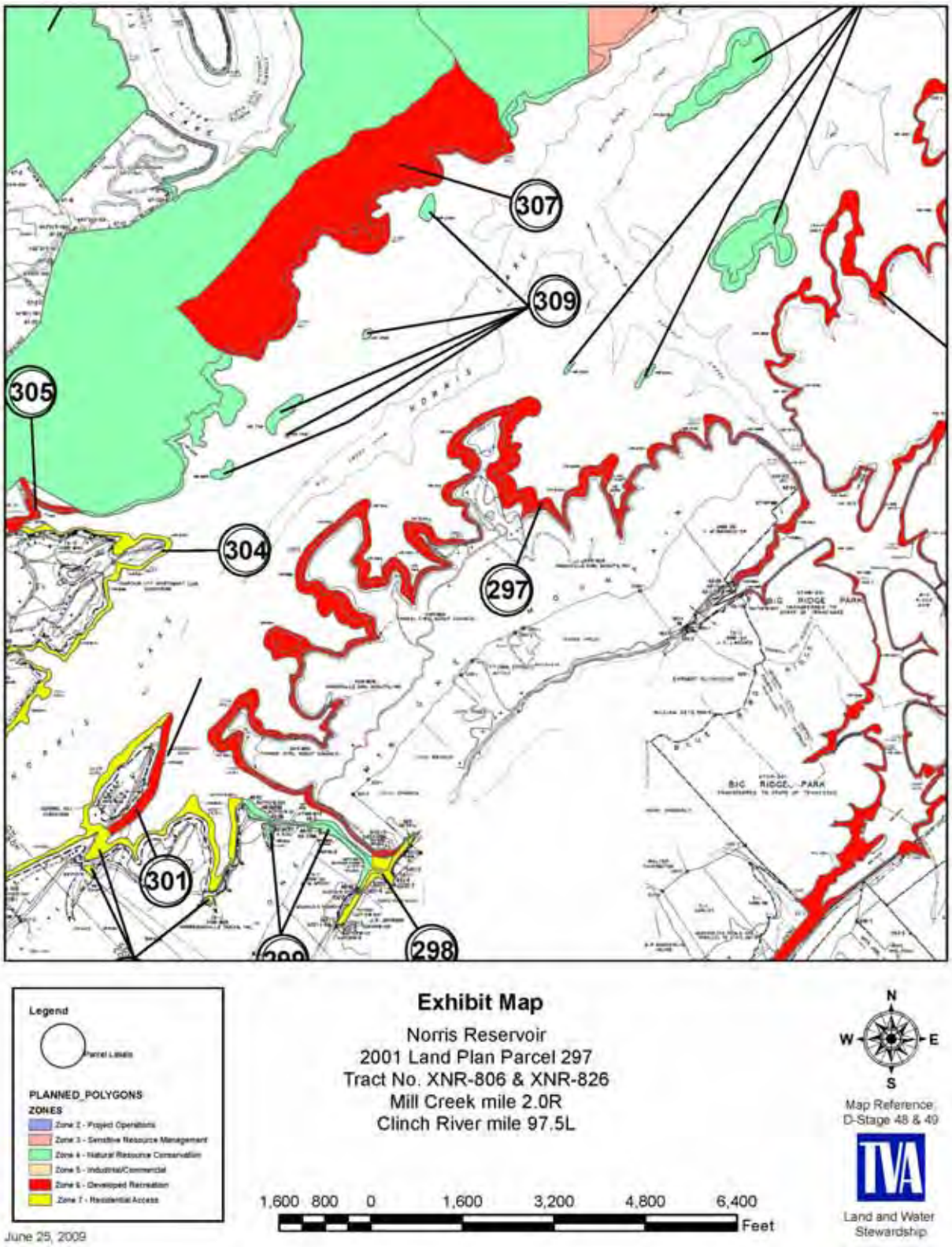


Figure 12. Norris Reservoir Parcel 293



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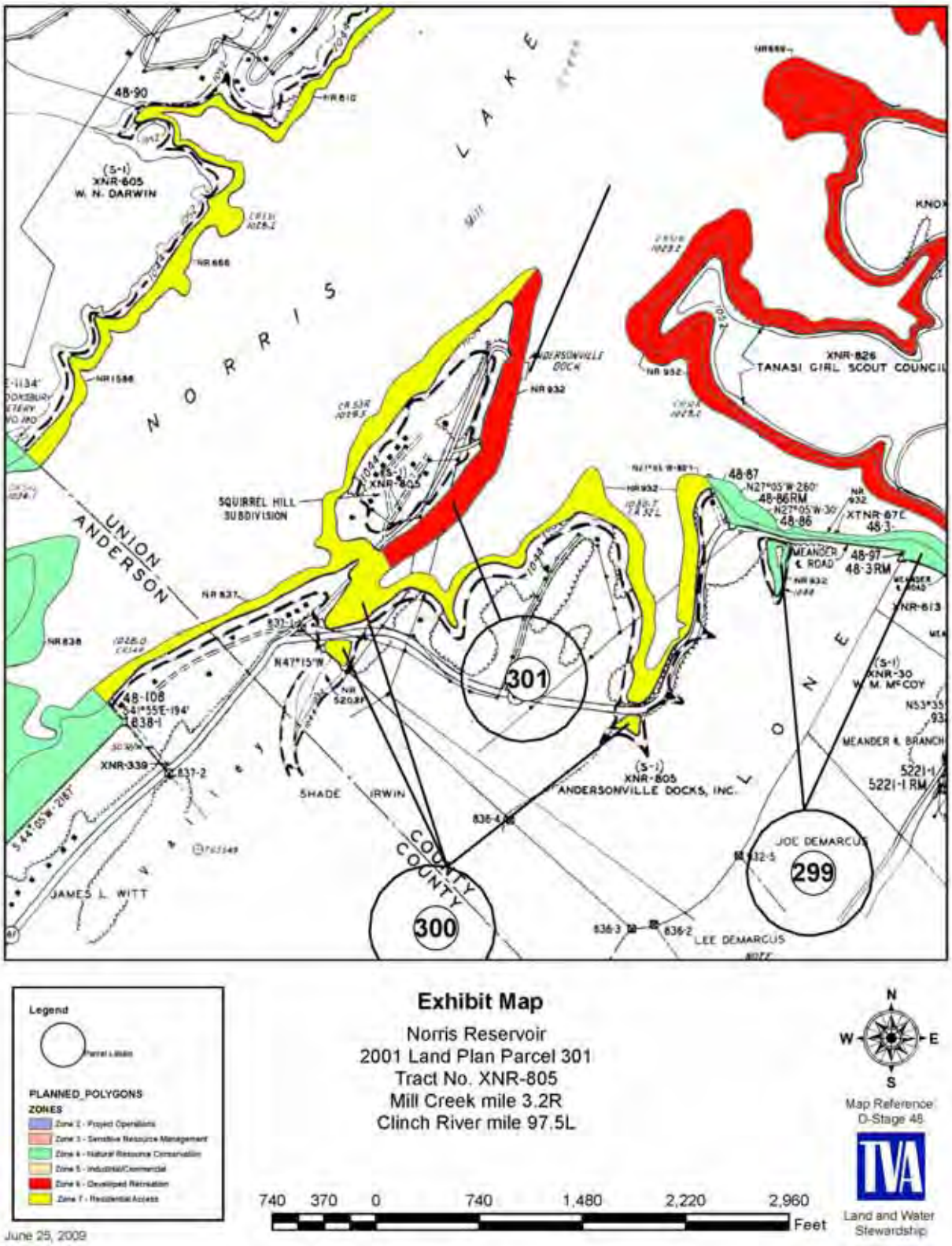

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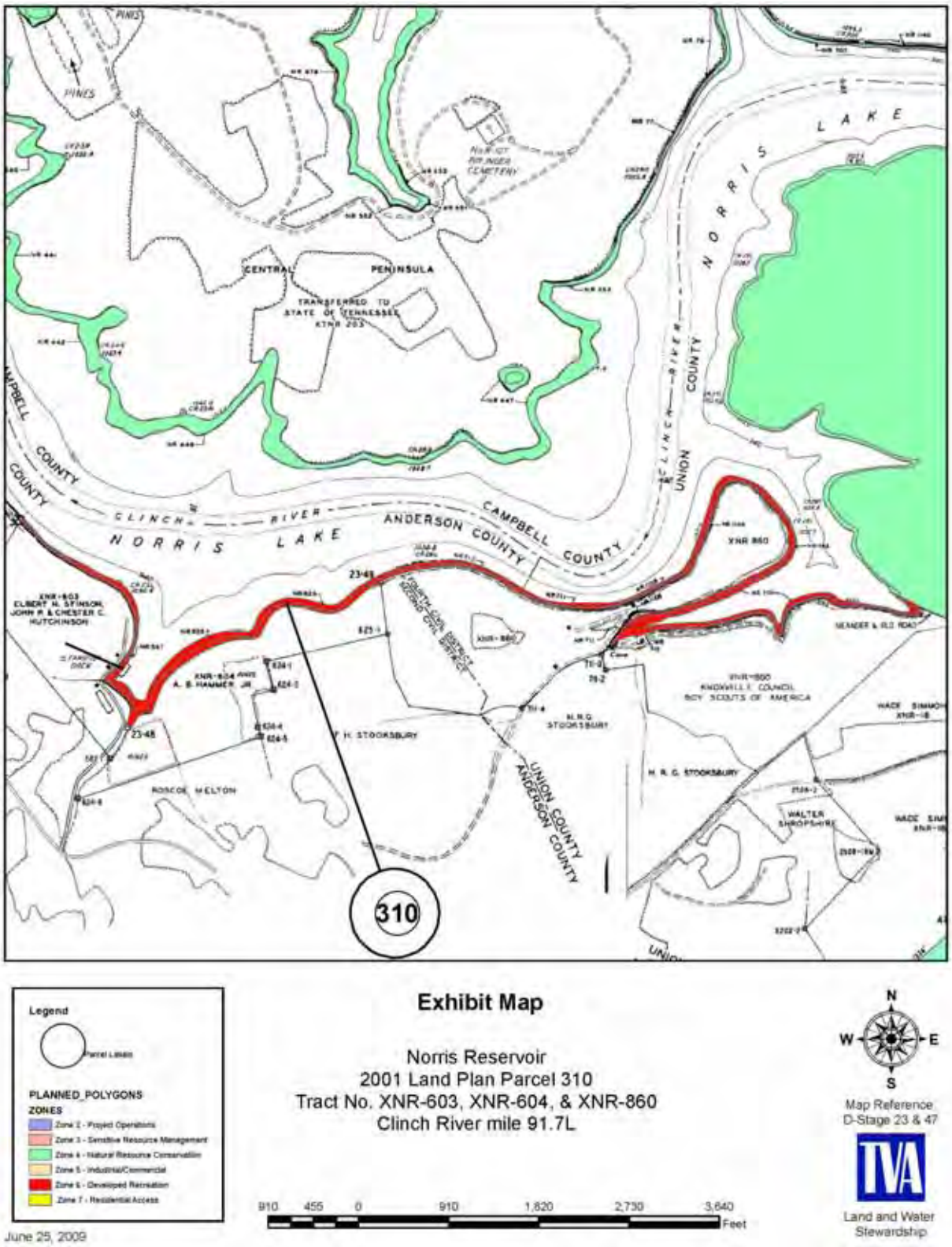

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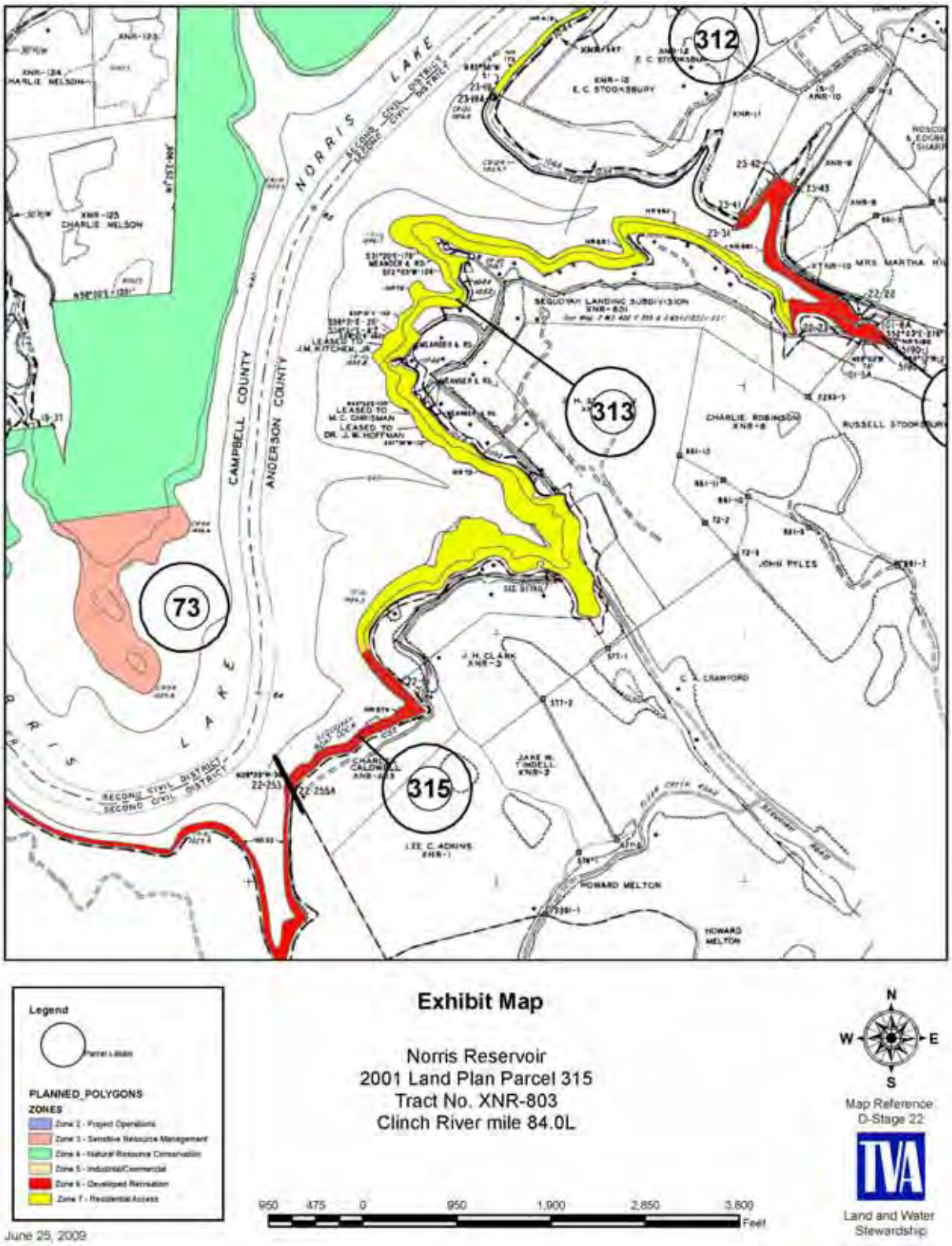


Figure 16. Norris Reservoir Parcel 315

Maps of Parcels – Guntersville Reservoir

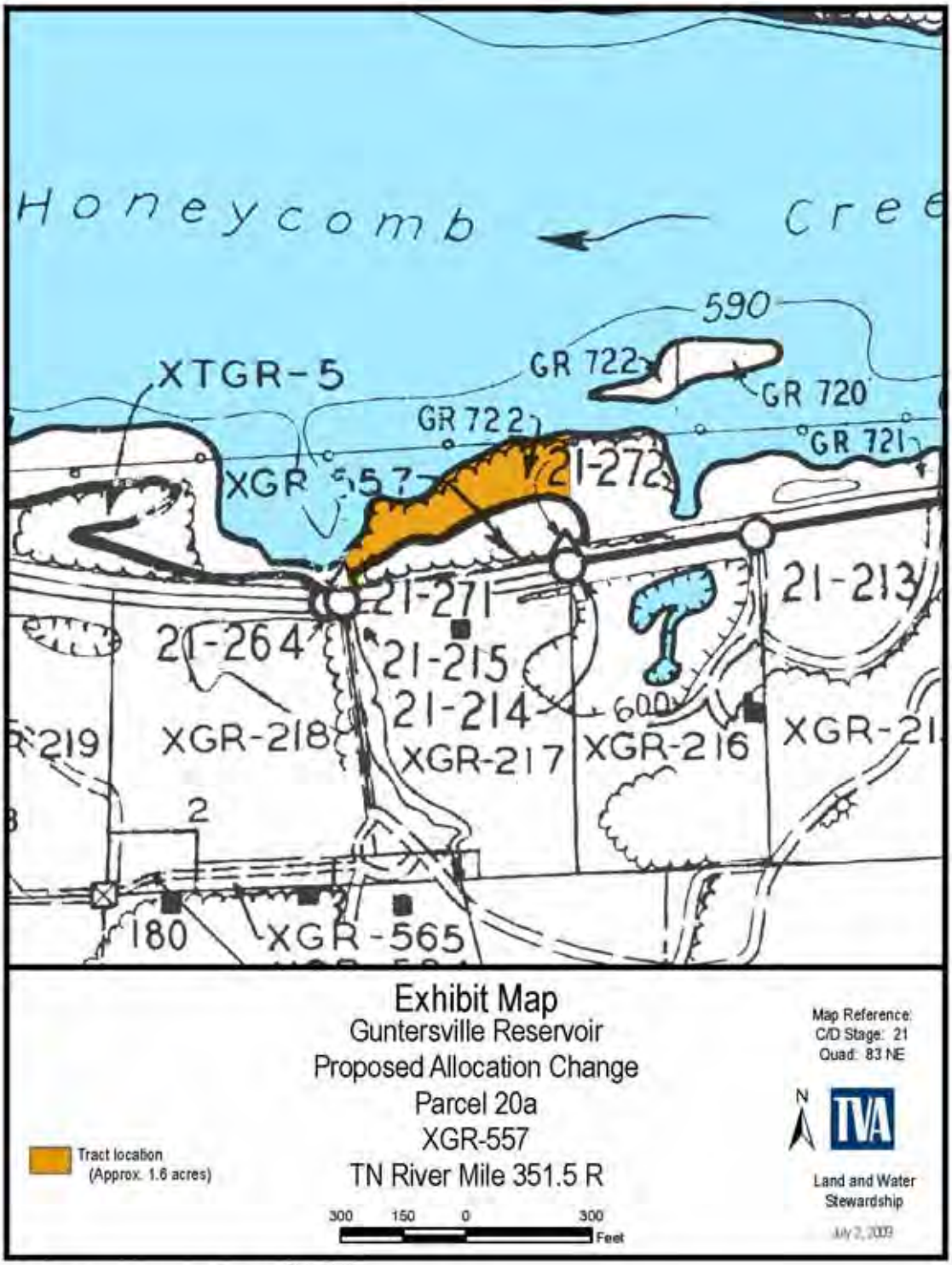


Figure 17. Guntersville Reservoir Parcel 20a

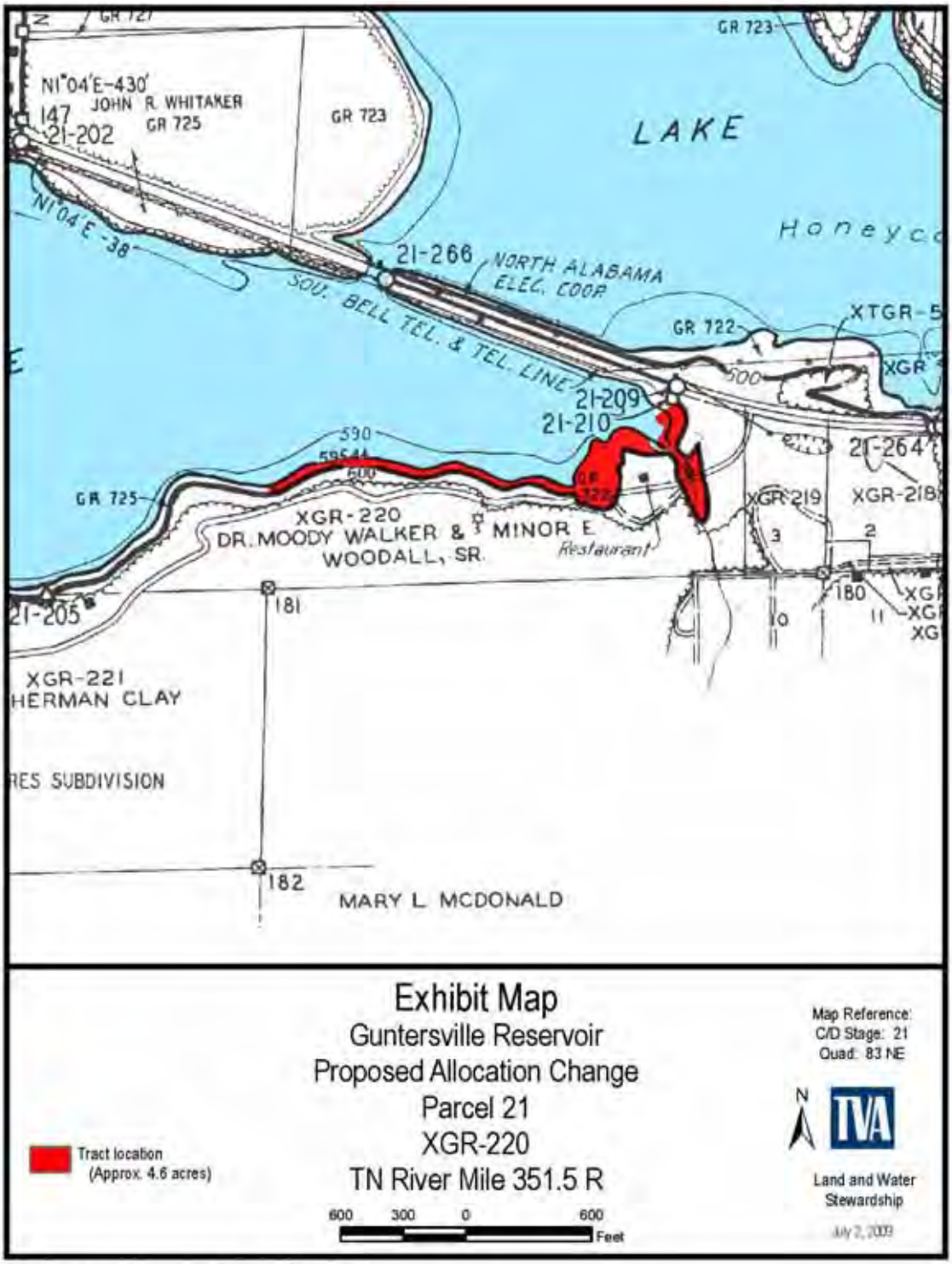


Figure 18. Guntersville Reservoir Parcel 21

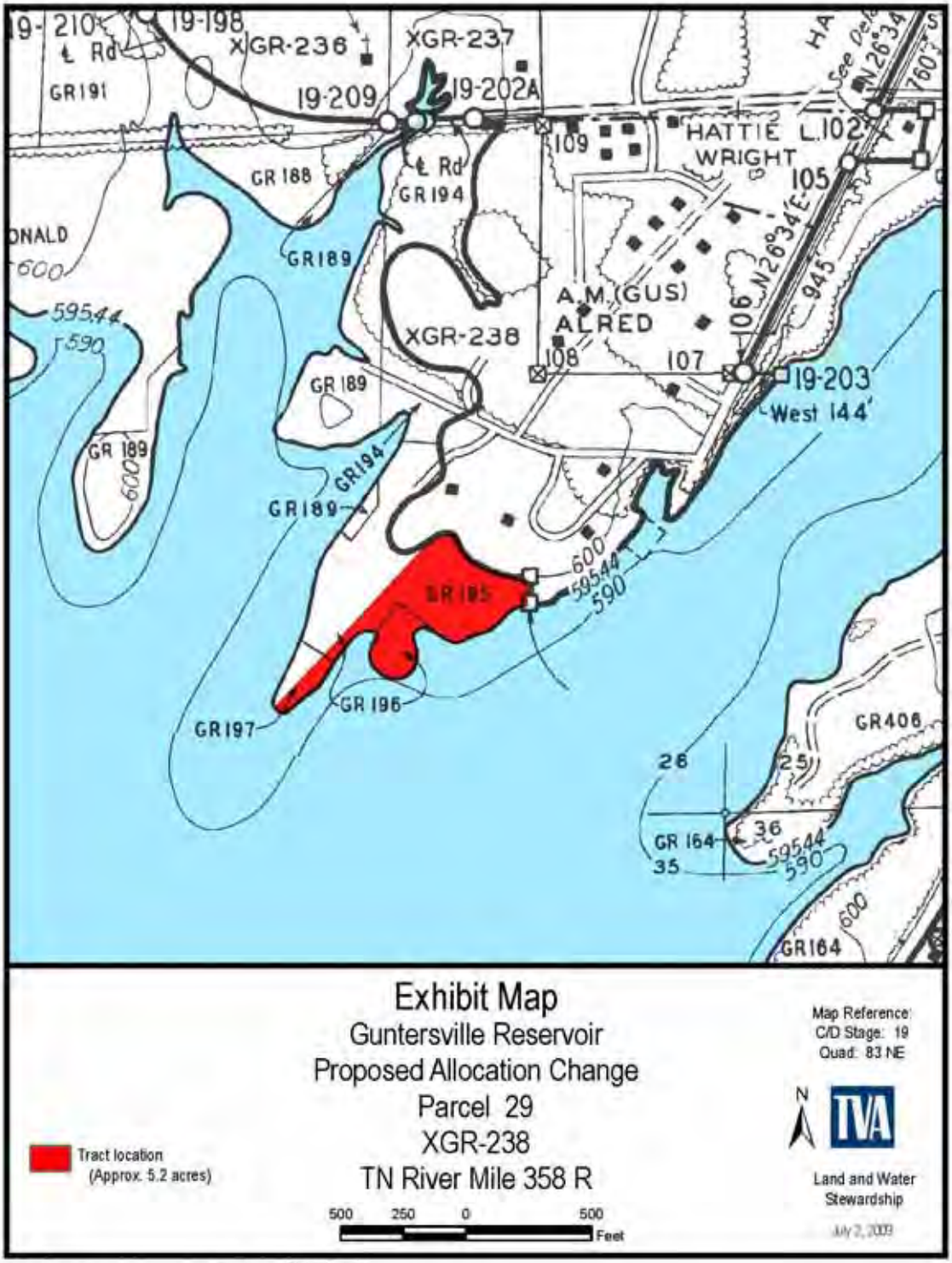
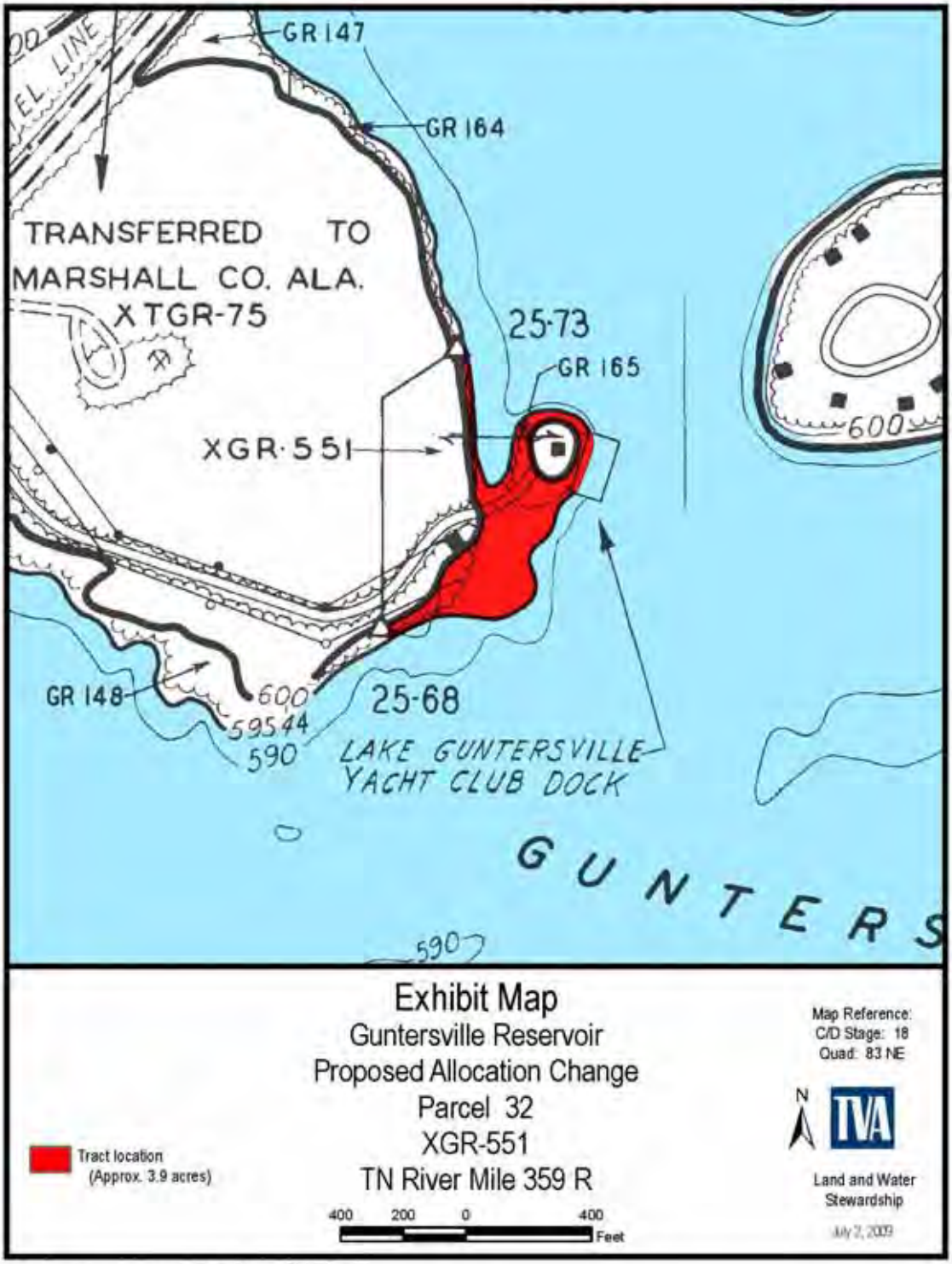


Figure 19. Guntersville Reservoir Parcel 29



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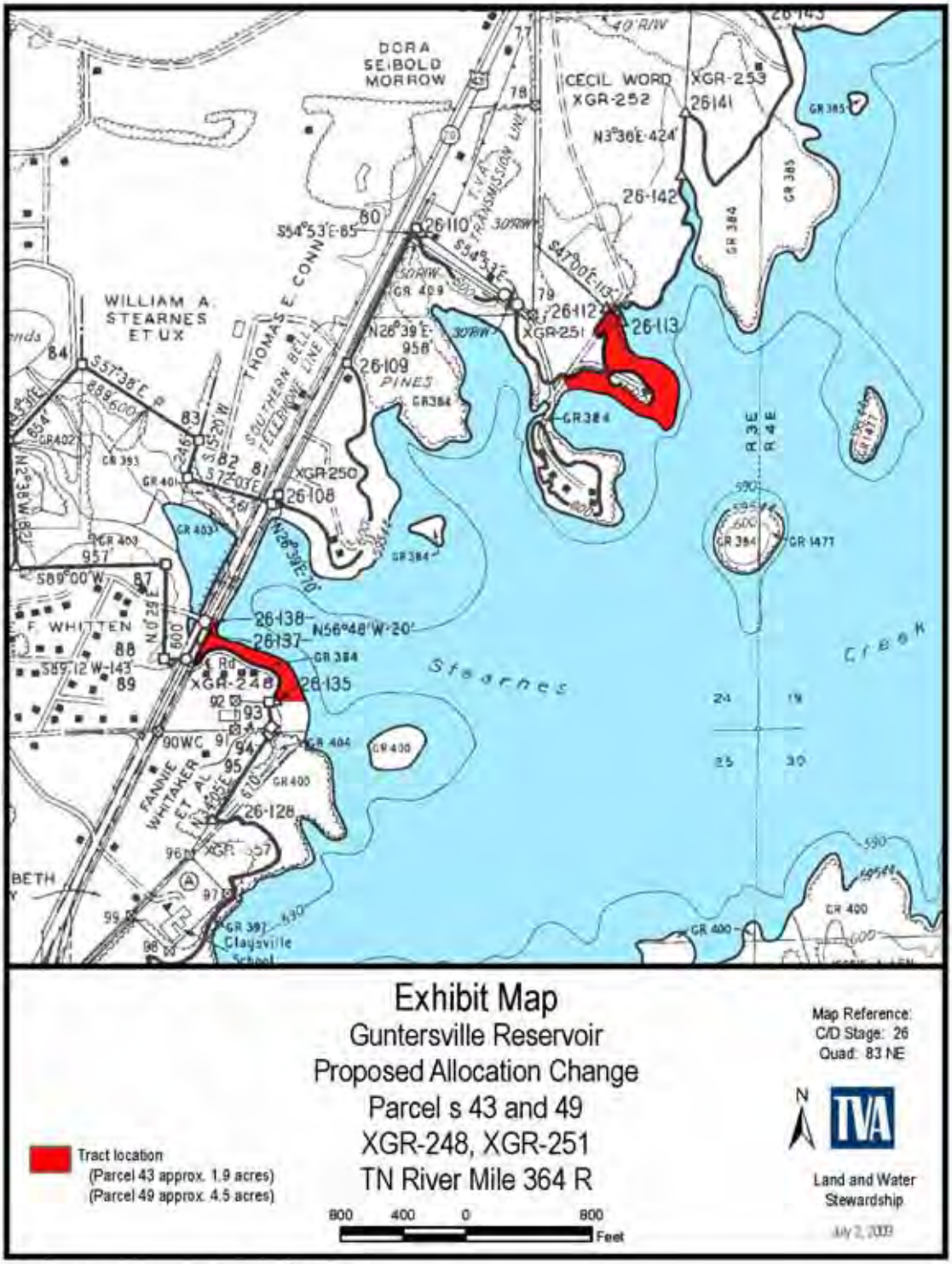
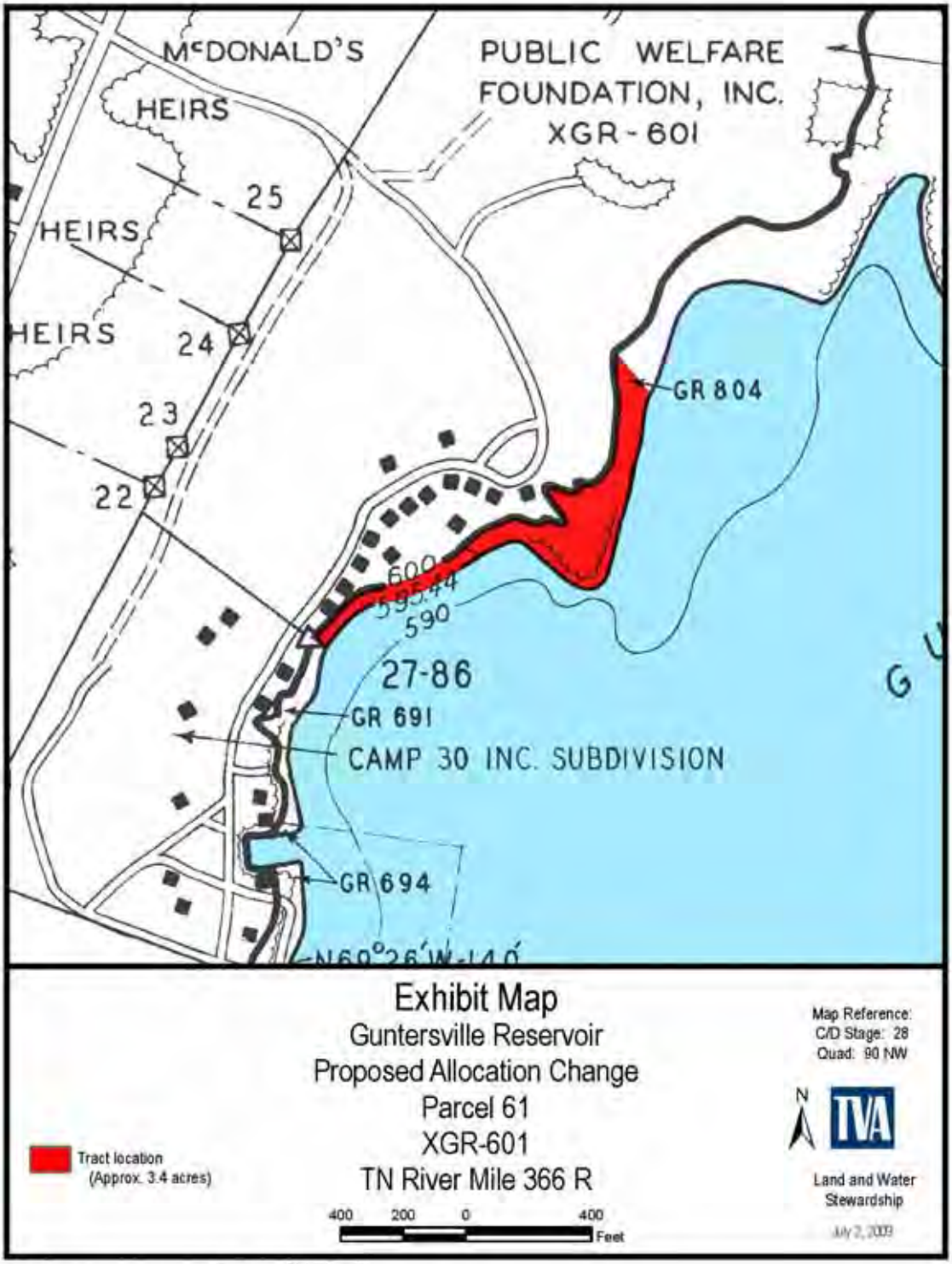


Figure 21. Guntersville Reservoir Parcels 43 and 49



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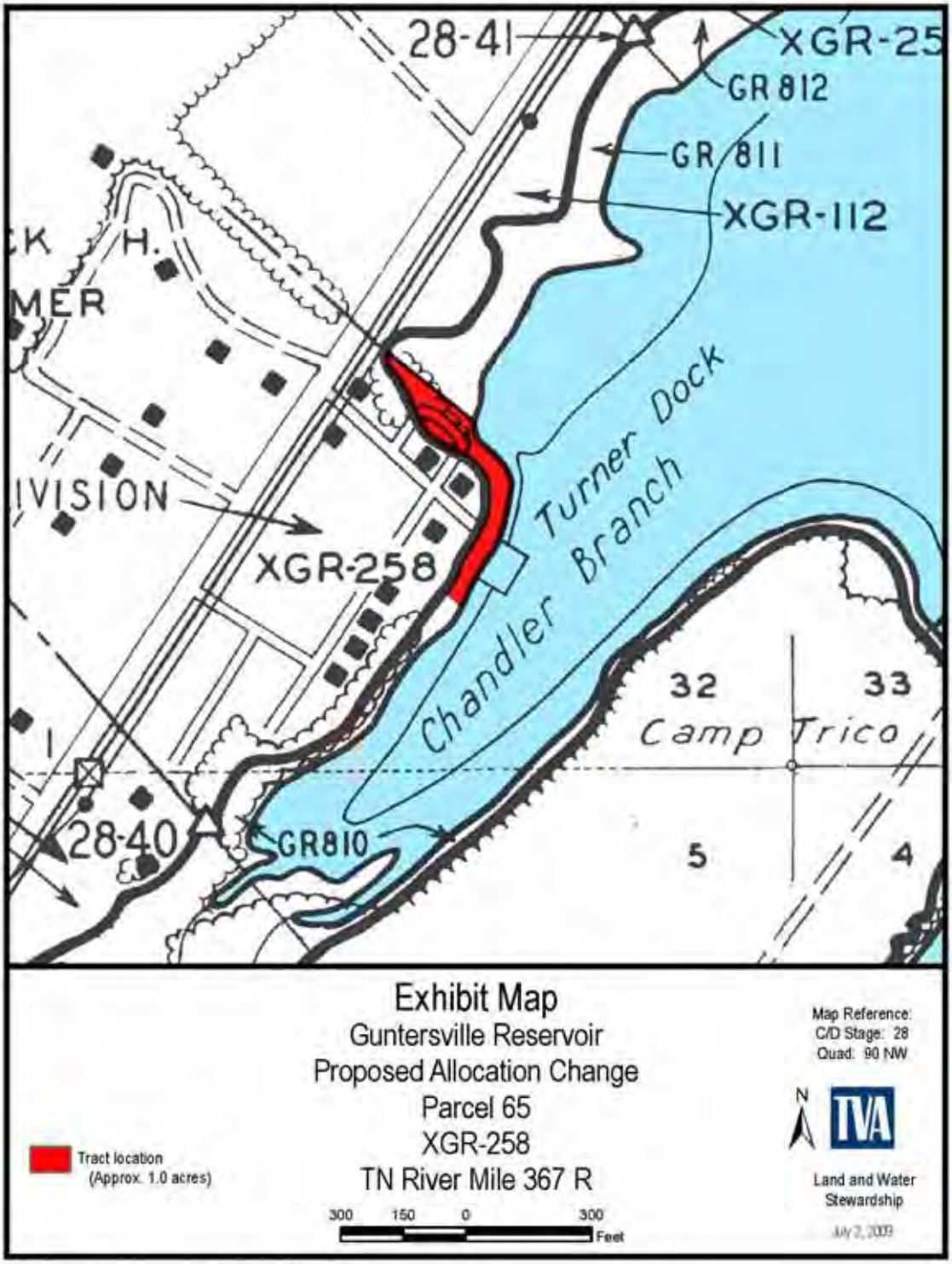

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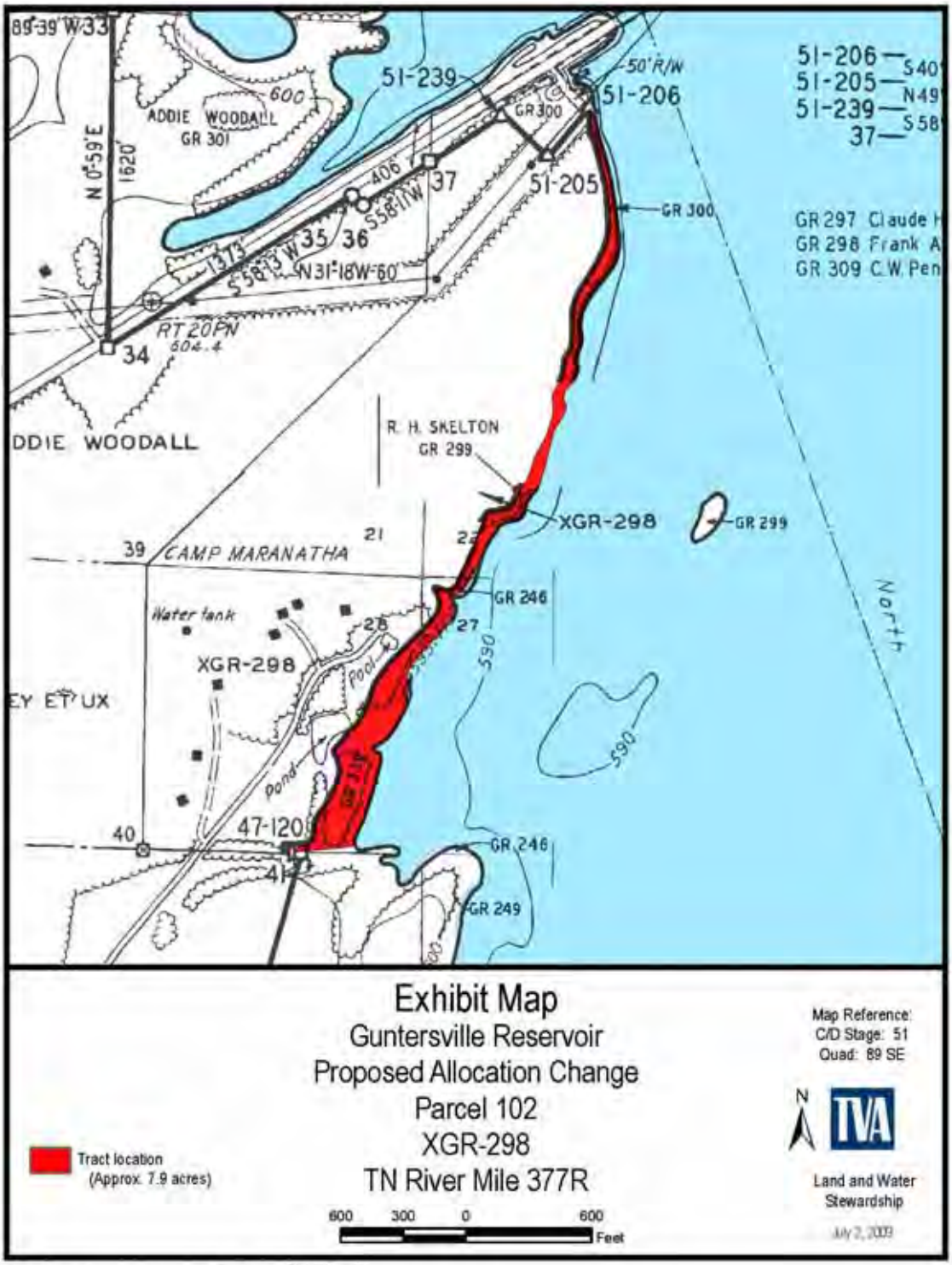
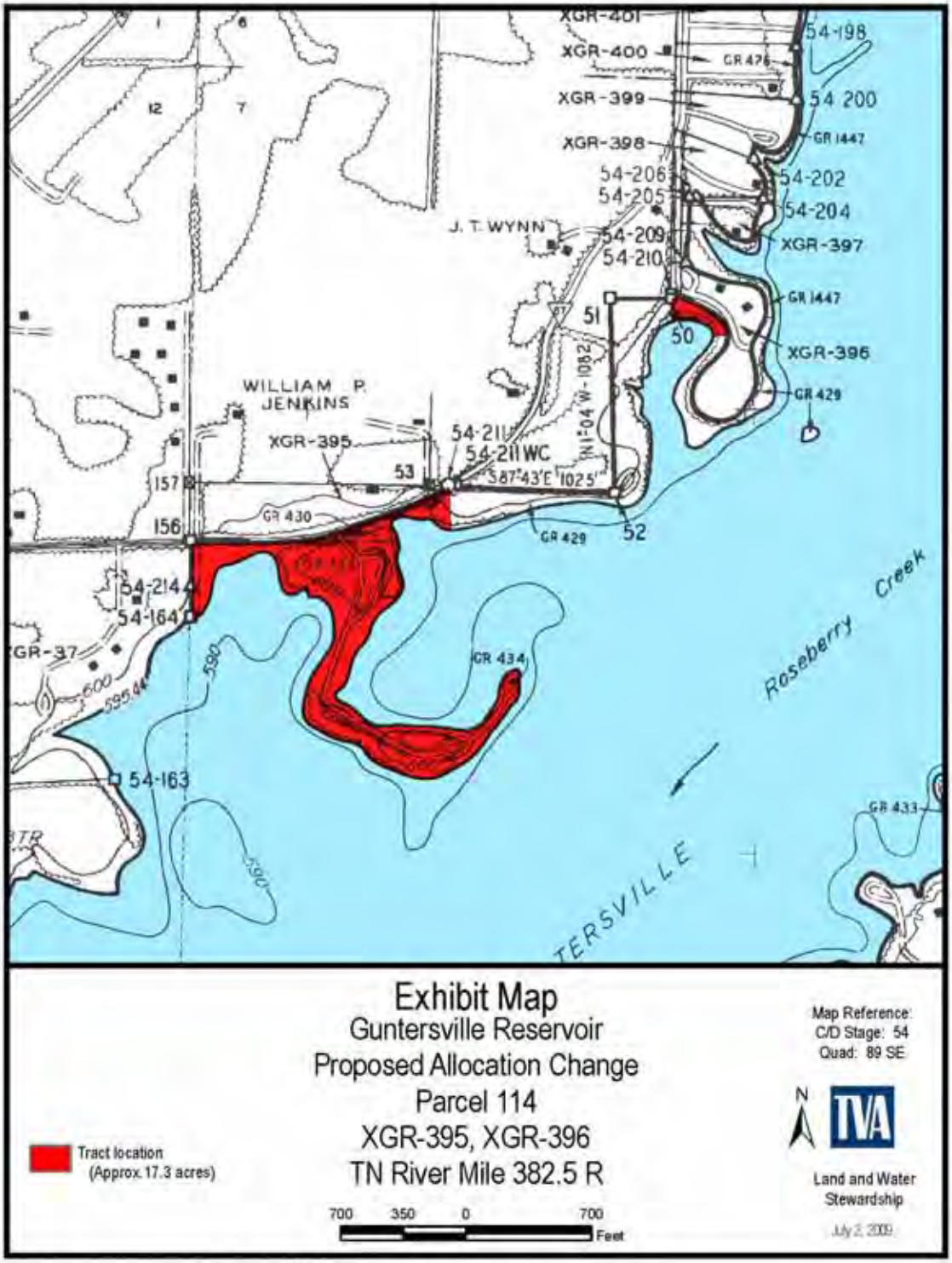


Figure 24. Guntersville Reservoir Parcel 102



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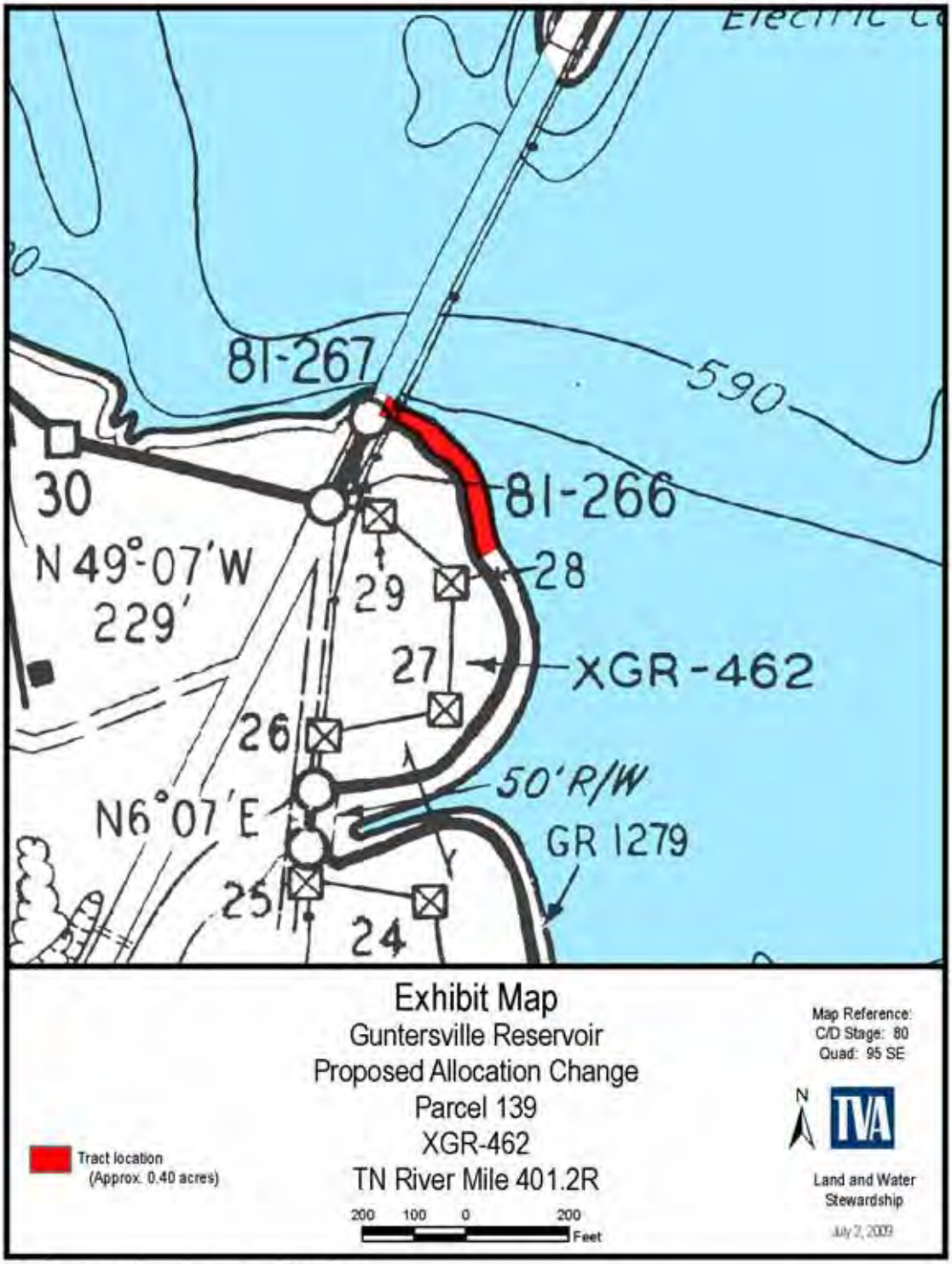

Figure 26. Guntersville Reservoir Parcel 139

Figure 27. Guntersville Reservoir Parcel 158

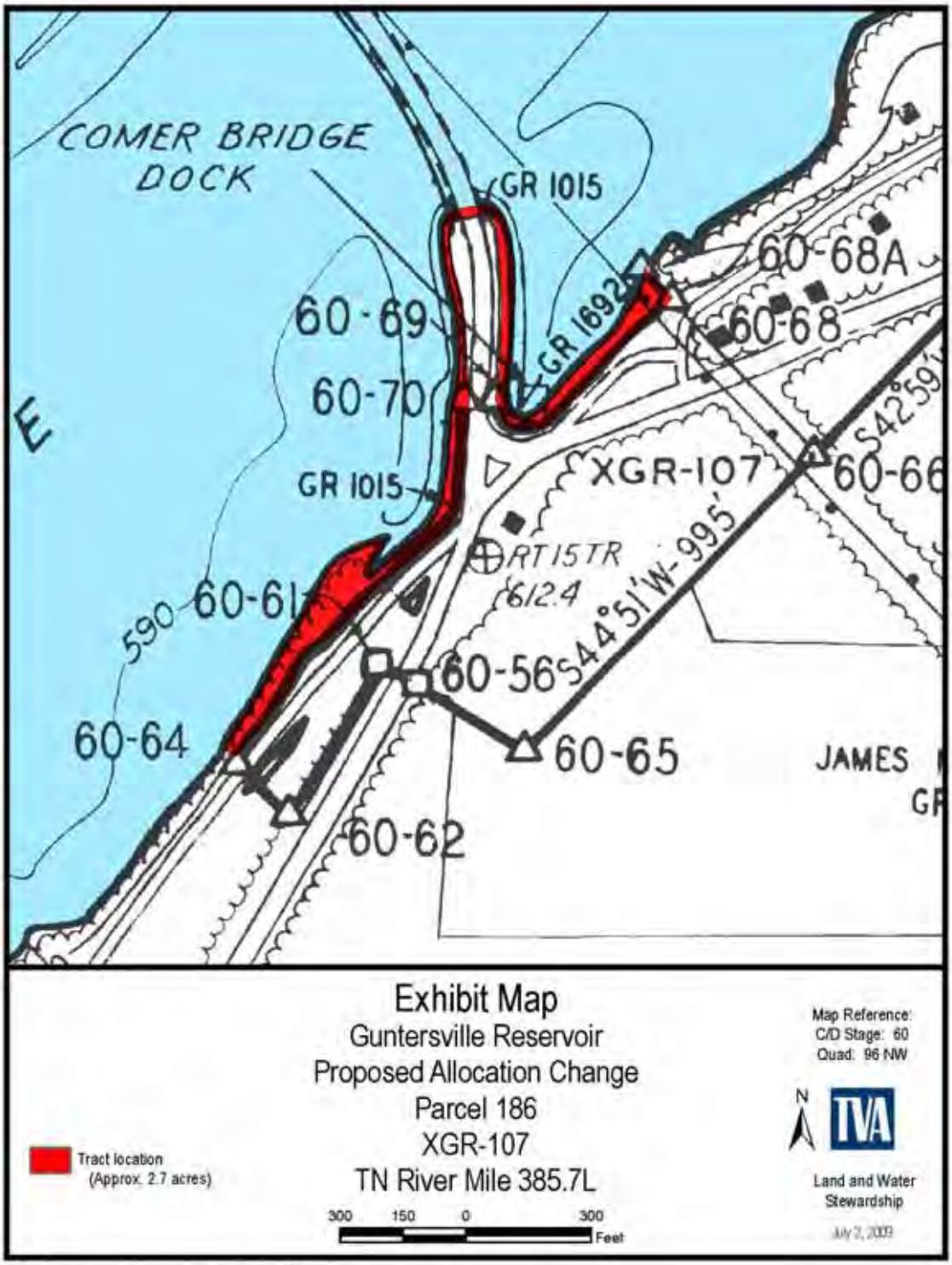

Figure 28. Guntersville Reservoir Parcel 186

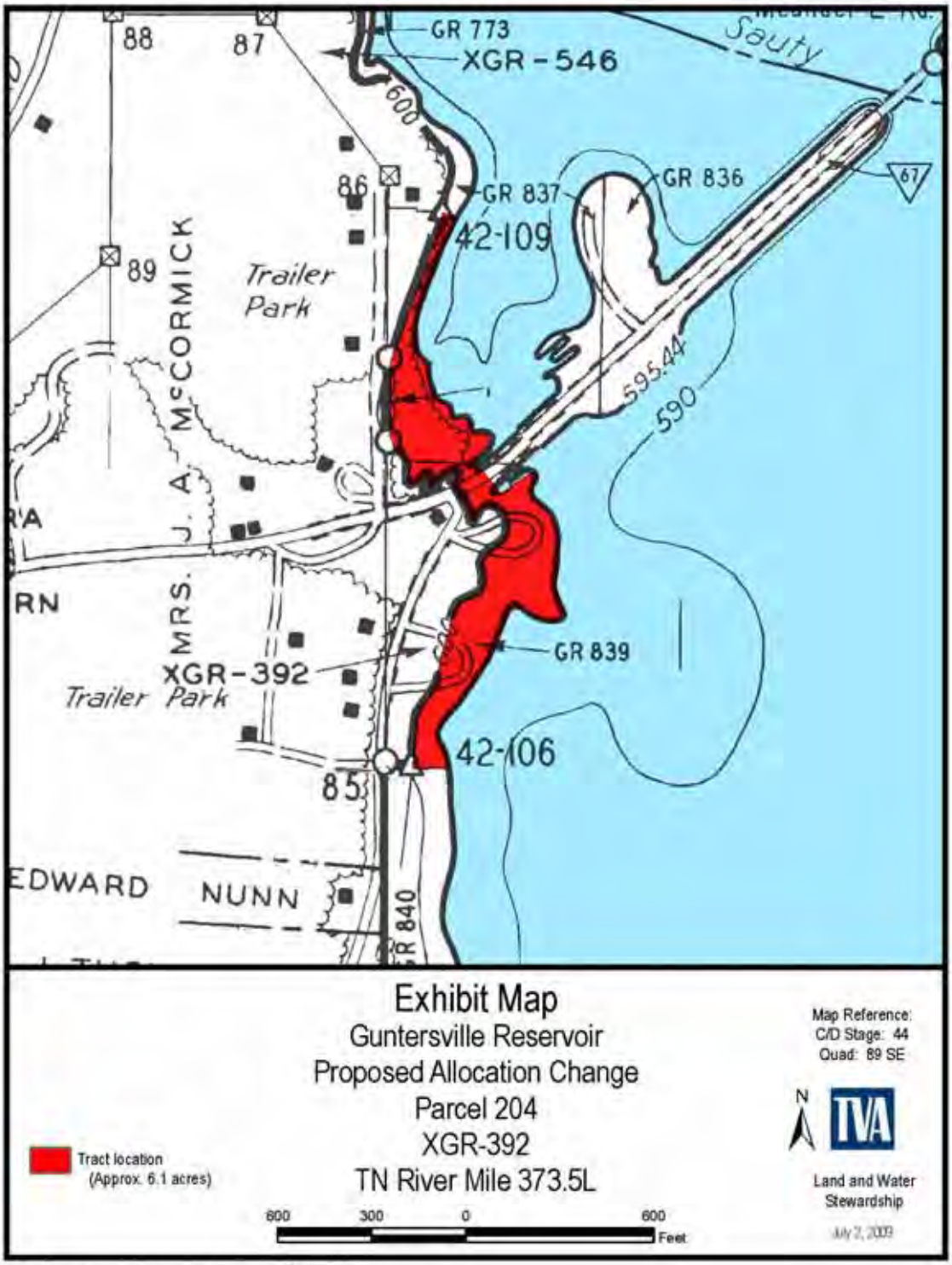

Figure 29. Guntersville Reservoir Parcel 204

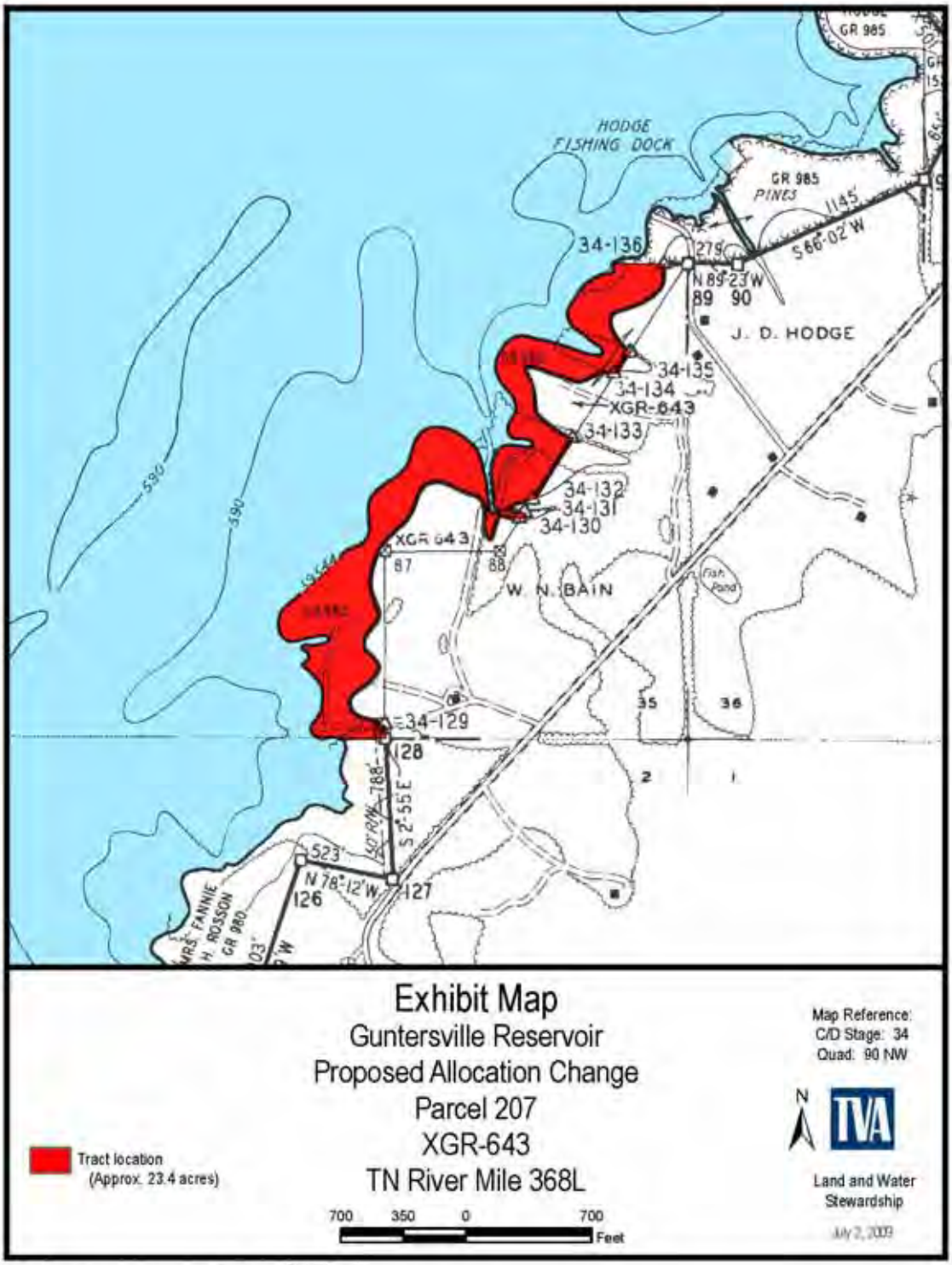

Figure 30. Guntersville Reservoir Parcel 207

Figure 31. Guntersville Reservoir Parcel 214

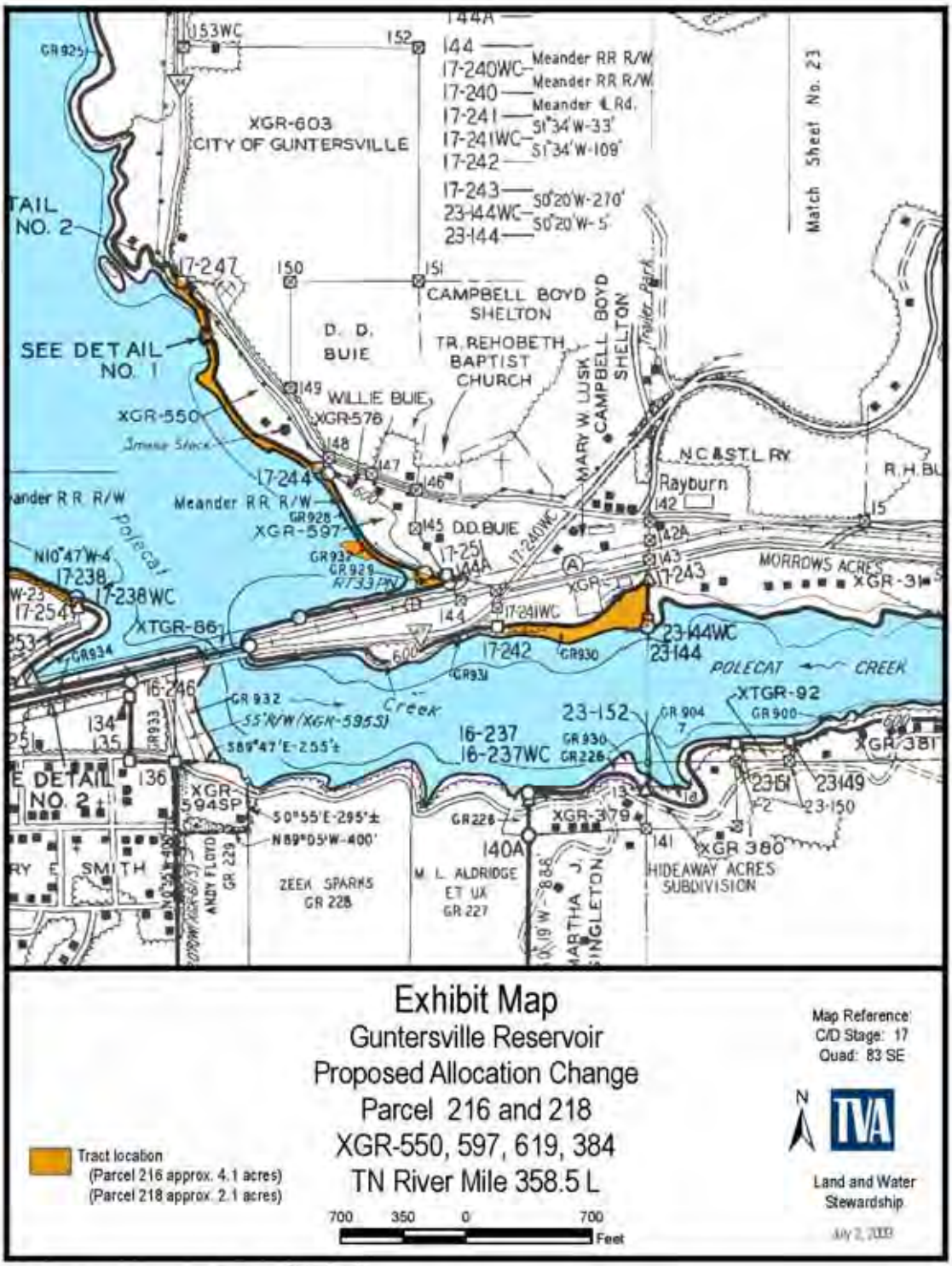

Figure 32. Guntersville Reservoir Parcels 216 and 218

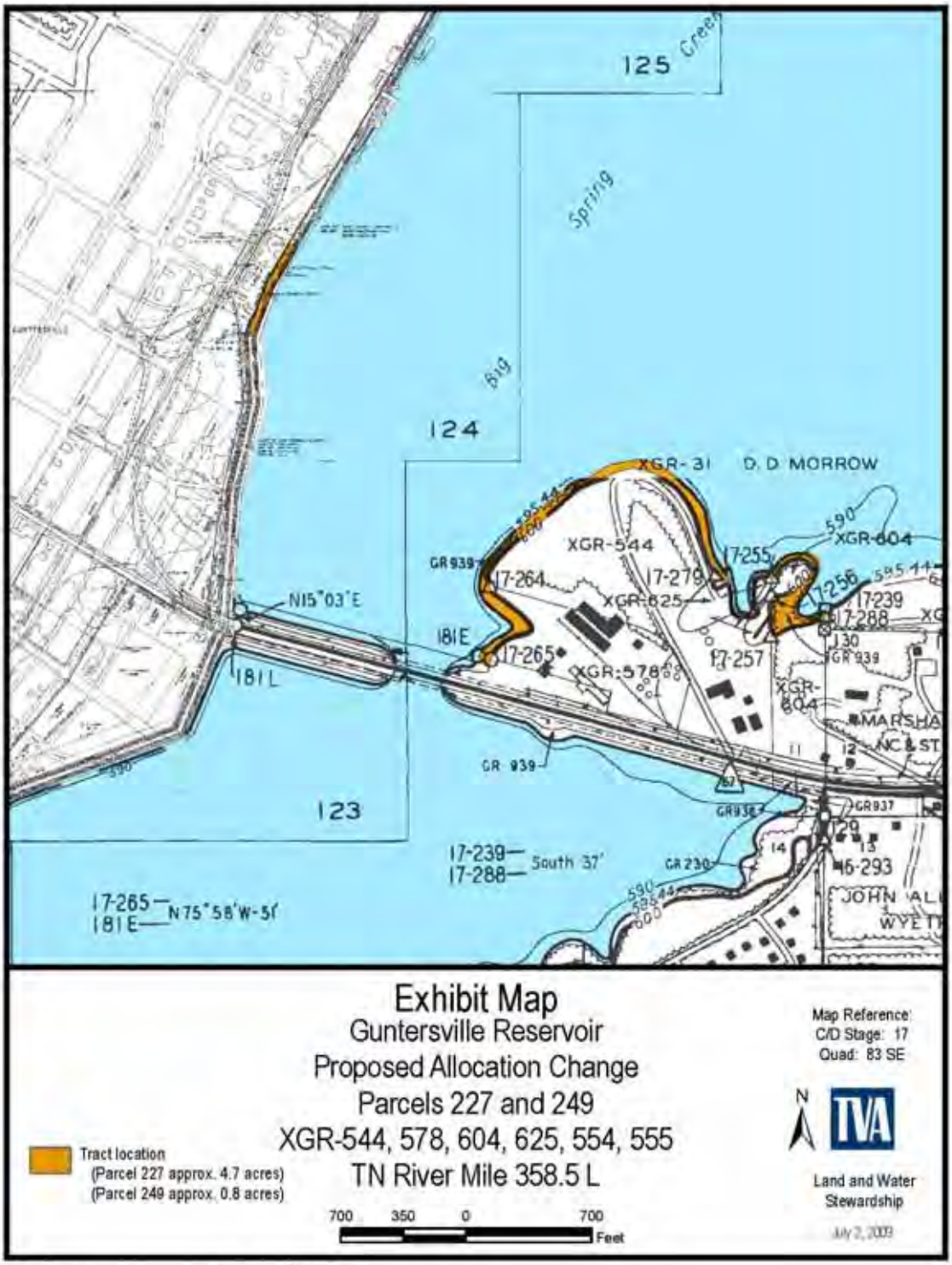

Figure 33. Guntersville Reservoir Parcels 227 and 249

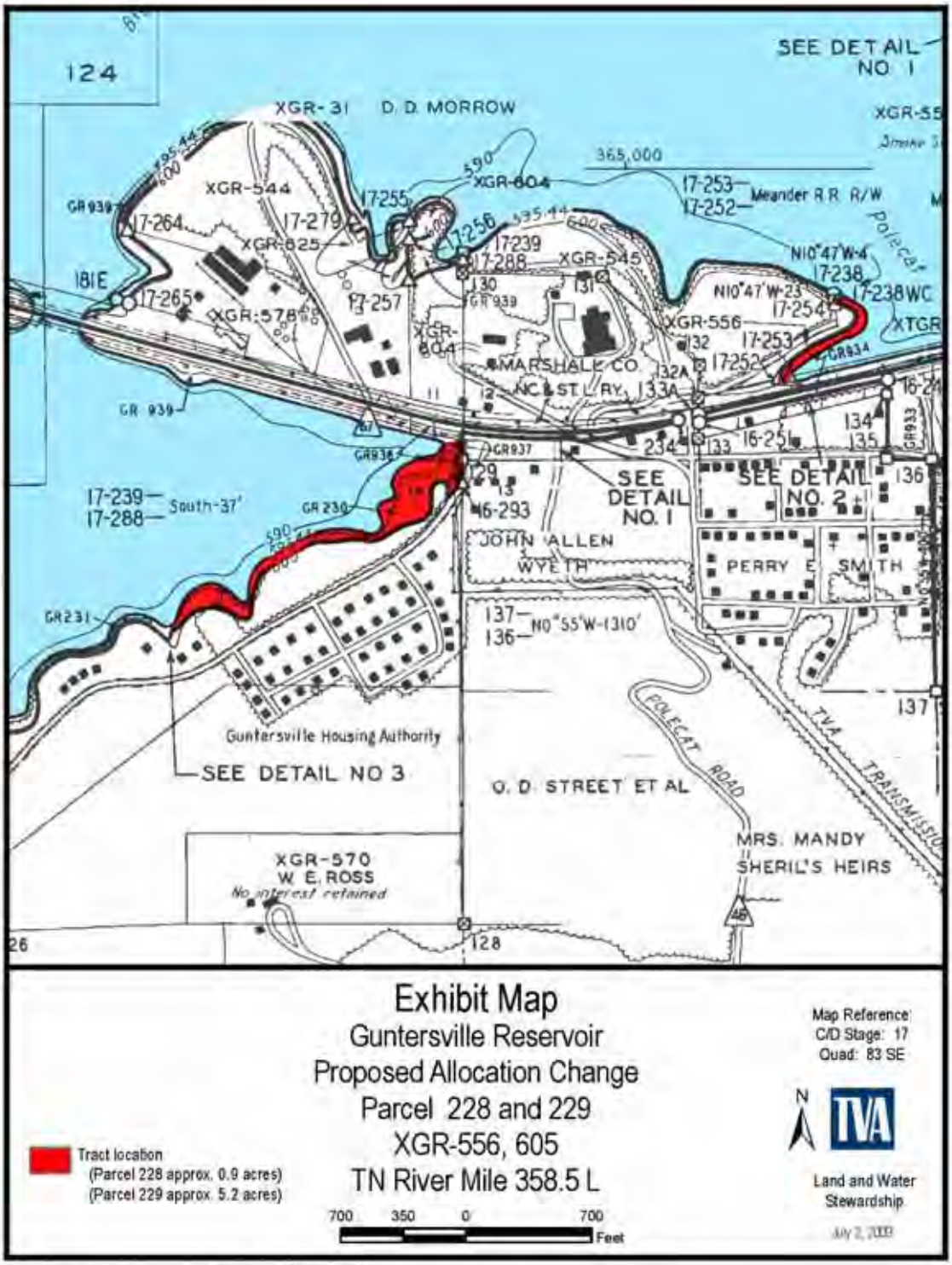

Figure 34. Guntersville Reservoir Parcels 228 and 229

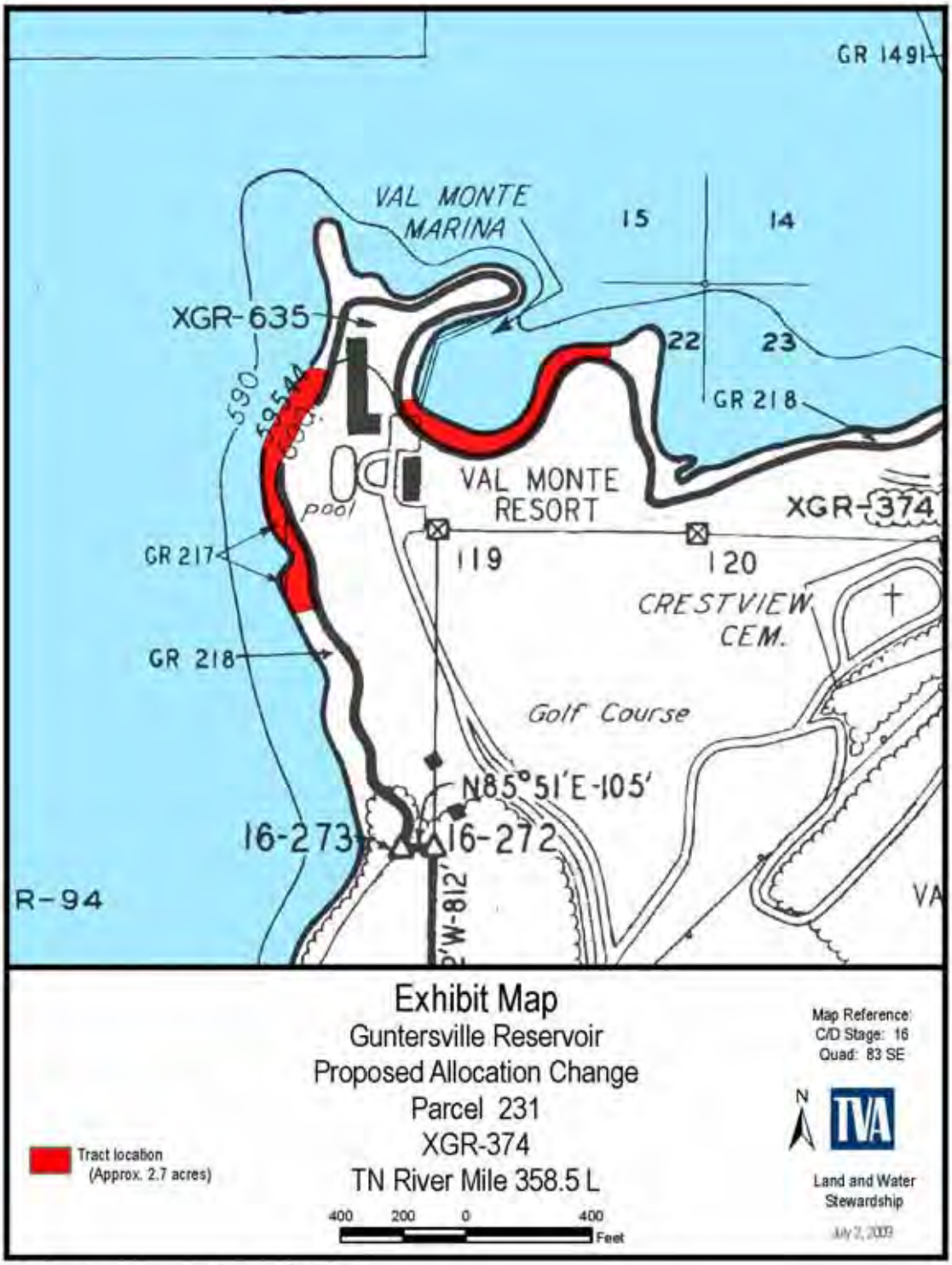

Figure 35. Guntersville Reservoir Parcel 231

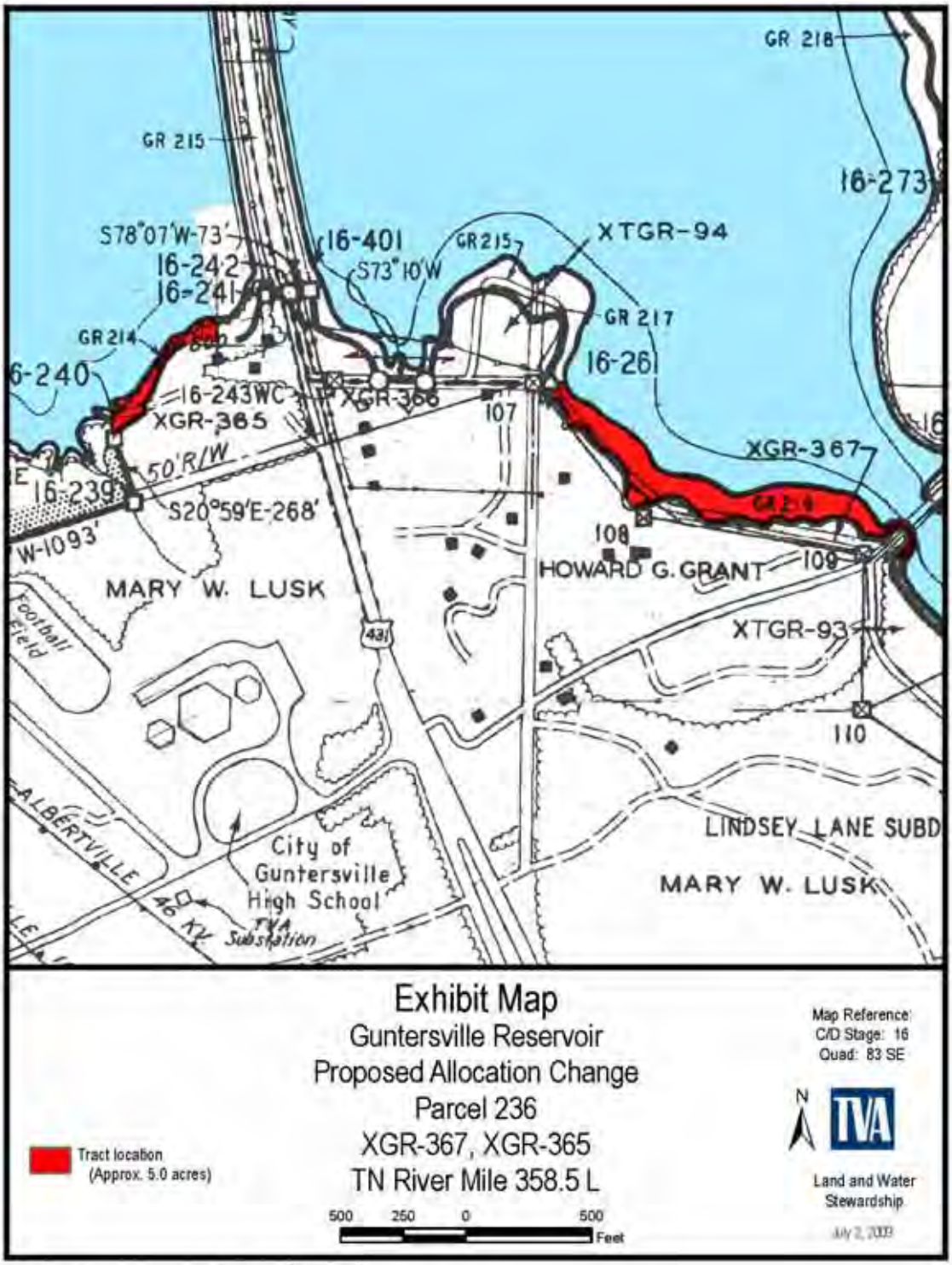

Figure 36. Guntersville Reservoir Parcel 236

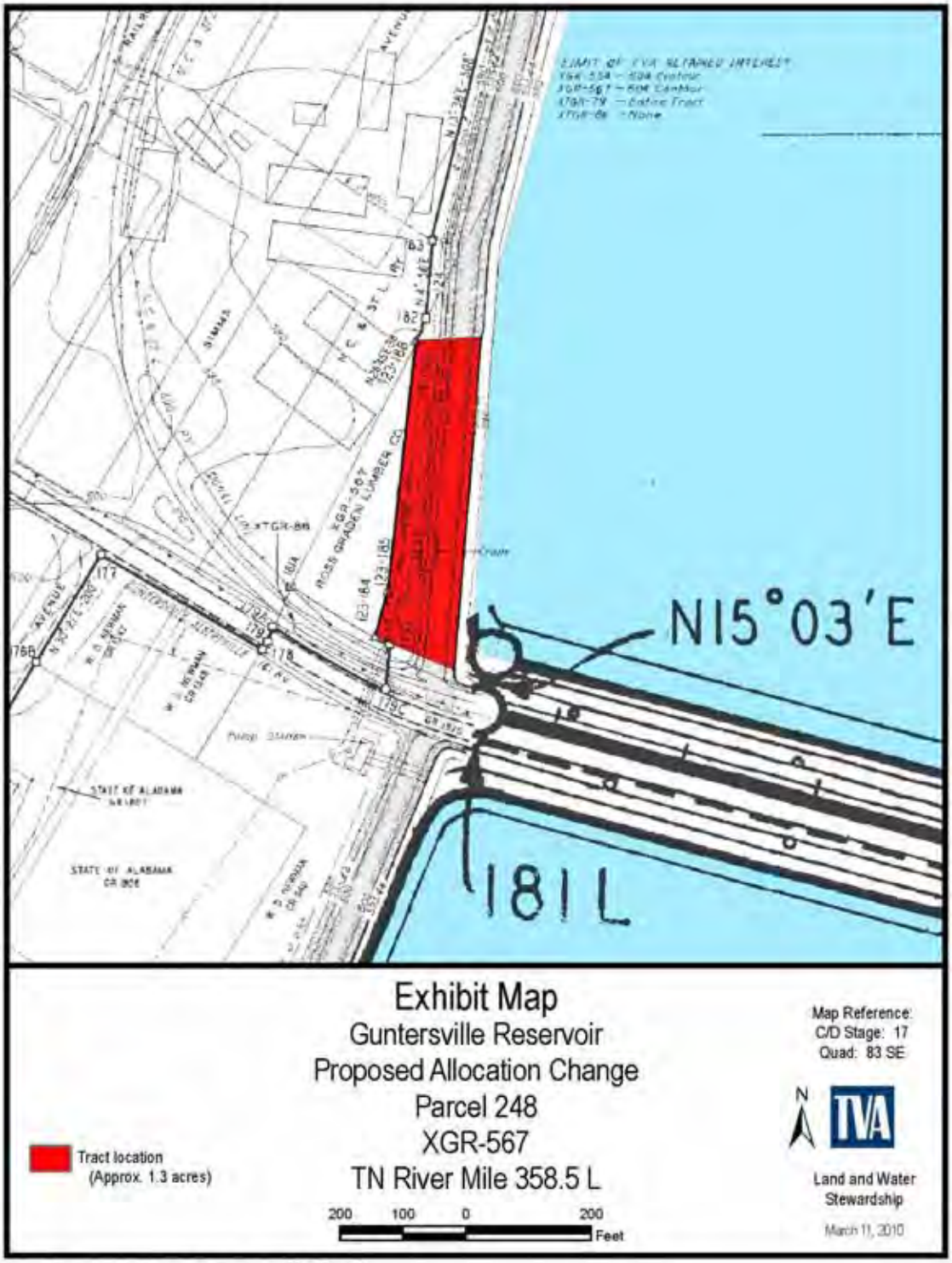

Figure 37. Guntersville Reservoir Parcel 248

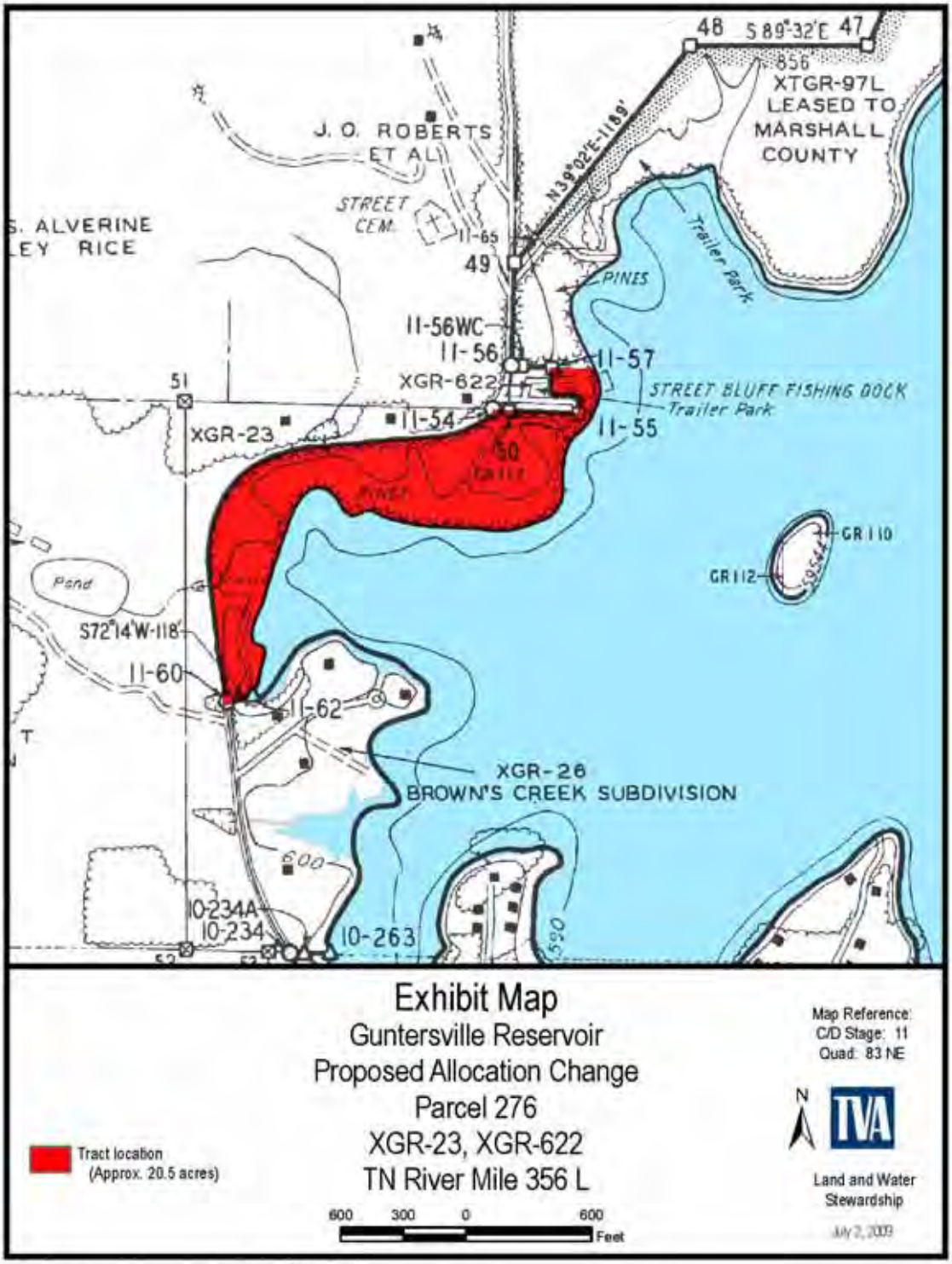

Figure 38. Guntersville Reservoir Parcel 276

Maps of Parcels – Pickwick Reservoir

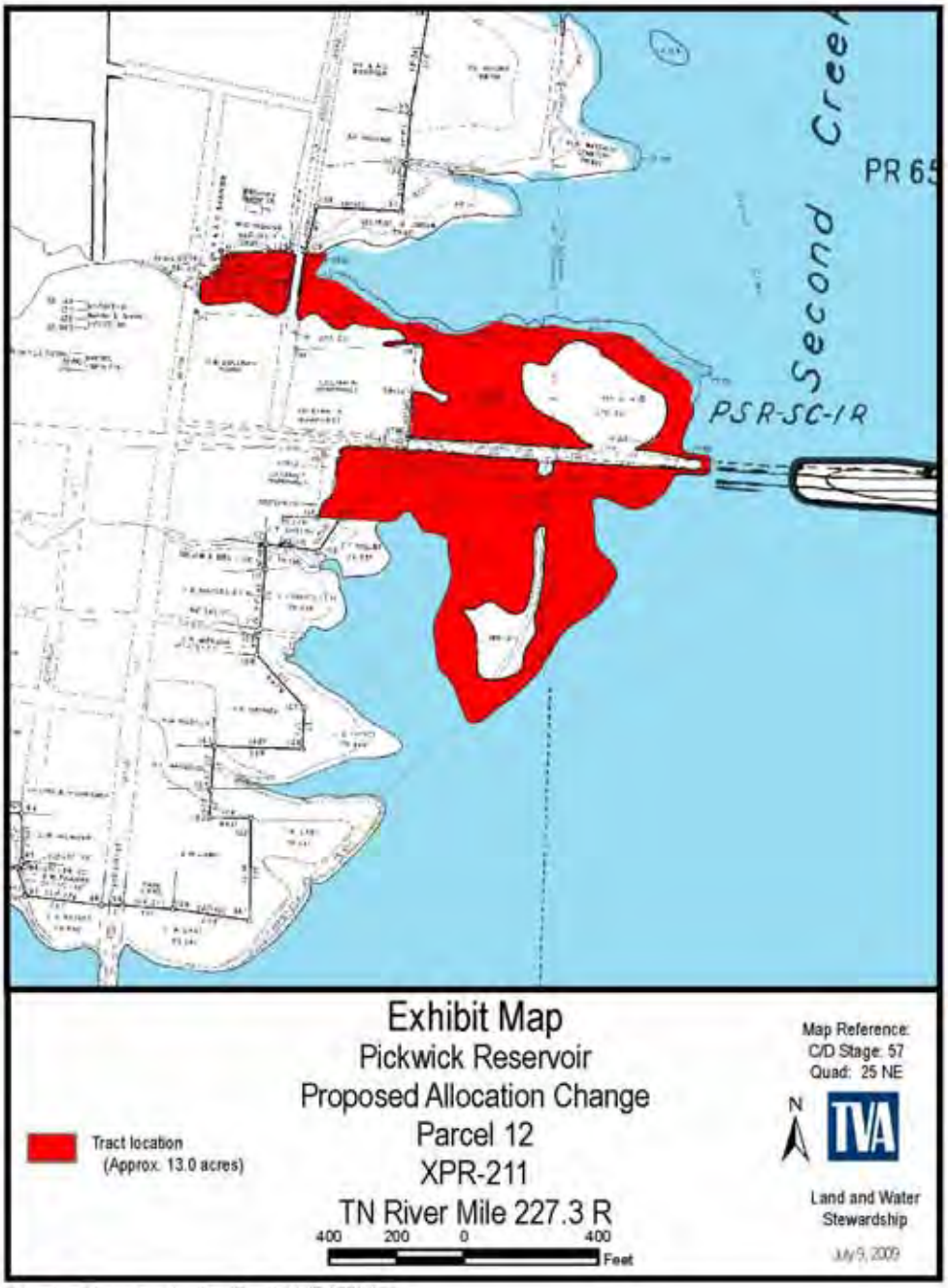

Figure 39. Pickwick Reservoir Parcel 12

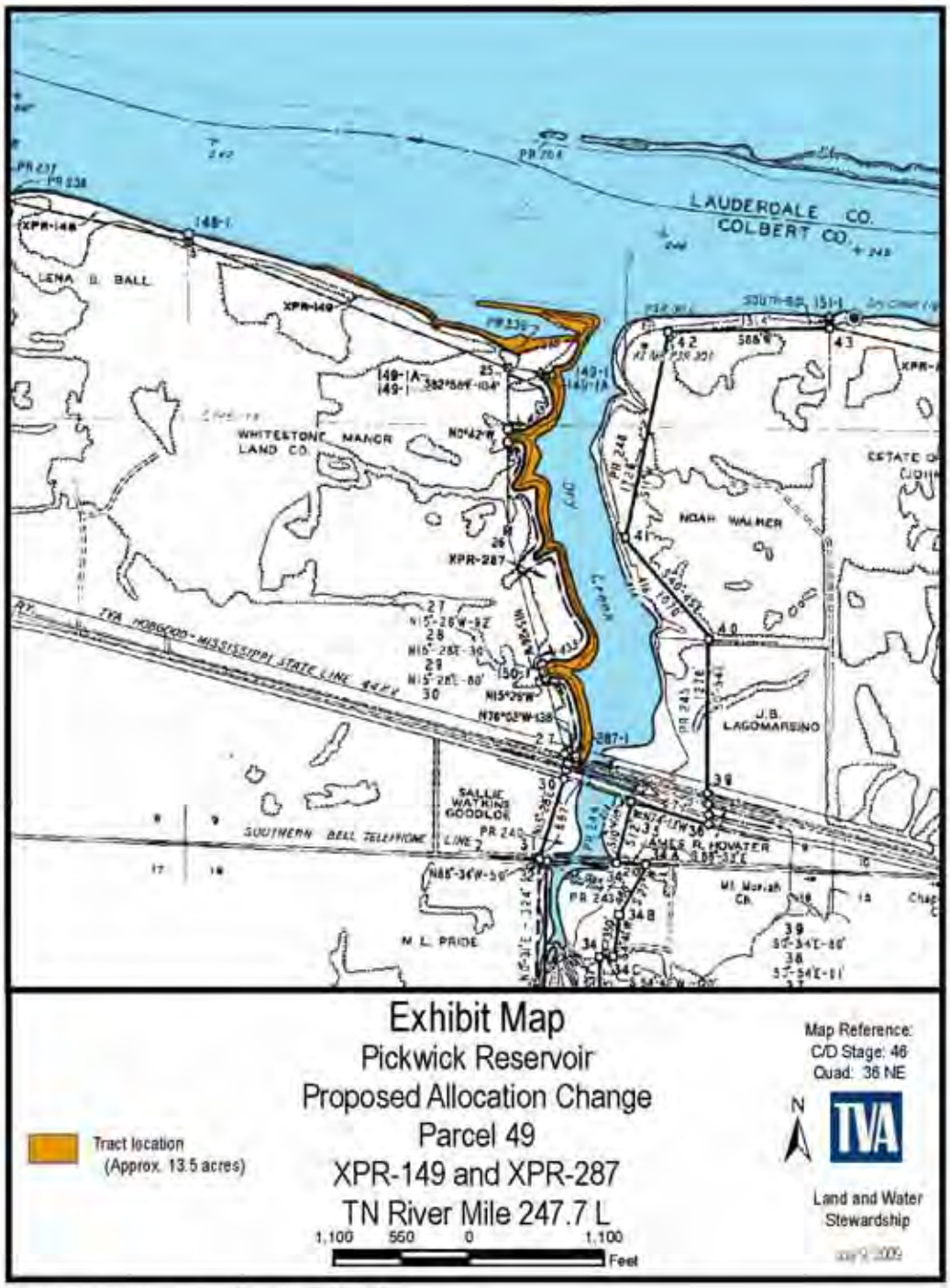

Figure 40. Pickwick Reservoir Parcel 49

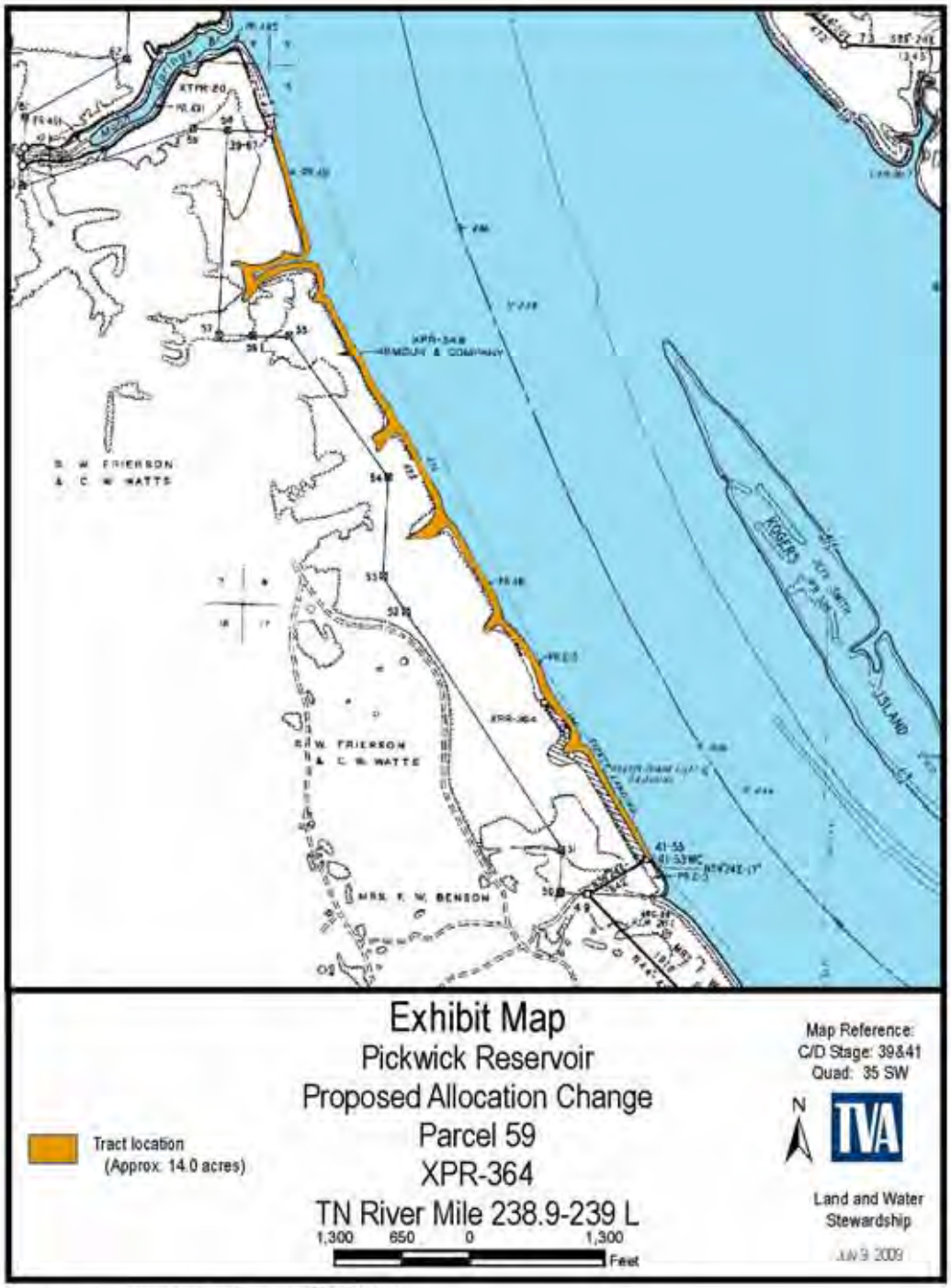

Figure 41. Pickwick Reservoir Parcel 59

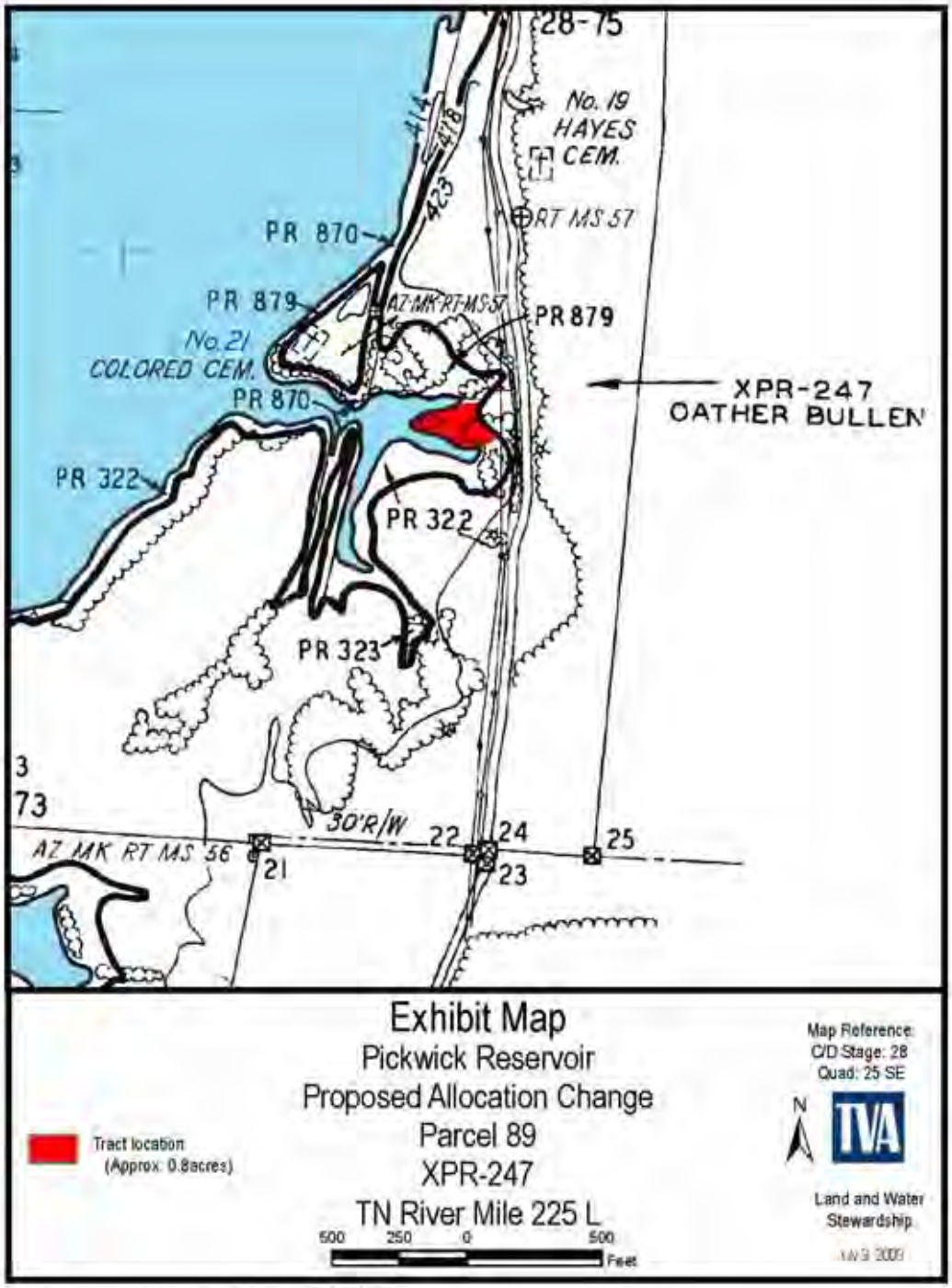

Figure 42. Pickwick Reservoir Parcel 89

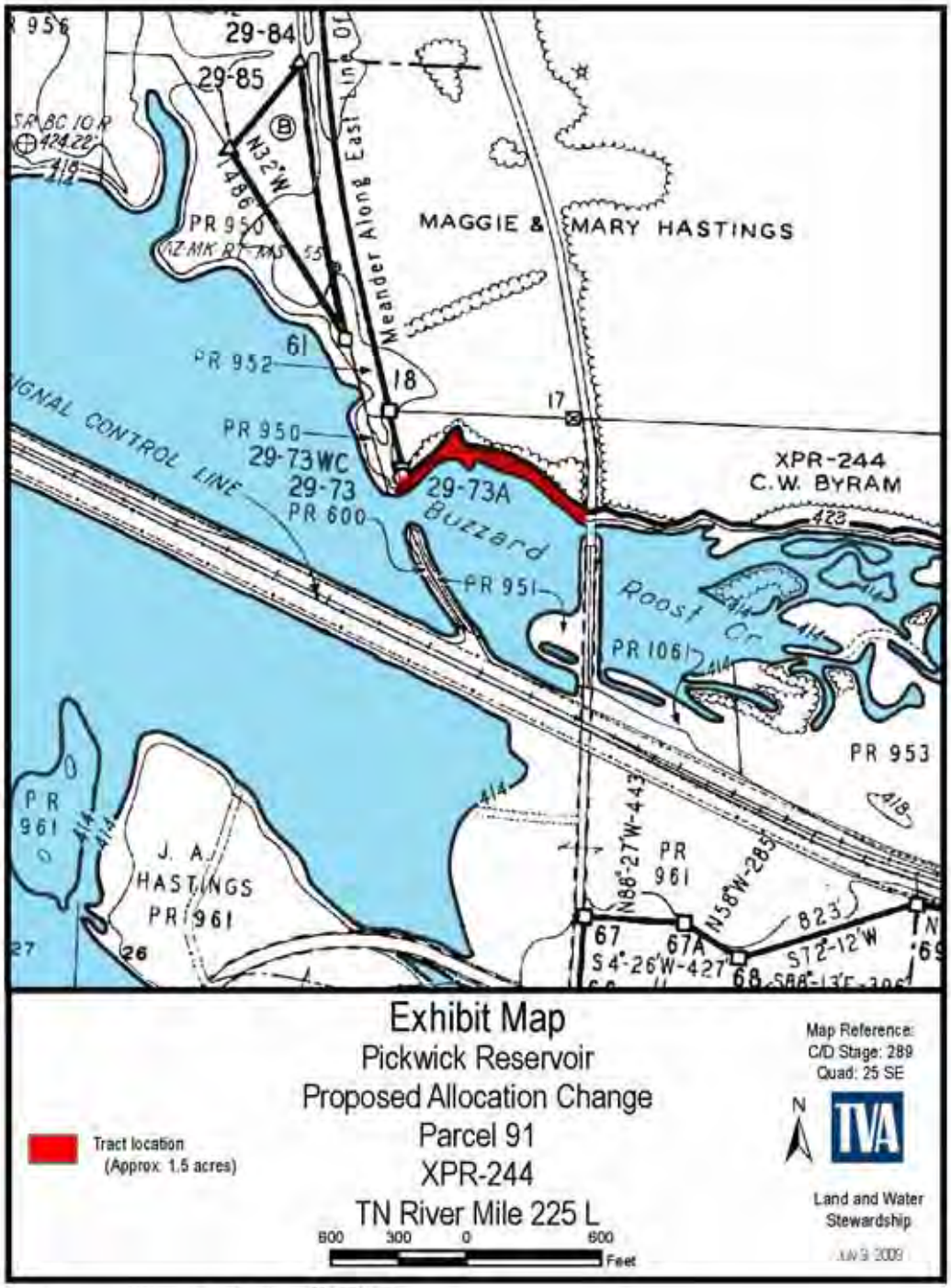

Figure 43. Pickwick Reservoir Parcel 91

Figure 44. Pickwick Reservoir Parcel 103

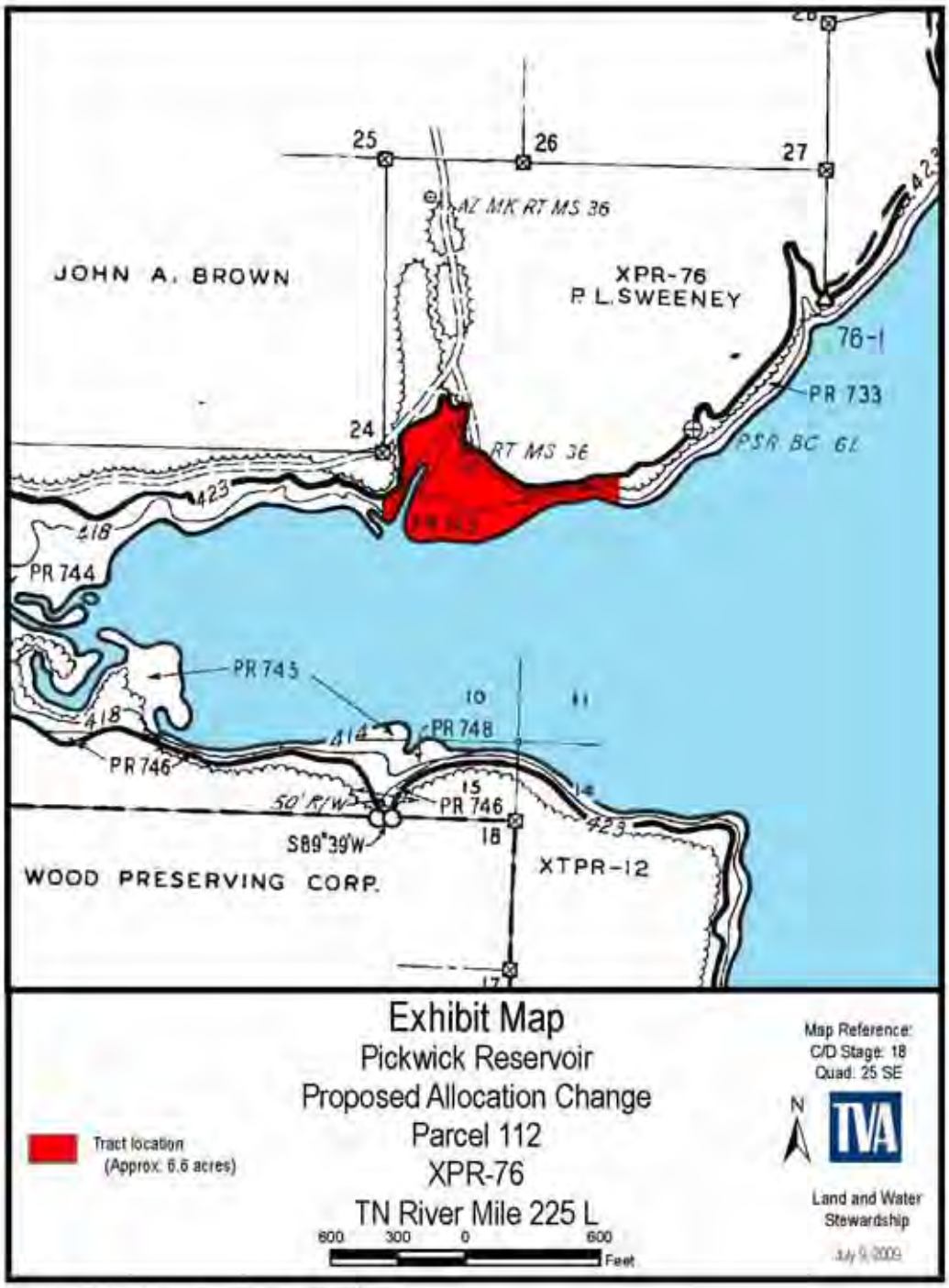

Figure 45. Pickwick Reservoir Parcel 112

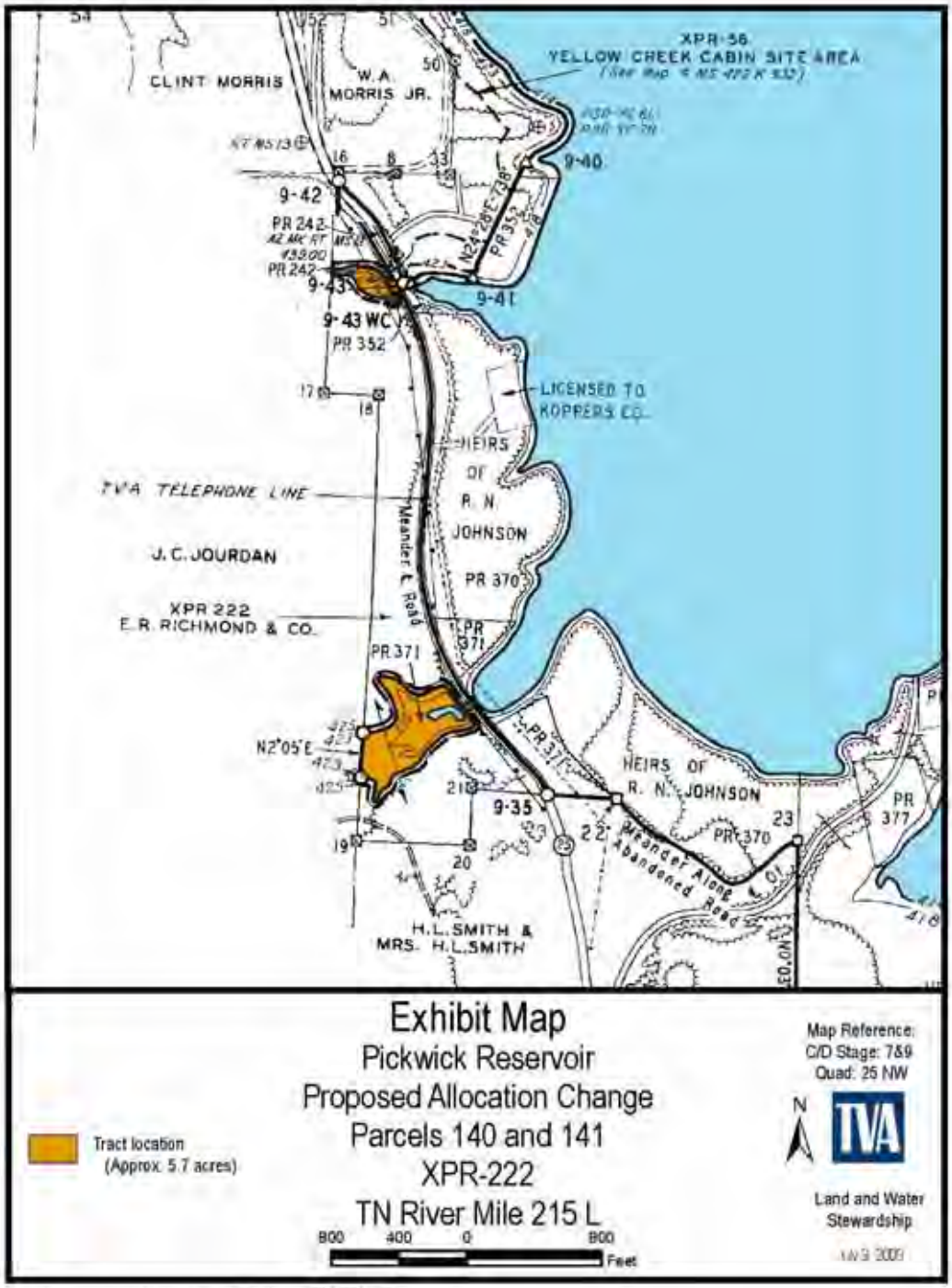

Figure 46. Pickwick Reservoir Parcels 140 and 141

Figure 47. Pickwick Reservoir Parcel 150

or about February 16, 2003, to on or about May 11, 2003, the Dallas Museum of Art, Dallas, Texas, from on or about June 8, 2003, to on or about September 7, 2003, and at possible additional venues yet to be determined, is in the national interest. Public Notice of these determinations is ordered to be published in the **Federal Register**.

FOR FURTHER INFORMATION CONTACT: For further information, including a list of exhibit objects, contact Paul W. Manning, Attorney-Adviser, Office of the Legal Adviser, 202/619–5997, and the address is United States Department of State, SA-44, Room 700, 301 4th Street, SW, Washington, DC 20547–0001.

Dated: January 15, 2003.

Miller Crouch,

Acting Assistant Secretary for Educational and Cultural Affairs, Department of State.

[FR Doc. 03–1767 Filed 1–24–03; 8:45 am]

BILLING CODE 4710–08–P

TENNESSEE VALLEY AUTHORITY

Pickwick Reservoir Land Management Plan, Lauderdale and Colbert Counties, AL; Tishomingo County, MS; and Hardin County, TN

AGENCY: Tennessee Valley Authority (TVA).

ACTION: Issuance of record of decision.

SUMMARY: This notice is provided in accordance with the Council on Environmental Quality's regulations (40 CFR 1500 to 1508) and TVA's procedures implementing the National Environmental Policy Act. TVA has updated its 1981 land management plan for 19,238 acres of TVA public land on Pickwick Reservoir in Alabama, Mississippi, and Tennessee. TVA will use the plan to guide land use approvals, private water-use facility permitting, and resource management decisions on Pickwick Reservoir. On September 10, 2002, the TVA Board of Directors decided to adopt the preferred alternative (Alternative B) identified in the Final Environmental Impact Statement (EIS) and Land Management Plan, Pickwick Reservoir. A notice of availability of the final EIS was published in the **Federal Register** on August 2, 2002. Under the adopted land plan, TVA has allocated undeveloped lands for public recreation and natural resource conservation, and has also been responsive to local requests for use of TVA lands for water access and community development. Of the 19,238 acres of TVA lands on the reservoir which are available for allocation, 16,291 acres would be allocated to natural resource conservation (Zone 4), sensitive resource management (Zone 3), TVA project operations (Zone 2); 1,327 acres would be allocated for developed recreation (Zone 6) uses such as marinas, campgrounds, parks, and boat ramps; 1,085 acres would be allocated for residential lake access, and 534 acres for industrial or commercial uses (Zone 5). Although reserved for conservation purposes, lands in Zones 3 and 4 also lend themselves to dispersed recreation uses.

FOR FURTHER INFORMATION CONTACT: Harold Draper, Senior NEPA Specialist, Environmental Policy and Planning, Tennessee Valley Authority, 400 West Summit Hill Drive, WT 8C, Knoxville, Tennessee 37902—1499; telephone (865) 632–6996 or e-mail *hmdraper@tva,gov.*

SUPPLEMENTARY INFORMATION: Pickwick Reservoir is a 52.7-mile long reservoir completed in 1938. Although 63,625 acres were acquired for construction of the reservoir, 42,708 are covered by water. Subsequent transfers of land by TVA for economic, industrial, residential, or public recreation development have resulted in a current balance of 19,238 acres of TVA public land above normal summer pool elevation of 414 mean sea level.

TVA first announced its proposal to update its 1981 land management plan in 2001. TVA determined that the development of an EIS would allow a better understanding of the impacts of the alternatives. TVA published in the **Federal Register** a notice of intent to prepare an EIS on March 26, 2001. Meetings were held to inform the public of TVA's proposal to update the land allocation plan and to solicit input on scoping this proposal. The scoping meetings were held on March 29, 2001, in Lula, Mississippi at the Tishomingo County High School; April 3, 2001, in Memphis, Tennessee at the Adam's Mark Hotel; April 6, 2001, in Pickwick Dam, Tennessee at the Pickwick Landing State Park; and April 12, 2001, in Muscle Shoals, Alabama at the TVA Environmental Research Center Auditorium. These meetings were attended by 203 people. In addition, written comments were invited through a news release, newspaper notices, and a web site notice. During the scoping period, commenters expressed a desire for more environmental protection of the lands of Pickwick Reservoir, and discussed how they valued the scenic beauty and setting of the reservoir. TVA made an effort to identify parcels of land with sensitive resources that should be managed in a manner that ensures the protection of these resources. Further, TVA used the comments received during the scoping process to develop alternatives to be assessed in the draft EIS (DEIS). TVA assessed the impacts of the following alternatives: No action (Alternative A); balanced conservation with limited development (Alternative B); and conservation (Alternative C). A notice of availability (NOA) of the DEIS appeared in the **Federal Register** on May 3, 2002.

In addition to written materials, additional information on the proposals and other aspects of the DEIS was available to the public in four public meetings held in May 7, 2002, in Muscle Shoals, Alabama at the TVA Environmental Research Center Auditorium; May 14, 2002, in luka, Mississippi at the Tishomingo County High School; May 16, 2002, in Memphis, Tennessee at the Adam's Mark Hotel; and May 21, 2002, in Pickwick Dam, Tennessee at the Pickwick Landing State Park. Approximately 64 comments were received on the DEIS. These comments primarily related to recommendations for proposed uses of TVA land. In the Final EIS (FEIS), TVA selected Alternative B as the preferred alternative. After considering all comments, the Final EIS was completed and distributed to commenting agencies and the public. A NOA for the Final EIS was published in the **Federal Register** on August 2, 2001.

Alternatives Considered

TVA considered three alternatives, including no action, for allocation of Pickwick Reservoir lands. The action alternatives were characterized as Alternative B, balanced conservation with limited developed recreation and industrial/commercial development, and Alternative C, conservation. Alternative B accommodated use requests and allocation changes for 3 parcels, while Alternative C did not accommodate allocation change requests and instead reserved these three parcels to conservation-oriented uses by allocating the parcels to Zone 4. In response to public comments on the DEIS, TVA selected Alternative B as the preferred alternative for the FEIS.

Under *Alternative A, the no action alternative,* TVA would not revise the 1981 allocation plan. Proposed land use requests received from external applicants or internal TVA interests would be evaluated for consistency with the 1981 plan. Requested land uses that are consistent would be approved or denied based on a review of potential environmental impacts and other administrative considerations. If the

request is not consistent with the designated land use, and TVA staff believe the proposal has merit, then the TVA Board of Directors would be asked to amend the plan and change the allocation.

The 1981 plan used 10 allocation categories to allocate approximately 21,000 acres of TVA public land. Residential shoreline and other shoreline strips were not included in the allocations. Many parcels in the 1981 plan were designated with multiple allocation tags, allowing their consideration for a wide range of uses with a wide range of resulting environmental consequences. TVA estimates that under the existing plan, 31.5 to 55.0 percent of reservoir lands would be used for sensitive resource protection or natural resource management, 2.3 to 13.0 percent would be used for industrial or other developed uses, and 1.9 to 12.8 percent would be used for recreation development. As explained in the FEIS, the above figures are presented as ranges because certain parcels have multiple allocation tags under the 1981 plan.

Under *Alternative B, balanced conservation with limited developed recreation and industrial/commercial development,* 69.8 percent of project lands would be allocated to sensitive resource protection or natural resource management uses, 2.8 percent would be allocated for developed uses or industrial uses, 6.9 percent for recreation development, and 5.6 percent for residential access.

Under *Alternative C, conservation,* 70.5 percent of project lands would be allocated to environmental protection and natural resource management uses, 2.4 percent for developed uses or industrial uses, 6.7 percent for recreation development, and 5.5 percent for residential access.

Alternatives B and C differ with respect to the allocations for Parcels 37, 53, and 156. Under Alternative B, TVA would allocated these tracts for developed uses: Parcel 37 (35 acres) for recreation development; Parcel 156 (89 acres) for industrial development; and Parcel 156 (21 acres) for residential development. Under Alternative C, TVA would allocate all three tracts for natural resource conservation (Zone 4).

The EIS considered the environmental consequences of the alternatives on a wide variety of environmental resources. Under any alternative, sensitive resources such as endangered and threatened federal and state-listed species, cultural resources, and wetlands would be protected. Adoption of Alternative B would balance the competing demands of development and conservation. Proposed development activities would have insignificant environmental impacts.

Because the potential effects on historic properties cannot be fully determined prior to implementation of the land plan, TVA will use a phased identification and evaluation process as allowed under 36 CFR 800.4(b)(2) to fulfill its obligations under section 106 of the National Historic Preservation Act in all three states. A programmatic agreement for reservoir land management plans in Alabama has been executed. ACHP, TVA, the Alabama SHPO, the Eastern Band of Cherokee Indians, and the Chickasaw Nation are signatories in the Programmatic Agreement, and the Alabama Indian Affairs Commission is a concurring party.

Response to Comments

Appendix H of the Final EIS contains summaries of and responses to the comments TVA received during the Draft EIS process. TVA received comments from 64 individuals and organizations on the DEIS. The open public process and discussion on a number of issues substantially enhanced TVA's decision making. TVA also received comments on the FEIS from EPA, Alabama Historical Commission, and Tennessee Historical Commission.

As in response to the FEIS, EPA continues to prefer Alternative C or a modification thereof over TVA Preferred Alternative B. EPA recommends if Alternative B was to be selected by TVA, that there be a careful balance between development and the environment, such that development in Zones 5 and 6 is consistent with state and federal environmental regulations and that the current quality of the environment is maintained in conservation zones 3 and 4. EPA also looks to TVA to be selective in the type of development allowed in order to minimize/mitigate potential environmental impacts on Pickwick Reservoir. Further, EPA encourages TVA to be selective in the type of development allowed in order to minimize/mitigate potential environmental impacts on Pickwick Reservoir. Further, EPA encourages TVA to not only directly manage its reservoir shorelands through its updated land management plans and its Shoreline Management Initiative (SMI) Policy, but also to increase its stakeholder activities within the entire watershed community for the overall management of Pickwick and other reservoirs. It is also recommended by EPA that in future, TVA reservoir management EISs and Records of Decision (RODs), protection activities in the greater watershed be disclosed, including progress toward a stakeholder watershed protection plan for the reservoir being considered.

In cognizance of EPA's comments, TVA will continue to emphasize water quality considerations in its land use and section 26a decision making processes for facilities on Pickwick Reservoir. As to the need to mitigate potential environmental impacts, Alternative B is designed such that seventy percent of the TVA public land is allocated to Zones 3 and 4, whereas only 7.9 percent is allocated to Zones 5 and 6. Further, under Alternative B, the amount of TVA public land allocated to Zones 5 and 6 has been reduced by 3,095 acres as compared to Alternative A, the no action alternative. All land use and 26a applicants are required to obtain the necessary federal and state permits to operate their facilities. Under Alternative B, TVA has attempted to accommodate only three development proposals consisting of 145 acres out of 19,238 acres. These proposals are of limited area and shoreline length. As to Parcel 53, the proposed industrial development will occur on backlying lands, and the request to TVA will be limited to corridors for water access. The site-specific impacts of the proposed industrial development tract would be appropriately mitigated through measures identified in the NEPA reviews associated with tract specific requests.

EPA's comment encouraging TVA to increase its stakeholder activities within the entire watershed community for the overall management of Pickwick and other reservoirs is well taken. Water quality is a major consideration in the management of TVA reservoirs. In addition to its efforts to control pollutants via its shoreline and land use, TVA currently has more than 50 watershed water quality initiatives underway across the Valley. Many of these are directly focused on impacts of nutrients on reservoir water quality. These initiatives are undertaken in large part as a response to monitored conditions such as chlorophyll levels. Efforts are targeted on reservoirs and watersheds where the needs are most critical and where there is a reasonable likelihood of success. Furthermore, efforts are focused on identifying and controlling significant sources of pollutants within the watershed where increased control is likely to produce measurable improvements. Additionally, TVA plays a major role as stakeholder in overall watershed management through its participation in numerous local and regional

organizations focusing on watershed and water quality issues. Our active involvement in stakeholder driven initiatives is a hallmark of TVA's resource stewardship program. TVA has provided data and technical assistance to States for their use in development of reservoir water quality standards. Specifically, we have provided data to ADEM for its consideration of chlorophyll standards for Pickwick Reservoir. While water quality standards development are a State and EPA function, TVA provides the technical support necessary for development of standards to protect water quality. TVA continues to monitor water quality in its reservoirs and steams and systematically uses these data to target its management efforts. The importance and value of water quality monitoring is clearly understood by TVA.

In other agency comments, the Tennessee Historical Commission (THC) concurred that phased compliance is an appropriate strategy, and requested that TVA submit all historic property survey reports to the office for review and comment. In accordance with standard section 106 of the National Historic Preservation Act, TVA will provide this information to the THC for all properties in Tennessee subject to land disturbance activity. The Alabama Historical Commission agreed with Alternative B provided that a phase II archaeological investigation be conducted for every site potentially eligible for National Register of Historic Places that could be affected by land disturbance activities proposed in the future. TVA will conduct archaeological and historic structure surveys to identify historic properties, and will submit phase II proposals to the Alabama Historical Commission for approval prior to testing for projects in Alabama.

Decision

The TVA Board decided on September 10, 2002, to adopt the Pickwick Reservoir Land Management Plan as described in Alternative B. TVA believes that Alternative B not only responds to community development and recreational development needs on Pickwick Reservoir, but also recognizes and preserves the aesthetic and sensitive resources which make the reservoir unique. Alternative B sets aside parcels containing sensitive resources and habitats in the sensitive resource protection and natural resource conservation categories. For lands where TVA proposes to consider development proposals, Alternative B adopt commitments that would further minimize the potential for adverse impacts to the environment. These commitments are listed below, under Environmental Commitments.

Environmentally Preferable Alternative

Out of the 19,238 planned acres considered under Alternatives B and C, less than one percent (145 acres) are considered for development purposes under Alternative B. Potential adverse impacts can be substantially avoided or minimized through mitigation measures. TVA has therefore concluded that between the two action alternatives (Alternatives B and C), there is no clear environmentally preferable alternative for the Pickwick Reservoir Land Management Plan. Both B and C are environmentally preferable as compared to the no action alternative (Alternative A). TVA believes that Alternative B helps to meet the multiple objectives of the Pickwick project, and would result in substantially better environmental protection than previous shoreline development practices.

Environmental Commitments

The land plan envisioned in Alternative B advances TVA's commitment to resource stewardship and habitat protection through strong conservation approaches. Environmental protection measures are built into the formulation of Alternative B since the approximately 70 percent of the land is allocated to conservation uses (Zones 3 and 4). Further, the retention by TVA of fee ownership of Zones 5 and 7 lands would ensure appropriate buffers between the developed land and the water. In addition, TVA is adopting the following measures to minimize environmental impacts:

- All soil-disturbing activities, such as dredging, shoreline excavations, *etc.*, on Parcels 26, 36, 41, 61, 66, 67, and 68 would be conducted in a manner to avoid impacts to cultural resources.
- The construction of water use facilities and shorelines alterations within the marked limits of the safety landings and harbors would be prohibited.
- Requests for water use facilities on shoreline immediately upstream and downstream of the safety landings and harbors would continue to be reviewed to ensure that barge tows would have sufficient room to maneuver in and out of the safety landings and harbors without the risk of damaging private property.
- Because caves are extremely fragile and biologically significant, TVA has placed and would continue to maintain protective buffer zones around each of the known caves on TVA public land on Pickwick Reservoir.
- Wetlands on Parcel 37 would be mitigated by avoiding wetlands areas, including small upland buffers.
- Corridors for water access across Parcel 53 would be designed to avoid impacts to terrestrial habitat and wetlands.
- Requests for the alteration or further development of this parcel would need to include BMPs and maintenance of a 50-foot SMZ to reduce potential impacts.
- Requests for the alteration or development of Parcel 156 would need to include mitigation measures, such as vegetation management plans, use of architecturally compatible styles/colors, and height restrictions to maintain the scenic attractiveness without adversely impacting the scene integrity.

With the implementation of the above environmental protection measures, TVA has determined that adverse environmental impacts of future development proposals on the reservoir would be significantly reduced. These protective measures represent all of the practicable measures to avoid or minimize environmental harm associated with the alternative adopted by the TVA Board.

As TVA implements the Pickwick Reservoir Land Management Plan, the agency will continue to work with all affected interests to promote environmentally sound stewardship of public lands.

Dated: January 10, 2003.

Kathryn J. Jackson,

Executive Vice President, Rivers System Operations & Environment.

[FR Doc. 03–1697 Filed 1–24–03; 8:45 am]

BILLING CODE 8120–08–M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Pueblo, CO

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project on Interstate 25 in Pueblo, Colorado, from south of Pueblo Boulevard/State Highway 45 (Milepost 94) to north of U.S. Highway 50/State Highway 47 (Milepost 102).

FOR FURTHER INFORMATION CONTACT: Chris Horn, Federal Highway

Final Environmental Impact Statement and Land Management Plan

Pickwick Reservoir

August 2002

TVA

FINAL ENVIRONMENTAL IMPACT STATEMENT

PICKWICK RESERVOIR LAND MANAGEMENT PLAN

TENNESSEE VALLEY AUTHORITY
RESOURCE STEWARDSHIP
PICKWICK WATERSHED TEAM

AUGUST 2002

FINAL ENVIRONMENTAL IMPACT STATEMENT
PICKWICK RESERVOIR LAND MANAGEMENT PLAN

Colbert and Lauderdale Counties, Alabama; Tishomingo County, Mississippi; and Hardin County, Tennessee

Responsible Federal Agency: Tennessee Valley Authority (TVA)

Abstract: TVA is proposing to update the 1981 Pickwick Reservoir Land Management Plan (1981 Plan) for approximately 19,238 acres of TVA public land on Pickwick Reservoir in Alabama, Mississippi, and Tennessee. The proposed updated Reservoir Land Management Plan (Plan) would be used to guide land use approvals, private water use facility permitting, and resource management decisions on Pickwick Reservoir. The proposed Plan allocates land into broad categories, including Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial/Commercial Development, Developed Recreation, and Residential Access. In addition, approximately 12,849 acres of land currently committed to a specific use through previous land transfers, leases, and contracts would be allocated to that current use. The proposed Plan would result in about 63 percent of Pickwick Reservoir land being allocated to Natural Resource Conservation, seven percent to Sensitive Resource Management, and 6.7 to 6.9 percent to Developed Recreation. The alternative to continue management under the 1981 Plan, also analyzed in this document, would allocate less land to Natural Resource Conservation (32 up to 55 percent) and more land to Industrial and Commercial Development (two up to 13 percent).

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SUMMARY

FINAL ENVIRONMENTAL IMPACT STATEMENT
PICKWICK RESERVOIR LAND MANAGEMENT PLAN
Colbert and Lauderdale Counties, Alabama; Tishomingo County, Mississippi; and Hardin County, Tennessee

Introduction

Tennessee Valley Authority (TVA) is proposing to update the 1981 Pickwick Reservoir Land Management Plan (1981 Plan) for TVA public land around Pickwick Reservoir. Currently, TVA owns and manages 19,238 acres of land on the reservoir. TVA intends to use the proposed updated Reservoir Land Management Plan (Plan) to guide future decision making and to systematically manage its reservoir properties. The Plan is intended to be consistent with the purposes of the Pickwick Project, which is a multipurpose reservoir operated by TVA for navigation, flood control, power production, recreation, and other uses. The Plan also seeks to address issues and concerns raised by the public including protection of sensitive resources.

Originally, TVA acquired approximately 63,625 acres of land for the Pickwick Project. Of that, 42,708 acres are covered by water during normal summer pool (414-feet mean sea level [msl]). Subsequent transfers and sales of land for various commercial, industrial, residential, and recreational uses have resulted in a current balance of 19,238 acres of TVA public land being allocated.

The proposed Plan is intended to provide a clear statement of how project land would be managed in the future based on scientific, cultural, and economic principles, and on public needs. TVA considered a wide range of possible land uses in the development of the proposed Plan. Each parcel of land was reviewed to determine its physical capability for supporting certain uses, other potential suitable uses of such land, and the needs of the public expressed during the scoping process. The Plan was developed using information obtained from the public, various state and federal agencies, elected officials, resource conservation groups, and other interested groups, existing and newly collected field data, both on land conditions and resources, and technical knowledge of TVA staff. Based on this information, the Pickwick Planning Team allocated parcels into one of seven land use zones. These zones are listed below (a more detailed definition of each zone can be found in the Final Environmental Impact Statement [FEIS]):

Zone 1 - Non-TVA Shoreland
Zone 2 - Project Operations
Zone 3 - Sensitive Resource Management
Zone 4 - Natural Resource Conservation
Zone 5 - Industrial/Commercial Development
Zone 6 - Developed Recreation
Zone 7 - Residential Access

Public Involvement and Issue Identification

TVA determined that the development of an Environmental Impact Statement (EIS) would allow a better understanding of the impacts of the proposed land use changes. Accordingly, TVA published a Notice of Intent to prepare an EIS in the *Federal Register* on March 26, 2001. From March 26, 2001, to June 1, 2001, TVA sought comments from citizens, agencies, and organizations. TVA hosted four public meetings at the following locations:

- Tishomingo County High School, Iuka, Mississippi
- Adams Mark Hotel, Memphis, Tennessee
- Pickwick Landing State Park, Pickwick Dam, Tennessee
- TVA Environmental Research Center, Muscle Shoals, Alabama

A total of 203 participants attended these public meetings. In addition, written comments were invited through a news release and newspaper notices. Information collected from these efforts was used to identify the following issues to be addressed in the EIS:

- Terrestrial Ecology (Plant and Animal Communities)
- Sensitive (Endangered and Threatened) Species
- Managed Areas and Sensitive Ecological Sites
- Water Quality
- Aquatic Ecology
- Wetlands and Floodplains
- Land Use and Prime Farmland
- Cultural Resources
- Air Quality
- Navigation
- Recreation
- Visual Resources
- Noise
- Socioeconomic Impacts
- Environmental Justice

TVA published a Notice of Availability for the Draft Environmental Impact Statement in the *Federal Register* on May 3, 2002. From May 3, 2002, to June 17, 2002, TVA sought comments from citizens, agencies, and organizations. TVA hosted four public meetings at the following locations:

- TVA Environmental Research Center, Muscle Shoals
- Tishomingo County High School, Iuka, Mississippi
- Adam's Mark Hotel, Memphis Tennessee
- Pickwick Landing State Park, Pickwick Dam, Tennessee

Alternatives

Three alternatives were developed and evaluated in the FEIS. Brief summaries of each alternative are provided below. The distribution of proposed land uses (by acres) for each alternative is shown in Table 1.

Table 1. Comparison of Alternatives - Acres

Existing (1981) Allocation Categories	Current Land Use Zones	Alternative A		Alternative B		Alternative C	
		Acres	%	Acres	%	Acres	%
Retained Developed Safety Harbors	Zone 2 - Project Operations	2,718.93	14.1	2,860.89	14.9	2,860.89	14.9
Cultural Resources Management Special Management Areas Visual Protection	Zone 3 - Sensitive Resource Management	1,220.42 up to 1335.03	6.3 up to 6.9	1,351.78	7.0	1,357.78	7.0
Wildlife Management Forest Management Agriculture Open Space	Zone 4 - Natural Resource Conservation	4,840.34 up to 9,249.96	25.2 up to 48.1	12,078.52	62.8	12,219.34	63.5
Industrial Sites Navigation	Zone 5 - Industrial/ Commercial Development	434.18 up to 2,499.63	2.3 up to 13.0	534.45	2.8	450.71	2.4
Recreation	Zone 6 - Developed Recreation	372.79 up to 2,457.91	1.9 up to 12.8	1,327.33	6.9	1,291.36	6.7
Previously Unplanned	Zone 7 - Residential Access	1,070.99[a]	5.5	1,085.43	5.6	1,064.43[a]	5.5
Previously Unplanned		259.13[b]	1.3				
Previously Planned, but not included in proposed updated plan.	Transferred land Land under water.	(1,200) (2,000)					
	Total	~21,100[c]		19,238.40		19,238.40	

[a] The 1,070.99 acres of Zone 7 land allocated under Alternative A was reduced by 6.56 acres. This marginal strip with water access rights has been developed as Mill Creek Boat Dock, a commercial marina since the 1981 Plan. Under Alternatives B and C, this land is allocated to Zone 6, Developed Recreation.

[b] This previously unplanned land does not have water access rights and under Alternatives B and C, has been allocated to Zone 4, Natural Resource Conservation.

[c] The original 1981 Plan included approximately 21,100 acres. Additional acreage in the original 1981 Plan included approximately 1,200 acres of land that have been transferred to other agencies and approximately 2,000 acres that are under water. Also, the 1981 Plan did not include approximately 1,064 acres of Residential Access shoreline and 259 acres of shoreline that does not have residential access rights (see footnote b).

Alternative A – Current Plan (No Action)

Under Alternative A, the No Action Alternative, TVA would continue to use the existing 1981 Plan to guide its land use decisions. When a proposal is received from an external applicant or internal TVA organization, the proposed land use request is evaluated for consistency with the 1981 Plan. If the requested land use is consistent with the 1981 Plan, the request can be considered, pending further environmental review on the site-specific aspects of the project. The 1981 Plan designated 10 allocation categories. In addition, TVA public land surrounding Pickwick Reservoir has been conveyed by TVA to individuals or groups for various uses, including industrial, recreation, and public works projects. The 1981 Plan also did not include residential shoreline development land. Of the land planned in 1981, approximately 25 up to 48 percent was allocated to natural resource management-related uses, 6.3 up to 6.9 percent to Sensitive Resource Management, and two up to 13 percent to Industrial/Commercial Development uses. TVA retained approximately 14 percent of the land for Project Operations and public works projects.

In implementing Alternative A, actual use for land with multiple tags would be decided on a case-by-case basis, making the assessment of impacts difficult. Therefore, for the comparison purposes of impacts, 1,220.42 up to 1,335.03 acres of land could be allocated to Sensitive Resource Management, 4,840.34 up to 9,249.96 acres could be allocated to Natural Resource Conservation, 434.18 up to 2,499.63 acres could be allocated to Industrial/Commercial Development, and 372.79 up to 2,457.91 acres could be allocated to Recreational Development. The actual allocation would be determined on a case-by-case basis as requests are received.

Alternative B and Alternative C

Under Alternatives B and C, the Plan map would be updated to reflect current uses and to allow additional but limited recreational or industrial development in a few selected locations. Based on consideration of resource inventories and public concerns, TVA has considered a different mix of land allocations. The percentage of land allocated for Sensitive Resource Management would increase to 7.0 percent; Natural Resource Conservation would increase to 62.8 percent and 63.5 percent; and Developed Recreation would increase to 6.9 percent and 6.7 percent. These allocations reflect public input, regulatory requirements, and the programmatic interests of TVA. This approach also provides enhanced protection of sensitive resources, such as rare species, wetlands, and cultural resources. The proposed allocations for Parcels 37, 53, and 156 differ under Alternatives B and C. Under Alternative B, a balanced alternative, TVA would allocate these 145 acres of TVA public land to Zone 5, Industrial/Commercial Development, Zone 6, Developed Recreation, and Zone 7, Residential Access. Under Alternative C, a conservation alternative, TVA would allocate this land to Zone 4, Natural Resource Conservation.

Comparison of Alternatives

Direct comparison of parcel land uses between alternatives is difficult because the land use allocation categories and definitions for the 1981 Plan and for the proposed alternatives are not the same. The reservoir land planning process has been updated and streamlined since 1981. In the 1981 Plan, many of the parcels were designated for

multiple uses, whereas the current process places land into one of seven land use zones. The existing 1981 Plan allocated approximately 21,100 acres which included approximately 1,200 acres that were transferred to other agencies. It also included approximately 2,000 acres that are submerged. The 1981 Plan did not allocate 1,330.12 acres of residential shoreline or other marginal shoreline strips along the reservoir. Under the proposed alternatives, all marginal shoreline strips with water access rights are allocated to Zone 7, Residential Access. Despite these differences, the allocated land uses in the 1981 Plan (Alternative A) and the proposed Plan (Alternatives B and C) for each TVA parcel have been identified and compared. For comparison purposes, an approximate relationship between the 1981 allocation categories and the current planning zones is shown in Table 1.

Under Alternatives B and C, more acreage is allocated for sensitive and natural resource uses than under Alternative A (see Table 2). Under Alternative B, approximately 2,845 to 7,369 acres of land would be allocated to more protective uses (Zones 3 and 4) than under Alternative A. Under Alternative C, approximately 2,992 to 7,516 acres of land would be allocated to more protective uses (Zones 3 and 4) than under Alternative A.

Table 2. Comparison of Acres Allocated to Sensitive and Natural Resource Uses

Alternative	Allocation	Acres
Alternative A	Cultural Resources Management Special Management Areas, Visual Protection, Wildlife Management, Forest Management, Agriculture , Open Space	6,061 to 9,250
Alternative B	Zone 3 - Sensitive Resource Management Zone 4 – Natural Resource Conservation	13, 430
Alternative C	Zone 3 - Sensitive Resource Management Zone 4 – Natural Resource Conservation	13, 577

Under Alternative C, approximately 145 acres would be allocated to more protective uses (Zone 4) than under Alternative B. Approximately 89 acres of Natural Resource Conservation are proposed to be allocated to Industrial/Commercial Development. A large number of sites previously allocated for access for future industrial development would be allocated to more protective categories. In addition, approximately 1,070.99 acres of marginal shoreline strip, not included in the 1981 Plan, would be allocated for Residential Access due to existing deeded rights for water access. Under Alternatives B and C, approximately 36 acres that were previously allocated to Industrial/Commercial Development are considered for allocation to Recreation Development or Natural Resource Conservation. Approximately 21 acres of land with existing privately-owned residential cabins and associated water use facilities are considered for allocation to either Natural Resource Conservation or Residential Access.

Affected Environment

At normal summer pool, Pickwick Reservoir is 52.7 miles long, and the shoreline length is 490.6 miles. Pickwick Reservoir spans portions of four counties in three states, (Colbert and Lauderdale Counties in Alabama, Hardin County in Tennessee, and Tishomingo County in Mississippi). TVA public land surrounding Pickwick Reservoir includes TVA-managed Natural Areas, Habitat Protection Areas, land fronting residential development, state parks, Wildlife Management Areas, forest areas, licensed recreation areas, power transmission line corridors, riparian/wetland areas along streams and the reservoir shoreline, and the Pickwick Landing Dam Reservation. Privately-owned land surrounding Pickwick Reservoir is a mosaic of residential and industrial/commercial development, upland and bottomland forests, and farmland comprised of hay, pasture, row crops, and small woodlots. The Pickwick Reservoir is, in landscape character, similar to other reservoirs in the Tennessee River system. Substantial visual features throughout the reservoir also include secluded coves where vegetation and wildlife populations abound, shoreline areas that serve as a visual buffers, and isolated areas of visual significance, such as undisturbed, pristine parcels amidst visually congested land.

The numerous plant communities on Pickwick Reservoir provide suitable habitat for a variety of wildlife species. These diverse plant communities include pine/hardwood forests, upland and riparian hardwood forests, and old field and agricultural field habitats. In addition to distinctive vegetated communities, many features, such as forested and emergent wetlands, streams, limestone bluffs, caves, and sinkholes, on reservoir parcels provide unique habitats for wildlife. Protected plant species known from the four counties spanned by Pickwick Reservoir include one federal-threatened plant species, one species that is a candidate for federal listing, and 105 species that are protected by the states of Alabama, Tennessee, and/or Mississippi. No federal-listed plant species or suitable habitat for such species were located during field investigations. Five Mississippi state-listed plant species were observed during these surveys, all occurring on Parcel 128.

The various aquatic and terrestrial habitats in the vicinity of Pickwick Reservoir provide suitable habitat for many species of federal- and state-listed species of wildlife. Twenty-five listed terrestrial animal species, approximately 165 caves, and five heron colonies were identified from the project area. Four of these terrestrial animals are protected by the U.S. Fish and Wildlife Service and the remaining 21 are protected by the states of Alabama, Mississippi, or Tennessee. Suitable bald eagle and Osprey nesting, foraging, and wintering habitat are found along Pickwick Reservoir on parcels which support large areas of middle-age and mature woodlands. Ospreys began nesting on Pickwick Reservoir in 2000. A pair of Ospreys has maintained a successful nest for two years on Parcel 39. While no other nests have been reported, osprey are regularly observed on Pickwick Reservoir during summer months, indicating that more nests likely exist around the reservoir. Gray bats are listed as federal-endangered and gray bat colonies are known from several caves on Pickwick Reservoir. Key Cave contains the largest maternity colony of gray bats on Pickwick Reservoir. Several smaller colonies of gray bats exist in caves throughout Pickwick Reservoir. Indiana bats have not been observed in caves on Pickwick Reservoir land in recent years. Mature hardwood forest communities on Pickwick Reservoir provide suitable summer habitat for Indiana bats. Although the red-cockaded woodpecker was not observed during field surveys, it was considered during this review. Little suitable habitat for red-cockaded woodpeckers exists on Pickwick Reservoir land. The long-tailed weasel, protected in the state of

Alabama, was found on Parcel 32. There are no other reports of the long-tailed weasel from the vicinity. A colony of great blue herons has been established in recent years below Wilson Dam (Parcel 39). This colony has grown from 30 to 100 nests in the past three years. The presence of this heron colony and the increase in ospreys and bald eagles in the vicinity of Pickwick Reservoir is of importance. These species were severely affected by the widespread use of the pesticide DDT during the 1970s. As DDT levels decreased in the past 15 years, the numbers of heron colonies, ospreys, and bald eagles have increased throughout the Tennessee River Valley. However, the numbers of these birds have remained low around Pickwick and Wheeler Reservoirs. The recent increase in these nesting birds in the past five years suggests that the water quality has improved to the point that these birds can successfully reproduce on Pickwick Reservoir.

The reservoir also contains common habitat types found in the region, such as old fields and pine woodlands, which provide potential habitat for protected terrestrial animals. There are numerous forested woodland communities of excellent quality on Pickwick Reservoir land. These parcels contain suitable habitat for Cooper's hawk, Swainson's warbler, eastern big-eared bat, and northern long-eared bat. These parcels also contain trees that are mature enough to provide roosting habitat for federal-endangered Indiana bats. There are several wetland communities, although most are limited to the mouths of tributaries. These habitats are suitable for the little blue heron, queen snake, map turtle, chorus frog, meadow jumping mouse, southeastern shrew, southern coal skink, and pigmy rattlesnake. Woodland rock outcrops can provide habitat for a variety of protected species of terrestrial animals. Rock outcrops provide habitat for green salamander, cave salamander, black king snake, eastern wood rat, and old field mouse. Seepages are uncommon on Pickwick Reservoir land. Several small seepages were found on Parcels 155 and 128. These sites provide suitable habitat for red salamander, southern zigzag salamander, and spring salamander. Caves are fragile ecosystems that provide habitat to a diverse group of organisms. Because cave systems are usually isolated from other cave systems, groups of organisms that live in a given cave often depend on the presence of one particular species (keystone species) to survive.

The TVA Regional Natural Heritage database indicated that there are pre-impoundment records of several mussels, a snail, and three fish from the waters now included in vicinity of Pickwick Reservoir which are protected as state- and federal-listed endangered or threatened species. In addition, 10 snails, 18 mussels, three crayfish, and four fish are tracked as sensitive aquatic species by the Alabama Heritage Program. However, because of the habitat changes resulting from impoundment, many of these sensitive aquatic species are believed to be extirpated from the reservoir. Currently, six federal-listed mussels, one federal-listed fish, and one rare shrimp are known from the areas included in the Plan.

There are 15 Managed Areas or Significant Ecological Sites on or adjacent to public lands on Pickwick Reservoir. Several of the areas, including the Natchez Trace Parkway, Pickwick Landing State Resort Park (including Burton Branch Primitive Area), and J. P. Coleman State Park are managed for recreation. Three of the areas—Lauderdale County State Wildlife Management Area, Seven Mile Island State Wildlife Management Area, and Key Cave National Wildlife Refuge—are managed for recreation and resource management. Two areas, Old First Quarters TVA Small Wild Area and the Rockpile National Recreation Trail are managed for low-impact, public use such as hiking. Several areas, Cooper Falls TVA Habitat Protection Area, Coffee Bluff TVA

Habitat Protection Area, Sandstone Outcrops/Pickwick Lake Protection Planning Site, East Port Bluffs, Key Cave Aquifer Hazard Area, Alabama Cave Fish Designated Critical Habitat, and Wilson Dam Tailwaters Restricted Mussel Harvest Area, are managed and/or monitored for federal- and/or state-protected species. Based on survey findings, one parcel (Parcel 128) was found suitable to recommend for designation as a TVA Natural Area. No parcels were found suitable for Small Wild Area, Wildlife Observation Area, or Ecological Study Area designation at this time.

Water quality in Pickwick Reservoir is considered good based on TVA's Reservoir Vital Signs Monitoring Program. The only water quality parameter measured during the program that has shown a declining trend is chlorophyll levels, indicating an overall increase in nutrient loading in the reservoir. Pickwick Reservoir has a "good" aquatic habitat condition rating along its shoreline. Sixty-five percent of the shoreline habitat scored good; 33 percent scored fair; while only two percent fell into the poor category. Ratings from TVA's Vital Signs monitoring conducted from 1991 to 1998 for fish and benthic communities ranged from fair to good for both communities. Pickwick Reservoir is rich in benthic fauna with a mussel sanctuary starting at the base of Wilson Dam and going downstream to the head of Seven Mile Island. Based on historic and recent fisheries data collected in the reservoir, it appears that Pickwick Reservoir is maintaining a diverse and healthy fish community.

In general, forested wetlands comprise the majority of wetland area associated with Pickwick Reservoir. Extensive areas of forested wetlands occur in the Seven Mile Island area (Parcel 32) and are also found in the floodplains and riparian zones of Second Creek (Parcel 16), Malone Creek (Parcel 57), Yellow Creek (Parcels 134 and 135), Colbert Creek (Parcel 26), Little Bear Creek (Parcel 44), Panther Creek (Parcel 9) and its tributaries, Indian Creek (Parcel 121) and Mulberry Creek (Parcel 55). There is also a unique palustrine forested wetland dominated by bald cypress trees located in the Coffee Slough area behind Seven Mile Island (Parcel 30). This is the easternmost occurring locale of naturally occurring bald cypress trees on the Tennessee River system. Emergent and scrub-shrub wetlands have developed in the embayments and mouths of tributary streams. There are significant areas of emergent wetlands found in Malone Creek (Parcel 57), Little Bear Creek (Parcel 44), and Yellow Creek (Parcels 134 and 135).

The 100-year flood elevation for Pickwick Reservoir varies from elevation 419.0 feet above msl at Pickwick Landing Dam (Tennessee River Mile [TRM] 206.7) to elevation 434.9-feet msl at the upper end of Pickwick Reservoir at TRM 259.4 (downstream of Wilson Dam). The Flood Risk Profile (FRP) elevation varies from elevation 419.0-feet msl at Pickwick Dam (TRM 206.7) to elevation 437.2-feet msl at the upper end of Pickwick Reservoir at TRM 259.4. For Pickwick Reservoir, the FRP elevations are equal to the 500-year flood elevations.

The soils surrounding the reservoir are silt loams which have developed from limestone, alkaline shale, or Coastal Plain marine sediments. Many of these soils are classified as prime farmland soils. According to the State Soils Geographic database statistics, about 75 percent of the soils on the TVA public land surrounding the Pickwick Reservoir are prime farmland soils.

Over 725 archaeological resources have been identified on TVA public land surrounding Pickwick Reservoir from existing data and recent survey results. The eligibility of these

or other resources for the National Register of Historic Places (NRHP) would be determined when specific actions are proposed that could potentially affect historical properties. This review would be undertaken in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966. The acquisition of land for the Pickwick Reservoir by TVA resulted in the removal of most structures and other man-made features. Very few structures remained, though many historic structures do remain on adjacent non-TVA land. Due to their age and architectural character, Pickwick Dam and Powerhouse are considered historically significant. Known historic sites on TVA public land include the former river port towns of Waterloo, Riverton, and Eastport, remnants of the old Muscle Shoals Canal and the later Lock No. 1 of the Wilson Dam complex, the former Keller Quarry Landing, the Colbert Shoals Canal, the Riverton Lock complex, and the White Sulphur Springs cabin group.

All counties that surround Pickwick Reservoir and their surrounding counties are in air quality attainment. However, in July 1997, the U.S. Environmental Protection Agency (USEPA) promulgated new, more restrictive standards for ozone and particulate matter. These new standards include an 8-hour standard for ozone that would supersede the old 1-hour standard. The EPA is moving forward to develop implementation guidance for both of these standards, and expects to promulgate designations for the 8-hour ozone standard by 2004. There is a likelihood that some of the counties which surround Pickwick Reservoir may not attain the new standards for ozone and particulate matter, when these new standards are eventually implemented after collection of the requisite air monitoring data.

The commercial navigation channel on Pickwick Reservoir extends from the Pickwick Landing Lock and Dam at TRM 206.7 upstream to the Wilson Lock and Dam at TRM 259.4. The commercial channel is a year-round channel with a minimum 11-foot depth suitable for towboats and barges with a nine-foot draft. Navigation safety landings and harbors have been established at various places along the reservoir to provide safe locations for commercial tows to tie off and wait during periods of severe weather, fog, or equipment malfunction. There are public and private use barge terminals on Pickwick Reservoir which handle barge shipments of various commodities.

Recreation facilities are provided on and adjacent to the reservoir by federal, state, county, municipal, and commercial entities. Facilities include 12 campgrounds, 21 boat ramps, seven marinas, and three locations with a resort lodge and/or rental cabins.

The 2000 population of the four counties in the Pickwick Reservoir area is estimated to have increased by 9.4 percent over the 1990 population. Minorities account for 12.7 percent of the population in the Pickwick Reservoir area. This is far below the three-state and national levels, which are 27.9 and 30.9 percent, respectively. In 2000, the civilian labor force of the three-county area was 88,365. Of these, 5,274 were unemployed, yielding an unemployment rate of 6.0 percent. In 1999, the four-county Pickwick Reservoir area had 92,988 jobs, an increase of 16.7 percent over the level in 1989. Per capita personal income in the area increased by 51.4 percent from 1989 to 1999. Overall, the poverty level in the four-county area at 14.3 percent is lower than the three-state average of 15.5 percent, but higher than the national figure of 13.3 percent.

Environmental Consequences

Under any alternative, sensitive resources, such as endangered and threatened federal- and state-listed species, cultural resources, and wetlands, would be protected. Future residential, industrial, and recreational developments on adjacent private property or on TVA property have the potential to result in water quality effects due to increased soil erosion, chemical usage, and sewage loading. However, these effects are not inevitable, and can be avoided by use of vegetated buffer zones and development restrictions such as those required for residential permitting according to TVA's Shoreline Management Policy. In implementing any of the three alternatives, impacts to floodplain values would be insignificant and any development proposed in the 100-year floodplain would be subject to the requirements of Executive Order 11988 (Floodplain Management). None of the alternatives directly result in any significant impacts on air quality. Indirectly, there could be significant air quality impacts from specific future proposed actions on some acres designated Industrial/Commercial Development. However, those proposed actions would be carefully reviewed for approval or disapproval and impacts would be avoided or mitigated according to air quality permit requirements and any other appropriate commitments. In site-specific cases where some wetland impacts do occur, mitigation requirements would offset any long-term loss of wetland functions. Mostly, impacts to wetlands would be mitigated by avoiding these areas and including small upland buffers. There may also be some incremental clearing of wetland vegetation by landowners resulting in some minor, cumulative loss of wetland function, primarily shoreline stabilization, wildlife habitat provision, and plant community diversity.

In implementing the No Action Alternative, potential impacts to threatened or endangered plant species associated with Parcel 128 are expected to be significant, because this site could be considered for future development. Potential impacts to rare plants and uncommon plant communities found on Parcel 128 would potentially be significant because disturbance of the vegetation on the tops of the bluffs or on the bluff faces would seriously alter this community and probably result in the loss of these rare plant occurrences. However, during the individual site review for any future proposals, a mitigation plan for these resources could be developed to reduce the level of impacts. Adoption of Alternative A would have the greatest potential on air quality impacts because more industrial and/or commercial development is possible. The potential for converting prime farmland is also the greatest under Alternative A because more acreage is allocated for Zones 5 and 6 than by the other alternatives. The 1981 Plan does not provide for specific preservation of archaeological resources; however, TVA will comply with regulatory requirements of NHPA and the Archaeological Resources Protection Act (ARPA). Site-specific activities proposed in the future would be approved, mitigated, or denied according to the significance of cultural resources present.

Under Alternative B, more land is allocated to Zones 5, Industrial/Commercial Development, and 6, Developed Recreation, than under Alternative C. Under Alternatives B and C, impacts to threatened or endangered plant species associated with the allocation of Parcel 128 are expected to be beneficial because Parcel 128 would be allocated to Zone 3, Sensitive Resource Management. This would offer protection to the rare plants and uncommon plant community found here. More land would be allocated to Zones 3, Sensitive Resource Management, and 4, Natural Resource Conservation under Alternatives B and C than under Alternative A. Public

requests for additional boat access areas can be accommodated in existing recreation areas and also are compatible with Zone 4, Natural Resource Conservation, areas, including the Lauderdale and Seven Mile Island Wildlife Management Areas. Under Alternatives B and C, more resources would be allocated to land use categories that provide cultural resource protection than Alternative A would. TVA would incorporate a phased identification and evaluation procedure to take into consideration the effects on historic properties to comply with Section 106 of the NHPA. Also, fewer archaeological resources would be affected because more parcels would be allocated to Zone 4, Natural Resource Conservation, or Zone 3, Sensitive Resource Management, and, therefore, subject to less proposed disturbance. All uncommitted TVA public land with historic structures would be allocated to Zone 3, Sensitive Resource Management, or Zone 4, Natural Resource Conservation, for protection. Both Alternatives B and C would have insignificant potential impacts on prime farmland and would protect existing visual resources and maintain scenic integrity and attractiveness.

The Preferred Alternative

TVA prefers Alternative B over the No Action Alternative and Alternative C. Alternative B would allocate a substantial amount of acreage to Natural Resource Management and Sensitive Resource Management, while also providing industrial/commercial and recreational development opportunities. Under Alternative B, the allocation of Parcel 37 to Developed Recreation would be compatible with the City of Florence's request for the River Heritage trail project. The allocation of Parcel 53 to Industrial/Commercial Development would be compatible with any industrial projects on the Barton Industrial Site. The allocation of Parcel 156 to Residential Access would be compatible with the existing use of summer cabins, commonly known as the White Sulphur Springs Cabin sites. As indicated in this analysis, the potential environmental impacts of these developments would be insignificant. TVA would designate the entrance to Key Cave (Parcel 31) for addition to the Key Cave National Wildlife Refuge and Parcel 128 would be designated as a TVA Natural Area.

Mitigation Commitments

The following commitments would be used in preparing the Record of Decision for the FEIS.

Under all alternatives:

- All soil-disturbing activities, such as dredging, shoreline excavations, etc., on Parcels 26, 36, 41, 61, 63, 66, 67, and 68 would be conducted in a manner to avoid impacts to cultural resources.
- The construction of water use facilities and shoreline alterations within the marked limits of the safety landings and harbors would be prohibited.
- Requests for water use facilities on shoreline immediately upstream and downstream of the safety landings and harbors would continue to be reviewed to

ensure that barge tows would have sufficient room to maneuver in and out of the safety landings and harbors without the risk of damaging private property.

- Because caves are extremely fragile and biologically significant, TVA has placed and would continue to maintain protective buffer zones around each of the known caves on TVA public land on Pickwick Reservoir.

Under Alternative B:

- Wetlands on Parcel 37 would be mitigated by avoiding wetland areas, including small upland buffers.
- Corridors for water access across Parcel 53 would be designed to avoid impacts to terrestrial habitat and wetlands.
- Requests for the alteration or further development of Parcel 53 would need to include BMPs and maintenance of a 50-foot SMZ to reduce potential impacts.
- Should TN SHPO determine an adverse effect for the allocation of Parcel 156 to Residential Access, TVA will negotiate mitigation measures with the SHPO.
- Requests for the alteration or development of Parcel 156 would need to include mitigation measures, such as vegetation management plans, use of architecturally compatible styles/colors, and height restrictions to maintain the scenic attractiveness without adversely impacting the scenic integrity.

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Acronyms and Abbreviations

1981 Plan	1981 Pickwick Reservoir Land Management Plan
ADCNR	Alabama Department of Conservation and Natural Resources
ALNHP	Alabama Natural Heritage Program
APE	Area of Potential Effects
ARPA	Archaeological Resources Protection Act
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement
DO	Dissolved Oxygen
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FRP	Flood Risk Profile
FWW	Florence Wagon Works
HPA	Habitat Protection Area
mgd	Million gallons per day
mg/kg	Milligrams per kilogram
MLC	Montana Land Company
msl	mean sea level
NEP	Nonessential Experimental Population
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNL	National Natural Landmark
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
Parkway	Natchez Trace Parkway
Plan	Reservoir Land Management Plan

PSD	Prevention of Significant Deterioration
SAHI	Shoreline Aquatic Habitat Index
SAS	Statistical Analysis Systems
SCS	Soil Conservation Survey
SEDA	Shoals Economic Development Authority
SHPO	State Historic Preservation Officer
SMI	Shoreline Management Initiative, TVA
SMP	Shoreline Management Policy, TVA
STATSGO	State Soils Geographic Database
TCDF	Tishomingo County Development Foundation
Tenn-Tom	Tennessee-Tombigbee
TRM	Tennessee River Mile
TVA	Tennessee Valley Authority
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WMA	Wildlife Management Area

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Background

Pickwick Reservoir is an impoundment of the Tennessee River formed by Pickwick Landing Dam, which is located at Tennessee River Mile (TRM) 206.7 in Hardin County, Tennessee. Pickwick Reservoir is located in parts of three states—Alabama, Mississippi, and Tennessee (see Figure 1.1). The Tennessee Valley Authority (TVA) originally acquired 63,625 acres of land for construction of the reservoir, which was begun in December 1934 and completed in February 1938. TVA has retained 19,238 acres of land lying above full pool elevation. At full pool, the reservoir is 52.7 miles long; shoreline length is 490.6 miles; and surface area is 43,100 acres (see Table 1-1). Of the 490.6 miles of shoreline, 95.8 miles (20 percent) is available for Residential Access, which includes current development.

Table 1-1. Pickwick Reservoir Project Data	
TVA public land (current)	19,238 acres
Length of reservoir	52.7 miles
Length of shoreline	490.6 miles
June 1 summer level	414 mean sea level (msl)
January 1 winter level	409 (msl)
Impoundment at elevation 576	43,100 acres

TVA is proposing to update the 1981 Pickwick Reservoir Land Management Plan (1981 Plan) and allocate additional land that was not considered in the 1981 Plan. This additional land was generally narrow shoreline strips known as the marginal strip. This strip is made up of certain shoreland owned by TVA or subject to easement rights retained by TVA on behalf of the public. It lies between the waters of the reservoir and abutting private noncommercial property, which normally ends at the maximum shoreline contour (elevation 423 on Pickwick). Construction in this marginal strip by adjacent landowners is subject to criteria for permissible improvements identified in the Shoreline Management Initiative (SMI) (TVA, 1998a). Further, proposed construction anywhere on the marginal strip is subject to approval under Section 26a of the TVA Act. Because the 1981 Plan may not reflect current demands for the land, TVA is proposing that it be updated to reflect new information, stakeholder needs and current TVA policies.

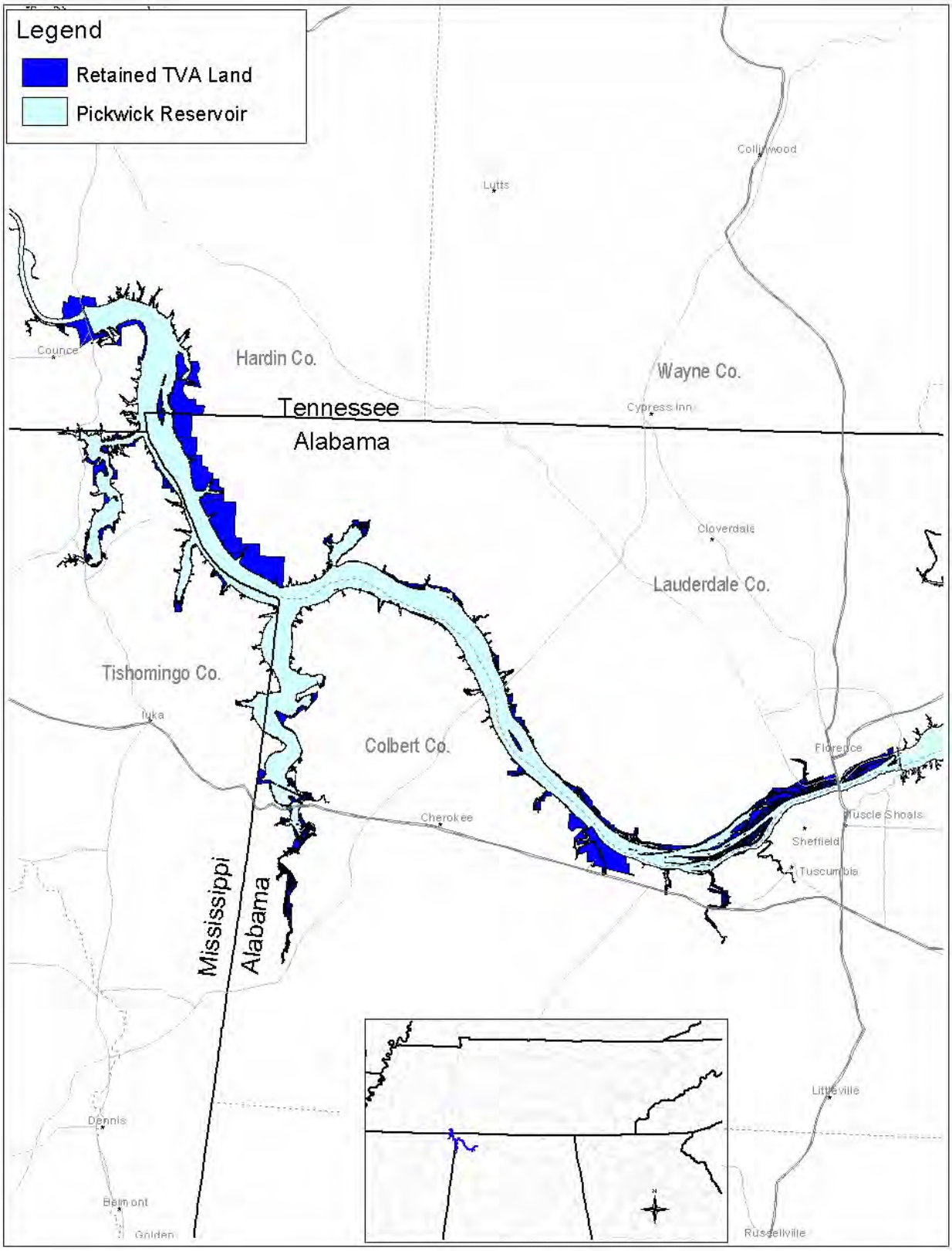

Figure 1.1. Map of Pickwick Reservoir

1.2 Purpose and Need for Proposed Action

TVA manages public land on Pickwick Reservoir to protect and enhance natural resources, generate prosperity, and improve the quality of life in the Tennessee Valley. This TVA public land, together with adjoining private land, is used for public and commercial recreation, industrial development, natural resource management, and a variety of other community needs. The purpose of the land planning effort is to apply a systematic method of evaluating and identifying the most suitable use of public land under TVA stewardship. Public input, resource data, computer analyses, and TVA staff are used to allocate land to the following land management categories: Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial/Commercial Development, Developed Recreation, and Residential Access (see Section 2.2). These allocations are then used to guide the types of activities that would be considered on each parcel. Each Reservoir Land Management Plan (Plan) is submitted for approval to the TVA Board of Directors and adopted as policy to provide for long-term stewardship and accomplishment of TVA responsibilities under the TVA Act of 1933.

Plans have been completed and implemented for seven Tennessee River mainstream reservoirs and five tributary reservoirs. Older plans are being updated for selected mainstream reservoirs including Pickwick Reservoir.

The purpose of this Environmental Impact Statement (EIS) is to assess environmental impacts of a reasonable range of alternatives for allocating TVA public land on Pickwick Reservoir and to provide a means for involving the public in the decision-making process.

1.3 Other Pertinent Environmental Review of Documents

This EIS relies on and tiers from information contained in the following documents.

Pickwick Reservoir Land Management Plan (TVA, 1981)

The 1981 Plan sets forth the permissible uses for approximately 17,370 acres of TVA public land on Pickwick Reservoir. The most suitable uses for each parcel of TVA public land around the reservoir were identified. Each parcel was allocated into one or more of 10 land use categories. The 1981 Plan currently serves as guidance for all administrative land use requests and resource management decisions on Pickwick Reservoir.

An area of special concern was identified in the 1981 Plan as The Bend of the River along Upper Pickwick Reservoir, because of the area's level terrain and its industrial potential to the region. This area included the Seven Mile Island Wildlife Management Area, which is known to contain significant archeological resources, habitat for threatened and endangered species, and prime farmland. The divergent interests of the wildlife and agricultural groups, the general community's desire to preserve the area, and the potential of this area for industrial development produced conflicts during the planning process. The 1981 Plan resolved these conflicts by allocating this area to agricultural, forestry, and wildlife uses with some limited industrial access along the south side of the Tennessee River.

Final Environmental Impact Statement: Patton Island Bridge and Approaches Crossing the Tennessee River and Connecting the Cities of Florence and Muscle Shoals, Lauderdale and Colbert Counties (FHWA, 1991)

In 1991, the Federal Highway Administration (FHWA) issued a Final Environmental Impact Statement (FEIS) on the Patton Island Bridge Project. TVA was a cooperating agency in the preparation of this document. Subsequently, TVA issued a Record of Decision on September 20, 1994, on its decision to provide a permanent easement over 63.7 acres of TVA public land for the bridge and highway approaches, and to provide 26a approval for a bridge over the Tennessee River at TRM 258. This bridge has been constructed.

The FEIS concluded that implementation of the Patton Island Bridge Project would not have substantial land use impacts. The south shoreline of Patton Island was found to be a valuable fish spawning area, as well as mussel sanctuary. Two endangered mussels inhabiting the Tennessee River in the vicinity of the bridge were relocated to a suitable area prior to the placement of bridge piers. No adverse impacts to aquatic resources were expected from implementing the project as long as Best Management Practices (BMPs) were used to control erosion and sedimentation.

Lighthouse Fuels, Inc. (TVA, 1997a)

This Environmental Assessment (EA) assessed the environmental impacts of Lighthouse Fuels' request for 37 acres of TVA public land on Pickwick Reservoir and construction of a barge terminal with three separate loading areas. The proposed site is adjacent to the Yellow Creek Port Authority's industrial complex and barge terminal easement, which was sold to the state of Mississippi in 1974. The primary purpose of the facility to be constructed would be to provide procurement, merchandising, and delivery of wood waste to fossil fuel power plants. Other commodities, such as dirt, sand, gravel, rock, minerals, grain, and other agricultural products, including switchgrass, also would be loaded. The TVA public land would be used to store fuels awaiting processing and barge loading, to construct an access road, construction of concrete pads for wood and rock storage, construction of grain silos, and construction of associated material handling equipment. Also, a scale house, office, and maintenance shop would be built on the site.

The EA assessed the environmental consequences of two alternatives, No Action and the Proposed Action. The EA concluded that adoption of the Proposed Action would not result in significant impacts to noise, traffic, aesthetics, air quality, water quality, navigation, wildlife, and aquatic resources. Economic impacts would be expected to be positive. Conditions placed in the approval by TVA prohibit the shipping by the applicant of chips produced at existing chip mills (now producing green chips) or pulp mills.

Lighthouse Fuels made no improvements to the property except partial clearing. The easement was canceled by TVA.

City of Florence, Alabama; Wastewater Treatment Plant Expansion (TVA, 1997b)

The City of Florence, Alabama, requested that TVA grant a permanent easement over approximately 121.8 acres of TVA public land abutting the Cypress Creek Wastewater Treatment Plant for the purpose of making improvements in the facility. The requested land is part of the area identified in the Pickwick Reservoir 1981 Plan as Planned Tracts

XPR-74PT and XPR-75PT. They are allocated for wetland and upland wildlife management, waterfowl management, general forest management, agricultural research, general agriculture, archaeological resources management, visual protection, habitat protection, and open space. The existing facility would be upgraded by adding an additional 20 million gallons per day (mgd) of wastewater treatment capacity. This would be accomplished by expanding the current wastewater treatment plant by 5 mgd (from 15 mgd to 20 mgd) and by constructing a three-cell lagoon with a treatment capacity of 15 mgd. It is estimated that the additional sewered accounts would increase the average daily flow from 11.1 mgd to 13.7 mgd. By adding the lagoon (15 mgd), the city would have sufficient wastewater treatment capacity to treat excessive infiltration/inflow and wet weather flows that have in the past resulted in frequent sewer overflows.

The EA assessed the environmental consequences of two alternatives, No Action and the Proposed Action. The EA concluded that adoption of the Proposed Action would not result in significant impacts to threatened and endangered species, cultural, archaeological, and historical resources, flood storage, prime farmland, water quality (surface water and groundwater), recreation, wildlife habitat, wetlands and non-navigable waterways, land use, navigation, and road access.

Florence Wagon Works Site Remediation at Pickwick Reservoir, Wilson Dam Reservation (TVA, 1998b).

This EA determined the environmental impacts of TVA's proposed corrective action plan and alternatives to conduct remediation at the former site of the Florence Wagon Works (FWW) in the spring and summer of 1998. The FWW site is located in Lauderdale County, Alabama, in the city of Florence on the north bank of the Tennessee River at TRM 258.6R. Lead contamination was identified at the site in the fall of 1994 during a preliminary survey of the area for a proposed historic riverside trail route. The contamination at the site is caused by paint and other chemicals used during the operation of the FWW plant. The EA describes and documents the health and ecological basis for TVA's decision and evaluates the environmental consequences of the proposed corrective action and alternatives. Together with the studies and other documents referenced herein, it generally corresponds to a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation/Feasibility Study for the selection of remedy under 40 CFR §300.430. The proposed remediation action was designed to reduce the level of lead (the principal chemical of potential concern) below the health-based cleanup level of 500 milligrams per kilogram (mg/kg), which equals 500 parts per million.

Barton Industrial Site (TVA, 1998c)

This EA evaluated the environmental impacts of developing the Barton industrial site as an industrial park. In this EA, TVA proposed to lend $1,850,000 to the Shoals Economic Development Authority (SEDA) for the purchase and development of a 1,284-acre industrial site at Barton, Alabama, 12 miles west of Tuscumbia. The Barton site is located in western Colbert County with close proximity to rail, water, and U.S. Highway 72. Future development would be based on specific projects centered around industries proposing to locate in the park.

SEDA received a bridge loan from a local bank to exercise its option on the property and needed a long-term loan for purchase and development of the property. A total of $1,350,000, including closing costs, attorney's fees, and bridge loan expenses would be used to purchase the property. The remaining $500,000 would initially be put in trust for use in developing a marketing plan and marketing the site. TVA would approve the use of the money in trust. None of the TVA money would be used for construction of a road or other infrastructure unless specifically approved by TVA as part of a project to site a facility in the park. Any such project would be included in the required infrastructure plan. The activities to be paid for with the trust fund addressed in this environmental review were:

- Development of a marketing plan and materials.
- Marketing activities to attract industries to the site.
- Erection of signs identifying the site.
- Remodeling of the "Gilbert" house on the site for use in the marketing efforts.

Barton Site Expansion EA (TVA, 1999a)

The proposed action for this EA was for TVA:

- To allow the SEDA to use $560,000 of Economic Development Loan funds to refinance the purchase of two parcels of land known as the McWilliams property and the Blankenship property (approximately 320 acres). These parcels border the Barton industrial site in Colbert County, Alabama.
- To approve Section 26a permits for the development of a port facility on the Tennessee River at TRM 244.0L and extending downstream approximately 1,300 feet.
- To approve a permanent industrial easement for an access road and approximately 8 hectares (19.76 acres) of TVA property needed to develop the port.

The EA evaluated the environmental impacts of refinancing the purchase of the two additional tracts of land, approving a port facility under Section 26a of the TVA Act, and approving an industrial development easement for development of a port facility. The impacts of specific industries locating on the site would be addressed by development standards that would take into account the environmental impacts of the proposed industry.

Shoreline Management Initiative (SMI): An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley (TVA, 1998a).

TVA completed an EIS on possible alternatives for managing residential shoreline development throughout the Tennessee River Valley. Under the alternative selected, sensitive natural and cultural resource values of reservoir shorelines would be conserved and retained by preparing a shoreline categorization for individual reservoirs; by voluntary donations of conservation easements over flowage easement or other shore land to protect scenic landscapes; and by adopting a "maintain and gain" public shoreline policy when considering requests for additional residential access rights. The Pickwick Reservoir Land Management Plan EIS will tier from the Final SMI EIS.

In accordance with the TVA Shoreline Management Policy (SMP), TVA categorized the residential shoreline of Pickwick Reservoir based on resource data collected from field surveys. A resource inventory has been conducted for sensitive species and their potential habitats, archaeological resources, and wetlands along the residential shoreline of Pickwick Reservoir.

The shoreline categorization is composed of three categories:

Shoreline Protection for shoreline segments that support sensitive ecological resources, such as federal-listed threatened or endangered species, high-priority, state-listed species, wetlands with high function and value, archaeological or historical sites of national significance, and certain navigation restriction zones. Within this category, all significant resources will be protected.

Residential Mitigation for shoreline segments where resource conditions or certain navigation restrictions would require analyses of individual development proposals, additional data, or specific mitigation measures.

Managed Residential for shoreline segments where no sensitive resources are known to exist. Standard environmental review would be completed for any proposed action.

The residential shoreline on Pickwick Reservoir comprises 95.8 miles or 20 percent of the total 490.6 miles of shoreline. Approximately 38.3 miles (40 percent) of the residential shoreline has archaeological resources; 19.2 miles (20 percent) of the residential shoreline has wetland vegetation; 37.4 miles (39 percent) has sensitive plant and/or animal resources present and 4.8 miles (five percent) has navigation restrictions. Depending on the sensitivity of the resource, these shoreline reaches were placed in either the Shoreline Protection or Residential Mitigation Categories. When these four sensitive resources are tallied for Pickwick Reservoir, the result is that approximately 1.9 miles (two percent) of the residential shoreline is in the Shoreline Protection Category; 77.6 miles (81 percent) is in the Residential Mitigation Category; and approximately 16.3 miles (17 percent) is in the Managed Residential Category.

Docks and other residential shoreline development would not be permitted on land within the Shoreline Protection Category because of the sensitive nature of the resources contained in this area or because of navigation restrictions. Section 26a applications for docks and other residential shoreline development in the Residential Mitigation Area would be reviewed by TVA for compliance with the SMP (TVA, 1998a) and the Section 26a regulations. Development restrictions or mitigation measures may be necessary in this shoreline category. Section 26a applications for docks and other shoreline development in the Managed Residential Area would also be reviewed for compliance with the SMP and Section 26a regulations.

As new data are collected on the spatial location and significance of endangered species, wetlands, cultural resources, or navigation restrictions, adjustments to category boundaries may be necessary. Property owners should check with the TVA Pickwick Watershed Team Office for the current categorization of an area.

Tishomingo County Development Foundation Request for Long-term Tenure Commercial Recreation Easement on Tract XPR-460RE EA (TVA, 2000a).

The Tishomingo County Development Foundation (TCDF) requested long-term tenure for 31 acres in two 1981 planned tracts (Tract E and Tract 11, now combined as Tract XPR-460RE) on the Yellow Creek embayment at mile 448.4R on the Tennessee-Tombigbee (Tenn-Tom) Waterway. TCDF requested the property for development of commercial recreation facilities. Tentative plans for the proposed action include a convention center, a marina, cabin sites, and covered boat slips. TCDF would solicit proposals for actual design, construction, and operation of the facilities. Under the proposed action, environmental safeguards include maintenance of shoreline and woodland buffers around the perimeter of the property, use of construction BMPs, and emphasis of bioengineering methods in shoreline stabilization. Buildings would be required to blend into the aesthetics of the surrounding area. In addition, entrance and exit roads would be designed to allow for safe turning maneuvers into and out of the facility. Marina plans would be required to include sewage pump-out facilities with spill-proof connections. Any above ground or underground storage tanks would also be required to have secondary containment and a spill prevention, control, and countermeasures plan. Final site development and marina development plans would be subject to TVA approval.

Memphis to Atlanta Corridor Study, Mississippi/Alabama State Line to Interstate 65, Colbert, Franklin, Lauderdale, Lawrence, Limestone, and Morgan Counties, Project DPS - A002, Draft Environmental Impact Statement, 2001

This Draft Environmental Impact Statement (DEIS), prepared by the FHWA, assesses the impacts for a proposal to build a controlled access highway from the Mississippi/Alabama state line to Interstate 65, a distance of approximately 75 miles. This statement documents the need for the project, describes the existing and projected conditions in the area, and evaluates alternative corridor locations with respect to costs, social economic impacts, and environmental consequences. The proposed Corridor A would cross Pickwick Reservoir at approximately TRM 240.9. All proposed corridors cross Bear Creek on Pickwick Reservoir at the existing U.S. Highway 72 bridge crossing. Implementation of this corridor would require approval under the Section 26a of the TVA Act and a land use agreement for Parcels 29 and 56.

1.4 Public Involvement

1.4.1 The Scoping Process

TVA determined that the development of an EIS would allow a better understanding of the impacts of the proposed land use changes. Accordingly, TVA published a Notice of Intent to prepare an EIS in the *Federal Register* on March 26, 2001.

From March 26, 2001 to June 1, 2001, TVA sought comments from citizens, various state and federal agencies, elected officials, resource conservation groups, and other organizations. TVA advertised public participation opportunities through news releases, paid advertisements in newspapers, and letters and questionnaires were sent to individuals on the Pickwick Reservoir mailing list. Stakeholder organizations and local, state, and federal agencies were contacted for scoping meetings. To announce the public comment period and public meeting dates, TVA placed paid advertisements in numerous local newspapers (Table 1-2) and issued a news release on March 20, 2001,

to the media sources listed in Table 1-3. Public notices were also displayed at various public places (see Table 1-4).

Table 1-2. List of Newspapers with Paid Advertisements		
Newspaper	**Location**	**Date Ad Appeared**
The Florence Times Daily	Florence, Alabama	Wednesday, April 11, 2001
The Commercial Appeal	Memphis, Tennessee	Sunday, March 25, 2001
The Tishomingo County News	Iuka, Mississippi	Thursday, April 5, 2001
The Courier	Savannah, Tennessee	Thursday, April 5, 2001
Franklin County Times	Russellville, Alabama	Wednesday, April 11, 2001
Northeast Mississippi Daily Journal	Tupelo, Mississippi	Sunday, March 25, 2001
East Lauderdale News	Florence, Alabama	Thursday, April 5, 2001

Table 1-3. Media Distribution List for Press Release	
Newspapers	
The Tennessean	Nashville, Tennessee
The Commercial Appeal	Memphis, Tennessee
The Jackson Sun	Jackson, Tennessee
The Florence Times Daily	Florence, Alabama
The Northeast Mississippi Daily Journal	Tupelo, Mississippi
East Lauderdale News	Florence, Alabama
Franklin County Times	Russellville, Alabama
Tishomingo County News	Iuka, Mississippi
The Daily Corinthian	Corinth, Mississippi
The Collierville Herald	Collierville, Tennessee
The Lexington Progress	Lexington, Tennessee
Independence Appeal	Selmer, Tennessee
The Courier	Savannah, Tennessee
Sheffield Standard and Times	Sheffield, Alabama
Colbert County Reporter	

Table 1-3 (cont.). Media Distribution List for Press Release	
Radio Stations	
WBCF	Florence, Alabama
WLAY	Florence, Alabama
WBHL	Florence, Alabama
WXFL/WSBM/WQLT	Florence, Alabama
Corinth	Corinth, Mississippi
Savannah	Savannah, Tennessee
Television Stations	
WTVA TV	Tupelo Mississippi
WAFF TV, Channel 48	Huntsville, Alabama
WHNT TV, Channel 19	Huntsville, Alabama
WAAY TV, Channel 31	Huntsville, Alabama
WMC TV 5	Memphis, Tennessee
WREG TV 3	Memphis, Tennessee
WHBQ TV 13	Memphis, Tennessee

Table 1-4. Public Places Where Public Notice for Meetings were Displayed	
Courthouses	**Marinas**
Colbert County, Alabama	Aqua Yacht Harbor, Mississippi
Lauderdale County, Alabama	Grand Harbor Marina, Mississippi
Hardin County, Tennessee	Florence Harbor, Alabama
Wayne County, Tennessee	Pickwick Landing State Park, Tennessee
Tishomingo County, Mississippi	Eastport, Mississippi
	Mill Creek, Mississippi
	J. P. Coleman, Mississippi

Table 1-4 (cont.). Public Places Where Public Notice for Meetings were Displayed	
Businesses	Jim Bennett Yacht Sales, Iuka, Mississippi
Lakeview Market, Waterloo, Alabama	Lowe's, Muscle Shoals, Alabama
Burch Outdoors, Florence, Alabama	The Corner Store, Iuka, Tennessee
Scotty's, Iuka, Mississippi	**Wal-Mart Locations**
Bruton 4-Way Market, Bruton Branch, Tennessee	Iuka, Mississippi
Fouch's Grocery, Pickwick Dam, Tennessee	Muscle Shoals, Alabama
Bass Plus, Muscle Shoals, Alabama	Savannah, Tennessee
State Line Grocery, Margerum, Alabama	**Other Locations**
Big Daddy's Bait shop, Florence, Alabama	Colbert Park Boat Ramp

TVA hosted four public meetings at the following locations:

- Tishomingo County High School, Iuka, Mississippi
- Adams Mark Hotel, Memphis, Tennessee
- Pickwick Landing State Park, Pickwick Dam, Tennessee
- TVA Environmental Research Center, Muscle Shoals, Alabama

A total of 203 participants attended these public meetings. At each meeting, all attendees were invited to participate in small discussion groups where they were asked to provide input on which parcels of land in the 1981 Plan should be designated for uses other than their currently designated use. Participants were also asked to provide input on how TVA should manage the public land under each designation.

TVA also received comments via questionnaires and letters. In all, 115 questionnaires were completed and mailed to the Pickwick Watershed Team Office. The questionnaire (see Appendix A) asked respondents to rate their preference regarding services, facilities, and recreation around the Pickwick Reservoir. Comments recorded during public meetings and scoping meetings were compiled and analyzed and are presented in Appendix A.

Issue Identification – TVA internal reviews of current and historical information, reservoir data collected, and public input were used to identify the following resources/issues for evaluation in this EIS:

- **Terrestrial Ecology**. Many respondents also expressed concern for the preservation of natural resources (e.g., natural areas, wildlife habitat, wetlands) and the ways in which these resources may be compromised by increased development (e.g., loss of sensitive habitat, clear-cutting of land).
- **Sensitive Plant and Animal Species**. Respondents expressed a preference for more protection of endangered species, especially eagles.

- **Significant Natural Areas.** Although not identified by participants, the effects of the allocations on designated or recognized natural areas was an issue identified by TVA staff.
- **Water Quality**. Participants requested more protection of water quality.
- **Aquatic Ecology**. Erosion caused by wave action from boats was also a concern among many respondents.
- **Wetlands**. Participants requested more protection of wetlands.
- **Floodplains**. The effects of the allocations on floodplain development was an issue identified by TVA staff.
- **Land Use and Prime Farmland Conversion**. Although not identified by participants, this issue was identified by TVA staff.
- **Cultural Resources**. Respondents expressed a need for increased protection of cultural and historic sites.
- **Navigation**. The effect of the allocations on navigation safety was an issued identified by many respondents and TVA staff.
- **Recreation**. Opinions were divided between respondents who expressed a need for more water recreation opportunities/facilities and respondents who requested greater restrictions on water recreation. For instance, those in favor of more water recreation expressed a need for more boat ramps, marinas, access points, dry stack storage, or pump-out stations. Other respondents expressed concern about increased boat traffic and its potential consequences on the environment and safety.
- **Visual Resources**. Participants valued the scenic beauty and setting of the reservoir and requested more protection of natural lands and open space.
- **Socioeconomic Impacts and Environmental Justice**. The effects of the allocations on promoting economic growth, minorities, and low income communities were issues identified by TVA staff. Some respondents expressed a need for less development.

The Montana Land Company (MLC) Maintain and Gain Proposal was raised as an issue during the public scoping meetings. MLC has requested fee transfer of TVA retained Parcels 3, 4, and 5 in exchange for approximately 164 acres and 4,800 feet of residential shoreline. The environmental impacts of MLC's proposal will be assessed through a separate National Environmental Policy Act (NEPA) process that is not expected to be complete prior to the finalization of the proposed Plan. Therefore, these parcels (Parcels 3, 4, and 5) are allocated to Zone 4, Natural Resource Conservation, under the proposed action alternatives being assessed in this EIS. Several people raised a concern about a casino, however, no such proposal was ever made to TVA.

1.4.2 Public Review of the Draft Environmental Impact Statement and Land Management Plan

On May 3, 2002, TVA released the DEIS for the Pickwick Reservoir Land Management Plan for public review. Copies of the DEIS were mailed to individuals, agencies, and organizations. The DEIS was also available on TVA's Web site. The Notice of

Availability of the DEIS was published in the *Federal Register* on May 3, 2002. To announce the public comment period and public meeting dates, TVA placed paid advertisements in numerous local newspapers (Table 1-5) and issued a news release on May 3, 2002, to the media sources listed in Table 1-3.

Table 1-5. List of Newspapers with Paid Advertisements

Newspaper	Location	Date Ad Appeared
The Florence Times Daily	Florence, Alabama	Saturday, May 4, 2002
The Commercial Appeal	Memphis, Tennessee	Monday, May 6, 2002
The Tishomingo County News	Iuka, Mississippi	Thursday, May 9, 2002
The Courier	Savannah, Tennessee	Thursday, May 9, 2002
Northeast Mississippi Daily Journal	Tupelo, Mississippi	Monday, May 6, 2002

Approximately 64 comments were received on the DEIS. These comments primarily related to recommendations for proposed uses of TVA public land. TVA responses to the comments are provided in Appendix H.

1.5 The Goals of the Plan

The goals of the Pickwick Plan include the following:

Goal 1: Protect Sensitive Resources on TVA public land. These resources include threatened and endangered species, cultural resources, wetlands, unique habitats, natural areas, and distinctive visual resources. During the public scoping process, the respondents to the scoping questionnaire indicated that TVA should place a high priority on protection of these resources. Under the preferred alternative, 1,351.78 acres of land are allocated to Zone 3, Sensitive Resource Management. Parcels allocated to Zone 3 may be used for activities, such as informal recreation opportunities and Natural Resource Conservation, but protection of the sensitive resource is the overall guide to the management of these parcel.

Goal 2: Protect Water Quality. The allocation team reviewed capability and suitability criteria (Appendix J) for parcels that were previously allocated for future industrial development and eliminated parcels that did not support Industrial/Commercial Development suitability/capability criteria. This reduced potential cumulative impacts on water quality by removing up to 2,066 acres that were potentially available for development under Alternative A. Additionally, a majority of the reservoir lands was allocated to Zones 3 and 4, providing 13,429.93 acres of largely undeveloped land that would buffer water runoff, protect against erosion and sedimentation, and provide shade and cover for aquatic communities. In addition, the allocation team did not propose any new development in the only poorly rated hydrologic unit (Bear Creek) on Pickwick Reservoir.

Goal 3: Maintain visual character of the Reservoir. A major objective in the 1981 Plan was to preserve the natural setting and visual character of the Reservoir. The

allocation team wanted to continue this goal, which was supported the public scoping data and the allocation team. By eliminating previously allocated tracts for future industrial development that did not support Industrial/Commercial Development suitability/capability criteria, and by maintaining large contiguous parcels in Zones 3 and 4, the scenic setting of the reservoir would not change significantly. The team also allocated parcels within the viewshed of the Natchez Trace Parkway so that they would be compatible with the visual character of the scenic parkway. Additionally, the allocation of parcels near the mouth of Yellow Creek to Zone 3, Sensitive Resource Management, would allow preservation and maintenance of a more natural setting at the mouth of Yellow Creek.

Goal 4: Support local communities' economic development goals. The proposed plan supports future development opportunities by: 1.) providing industrial/commercial access corridors when compatible with existing uses and when there is minimal impact on natural resources and sensitive resources; and 2.) considering proposals by SEDA to obtain water access for the Barton Industrial Site and the City of Florence to develop the River Heritage Trail. Under the preferred alternative, Parcel 37 would be allocated to Zone 6, Developed Recreation, to accommodate the city of Florence's request for public recreation facilities including trails and overlooks. Parcel 53 would be allocated to Zone 5, Industrial/Commercial Development, to be compatible with the back-lying land use of the Barton industrial site.

1.6 TVA Decision

The TVA Board of Directors will decide whether to adopt an updated Pickwick Plan (Alternatives B or C) or to continue the use of the existing 1981 Plan (Alternative A).

1.7 Necessary Federal Permits or Licenses

No federal permits are required to develop a Plan. Site-specific information on reservoir resources has been characterized in this EIS and potential impacts on these resources were considered in making land use allocation recommendations. Appropriate agencies regulating wetlands, endangered species, and historic resources have been consulted during this planning process. When specific actions, such as a dock, building, road or walking trail, are proposed, additional environmental reviews for these actions would be undertaken.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

TVA is considering three alternatives for managing the TVA public land around Pickwick Reservoir. Under the No Action Alternative (Alternative A), TVA would continue to use the existing 1981 Plan previously prepared by TVA staff, along with minor updates to reflect allocation changes approved by the TVA Board of Directors over the past 20 years. Under the action alternatives (Alternatives B and C), TVA would update the plan to guide future land use decisions. Alternatives B and C would call for substantial changes to the 1981 parcel allocations to address the needs and expectations of stakeholders. The changes proposed under Alternatives B and C would be based on evaluations, reservoir data collected, and TVA technical staff and public input. These alternatives seek to integrate land and water resources protection needs and balance competing, and sometimes conflicting, resource uses, while providing for the optimum public benefit from use of the land. The TVA Board of Directors' selected alternative would guide TVA resource management and property administration decisions on the TVA public land surrounding Pickwick Reservoir for the next ten years or until the Plan is revised.

2.1 No Action Alternative - Alternative A

Under the No Action Alternative, TVA would continue to use the 1981 Plan which currently guides land use decisions on TVA public land surrounding Pickwick Reservoir. The 1981 Plan documents actual and prospective uses indicated for the public land. Currently, proposed land use requests received from external applicants or internal TVA organizations are evaluated for consistency with the 1981 Plan. Requested land uses that are consistent with the 1981 Plan can either be approved or denied based on a review of potential environmental impacts and other administrative considerations. If the request is not consistent with the designated land use, then formal TVA Board of Directors' approval, following necessary review, would be required to change the designated allocation.

The 1981 Plan used 10 allocation categories, defined in Table 2-1. Under Alternative A, the land uses designated in the 1981 Plan would continue to be used by TVA to make land use decisions. The 1981 Plan included approximately 21,100 acres. This included approximately 1,200 acres of land transferred to other agencies under easement or other agreements. TVA still owns title to the land in fee. It also included approximately 2,000 acres that are under water. The 1981 Plan did not allocate approximately 1,330 acres of residential shoreline or other marginal shoreline strips along the reservoir.

Table 2-1. Allocation Category Definitions (1981)	
Allocation	**Description**
Wildlife Management	*Parcels allocated for wildlife management are managed to protect and enhance wildlife habitats, restore depleted or regionally rare populations of certain species, and improve public access and use opportunities where appropriate. Specific types of management included:* ***Upland Wildlife Management, Wetland Wildlife Management, and Water Fowl Management****.*
Forest Management	*Parcels are managed to improve the forest resources. On parcels allocated for* ***Forest Management Demonstrations/Research****, TVA demonstrates to private nonindustrial forest landowners that harvesting and other silvicultural activities can be conducted for economic benefits which result in more productive and attractive forest stands.* ***General Forest Management*** *tracts are managed for the multiple-use benefits of timber, wildlife, recreation, and watershed protection.*
Recreation	*On certain parcels allocated for public recreation, TVA will develop recreation facilities or encourage and provide technical assistance for recreation development by other public agencies (i.e., federal, state, county, or local government agencies). On other parcels allocated for public recreation, TVA will continue to promote informal recreation use with little or no physical development of the site.* *Types of development that can occur on this land:* ***Campgrounds and Boat Ramps****.*
Cultural Resources Management	*Parcels allocated to Cultural Resources Management contain historic and/or archaeological sites.* ***Historic sites*** *include buildings, sites, objects, structures, and districts.* ***Archaeological sites*** *contain physical remains from the prehistoric and/or historic periods. Parcels allocated to specific land uses with the presence of such sites noted as a possible constraint to the management or development of that parcel.*
Agriculture	*Parcels allocated for* ***general agriculture*** *are managed to protect their potential for agricultural use, promote increased agricultural productivity, and demonstrate multiple-use developments that preserve agricultural land. The need for TVA land in* ***agricultural research*** *was identified by TVA's Office of Agriculture and Chemical Development. This land is chosen after considering such factors as location, soil conditions, and economics.*
Navigation	**Safety Harbor or Landing -** *Safety harbors or landings are designated shoreline areas where commercial tows and recreational boats can be tied up during adverse weather conditions or equipment malfunctions.* **Minor Commercial Barge Landing -** *Parcels allocated for minor commercial landings are relatively unprepared sites that can be used for the transfer of pulpwood, sand, gravel, and other natural resources between barges and trucks.* **Barge Fleeting Areas -** *Fleeting areas are designated places where barges are switched between tows and/or barge terminals.* **The Tennessee-Tombigbee Letter Permit -** *Area located on Yellow Creek, committed for the purpose of constructing the Tenn-Tom Waterway.*

Table 2-1 (cont.). Allocation Category Definitions (1981)	
Allocation	**Description**
Visual Protection	*Parcels are allocated to Visual Protection with the intent to maximize actions that result in either no change or a positive change to the visual environment.*
Open Space	*Parcels allocated for open space are not intensively managed but are available for continued informal public use. These parcels are generally unsuitable for development or intensive management because of size, topography, or location.*
Special Management Areas	***Habitat Protection Areas*** *- Parcels allocated as Habitat Protection Areas are closed to any activities which might harm or damage significant natural elements. These areas are established to protect species which have been identified by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered or which are rare to the region. Unusual or exemplary biological communities or unique geologic features also receive protection.* ***Mussel Sanctuary*** *- The area from Wilson Dam downstream to the head of Seven Mile Island contains endangered species and commercial quantities of freshwater mussels. The sanctuary is maintained by the state of Alabama.*
Industrial Sites	*Parcels allocated for industrial sites can be made available to industrial developers on adjacent back-lying properties if the developers require additional land or access to the inland waterway system.* **Barge Terminals Sites -** *Public or private facilities used for the transfer, loading, and unloading of commodities between barges and trucks, trains, storage areas, or industrial plants.* **Access for Development** *- Developers on these sites can be permitted access for water intake, wastewater discharge and commodity pipelines.*

2.2 Action Alternatives

2.2.1 The Plan Revision Process

Information on public concerns was obtained from the public meetings and scoping meetings with stakeholders, community leaders, and peer groups as described in Section 1.4 and Appendix A. In addition, TVA reviewed existing and newly collected field data both on land conditions and resources. Each parcel of land was reviewed to determine its physical capability for supporting certain uses, other potential suitable uses of such land, and the needs of the public expressed during the scoping process. Based on this information, the planning team allocated land parcels to one of seven allocation zones described in Table 2-2.

Committed Land

The following assumptions were made in updating the 1981 Plan. Land currently committed to a specific use would be allocated to a zone designated for that use unless there is a need to make a change. Commitments include leases, licenses, easements, outstanding land rights, or existing designated natural areas. Possible reasons to change allocations would be ongoing adverse impacts or a request by the license or easement holder. No committed lands are proposed for change in the Pickwick Area. Projects such as the TVA dam reservation and public works projects are also committed land and are allocated to Zone 2, Project Operations. Approximately 2,861 acres (14.9 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing TVA projects. Agricultural licenses are not considered to be committed uses because they are an interim use of TVA public land. Approximately 9,987.92 acres (52.1 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing land use agreements. In the list of parcels presented in Appendix B, the parcels where these agreements are located are shaded in gray.

If sensitive resources were identified on a parcel with an existing land use agreement (leases, licenses, etc.), that parcel would remain zoned for the committed use, unless an ongoing adverse impact is found. However, TVA review would be needed prior to future activities that could impact the identified sensitive resources on that parcel to ensure the proposed activity would not significantly impact the identified sensitive resource(s).

Over the years, TVA sold surplus land on Pickwick Reservoir, but retained a strip of land lying between the 423-foot contour and the water's edge (in some exceptions, the 418-contour was used). The majority of these sales occurred in the mid- to late 1950s. The bulk of this public land which TVA retained below the 423-foot contour has water access rights. Based on the Shoreline Management decision of 1999, these back-lying property owners with access rights may apply for private water use facilities.

Uncommitted Land

The balance of public land on Pickwick Reservoir (6,304.02 acres) were not committed to a specific use. Field data were collected on many uncommitted parcels by technical specialists to identify areas containing sensitive resources. Representatives from different TVA organizations including power generation, navigation, resource stewardship, recreation and economic development (the planning team) met to allocate the parcels of TVA public land into the seven planning zones. There is a small amount of land in Sheffield, Alabama that has been allocated to Zone 1, Non-TVA Shoreland. TVA has retained the right to flood this privately owned land up to elevation 418 msl. Using maps that identified the location of sensitive resources (cultural, wetlands, threatened and endangered species, and visual) and the data collected during the scoping process, the capability and suitability for potential uses of each parcel were discussed. The proposed allocations were made by consensus of the planning team members.

Table 2-2. Land Use Zone Definitions		
Zone		**Definition**
1	**Non-TVA Shoreland**	Shoreland located above summer pool elevation that TVA does not own in fee or land never purchased by TVA. TVA is not allocating private or other non-TVA land. This category is provided to assist in comprehensive evaluation of potential environmental impacts of TVA's allocation decision. Non-TVA shoreline includes: • ***Flowage easement land***—Privately or publicly owned land where TVA has purchased the right to flood and/or limit structures. Flowage easement rights are generally purchased to a contour elevation. Since construction on flowage easement land is subject to TVA's 26a permitting requirements, the SMP guidelines discussed in the definition of Zone 7 would apply to the construction of residential water use facilities fronting flowage easement land. SMP guidelines addressing land-based structures and vegetation management **do not** apply. • ***Privately owned reservoir land***—This was land never purchased by TVA and may include, but is not limited to, residential, industrial, commercial, or agricultural land. This land, lying below the 500-year flood elevation, is subject to TVA's 26a approvals for structures.
2	**Project Operations**	All TVA reservoir land currently used for TVA operations and public works projects includes: • ***Land adjacent to established navigation operations***—Locks, lock operations and maintenance facilities, and the navigation work boat dock and bases. • ***Land used for TVA power projects operations***—Generation facilities, switchyards, and transmission facilities and rights-of-way. • ***Dam reservation land—***Areas used for developed and dispersed recreation, maintenance facilities, watershed team offices, research areas, and visitor centers. • ***Navigation safety harbors/landings—***Areas used for tying off commercial barge tows and recreational boats during adverse weather conditions or equipment malfunctions. • ***Navigation dayboards and beacons—***Areas with structures placed on the shoreline to facilitate navigation. • ***Public works projects***—Includes fire halls, public water intakes, public treatment plants, etc. (These projects are placed in this category as a matter of convenience and may not relate specifically to TVA projects.) • ***Land planned for any of the above uses in the future.***

Table 2-2 (cont.).		Land Use Zone Definitions
Zone		**Definition**
3	**Sensitive Resource Management**	Land managed for protection and enhancement of sensitive resources. Sensitive resources, as defined by TVA, include resources protected by state or federal law or executive order and other land features/natural resources TVA considers important to the area viewscape or natural environment. Recreational natural resource activities, such as hunting, wildlife observation, and camping on undeveloped sites, may occur in this zone, but the overriding focus is protecting and enhancing the sensitive resource the site supports. Areas included are: • TVA-designated sites with potentially ***significant archeological resources***. • TVA public land with ***sites/structures listed on or eligible for listing on the National Register of Historic Places***. • ***Wetlands***—Aquatic bed, emergent, forested, and scrub-shrub wetlands as defined by TVA. • ***TVA public land under easement, lease, or license to other agencies/individuals for resource protection purposes***. • ***TVA public land fronting land owned by other agencies/individuals*** for resource protection purposes. • ***Habitat Protection Areas***—These TVA Natural Areas are managed to protect populations of species identified as threatened or endangered by the USFWS, state-listed species, and any unusual or exemplary biological communities/geological features. • ***Ecological Study Areas***—These TVA Natural Areas are designated as suitable for ecological research and environmental education by a recognized authority or agency. They typically contain plant or animal populations of scientific interest or are of interest to an educational institution that would utilize the area. • ***Small Wild Areas***—These TVA Natural Areas are managed by TVA or in cooperation with other public agencies or private conservation organizations to protect exceptional natural, scenic, or aesthetic qualities that can also support dispersed, low-impact types of outdoor recreation. • ***River corridor with sensitive resources—***A river corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails, and interpretive activities. These areas will be included in Zone 3 when identified sensitive resources are present. • ***Significant scenic areas***—These are areas designated for visual protection because of their unique vistas or particularly scenic qualities.

Table 2-2 (cont.).		Land Use Zone Definitions
Zone		**Definition**
		• ***Champion tree site—*** Areas designated by TVA as sites that contain the largest known individual tree of its species in that state. The state forestry agency "Champion Tree Program" designates the tree, while TVA designates the area of the sites for those located on TVA public land. • ***Other sensitive ecological areas***—Examples of these areas include heron rookeries, uncommon plant and animal communities, and unique cave or karst formations. • ***Land planned for any of the above uses in the future.***
4	**Natural Resource Conservation**	Land managed for the enhancement of natural resources for human use and appreciation. Management of resources is the primary focus of this zone. Appropriate activities in this zone include hunting, timber management to promote forest health, wildlife observation, and camping on undeveloped sites. Areas included are: • ***TVA public land under easement, lease, or license*** to other agencies for wildlife or forest management purposes. • ***TVA public land fronting land owned by other agencies*** for wildlife or forest management purposes. • ***TVA public land*** managed for wildlife or forest management projects. • ***Informal recreation areas*** maintained for passive, dispersed recreation activities, such as hunting, hiking, bird watching, photography, primitive camping, bank fishing, and picnicking. • ***Shoreline Conservation Areas***—Narrow riparian strips of vegetation between the water's edge and TVA's back-lying property that are managed for wildlife, water quality, or visual qualities. • ***Wildlife Observation Areas***—TVA Natural Areas with unique concentrations of easily observed wildlife that are managed as public wildlife observation areas. • ***River corridor without sensitive resources present***—A river corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails, and interpretive activities. River corridors will be included in Zone 4 unless sensitive resources are present (see Zone 3). • ***Islands of 10 acres or less*.** • ***Land planned for any of the above uses in the future.***

Table 2-2 (cont.).		**Land Use Zone Definitions**
Zone		**Definition**
5	**Industrial/ Commercial Development**	Land managed for economic development including business, commercial, light manufacturing, and general industrial uses. Areas included are: • ***TVA public land under easement, lease, or license to other agencies/individuals***. • ***TVA public land fronting land owned by other agencies/individuals***. • ***Sites planned for future use supporting sustainable development.*** Types of development that can occur on this land are: • ***Business parks***—TVA waterfront land which would support business and light manufacturing activities. • ***Industrial access***—Access to the waterfront by back-lying property owners across TVA property for water intakes, wastewater discharge, or conveyance of commodities (i.e., pipelines, rail, or road). Barge terminals are associated with industrial access corridors. • ***Barge terminal sites***—Public or private facilities used for the transfer, loading, and unloading of commodities between barges and trucks, trains, storage areas, or industrial plants. • ***Fleeting areas***—Sites used by the towing industry to switch barges between tows or barge terminals which have both offshore and onshore facilities. • ***Minor commercial landing***—A temporary or intermittent activity that takes place without permanent improvements to the property. These sites can be used for transferring pulpwood, sand, gravel, and other natural resource commodities between barges and trucks. *(Commercial recreation uses, such as marinas and campgrounds, are included in Zone 6.)*
6	**Developed Recreation**	All reservoir land managed for concentrated, active recreational activities that require capital improvement and maintenance, including: • ***TVA public land under easement, lease, or license to other agencies/individuals*** for recreational purposes. • ***TVA public land fronting land owned by other agencies/individuals*** for recreational purposes. • ***TVA public land developed for recreational purposes***, such as campgrounds, day use areas, etc. • ***Land planned for any of the above uses in the future.***

Table 2-2 (cont.).		Land Use Zone Definitions
Zone		**Definition**
		Types of development that can occur on this land are: • ***Commercial recreation***, e.g., marinas, boat docks, resorts, campgrounds, and golf courses. • ***Public recreation***, e.g., local, state and federal parks, and recreation areas. • ***Greenways,*** e.g., linear parks located along natural features, such as lakes or ridges, or along man-made features, including abandoned railways or utility rights-of-way, which link people and resources together. • ***Water access sites***, e.g., boat ramps, courtesy piers, canoe access, fishing piers, vehicle parking areas, picnic areas, trails, toilet facilities, and information kiosks.
7	**Residential Access**	TVA-owned land where Section 26a applications and other land use approvals for residential shoreline alterations are considered. Requests for residential shoreline alterations are considered on parcels identified in this zone where such use was previously considered and where the proposed use would not conflict with the interests of the general public. As provided for in the SMP, residential access would be divided into three categories based on the presence of sensitive ecological resources and navigation restrictions. The categories are: (1) Shoreline Protection where no residential alterations would be permitted; (2) Residential Mitigation where special analysis would be needed; and (3) Managed Residential, where no known sensitive resources exist. Types of development/management that can occur on this land are: • ***Residential water use facilities***, e.g., docks, piers, launching ramps/driveways, marine railways, boathouses, enclosed storage space, and nonpotable water intakes. • ***Residential access corridors***, e.g., pathways, wooden steps, walkways, or mulched paths which can include portable picnic tables and utility lines. • ***Shoreline stabilization***, e.g., bioengineering, riprap and gabions, and retaining walls. • ***Shoreline vegetation management*** on TVA-owned residential access shoreland. • ***Conservation easements*** for protection of the shoreline. • ***Other activities***, e.g., fill, excavation, grading, etc.

Property Administration

The reservoir land plan takes into consideration TVA policy, guidelines, and environmental laws and regulations developing a strategy to manage resources by identifying suitable uses for each tract of land. As administrators of TVA public land, the watershed team uses the plan along with TVA policies and guidelines to manage resources and to respond to requests for the use of TVA public land. All inquiries about, or request for the use of TVA public land on Pickwick Reservoir should be made to TVA's Pickwick Watershed Team, P.O. 1010, Muscle Shoals, Alabama, 256-386-2228.

Requests generally fall into one of four categories:

1. A proposed land use that is consistent with the allocation in the plan.
2. A proposed land use that is not consistent with the plan allocation but is not otherwise inconsistent with TVA policy or legal authority.
3. Public service uses not specifically considered during the development of the plan.
4. A proposed land use that is not consistent with the plan allocation and is also precluded by TVA policy or legal authority.

Proposals that fall into the fourth category of request would normally be denied at the Watershed Team level. For each of the other three categories of requests, the applicant would be required to demonstrate the public benefits of the request, the need for TVA public land, and the capability of the tract to support the requested use. The applicant must also provide information about the proposed investment schedule, capital improvements, and other information typically required of any applicant for the use of TVA public land.

When a proposal is consistent with the allocated use (category 1), the request would be reviewed in accordance with NEPA and other legal authorities. If a proposed land use is consistent with TVA policies but is not congruent with the allocated uses for a parcel (category 2), the applicant would be asked to consider other tracts allocated for the proposed use. If an applicant finds none of the alternative to be satisfactory, they would be asked to provide justification that a modification to the plan is warranted and in the best public interest. If justifications are provided that are satisfactory to TVA, the agency would consider changing the allocation to accommodate the proposed need.

For requests falling within categories 2 and 3, TVA staff would use resource information and information provided by the applicant to determine if the requested site is physically capable of supporting the proposed use. If the capability evaluation reveals that the tract does not have the physically characteristics necessary to support the proposed use, the request will be denied. If the tract is found to be capable of supporting the proposed use, an interdisciplinary TVA team would conduct a suitability review that would include, in addition to public input, an assessment of the impacts on the environment, adjacent land uses, surrounding allocations, land management goals, reservoir plan objectives, and socioeconomic conditions. Public input would be a key component of this suitability analysis. If the request is found to be suitable, it would be coordinated within TVA, following established land use review processes. Access corridors for public works/utility projects proposed on any TVA public land that do not affect the zoned land use or sensitive resources would not require an allocation change so long as such uses would not be inconsistent with the use of the allocated zone. (An

access corridor is a linear pathway extending between TVA and the adjacent landowner to the water. It is located in a way that minimizes removal of trees or other vegetation and potential for erosion. The corridor should be stabilized and revegetated with native species.) Any other requests involving a departure from the planned uses would require the approval of the TVA Board of Directors.

2.2.2 Action Alternatives B and C

Under the action alternatives, TVA would update the 1981 Plan using resource data, computer analyses, stakeholder input, and TVA staff input. Alternatives B and C include 1,330.12 acres not planned in 1981. This previously unplanned land includes strips of retained land fronting tracts sold by TVA. Approximately, 1,064 acres of these retained strips of TVA public land have water access rights. These have been allocated to Zone 7, Residential Access, based on access rights as documented in the SMI and to Zone 5, Industrial/Commercial Development, based on existing land use. The remainder of the unplanned land is allocated to Zone 4, Natural Resource Conservation.

Comments received during the scoping period by public input requested that Parcel 16 be allocated to Zone 3, Sensitive Resource Management, instead of Zone 4, Natural Resource Conservation. This 154.66-acre parcel is located at the back of the Second Creek embayment near Waterloo, Alabama. Under both action alternatives, TVA is proposing to retain Parcel 16 in Zone 4, Natural Resource Conservation, since sensitive resources (fringe wetlands and bald eagle habitat) potentially present on this tract could still be managed effectively under this allocation. TVA staff would conduct additional surveys around this parcel during the winter for the presence of a bald eagle nest.

Public scoping comments also included a request for allocating Parcel 26 to Zone 3, Sensitive Resource Management, instead of Zone 6, Developed Recreation, because of the sensitive resources on this parcel. This 150.65-acre parcel fronts land transferred to the U.S. Department of Interior, National Park Service (NPS), to be managed as part of a national historic park (the Natchez Trace Parkway). This parcel is under permanent easement to the NPS to be managed as part of the Natchez Trace Parkway and other recreational uses. Under the action alternatives, Parcel 26 would be allocated to Zone 6, Developed Recreation, because of this existing agreement with the NPS. As stated in the previous section, if sensitive resources were identified on a parcel with an existing land use agreement (leases, licenses, etc.), that parcel would remain zoned for the committed use. However, TVA approval would be needed prior to undertaking activities on the parcel to ensure that the proposed activities would not adversely impact the identified sensitive resource(s).

The state of Mississippi inquired about changing the allocation of Parcel 130 from Natural Resource Conservation to commercial recreation. At this time, the state does not have enough information to proceed with a proposal and, therefore, it was not considered in this EIS.

Alabama Department of Conservation and Natural Resources (ADCNR) has requested Parcels 9, 30, and 32 be incorporated into a consolidated 30-year term easement involving 24,534 acres of TVA fee-owned land in North Alabama (includes property on Wheeler and Guntersville Reservoirs also). Parcels 9, 30, and 32 are currently under a 15-year term easement to ADCNR for natural resources management and public recreation (Seven Mile Island and Lauderdale Wildlife Management Areas). Under the

existing and proposed easements the land use and activities would remain the same; therefore these parcels would be allocated to Zone 4, Natural Resources Conservation under Alternatives B and C. Additionally, the U.S. Fish and Wildlife Service has requested that Parcel 31 (0.8 acre) be considered for transfer as part of the Key Cave National Wildlife Refuge.

Proposals for the use of three parcels (Parcels 37, 53, and 156) of TVA public land have been received. Under Alternative B, a balanced alternative which provides for conservation of natural resources and allows for limited Developed Recreation and Industrial/Commercial Development, these parcels would be allocated to zones that are compatible with the requests. Under Alternative C, a conservation alternative, TVA would not consider these requests and would allocate these parcels to Zone 4 (Natural Resource Conservation). These three parcels are described below.

Parcel 37

This 35.97-acre parcel was previously allocated in the 1981 Plan for industrial development. This parcel has been requested by the city of Florence for public recreation facilities including trails and overlooks.

Parcel 53

This 88.59-acre parcel was previously allocated for Upland Wildlife and General Forest Management. This parcel fronts the Barton industrial site (previously known as the Gilbert farm site). Also, Tennessee River Interstate Gas Company has an existing pipeline easement across this parcel. Southeast Tissue has requested access across this parcel for an industrial discharge for their proposed tissue plant to be located in Barton Riverfront Industrial Park.

Parcel 156

This 21-acre parcel is located on the left bank of lower Pickwick Reservoir (TRM 209.5), just upstream of Pickwick Landing State Park. This parcel consists of the nine White Sulphur Springs cabin sites, which are intermingled along the shoreline of Parcel 155. The lessees of these cabin sites have requested to purchase their individual lots. The White Sulphur Springs cabin site area was one of TVA's early ventures in cabin site development. The site was established in 1940 as a leased cabin site area containing 23 lots including one out-lot. Later, one lot was eliminated to accommodate a safety harbor for a total of 21 subdivision lots. During the 1940s, 11 lots were leased to individuals, and summer cabins were constructed on nine of the 11 lots by the lessees. These nine lots ranged from 1.5 acres to 5.5 acres in size for a total of 21 acres under lease. The nine lots that are leased are not grouped together in one location. The lots that are under lease are: 3, 4, 5, 8, 9, 11, 12, 13, and 19.

Alternative B, Balanced Conservation with Limited Developed Recreation and Industrial/Commercial Development

TVA would allocate these parcels of TVA public land to Zones 5, 6, and 7 (see Table 2-3). This alternative best accommodates existing back-lying uses and requests, with minimal to no impacts to the environment, and in some cases provides beneficial impacts. Parcel 37 would be allocated to Zone 6, Developed Recreation, to accommodate the city of Florence's request for public recreation facilities including trails and overlooks. Parcel 53 would be allocated to Zone 5, Industrial/Commercial

Development, to be compatible with the back-lying land use of the Barton industrial site. Parcel 156 would be allocated to Zone 7, Residential Access, because of the existing land use and developments. With this allocation, TVA would have the option to continue the leases, cancel the leases, or sell the lots (3, 4, 5, 8, 9, 11, 12, 13, and 19). TVA currently is considering all three options and how best to manage this property in future years.

Table 2-3. Allocations of Parcels Under Alternative B

Parcel	Acres	Location	Alternative B
37	35.97	Florence River Heritage Trails Request	Zone 6
53	88.59	Barton Industrial Site (Old Gilbert Farm Site)	Zone 5
156	21.00	White Sulphur Springs Cabin Sites	Zone 7

Alternative C, Conservation

Under this conservation-oriented alternative, TVA would allocate Parcels 37 and 53 to Zone 4, Natural Resource Conservation (see Table 2-4). Parcel 156 would be allocated to Zone 4, Natural Resource Conservation, making its use compatible with the use of the backlying Pickwick Landing State Park.

Table 2-4. Allocations of Parcels Under Alternative C

Parcel	Acres	Location	Alternative C
37	35.97	Florence River Heritage Trails Request	Zone 4
53	88.59	Barton Industrial Site (Old Gilbert Farm Site)	Zone 4
156	21.00	White Sulphur Springs Cabin Sites	Zone 4

2.3 Comparison of Alternatives

This section compares the environmental impacts of the three alternatives based on the information and analyses provided in Chapters 3, the Affected Environment, and 4, Environmental Consequences.

Section 101 of the NEPA declares that it is the policy of the Federal government to use all practicable means and measures, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations. TVA believes that all alternatives would be consistent with this policy, and TVA has interpreted the regulations and laws governing it to be consistent with this policy, as required by Section 102(1). Because of the environmental safeguards in each alternative, a wide range of beneficial uses of the environment could be obtained without degradation or unintended consequences under each alternative.

Direct comparison of parcel land uses between Alternatives A, B, and C is difficult because the 1981 Plan land allocation definitions and the proposed Alternatives B and C plan definitions are not the same. In the 1981 Plan, many of the parcels were designated for multiple uses. The existing 1981 Plan allocated approximately 21,100 acres which included approximately 1,200 acres that were transferred to other agencies. It also included approximately 2,000 acres that are submerged. The 1981 Plan did not allocate 1,330.12 acres of residential shoreline or other marginal shoreline strips along the reservoir. The proposed alternatives allocate all marginal shoreline strips with existing residential access rights to Zone 7, Residential Access. Despite these differences, the allocated land uses in the 1981 Plan (Alternative A) and the proposed Plan (Alternatives B and C) for each TVA parcel are identified and compared in Appendix B. For comparison purposes, an approximate relationship between the 1981 allocation categories and the current planning zones is shown in Table 2-5.

In implementing Alternative A, actual use for land with multiple tags would be decided on a case-by-case basis, making the assessment of impacts speculative. Therefore, for comparison purposes, a range of acreages for each possible land use category has been given. Under Alternative A, 1,220.42 up to 1,335.03 acres of land could be allocated to sensitive resource management-type uses, 4,840.34 up to 9,249.96 acres could be allocated to natural resource conservation-type uses, 434.18 up to 2,499.63 acres could be allocated to industrial and/or commercial development uses, and 372.79 up to 2,457.91 acres could be allocated to recreational uses. The actual allocation would be determined on a case-by-case basis as requests are received.

Under Alternatives B and C, more acreage is allocated for sensitive and natural resource uses than is designated than under Alternative A (see Table 2-6). Under Alternative B, approximately 2,845 to 7,369 acres of land would be allocated to more protective uses (Zones 3 and 4) than under Alternative A. Under Alternative C, approximately 2,992 to 7,516 acres of land would be allocated to more protective uses (Zones 3 and 4) than under Alternative A. Under Alternative C, approximately 145 acres would be allocated to more protective uses (Zone 4) than under Alternative B. Approximately 89 acres of Natural Resource Conservation are proposed to be allocated to Industrial/Commercial Development. A large number of sites previously allocated for access for future industrial development would be allocated to more protective categories. In addition, approximately 1,070.99 acres of marginal shoreline strip, not included in the 1981 Plan, would be allocated for Residential Access due to existing deeded rights for water access. Under Alternatives B and C, approximately 36 acres that were previously allocated to Industrial/Commercial Development are considered for allocation to Recreation Development or Natural Resource Conservation. Approximately 21 acres of land with existing privately-owned residential cabins and associated water use facilities are considered for allocation to either Natural Resource Conservation or Residential Access.

Table 2-5. Comparison of Land Uses Under Alternatives A, B, and C

Existing (1981) Allocation Categories	Current Land Use Zones	Alternative A		Alternative B		Alternative C	
		Acres	%	Acres	%	Acres	%
Retained Developed Safety Harbors	Zone 2 - Project Operations	2,718.93	14.1	2,860.89	14.9	2,860.89	14.9
Cultural Resources Management Special Management Areas Visual Protection	Zone 3 - Sensitive Resource Management	1,220.42 up to 1335.03	6.3 up to 6.9	1,351.78	7.0	1,351.78	7.0
Wildlife Management Forest Management Agriculture Open Space	Zone 4 - Natural Resource Conservation	4,840.34 up to 9,249.96	25.2 up to 48.1	12,078.52	62.8	12,219.60	63.5
Industrial Sites Navigation	Zone 5 - Industrial/ Commercial Development	434.18 up to 2,499.63	2.3 up to 13.0	534.45	2.8	450.34	2.4
Recreation	Zone 6 - Developed Recreation	372.79 up to 2,457.91	1.9 up to 12.8	1,327.33	6.9	1,291.36	6.7
Previously Unplanned	Zone 7 - Residential Access	1,070.99[a]	5.5	1,085.43	5.6	1,064.43[a]	5.5
Previously Unplanned		259.13[b]	1.3				
Previously Planned, but not included in proposed updated plan.	Transferred land Land under water.	(1,200) (2,000)					
	Total	~21,100[c]		19,238.40		19,238.40	

[a] The 1,070.99 acres of Zone 7 land allocated under Alternative A was reduced by 6.56 acres. This marginal strip with water access rights has been developed as Mill Creek Boat Dock, a commercial marina since the 1981 Plan. Under Alternatives B and C, this land is allocated to Zone 6, Developed Recreation.

[b] This previously unplanned land does not have water access rights and under Alternatives B and C, has been allocated to Zone 4, Natural Resource Conservation.

[c] The original 1981 Plan included approximately 21,100 acres. Additional acreage in the original 1981 Plan included approximately 1,200 acres of land that have been transferred to other agencies and approximately 2,000 acres that are under water. Also, the 1981 Plan did not include approximately 1,064 acres of residential access shoreline and 259 acres of shoreline that does not have residential access rights (see footnote b).

Table 2-6. Comparison of Acres Allocated to Sensitive and Natural Resource Uses		
Alternative	**Allocation**	**Acres**
Alternative A	Cultural Resources Management Special Management Areas, Visual Protection, Wildlife Management, Forest Management, Agriculture , Open Space	6,061 to 9,250
Alternative B	Zone 3 - Sensitive Resource Management Zone 4 – Natural Resource Conservation	13, 430
Alternative C	Zone 3 - Sensitive Resource Management Zone 4 – Natural Resource Conservation	13, 577

2.4 Impacts Summary

The range of impacts that could result from implementation of the alternatives is bracketed by the impacts of Alternatives A and C. Alternative A has greater acreages of land allocated to developed uses, including Industrial/Commercial Development, Access for Future Development, and Developed Recreation, than the other alternatives. Adoption of Alternative B would allow additional but limited recreational and industrial access and, therefore, would have greater natural resource potential impacts than Alternative C. Implementation of Alternative C would result in the largest amount of acres allocated to Zone 4, Natural Resource Conservation. A qualitative rating of the potential impacts of the alternatives with respect to different potentially affected resources is provided in Table 2-7. Mitigation measures to further reduce impacts are included in Section 4.21.

Table 2-7. Impacts Summary				
Resource	**Potential Impacts**	**Alternative A**	**Alternative B**	**Alternative C**
Terrestrial Ecology	Clearing and alteration of vegetation could impact the composition and abundance of species.	Forest areas generally remain forested. Potential for up to 2,500 acres for Industrial/ Commercial Development. Some potential for fragmentation to the resource.	Some forest and wildlife management to maintain and enhance the resource. Less potential for fragmentation as 69.8% of acreage is allocated to Zones 3 and 4.	Some forest and wildlife management to maintain and enhance the resource. Less potential for fragmentation as 70.5% of acreage is allocated to Zones 3 and 4.

Table 2-7 (cont.). Impacts Summary				
Resource	**Potential Impacts**	**Alternative A**	**Alternative B**	**Alternative C**
Threatened and Endangered Plants and Animals	Clearing and alteration of vegetation could impact the composition and abundance of species.	Generally protected; some potential for fragmentation to the resource. Potential impact for state-listed species on Parcel 128.	Suitable habitats are placed in appropriate management zones.	
Threatened and Endangered Aquatic Animals	Potential impacts to sensitive species in Key Cave.	Allocation of Parcel 32 allows general forest research and agriculture activities.	Provides protection by allocating Parcel 32 to Zone 4 and Parcel 31 (Key Cave) to Zone 3.	
Managed Areas and Sensitive Ecological Sites	Incompatible land use on adjacent areas. Impacts on sensitive resources.	Potential impact to state-listed species on Parcel 128.	Suitable habitats are placed in appropriate management zones.	
Water Quality	Toxic substances, erosion, and nutrient loading.	More overall development of residential, industrial, and recreational developments on either TVA or private property could increase pollutant release.	More acreage allocated to conservation uses which would protect water quality; however, some potential for impacts due to commercial, industrial, and recreational development.	
Aquatic Ecology	Alteration of aquatic habitat.	Generally no change from existing conditions; some accelerated shoreline erosion due to clearing of riparian vegetation.	Increases in woody shoreline vegetation over time would be beneficial.	
Wetlands	Adverse effects to or destruction of wetlands.	Generally protected under Section 404 and EO 11990; indirect impacts to functions and values through adjacent incompatible land uses.	Protected; cumulatively beneficial effects through Zone 3 designation for significant wetlands. Some indirect impacts to functions and values through adjacent incompatible land uses.	
Floodplains	No impacts to the 100-year floodplain.	Any future facilities or equipment subject to flood damage shall be located above the TVA FRP elevation of 419.1-feet msl. All future development shall be consistent with the requirements of TVA's Flood Control Storage Loss Guideline (TVA, 1999b).		

Table 2-7 (cont.). Impacts Summary

Resource	Potential Impacts	Alternative A	Alternative B	Alternative C
Prime Farmland	Conversion of prime farmland.	Resources protected; however, zoning did not consider the potential for impacts. These would be addressed in site-specific reviews.	Insignificant.	Insignificant.
Cultural Resources	Potential for activities to affect historic properties.	Resources managed; however, zoning did not consider the potential for impacts. These would be addressed in site-specific reviews.	Resources protected through phased identification and evaluation procedure; zoning considered the potential for impacts.	
Air Quality	Emissions from construction and development activities.	Greatest potential for air emissions due to most industrial development land	Generally insignificant impacts depending on the industries recruited.	
Navigation	Interference with commercial navigation.	No change from existing conditions.	Insignificant.	Insignificant.
Recreation	Availability of recreational opportunities.	Does not consider recent stakeholder input to limit development.	Informal use of 13,430 acres of Zones 3 and 4 land; 1,327 acres allocated to Developed Recreation; meets needs of city of Florence's request for walking trail.	Informal use of 13,571 acres of Zones 3 and 4 land; 1,291 acres allocated to Developed Recreation; does not allocate land to accommodate land use requests.
Visual Resources	Effects on Scenic Quality.	No change in present conditions.	Protection of scenic resources and maintenance of scenic integrity and attractiveness at a moderate to high level.	
Socioeconomic Impacts and Environmental Justice	Local economy and human communities.	Most acreage allocated to industrial/ commercial development. Would have more positive impact on local economy. No environmental justice impacts.	Lesser opportunities for access for future development. Public input was to limit future development. Possible development sites include Barton industrial site, Yellow Creek site, and Parcel 53. No environmental justice impacts.	Lesser opportunities for access for future development. Public input was to limit future development. Possible development sites include Barton industrial site and Yellow Creek site. No environmental justice impacts.

2.5 The Preferred Alternative

TVA prefers Alternative B over the No Action Alternative and Alternative C. Alternative B would allocate a substantial amount of acreage to Natural Resource Management and Sensitive Resource Management, while also providing industrial/commercial and recreational development opportunities. Under Alternative B, the allocation of Parcel 37 to Developed Recreation would be compatible with the City of Florence's request for the River Heritage trail project. The allocation of Parcel 53 to Industrial/Commercial Development would be compatible with any industrial projects on the Barton Industrial Site. The allocation of Parcel 156 to Residential Access would be compatible with the existing use of summer cabins, commonly known as the White Sulphur Springs Cabin sites. As indicated in this analysis, the potential environmental impacts of these developments would be insignificant. TVA would designate the entrance to Key Cave (Parcel 31) for addition to the Key Cave National Wildlife Refuge and Parcel 128 would be designated as a TVA Natural Area.

3.0 AFFECTED ENVIRONMENT

3.1 Regional Setting

At normal summer pool, Pickwick Reservoir is 52.7 miles long, and the shoreline length is 490.6 miles. Pickwick Reservoir spans portions of four counties in three states, (Colbert and Lauderdale Counties in Alabama, Hardin County in Tennessee, and Tishomingo County in Mississippi). This section of the Tennessee River is located in the Highland Rim physiographic province of the Interior Low Plateau section (Fenneman, 1938) and spans the Mississippian Plateau and Embayment Sections of the Western Mesophytic Forest Region as recognized by Braun (1950). Western and southern tributaries of the reservoir are in the geographic regions of the Coastal Plains or Limestone Valley physiographic provinces (USDA, 1963; 1977; 1987; 1994). The Highland Rim is composed primarily of limestone and chert and some shale. The Limestone Valley physiographic province is characterized by broad, gently sloping areas with semi-karst topography. Long, narrow, winding ridgetops and steep side slopes characterize the Coastal Plains. In the riparian woodlands along the Tennessee River and small water courses, the forest canopy is composed primarily of white oak, winged elm, river birch, sycamore, sweetgum, and hornbeam.

Throughout its history, TVA has used its reservoir shorelands, which were acquired as part of its mainstem and tributary projects, to meet a range of regional and local resource development needs and to enhance and improve the quality of life in the Valley. Reservoir property, often together with adjoining private land, has been utilized for the development of state parks, industry, and recreation, as well as to serve a variety of specific needs of local communities. Therefore, TVA public land surrounding Pickwick Reservoir includes a variety of land uses. This land includes TVA-managed Natural Areas, Habitat Protection Areas (HPAs), land fronting residential development, state parks, Wildlife Management Areas (WMAs), forest areas, licensed recreation areas, power transmission line corridors, riparian/wetland areas along streams and the reservoir shoreline, TVA's Colbert Fossil Plant, Yellow Creek Port Authority, and the Pickwick Landing Dam Reservation. Use of TVA public land for utility rights-of-way and facilities is necessary to provide the infrastructure for development of residential and industrial/commercial development around the reservoir. Utilities present on TVA public land include electric, gas, sewer, telephone, and water service. Highway/roads and railroad easements provide the necessary transportation infrastructure to permit access to and around the reservoir.

Privately-owned land surrounding Pickwick Reservoir is a mosaic of residential and industrial/commercial development, upland and bottomland forests, and farmland comprised of hay, pasture, row crops, and small woodlots. The upper end of the reservoir is the site of a major industrial, commercial, and residential complex consisting of Florence, Muscle Shoals, Sheffield, and Tuscumbia, Alabama. Outside of the urban area, land on the upper half of Pickwick is predominantly in large commercial farms with occasional industry. Land on the lower half of the reservoir (west of the Natchez Trace) is mostly wooded acreage with extensive recreational development, including two state parks. Industrial development activities include Hardin County Port, Yellow Creek Port,

Tri-State Commerce Park, and the Pickwick Lock. The Tenn-Tom Waterway connects with the Tennessee River at Yellow Creek.

Pickwick Reservoir begins at Wilson Dam (TRM 259.4). This section of the reservoir is referred to as the upper end. Patton Island and Jackson Island are located immediately below Wilson Dam. Jackson Island, the smaller of the two, is undisturbed, and a colony of great blue herons has been established here in recent years. Development on Patton Island consists of two each two-lane bridges and a transmission tower. The port of Florence, an industrial port, is located across from Patton Island along the northern shoreline. The cities of Florence and Sheffield, Alabama, are located on either side of the reservoir, with O'Neal Bridge crossing the reservoir at TRM 256.4. Just downstream of O'Neal Bridge on the north shore is Florence Harbor and McFarland Park. Seven Mile Island begins near TRM 253. There are expansive islands in this section of river. The island grouping comprises the Seven Mile Island Wildlife Management Area (WMA) and is sanctuary for many diverse wildlife species. On the northern side of Seven Mile Island is Coffee Slough and the Seven Mile Island WMA. Many features, such as forested and emergent wetlands, streams, caves, and sinkholes, on these parcels provide unique habitats for terrestrial and aquatic animals. Much of the habitats consist of upland pine/hardwoods and mixed hardwood forests. Riparian habitats are also abundant along this section of the reservoir. Key Cave National Wildlife Refuge, located on the northern shoreline in Coffee Slough, was formed to protect the watershed for Key Cave, the only known locality of the Alabama cave fish. The cave also contains the largest maternity colony of gray bats on Pickwick Reservoir.

Downstream of this area of the reservoir, several small tributaries flow into the reservoir, creating small coves with natural settings and interspersed residential development. There is industrial development along the shoreline consisting of barge unloading facilities, TVA Colbert Fossil Plant, and the Barton industrial site. The Natchez Trace Parkway Bridge spans the reservoir at TRM 236.6. Further downstream is Second Creek, a large embayment which joins the reservoir just upstream of the town of Waterloo, Alabama, near TRM 227.5. The Second Creek embayment is the largest embayment along the north shore of the reservoir, and contains residential development and wooded shoreline. Just downstream from the Second Creek embayment is the town of Waterloo, Alabama. On the opposite shore of the reservoir is the Bear Creek embayment, the largest embayment on the south shore of the reservoir. A Norfolk Southern Railroad causeway, a derelict bridge that was once U.S. Highway 72, and two existing bridges for U.S. Highway 72 are present in this embayment. The historic towns of Eastport, Mississippi and Riverton, Alabama, are near the confluence of Bear Creek and Pickwick Reservoir. Proceeding downstream from the mouth of Bear Creek, residential development occurs along the southern shoreline. J. P. Coleman State Park is located on the shoreline at the mouth of Indian Creek embayment. The remainder of the embayment is forested, with gentle to moderate slopes. The north shore of the reservoir consists of the Lauderdale WMA, reaching downstream to TRM 211.

Continuing downstream, several small coves are along both shorelines, and visual character remains consistent until reaching the mouth of Yellow Creek at TRM 215.2. This area of the reservoir is often referred to as the lower end. The shoreline along the entrance to Yellow Creek is wooded with mixed hardwoods and pines. Residential development and water use facilities are visible including the Tenn-Tom Marina, now known as the Grand Harbor Marina. Beyond the entrance is an unnamed island and

State Route 25 is in the distance to the west. The facilities at Yellow Creek Port Authority and Tri-State Commerce Park are visible near TRM 447.5. As the creek widens beyond the area of heavy development, Goat Island, a recreation area, is visible. Beyond Goat Island, residential development exists on the east and west shores of the inlet. Exiting the Yellow Creek embayment, State Line Island is located directly across from the north end of the Lauderdale WMA near TRM 214.7. This undeveloped shoreline continues until TRM 212 near Dry Creek, as the Lauderdale WMA ends and heavy residential development begins. The rear of the cove (Dry Creek) consists of pristine forest land. Leaving the cove and continuing around the north shore, there is residential development. The south shore of the reservoir is predominantly wooded with moderate to gently sloping terrain. Residential development is sparsely located along the shoreline until reaching Hardin County Port and Pickwick Landing State Park. Near TRM 208, the Pickwick Landing Dam can be seen. The sizable structure of the dam and the two-lane road that crosses the reservoir give a sense of terminus to the reservoir.

Regionally, several changes in the land use surrounding Pickwick Reservoir have occurred. Since 1985, the Lauderdale WMA acreage has been reduced from approximately 29,000 acres to 8,211 acres of which about half is TVA public land. This is the result of private land owners (timber companies) removing their land from the WMA and allowing private individuals to manage it for wildlife. However, in 2001, the State of Alabama purchased 32,000 acres through the Forever Wild Land Trust Program from Mississippi-based Southern Timber Ventures. The Alabama Department of Conservation and Natural Resources (ADCNR) is developing a plan to manage the 32,000 acres purchased to expand the Freedom Hills and Lauderdale WMAs.

In 1998, SEDA purchased the 1,284-acre Gilbert farm site, near Barton, Alabama, for development of an industrial site. The site was expanded with a purchase of 320 acres of adjoining property in 1999. In 2000, the city of Florence purchased a nearly 300-acre site off Alabama Highway 20 in Lauderdale County with plans to construct an industrial park. Key Cave National Wildlife Refuge is about five miles west from the site.

3.2 Terrestrial Ecology (Plant and Animal Communities)

The numerous plant communities on Pickwick Reservoir provide suitable habitat for a variety of wildlife species. These diverse plant communities include pine/hardwood forests, upland and riparian hardwood forests, old field, and agricultural field habitats. In addition to distinctive vegetated communities, many features, such as forested and emergent wetlands, streams, limestone bluffs, caves, and sinkholes, on reservoir parcels provide unique habitats for terrestrial wildlife.

Much of the habitats adjacent to Pickwick Reservoir consist of upland pine/hardwoods and mixed hardwood forests. Large expanses of these habitats are located in Seven Mile and Lauderdale WMAs and along more narrow strips of TVA-owned lands near Pickwick Landing Dam and Natchez Trace Parkway. These areas are dominated by loblolly pine, oaks (white, southern red, black, chestnut, and scarlet) and hickories with smaller numbers of yellow poplar, red maple, beech and blackgum.

These upland forest communities provide habitat to a large, diverse group of wildlife. Bird species such as the common crow, tufted titmouse, Carolina chickadee, northern

cardinal, and blue jay are common in these areas. These upland communities provide vital nesting and travel corridors for neotropical birds. Spring and fall migrations of these birds are quite spectacular along Pickwick Reservoir and can be easily viewed at the Muscle Shoals Reservation. Other species commonly observed in upland forest communities include the armadillo, white-tailed deer, raccoon, striped skunk, gray squirrel, eastern cottontail rabbit, and a variety of amphibians and reptiles.

Riparian habitats are also abundant along the reservoir. Bottomland hardwoods are restricted to low-lying areas along creeks and rivers and are occupied by water and willow oaks, sweetgum, red maple, ash, and sycamore. Several stands of bald cypress occur in Coffee Slough and several wetland areas along the river. These areas provide habitat to wildlife such as the belted kingfisher, great blue heron, blue-gray gnatcatcher, Louisiana waterthrush, northern rough-winged swallow, prothonotary warbler, and northern parula. Mammals such as the beaver, mink, and muskrat are common throughout the reservoir. Other species such as the northern water snake, midland water snake, rough green snake, northern cricket frog, and bullfrog are also abundant in riparian habitats.

Pastures, reverting old fields, and edge habitats include a variety of shrubs, forbs, vines, tree seedlings, and grasses. These old field communities might include green ash, maple, sweetgum, persimmon, sumac, honeysuckle, ironweed, ragweed, thistle, beggarweed, blackberry, and broom-sedge. Meadows may include planted grasses, clovers, sericea lespedeza, orchard grass, and wheat. These communities provide habitat for birds, such as the indigo bunting, blue grosbeak, mourning dove, chipping sparrow, and American kestrel. Other common species of wildlife include the gray rat snake, upland chorus frog, American toad, coyote, least shrew, and hispid cotton rat.

Privately-owned land surrounding the reservoir consists of a mosaic of residential and industrial/commercial development, upland and bottomland forests, and farmland comprised of hay, pasture, row crops, and small woodlots. While many of these sites only provide habitat for species that are more tolerant to developmental pressures, private land surrounding Pickwick Reservoir contains a diverse group of habitats ranging from extensive stands of high quality forests to large tracts of early successional habitats. These areas provide habitat for additional species of wildlife and contribute to the overall diversity of terrestrial wildlife species surrounding Pickwick Reservoir.

As stated in Section 2.2.2, this FEIS includes two action alternatives that differ in the land use zone category assigned to each of three parcels (Tables 2-3 and 2-4). Surveys of parcels for site-specific, sensitive botanical resources, including the presence of uncommon or sensitive plant communities, were conducted during June 2001. A description of each of these parcels is presented below. A description of Parcel 128 is included because of the sensitive resources found during the field investigations and the recommendation for this area to be included as a Natural Area.

Parcel 37

This 35.97-acre parcel is located between elevations 450 and 500 feet (msl). It consists of a disturbed hardwood forest with dominant tree species including hackberry, sycamore, princess tree, and locust. The average canopy age is approximately 30 years old. Understory species include privet, trumpet creeper, mimosa, Virginia creeper, and poison ivy. The herbaceous layer includes dog fennel, ragweed, nimble

will, and pale-flowered leaf-cup. There is a level area on part of the slope which has been cleared. Extensive cover by exotic plants, such as privet, mimosa, sericea lespedeza, tree of heaven, and gill-o-ground, is found in this cleared area. The landscape of this area has been altered and shaped by earth-moving machinery.

Because of this parcel's proximity to the tailwaters of Wilson Dam, great blue herons and black-crowned night herons can be observed along this parcel. Neotropical songbirds also use this parcel as a travel corridor during spring and fall migrations. However, due to extensive exotic plants, this parcel does not provide high quality wildlife habitat.

Parcel 53

This 88.59-acre parcel is located between elevations 410 and 500 feet (msl). It extends along the shoreline of the Tennessee River and up the east shore of the embayment of Mulberry Creek. Wetlands, dominated by water willow and alligator weed, are present in and along this embayment. The entire parcel is forested. The Tennessee River shoreline section is a narrow strip of limestone ledges and cliffs. Many species of trees, including yellowwood (state-listed), are found here, but hackberry and red cedar are particularly common. The limestone ledges are dominated by alumroot and fragile fern. By contrast, the Mulberry Creek portion of the parcel has little rock outcrop. There are some small areas of bottomland, particularly on the upstream end of this section. River birch, box elder, silver maple, and sycamore are the dominant trees along the shore and bottomlands. A few cypress trees are also present in these areas. Water oak and hop hornbeam are found in low areas and uplands. Other upland trees on the parcel include white oak, sugar maple, southern red oak, hickory, and loblolly pine. Understory species found in uplands and bottoms include beauty berry, coral berry, red bud, and dogwood. Exotic species observed on the parcel include privet, mimosa, moneywort, Japanese honeysuckle, multiflora rose, sericea lespedeza, and nandina. The Mulberry Creek section of the parcel can be distinguished on the basis of two areas, approximately equal in size, which differ in the level of prior land disturbance present. The section closest to the mouth has trees 50 to 80 years old and few exotic species. Further up slope, the trees are 20 to 30 years old; although, a few older trees are present, and there are many exotics.

The large stand of upland hardwoods along this parcel provides excellent habitat for wildlife. An extensive network of deer and small mammal trails was observed throughout the parcel. The mature oaks and hickories provide excellent habitat for woodland species of wildlife. This parcel also provides a visual screen from industrial development on the back-lying property.

Parcel 128

This 50.26 parcel occurs between elevations 420 and 520 feet (msl). Much of this parcel is open or semi-open, dry shale ledges. This contrasts with a few ravine area which are cool and moist with seeps. Dominant dry area trees include Virginia pine, yellow pine, red cedar, sweet gum, and sour wood. Sycamore, white oak, yellow poplar, hickory, oak, beech, and American ash tend to be found in the moist areas. Moist area understory species include leadbush, climbing hydrangea, Virginia willow, buttonbush, and spice bush. New Jersey tea and mock orange are found in dry areas. Herbaceous species of the dry shale include alumroot, agava, saxifrage, pussy toes, and stonecrop.

The moist areas support several species of fern and one small population of whorled pogonia.

There is little indication of disturbance on the parcel. Two exotic species, mimosa and Japanese honey suckle, were noted. Five Mississippi state-listed species occur on the parcel, more state-listed species would be expected upon further investigation of the area. The dry, steep areas of exposed rock-shale have produced a plant community that is uncommon in Mississippi. The community consists of an open cliff face dominated by the alumroot as well as New Jersey tea, mock orange, woolly lip-fern, stonecrop, purple cliff-brake, and saxifrage. Removal of vegetation on top of the bluffs would seriously alter this community.

This parcel also contains stands of mature loblolly pines, yellow poplars, oaks, and hickories, providing excellent habitat for wildlife. Large snags and hollow trees are common on this parcel. The numerous seepages and bedrock streams also provide habitat for woodland species of amphibians including several species considered to be uncommon by the Mississippi Natural Heritage Program. The seepages and mature woodland habitats appear to be uncommon around the Yellow Creek embayment.

Parcel 156

This 21-acre parcel consists of cabin sites that extend along the shoreline of Parcel 155. The cabin area is fairly undisturbed except for the area immediately around each homesite. Some small cleared areas exist on the south side of the parcel, as well as cleared utility corridors for the cabins. Exotic species are found mostly in bottomland areas and cleared areas. Exotics include privet, moneywort, Nepal grass, and sericea lespedeza.

This parcel also contains good habitat for wildlife. The mixture of mature loblolly pines and hardwoods provides a variety of foraging and nesting habitat for many species of wildlife. The parcel is used heavily by neotropical songbirds as they migrate during spring and fall. During winter months, bald eagles and osprey rest in the larger trees along the shoreline as they search for food.

3.3 Sensitive (Endangered and Threatened) Species

3.3.1 Plants

Field surveys were conducted in June 2001, as part of TVA's effort to update the 1981 Plan. Prior to these surveys, a search of the TVA Regional Natural Heritage Project database was conducted for protected plant species known from the four counties spanned by Pickwick Reservoir. This search revealed that one federal-threatened plant species, one species that is a candidate for federal-listing, and 105 species that are protected by the states of Alabama, Tennessee, and/or Mississippi are known from these counties (see Appendix C). This list, combined with regional information on additional species likely to occur on Pickwick Reservoir public land, provided a focus for the field surveys.

The June 2001 field investigations focused on parcels for which alternative land use designations have been proposed under the two action alternatives. Prior to field

surveys, no sensitive plant species were known from any of these four parcels. On each of the parcels examined, emphasis was placed on locating populations of federal- or state-listed plants, uncommon habitats, and sensitive ecological areas. No federal- or state-listed plant species or suitable habitat for such species, were located during the June 2001 surveys of Parcels 37, 53, or 156. Five Mississippi state-listed plant species were observed during these surveys, all occurring on Parcel 128 (see Table 3.3-1).

Table 3.3-1. Listed Plants Observed During June 2001 Surveys of Land Planning Parcels on Pickwick Reservoir

Common name	Scientific name	Federal status	State status*
Alumroot	*Heuchera villosa* var. *macorhiza*	--	NOST
Purple cliff-brake	*Pellaea atropurpurea*	--	NOST
Stonecrop	*Sedum ternatum*	--	NOST
Virginia pine	*Pinus virginiana*	--	NOST
Wooly lip-fern	*Cheilanthes lanosa*	--	NOST

*NOST = State listed, but no state status assigned

The Mississippi Heritage Program uses the Heritage ranking system developed by The Nature Conservancy, in which each species is assigned a rank representing its status in the state (S rank). Species with a rank of 1 are considered critically imperiled; those with a rank of 5 are the most secure. All of the Mississippi state-listed plant species observed during field surveys have been assigned ranks of S1 (critically imperiled), S2 (imperiled) or S1S2 (an intermediate ranking) under this system. The ranks assigned to each species are included in their descriptions below.

Alumroot (*Heuchera villosa* var. *macorhiza*)

This Mississippi state-listed plant species (state rank S1) was observed on Parcel 128. Three other occurrences of this species are known from Tishomingo County, Mississippi.

Purple cliff-brake (*Pellaea atropurpurea*)

This Mississippi state-listed plant species (state rank S1S2) was observed on Parcel 128. Three other occurrences of this species are known from Tishomingo County, Mississippi.

Stonecrop (*Sedum ternatum*)

This Mississippi state-listed plant species (state rank S2) was observed on Parcel 128. Five other occurrences of this species are known from Tishomingo County, Mississippi.

Virginia pine (*Pinus virginiana*)

This Mississippi state-listed plant species (state rank S2) was observed on Parcel 128. Nine other occurrences of this species are known from Tishomingo County, Mississippi.

Wooly lip-fern (*Cheilanthes lanosa*)

This Mississippi state-listed plant species (state rank S2) was observed on Parcel 128. Nine other occurrences of this species are known from Tishomingo County, Mississippi.

3.3.2 Animals

The various aquatic and terrestrial habitats in the vicinity of Pickwick Reservoir provide suitable habitat for many species of federal- and state-listed species of wildlife. The TVA Regional Natural Heritage Project database was reviewed to identify federal- and state-protected terrestrial animals as well as sensitive ecological areas, such as caves and heron colonies, from counties adjacent to Pickwick Reservoir. The counties include Colbert and Lauderdale Counties in Alabama, Tishomingo County in Mississippi, and Hardin County in Tennessee. Twenty-five listed terrestrial animal species (see Table 3.3-2), approximately 165 caves and five heron colonies were identified from the project area. Four of these terrestrial animals are protected by the U.S. Fish and Wildlife Service (USFWS), and the remaining 21 are protected by the states of Alabama, Mississippi, or Tennessee.

Table 3.3-2. Records of Protected Terrestrial Animals Known to Occur in the Vicinity of Pickwick Reservoir

Common Name	Scientific Name	Alabama Status	Mississippi Status	Tennessee Status	Federal Status
Amphibians					
Cave salamander	*Eurycea lucifuga*	-	END	-	-
Eastern hellbender	*Cryptobranchus a. alleganiensis*	Protected	NOST	INM	-
Four-toed salamander	*Hemidactylium scutatum*	SPCO	NOST	INM	-
Green salamander	*Aneides aeneus*	Protected	END	-	-
Spring salamander	*Gyrinophilus porphyriticus*	-	END	-	-
Tennessee cave salamander	*Gyrinophilus palleucus*	Protected	-	THR	-
Reptiles					
Alligator snapping turtle	*Macroclemys temminckii*	Protected	NOST	INM	-
Pigmy rattlesnake	*Sistrurus miliarius streckeri*	-	-	THR	-
Southern coal skink	*Eumeces anthracinus pluvialis*	SPCO	NOST	INM	-
Birds					
Bachman's sparrow	*Aimophila aestivalis*	SPCO	NOST	END	-
Bald eagle	*Haliaeetus leucocephalus*	Protected	END	INM	THR
Bewick's wren	*Thryomanes bewickii*	Protected	END	THR	-
Cooper's hawk	*Accipiter cooperii*	Protected	NOST	-	-
Lark sparrow	*Chondestes Grammacus*	-	-	THR	-
Little blue heron	*Egretta caerulea*	-	-	INM	-

Table 3.3-2 (cont.). Records of Protected Terrestrial Animals Known to Occur in the Vicinity of Pickwick Reservoir

Common Name	Scientific Name	Alabama Status	Mississippi Status	Tennessee Status	Federal Status
Mammals					
Osprey	*Pandion haliaetus*	Protected	NOST	-	-
Red-cockaded woodpecker	*Picoides borealis*	Protected	END	EXTI	END
Sharp-shinned hawk	*Accipiter striatus*	-	NOST	INM	-
Swainson's warbler	*Limnophlypis swainsonii*	-	-	INM	-
Eastern big-eared bat	*Coryhorhinus rafinesquii*	Protected	NOST	INM	-
Gray bat	*Myotis grisescens*	Protected	END	END	END
Indiana bat	*Myotis sodalis*	Protected	END	END	END
Long-tailed weasel	*Mustela frenata*	Protected	-	-	-
Meadow jumping mouse	*Zapus hudsonius*	-	-	INM	-
Southeastern shrew	*Sorex longirostris*	-	-	INM	-

END = Endangered

THR = Threatened

EXTI = Assumed extirpated from this portion of its former range

- = No official status

NOST - No status. However the species is considered uncommon by the Mississippi Natural Heritage Program.

INM - In Need of Management. The species is deemed in need of management by the Tennessee Wildlife Resources Agency.

SPCO - Species of Concern-the species has no status. The species is considered uncommon by the Alabama Natural Heritage Program.

Ten additional species considered uncommon or rare by Mississippi and/or Alabama Natural Heritage Programs were also reported from the project area. However, these species have no protective status in either state. The species include:

- southern zigzag salamander (*Plethodon ventralis*)
- red salamander (*Pseudotriton ruber*)
- mountain chorus frog (*Pseudacris brachyphona*)
- Ouachita map turtle (*Graptemys ouachitensis*)
- black king snake (*Lampropeltis getula nigra*)
- mole king snake (*Lampropeltis calligaster rhombomaculata*)
- queen snake (*Regina septemvittata*)
- cliff swallow (*Petrochelidon pyrrhonota*)
- old field mouse (*Peromyscus polionotus*)
- northern long-eared bat (*Myotis septentrionalis*)

Terrestrial animal surveys were conducted from June 2001 through August 2001 on TVA public land on Pickwick Reservoir (Parcels 16, 32, 37, 42, 53, 69, 128, 155). In each parcel, special emphasis was placed on locating populations of federal- and state-listed animals, uncommon habitats, and sensitive ecological areas, such as caves and heron colonies. A general overview of select parcels was also completed to identify suitable habitat for rare species. Surveys were performed in Bear Creek and Yellow Creek embayments, Coffee Slough, Wilson Dam tailwaters, and various localities throughout the reservoir. Wildlife habitat was also examined at Seven Mile and

Lauderdale WMAs. The protected terrestrial animals that were observed during field surveys and trips are listed in Table 3.3-3.

Table 3.3-3. Listed Terrestrial Animals Observed During Surveys on Pickwick Reservoir

Common Name	Scientific Name	Parcel Number
Bald Eagle	*Haliaeetus leucocephalus*	16, 39, 153
Osprey	*Pandion haliaetus*	39, 58, 152
Gray Bat	*Myotis grisescens*	Various Parcels
Long-tailed weasel	*Mustela frenata*	32

Bald eagle (*Haliaeetus leucocephalus*)

Bald eagles are listed as federal-threatened and are listed as in need of management in Tennessee and protected in Alabama and Mississippi. Bald eagles were observed on several occasions roosting and flying on or near parcels. Bald eagle populations continue to increase throughout the Tennessee River Valley. There are numerous active nests reported from Kentucky Reservoir and the Tenn-Tom Waterway; however, there are no confirmed nesting bald eagles known from Pickwick Reservoir. Historically, bald eagles have nested in the Bluff Creek embayment; however, they have not been active at this site since 1990.

Bald eagles were observed on several occasions during field surveys. Winter observations of eagles are regularly observed in Second Creek and Coffee Slough embayments, along the tailwaters of Wilson Dam and on larger portions of the reservoir near Waterloo. During the 2001 summer surveys, adult bald eagles were observed at Parcels 39 and 153. An adult and a juvenile bird were also observed foraging at Parcel 16. ADCNR reported that bald eagles successfully nested in the vicinity of Waterloo in 2002.

Large, middle-age and mature parcels of deciduous woodlands adjacent to Pickwick Reservoir represent suitable nesting habitat for resident eagles and wintering roosting habitat for migratory bald eagles. Protecting large forested parcels and more secluded areas adjacent to the reservoir would benefit bald eagles on Pickwick Reservoir.

Osprey (*Pandion haliaetus*)

Ospreys are also increasing in numbers throughout the Tennessee River Valley. The number of successful nests have increased to such levels that the Tennessee Wildlife Resources Agency recently de-listed the osprey in Tennessee. Ospreys are listed as protected in Alabama and are considered to be uncommon in Mississippi. Ospreys recently began nesting on Pickwick Reservoir in 2000. A pair of birds has maintained a successful nest for two years on Parcel 39 (D. Simbeck, June, 2000). While no other nests have been reported, ospreys are regularly observed on Pickwick Reservoir during summer months, indicating that more nests likely exist around the reservoir.

Suitable habitat for ospreys is abundant on Pickwick Reservoir. Maintaining forested islands (i.e., Parcel 58) and forested shoreline along the reservoir is vital for this

species. Ospreys also readily nest on man-made structures. Placement of osprey nesting structures in Coffee Slough and in more shallow waters around Koger Island and in Second Creek would benefit the species.

Gray bat (*Myotis grisescens*)

Gray bats are listed as federal endangered. This bat occupies a limited geographic range that includes limestone karst areas of the southeastern United States (USFWS, 1982). Gray bats utilize caves year-round, usually occupying different caves during the summer and winter. In the summer, female gray bats form maternity colonies in caves that contain unique habitat requirements (i.e., temperature, size, and structure). Summer maternity caves are nearly always located near rivers or reservoirs over which the bats feed. Forested areas surrounding caves, between caves, and over-water feeding habitat are important for gray bat survival (USFWS, 1982). In the winter, gray bats congregate and hibernate in a limited number of caves across the Southeast.

Gray bat colonies are known from several caves on Pickwick Reservoir. Key Cave National Wildlife Refuge was formed to protect the watershed for Key Cave, the only known locality of the Alabama cave fish (*Speoplatyrhinus poulsoni*). The cave also contains the largest maternity colony of gray bats on Pickwick Reservoir. This colony of bats provides nutrients that are critical for the survival of the Alabama cave fish and other rare species of organisms that live in Key Cave. Several smaller colonies of gray bats exist in caves throughout Pickwick Reservoir. Gray bats use these and other caves as resting sites as they forage along the Tennessee River and its tributaries. They regularly travel up to 20 miles from their roosts as they feed. They primarily feed on adult stages of aquatic insects emerging from the reservoir at night. These insects are sensitive to changes in water quality; therefore, degradation of water quality would have a negative impact on gray bats.

Long-tailed weasel (*Mustela frenata*)

This small weasel, protected in the state of Alabama was found on Parcel 33. The den was located on the edge of a hardwood forest. There are no other reports of the long-tailed weasel from the vicinity. However, due to the abundance of suitable habitat, the lack of records is likely due to the secretive nature and nocturnal habits of this small mammal.

Red-cockaded woodpecker (*Picoides borealis*)

Although this species was not observed during field surveys, it was considered during this review. This federal-endangered species was last reported in Hardin County when a single bird was observed in 1946. Red-cockaded woodpeckers are now considered to be extirpated from Tennessee. Little suitable habitat for red-cockaded woodpeckers exists on Pickwick Reservoir land. Forested parcels containing mature trees did not have the appropriate habitat structure (open midstory) to be suitable for red-cockaded woodpeckers.

Indiana bats (*Myotis sodalis*)

Recently, several small colonies of federal-endangered Indiana bats have been reported from caves in the Bankhead National Forest. Historically, the species has been reported from the abandoned chalk mine in the Bear Creek embayment adjacent to Parcel 114. However, Indiana bats have not been observed in caves on Pickwick

Reservoir land in recent years. The mine was surveyed extensively in 1990 to determine its use by Indiana bats as well as gray bats and northern long-eared bats, but investigators found no evidence of these species using the cave in recent years. Additional caves such as Collier Cave and Key Cave have been examined during winter months for Indiana bats, but none have been found at these caves. Pickwick Reservoir land having mature hardwood forest communities provide suitable summer habitat for Indiana bats. This habitat is abundant in Coffee Slough.

Heron colonies

Heron colonies are colonial nesting sites used by migratory wading birds, typically great blue herons (*Ardea herodias*). Several species of birds, in large numbers, may nest in colonies, often in large numbers. A colony of great blue herons has been established in recent years below Wilson Dam (Parcel 39). This colony has grown from 30 to 100 nests in the past three years. Currently only great blue herons are known to nest at this site. This site could potentially be used by other species, such as great egrets *(Ardea alba)* or little blue herons *(Egretta caerulea)*, in the future.

The presence of this heron colony and the increase in ospreys and bald eagles in the vicinity of Pickwick Reservoir is significant. These species were severely affected by the widespread use of the pesticide DDT during the 1970s. As DDT levels decreased in the past 15 years, numbers of heron colonies, ospreys and bald eagles have increased throughout the Tennessee River Valley. However, numbers of these birds have remained low in Pickwick and Wheeler Reservoir. The recent increase in these nesting birds in the past five years suggests that the water quality has improved to the point that these birds can successfully reproduce on Pickwick Reservoir.

Suitable Habitat for Threatened and Endangered Species

No populations of the remaining rare animal species listed in Table 3.3-2 were found during field surveys. However, suitable habitat exists on the public land surrounding Pickwick Reservoir for most of these species. The presence of sensitive terrestrial animal species was projected based on the geographical range of the species and the presence of habitat deemed suitable for the respective species. Pickwick Reservoir parcels contain special habitat types which contribute to regional natural resources or landscape diversity. These include mature deciduous woodlands, wetlands, woodland rock outcrops, bluffs, seepages, and karst features.

Mature Deciduous Woodlands

There are numerous forested woodland communities on Pickwick Reservoir land. Parcels having mature deciduous woodlands of excellent quality include Parcels 8, 9, 16, 27, 29, 30, 32, 42, 126, and 128. These parcels contain suitable habitat for Cooper's hawk, Swainson's warbler, eastern big-eared bat, and northern long-eared bat. These parcels contain trees that are mature enough to provide roosting habitat for federal-endangered Indiana bats.

Wetland Communities

Pickwick Reservoir has several wetland communities, although most are limited to the mouths of tributaries (see Section 3.7.1). Wetlands are located on Parcels 16, 30, 32, 33, 93, 95, 99, and 104. These habitats are suitable for the little blue heron, queen snake, map turtle, chorus frog, meadow jumping mouse, southeastern shrew, southern coal skink, and pigmy rattlesnake.

Woodland Rock Outcrops and Sandstone Bluffs
Woodland rock outcrops can provide habitat for a variety of protected species of terrestrial animals. Rock outcrops provide habitat for green salamander, cave salamander, black king snake, eastern wood rat, and old field mouse. An extensive network of rock outcrops and bluffs is located on Parcel 32.

Seepages
Seepages are uncommon on Pickwick Reservoir land. Several small seepages were found on Parcels 155 and 128. These sites provide suitable habitat for red salamander, southern zigzag salamander, and spring salamander.

Karst Features
Caves are fragile ecosystems that provide habitat to a diverse group of organisms. A variety of bats, small mammals, birds, fish, and invertebrates spend most or all of their lives in caves. Because cave systems are usually isolated from other cave systems, groups of organisms that live in a given cave often depend on the presence of one particular species (keystone species) to survive. Gray bats, for instance, provide nutrients that are vital for other species to survive in specific cave systems. Therefore, cave systems are extremely fragile and often biologically significant.

There are several biologically significant caves on or adjacent to Pickwick Reservoir land. Many of these caves, such as Key Cave, are the only known locality for many species. Also, many of the caves on Pickwick Reservoir land are used by federal-listed species such as gray bats and other protected species. Most caves on Pickwick Reservoir land have been monitored through the years by biologists from several state and federal agencies, universities, and museums. Federal-listed gray bat colonies are monitored annually by state and federal biologists.

3.3.3 Aquatic Animals

Information stored in the TVA Regional Natural Heritage database indicates that there are preimpoundment records of several mussels, a snail, and three fish from the waters now included in the vicinity of Pickwick Reservoir which are protected as state- and federal-listed endangered or threatened species. In addition to the federal-listed species included in Table 3.3-4, this list includes 10 snails, 18 mussels, three crayfish, and four fish that are tracked as sensitive aquatic species by the Alabama Heritage Program. However, because of the habitat changes resulting from impoundment, many of these sensitive aquatic species are believed to be extirpated from the reservoir. The turgid blossom (*Epioblasma turgidula*), tubercled blossom (*Epioblasma torulosa torulosa*), and yellow blossom pearlymussel (*Epioblasma florentina florentina*) are believed to be extinct (Parmalee and Bogan, 1998). Anthony's Riversnail (*Athearnia anthonyi*), while still alive in other parts of the mainstem Tennessee River, also is believed to have been extirpated from this portion of the river (Garner, 1992). The federal-threatened spotfin chub [*Cyprinella* (= *Hybopsis*) *monacha*] is only known from a few individuals at two localities: one in Shoal Creek (Lauderdale County) and one in Little Bear Creek (Colbert County). All other Alabama populations of spotfin chub are believed to have been extirpated since the 1930s (Mettee, 1996). Currently, six federal-listed mussels, one federal-listed fish, and one rare shrimp are known from the areas included in the Pickwick Reservoir Land Management Plan (Table 3.3-4). These species are discussed in more detail below.

Table 3.3-4. Federal-listed aquatic species historically known from Pickwick Reservoir and its tributaries, and recent status of those species in and around Pickwick Reservoir

Common Name	Scientific Name	Federal Status	State Status	Recently Found in Study Area?
Snails				
Anthony's river snail	*Athearnia anthonyi*	END	-	No
Mussels				
Dromedary pearlymussel	*Dromus dromas*	END	END	No
Oyster mussel	*Epioblasma capsaeformis**	END	-	No
Cumberland combshell	*Epioblasma brevidens*	END	END	No
Yellow blossom pearlymussel	*Epioblasma f. florentina*	END	EXTI	No
Purple catspaw	*Epioblasma o. obliquata*	END	-	No
Tubercled blossom pearlymussel	*Epioblasma t. torulosa*	END	EXTI	No
Turgid blossom pearlymussel	*Epioblasma turgidula*	END	-	No
Shiny pigtoe pearlymussel	*Fusconaia cor*	END	END	No
Fine-rayed pigtoe	*Fusconaia cuneolus*	END	END	No
Cracking pearlymussel	*Hemistena lata*	END	END	No
Pink mucket	*Lampsilis abrupta*	END	END	Yes
Alabama lampmussel	*Lampsilis virescens*	END	END	No
Scaleshell	*Leptodea leptodon*	P	-	No
Birdwing pearlymussel	*Lemiox rimosus*	END	EXTI	No
Ring pink	*Obovaria retusa*	END	END	Yes
White wartyback	*Plethobasus cicatricosus*	END	END	Yes
Orange-foot pimpleback	*Plethobasus cooperianus*	END	END	Yes
Clubshell	*Pleurobema clava*	END	END	No
Rough pigtoe	*Pleurobema plenum*	END	END	Yes
Winged mapleleaf	Quadrula fragosa*	END	-	No
Cumberland bean pearlymussel	*Villosa trabalis**	END	END	No
Cumberland monkeyface	*Quadrula intermedia*	END	END	No
Slabside pearlymussel	*Lexingtonia dollabelloides*	C	END	No
Fluted kidneyshell	*Ptychobranchus subtentum*	C	END	No
Cave invertebrates				
Undescribed blind cave shrimp	*Palaemonias* sp.**	-	-	Yes
Fish				
Slackwater darter	*Etheostoma boschungi*	THR	THR	No
Alabama cave fish	*Speoplatyrhinus poulsoni*	END	END	Yes
Spotfin chub	*Cyprinella monacha*	THR	-	No

END = Endangered; THR = Threatened; P = Proposed endangered; C = Candidate for federal listing; EXTI = assumed extirpated from this portion of its former range; - = no official status.
*These species are included in the NEP status designation for the free-flowing reach of the Tennessee River between Wilson Dam and the backwaters of Pickwick Reservoir.
**This record is included because its identification has not been confirmed. Records of this species in the TVA Regional Natural Heritage Project database are considered *Palaemonias alabamae*, but recent communications (Godwin, 2001) indicate it is a separate species.

In addition to those mussels presently known from this section of the Tennessee River, the USFWS (USFWS, 2001) has designated the free-flowing reach (about 12 miles) of the Tennessee River between Wilson Dam and the backwaters of Pickwick Reservoir in Colbert and Lauderdale Counties, Alabama, as nonessential experimental population (NEP) status for 16 federal-listed mussels and one federal-listed snail (see Table 3.3-4). Mussel species recently known from this section of river were not included in the NEP rule. Some of the mussels included in this proposal are believed to be extinct, but they are included in the designation in the event any living populations are found. The purpose of this designation is to preclude the applicability of certain regulatory requirements under the Endangered Species Act (ESA) for populations of these species that might result from reintroductions within this river reach. The NEP rule indicates that most individuals used for stocking would likely result from captive production, and that culture techniques have been recently developed for many, but not all, of these species. The long-term goal is to improve the status of these species so that they no longer need the protection of the ESA.

Mussels

Six federal-endangered mussel species have been observed relatively recently in Pickwick Reservoir: pink mucket (*Lampsilis abrupta*), ring pink (*Obovaria retusa*), white wartyback (*Plethobasus cicatricosus*), rough pigtoe (*Pleurobema plenum*), orange-foot pimpleback (*Plethobasus cooperianus*), and cracking pearlymussel (*Hemistena lata).* Most of these observations were in the vicinity of Seven Mile Island (Parcel 32); however, a few species, including the pink mucket and rough pigtoe, are apparently more widely distributed in the reservoir. Except for the mainstem of the Tennessee River, no state- or federal-listed mussels species are known from parcels under consideration for this Plan.

Cave Invertebrates

One species of cave shrimp, *Palaemonias* sp., has been recently reported from two caves near Parcel 47. Although this shrimp is being tracked in the TVA Heritage database as the federal-endangered Alabama cave shrimp (*Palaemonias alabamae)*, it apparently is an undescribed species closely related to the Alabama cave shrimp (Godwin, 2001). In addition to the shrimp, these caves also are known to contain several other blind cave crayfish species considered as sensitive by the state of Alabama.

Fish

The federal-endangered Alabama cave fish (*Speoplatyrhinus poulsoni*) is only known to occur in Key Cave, located on Parcel 31. In addition to the Alabama cave fish, Key Cave also contains three aquatic species considered sensitive by the state of Alabama: the southern cave fish (*Typhlichthys subterraneus*) and two cave crayfish (*Cambarus jonesi* and *Procambarus pecki*).

The federal-threatened slackwater darter (*Etheostoma boschungi*) is known from the Cypress Creek watershed within the Pickwick Reservoir study area. However, it is found only in small, high quality streams or flooded grassy or swampy areas (when spawning) (Etnier and Starnes, 1993; McGregor and Shepard, 1995). This fish is not known from the mainstem Tennessee River or from any streams potentially affected by this land use plan.

3.4 Managed Areas and Sensitive Ecological Sites

As part of TVA's effort to update the 1981 Plan, field surveys were conducted in June 2001. The purpose of the survey, from a Natural Areas perspective, was to evaluate parcels for their scenic and aesthetic qualities, ecological significance, and suitability for designation as a TVA Natural Area. TVA Natural Areas include Small Wild Areas (SWAs), Ecological Study Areas, HPAs, and Wildlife Observation Areas. Descriptions of these categories and the criteria considered when evaluating them are provided below.

- Small Wild Areas are sites with exceptional natural, scenic, or aesthetic qualities, which are suitable for low-impact public use, such as walking, hiking, photography and birding. Examples include concentrations of wildflowers, high bluffs with long views, geologic features (excluding caves), waterfalls or dripping rock ledges, and mature or "undisturbed" forests. Access by public road is preferred.
- Habitat Protection Areas are established to protect populations of species that have been identified as threatened or endangered by the USFWS or that are rare to the state in which they occur. Unusual or exemplary biological communities or unique geological features, such as bat caves or rare plant/animal habitat, also receive protection in this category.
- Wildlife Observation Areas are sites that have concentrations of viewable wildlife like shorebirds, songbirds, white-tailed deer, migratory hawks or monarch butterflies, turkey, raccoons, etc. Locations could include drawdown zones, dam reservations, urban wetlands, and bluffs. Public access to these sites is required for designation.
- Ecological Study Areas consist of sites judged suitable for ecological research or environmental education. Such areas typically contain plant or animal populations of scientific interest or are usually located near an educational institution that will use the area. The area should have potential benefit to the local educational community.

The following criteria were used to evaluate each parcel for its potential for TVA Natural Area designation:

- *Aesthetics* include the presence of unique natural features (i.e., waterfalls, mature trees, wildflower displays, concentrations of observable wildlife, and panoramic views).
- *Solitude* is a measure of the parcels' isolation from developed landscapes and ability to provide a quiet place in the natural world without the background sounds of urban, industrial, and residential activities.
- *Access* includes ease of access from public roads, the ease of development of parking areas, as well as a determination of whether the topography of the parcel is favorable for trail development.
- *Ecological integrity* is the capability to (1) protect the resource, (2) minimize visual intrusions, and (3) separate incompatible uses and presence of invasive, exotic species.
- *Environmental Education and Scientific Research* is the site's potential to be used for wildlife viewing opportunities, environmental education, and scientific research. These are often unique or uncommon ecological communities or habitats important to migratory wildlife or easily observable species.

- *Threatened and Endangered Species Habitat* is the known occurrence of plant or animal species with federal or state status.

Based on the survey findings, one parcel was found suitable for designation as a TVA Natural Area. Parcel 128 was found to contain a dry, steep area of exposed rock-shale resulting in a plant community unique to Mississippi. At least five Mississippi state-listed plant species occur on this parcel. The uniqueness of this area affords a high probability that additional rare plants and animal species are present. These species and their habitats are described in the Threatened and Endangered Species section of this report. None of the parcels surveyed were found suitable for SWA, Wildlife Observation Areas, or Ecological Study Areas designation at this time.

There are 15 Managed Areas or Significant Ecological Sites on or adjacent to public land on Pickwick Reservoir. Several of the areas, including the Natchez Trace Parkway (Parkway), Pickwick Landing State Resort Park (including Bruton Branch Primitive Area), and J. P. Coleman State Park are managed for recreation. Three of the areas, Lauderdale County State WMA, Seven Mile Island State WMA, and Key Cave National Wildlife Refuge, are managed for recreation and resource management. Two areas, Old First Quarters TVA SWA and the Rockpile National Recreation Trail, are managed for low impact public use such as hiking. Several areas (Cooper Falls TVA HPA, Coffee Bluff TVA HPA, Sandstone Outcrops/Pickwick Lake Protection Planning Site, East Port Bluffs, Key Cave Aquifer Hazard Area, Alabama Cave Fish Designated Critical Habitat, and Wilson Dam Tailwaters Restricted Mussel Harvest Area) are managed and/or monitored for federal- and/or state-protected species.

Pickwick Landing State Resort Park

This highly developed park, just above Pickwick Landing Dam, focuses on golfing and water sports. Facilities include a championship golf course and pro shop, a full service marina, public swimming beaches, playgrounds and play fields, and picnic shelters. Fishing is one of the most popular activities at the resort. Accommodations range from modern cabins and an inn to both developed and primitive camp sites including Bruton Branch Primitive Area. The park is owned and managed by the Tennessee Department of Environment and Conservation, Division of State Parks.

J. P. Coleman State Park

A very popular destination during the summer months, this 1,500-acre developed park focuses on water sports. Facilities include a marina, lodge, cabins, developed and primitive camping sites, and a day use area. The park is nestled in a forest of hardwoods and pines, on ridges overlooking Indian Creek, visible from a network of nature trails winding through the forest.

Lauderdale County State Wildlife Management Area

This 11,106-acre area is managed by the ADCNR, Division of Wildlife and Freshwater Fisheries. Although primarily used to hold big and small game hunts, camping and hiking are also permitted on this land.

Seven Mile Island State Wildlife Management Area

This 4,685-acre area is a maze of islands, shallow water, sloughs, wetlands, swamps, riverine forests, cliffs, caves, and reverting agricultural land. ADCNR administers hunts

in the area, primarily for waterfowl. Other outdoor activities, such as hiking and camping, are also permitted.

Key Cave National Wildlife Refuge

This area is not on TVA public land on Pickwick Reservoir, but is adjacent and connected to land on the reservoir. USFWS purchased the area directly behind Key Cave to provide greater protection to the federal-listed species found in Key Cave.

Natchez Trace Parkway

This unit of the U.S. National Park System (NPS) features a two-lane highway that follows an historic route from Nashville, Tennessee, to Natchez, Mississippi. These parklands preserve important examples of natural and cultural heritage. In addition, the NPS manages the area to provide a quality recreation and educational experience for visitors via campgrounds, horse, bike, and hiking trails, and picnic pavilions located along the route and by offering interpretive programs at various stops.

Old First Quarters TVA Small Wild Area/Potential National Natural Landmark

The 25 acres of the SWA were set aside to preserve this area's natural features, including abundant populations of spring wildflowers and woodland birds. The NPS has listed the area and a buffer zone as a possible National Natural Landmark (NNL). The NNL program was established by the NPS in the 1970s to identify nationally significant examples of ecologically pristine or near pristine landscapes.

Rockpile National Recreation Trail

This trail spurs off of a mile-long loop trail in Old First Quarters, hugging the shoreline until it reaches a parking lot near Wilson Dam. The NPS recognizes National Recreation Trails as contributing to the National Trails System.

Cooper Falls TVA Habitat Protection Area

Representing the southern extent of the Highland Rim physiographic province in Mississippi, this 75-acre area affords habitat for many species with a limited distribution in the state and also provides winter habitat for bald eagles. A sheer limestone bluff features Cooper Falls cascading into Pickwick Reservoir. Upland hardwoods and pines surround the falls.

Coffee Bluff TVA Habitat Protection Area

This 250-acre area contains the entrances to eight caves, including Key Cave (discussed above) and Collier Cave, which houses a bachelor colony of federal-listed endangered gray bats. The area is presently managed in cooperation with the ADCNR and the USFWS. While the primary focus is to provide habitat for federal-listed endangered species, the area is also managed for wetland and upland wildlife management, waterfowl management, and visual protection.

Sandstone Outcrops/Pickwick Lake Protection Planning Site

This narrow stretch of sandstone bluffs and deep ravines provide a floral habitat characteristic of the Tennessee Valley but found at no other locale within Mississippi. Golden eagles also use the spot as wintering habitat. Most of the approximately 1,800-acre area is under public ownership, divided among TVA and various state agencies. Protection Planning Sites are compiled by the Mississippi Protection Planning

Committee, a cooperative effort of government land managers and private individuals knowledgeable about the biota of the state.

Eastport Bluffs

This landscape of hills and outcroppings represents a unique geologic formation in Mississippi that supports many rare plants. Vegetation is primarily second growth deciduous forest and mixed deciduous forest. The Mississippi Natural Heritage Program has cited the area for its ecological significance.

Key Cave Aquifer Hazard Area

This site, a large sinkhole or plain behind Key Cave, has multiple owners, both private and federal. Management practices that promote high water quality are encouraged because this site delineates the main water recharge area for Key Cave. Key Cave provides habitat for two federal-listed endangered species, the Alabama cave fish and the gray bat.

Alabama Cave Fish Designated Critical Habitat (Key Cave)

Key Cave is the only known location of the federal-listed endangered Alabama cave fish, and, therefore, in 1977 the USFWS designated this cave as critical habitat necessary for its survival. Key Cave also contains a maternity colony of federal-listed endangered gray bats. It is believed that a healthy bat population plays an important role within the nutrient cycle related to the aquatic life of the cave.

Wilson Dam Tailwaters Restricted Mussel Harvest Area

This section of the Tennessee River provides habitat for several federal-listed endangered aquatic mollusks. This is a restricted area in which the ADCNR prohibits the taking, catching, killing, or attempt to take, catch, or kill freshwater mussels.

3.5 Water Quality

The water quality in Pickwick Reservoir is affected by many factors, both from TVA public land along the reservoir and from land use practices throughout the reservoir's drainage area. Pickwick Reservoir is a relatively long reservoir (53 miles) and has only two major (>200 square miles) tributaries. Cypress Creek (215-square-mile drainage) enters Pickwick Reservoir near Florence, Alabama, below Wilson Dam. Bear Creek flows into Pickwick Reservoir near TRM 225 and drains approximately 945 square miles. Most water (approximately 95 percent) entering Pickwick Reservoir comes from Wilson Reservoir, so overall water quality in Pickwick is strongly affected by waters outside its own immediate drainage area. Water quality in the Bear Creek and Yellow Creek embayments of Pickwick Reservoir are, however, strongly affected by local runoff conditions, as these embayments are typically not influenced by main channel waters. Yellow Creek does receive some influence from the main channel when water is drawn through the embayment to assist barge traffic through the Tenn-Tom Waterway. This would primarily occur during drier seasons when lower water volumes flow from the Yellow Creek watershed.

Water quality in Pickwick Reservoir is considered good based on TVA's Reservoir Vital Signs Monitoring Program (TVA, 1992; TVA, 1993; TVA, 1994; TVA, 1995; TVA, 1996; TVA, 1997c; TVA, 1998d; TVA, 1999c). TVA monitors four locations on Pickwick Reservoir. The forebay region is sampled near Pickwick Landing Dam (TRM 207.3).

The Transition Zone is sampled near Waterloo at TRM 230.0. The inflow is sampled at TRM 253, near the upper end of Seven Mile Island. The Bear Creek embayment is sampled near mid-embayment at Bear Creek Mile 8.4. Overall, conditions at three of the four sampling locations generally score good (see Table 3.5-1). The location in the Bear Creek embayment usually scores fair to poor, overall. Fish and benthic communities usually score good at main channel stations. Fish score good and benthics fair at the Bear Creek station. Dissolved oxygen (DO) levels are usually good at all stations; however, the Bear Creek station occasionally shows some stratification and DO declines, particularly during drier summers (lower flow). Sediment quality at all stations is usually good; however, historically, high levels of mercury in sediments produced fair and poor ratings in the Transition Zone and Forebay stations in the early 1990s. Recent samples show a continuing decline in sediment mercury levels at both of these stations. High levels of mercury were historically discharged from industries in the quad-cities area; however, changes in state environmental regulations and industrial waste treatment have significantly reduced mercury contamination in Pickwick Reservoir.

Table 3.5-1. Water Quality Ratings, Vital Signs Monitoring Data

	Monitoring Years					
	1991	**1992**	**1993**	**1994**	**1996**	**1998**
Pickwick Forebay						
Fish Community	good	poor	good	good	fair	good
Benthic Community	good	good	good	good	good	good
Dissolved Oxygen	good	good	good	good	good	good
Chlorophyll	good	fair	fair	fair	poor	fair
Sediment	poor	fair	good	good	fair	good
Pickwick Transition Zone						
Fish Community	fair	fair	good	good	good	fair
Benthic Community	good	good	good	good	good	good
Dissolved Oxygen	good	good	good	good	good	good
Chlorophyll	good	poor	fair	good	poor	good
Sediment	fair	fair	good	good	good	good
Pickwick Inflow						
Fish Community	fair	fair	good	good	good	good
Benthic Community	fair	fair	good	good	fair	fair
Dissolved Oxygen	NS	good	fair	good	good	NS
Chlorophyll	NS	NS	NS	NS	NS	NS
Sediment	NS	NS	NS	NS	NS	NS

Table 3.5-1 (cont.). Water Quality Ratings, Vital Signs Monitoring Data						
	Monitoring Years					
	1991	1992	1993	1994	1996	1998
Pickwick Embayment (Bear Creek)						
Fish Community	NS	good	good	good	good	fair
Benthic Community	NS	fair	fair	fair	fair	fair
Dissolved Oxygen	NS	NS	fair	good	fair	good
Chlorophyll	NS	fair	poor	fair	poor	poor
Sediment	NS	fair	fair	good	good	good

NS-Not Sampled

The only water quality parameter measured during the Vital Signs project that has shown a declining trend is chlorophyll levels. Chlorophyll levels at both the forebay and embayment locations are indicating a trend toward fair to poor levels in recent sampling periods. An overall trend of increasing chlorophyll levels is demonstrated by the graphs in Figures 3.5.1 and 3.5.2. A similar trend has not been shown at the Transition Zone location (see Figure 3.5.3). Linear regression of chlorophyll data was determined using Statistical Analysis Systems (SAS) least square estimates (y=mx+b) with no data transformations. Graphs were drawn using Microsoft Excel trend line with results comparable to those developed through SAS. Although a trend of increasing chlorophyll levels is noted, this trend is not statistically significant. Increases in chlorophyll levels usually indicate increases in nutrient loading which could eventually lead to an overall decline in water quality in the reservoir. Increased human use and development in the lower portion of Pickwick Reservoir and an increase in the poultry industry in the Bear Creek watershed (TVA, 2000b) could contribute to such a trend. Increased fertilizer and septic system runoff combined with loss of riparian buffers in residential developments, as well as discharges of untreated wastes from recreational boats, on lower Pickwick can provide additional nutrients.

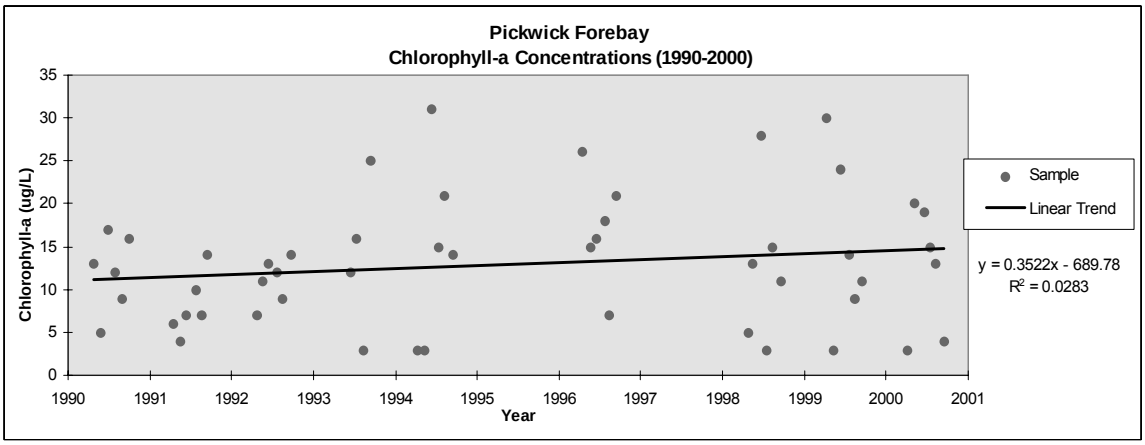

Figure 3.5.1. Chlorophyll Trends in Pickwick Forebay

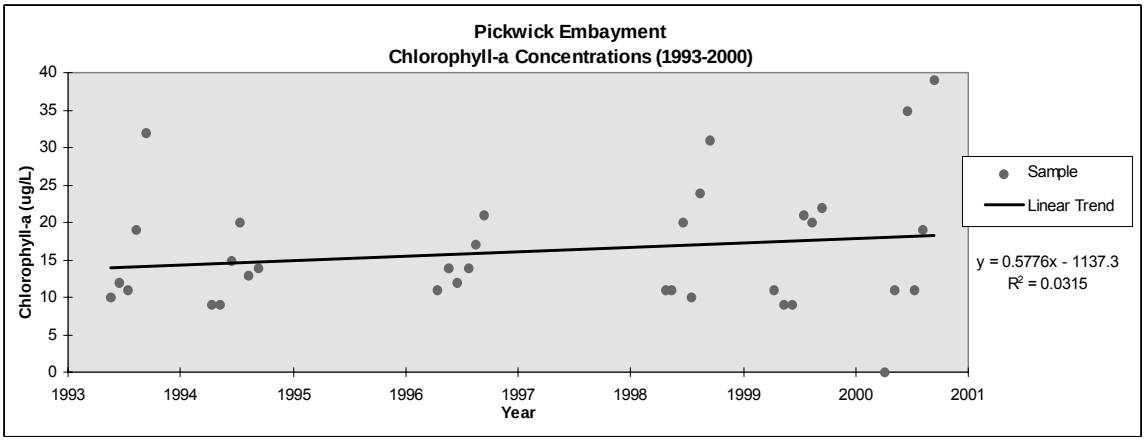

Figure 3.5.2. Chlorophyll Trends in Bear Creek Embayment

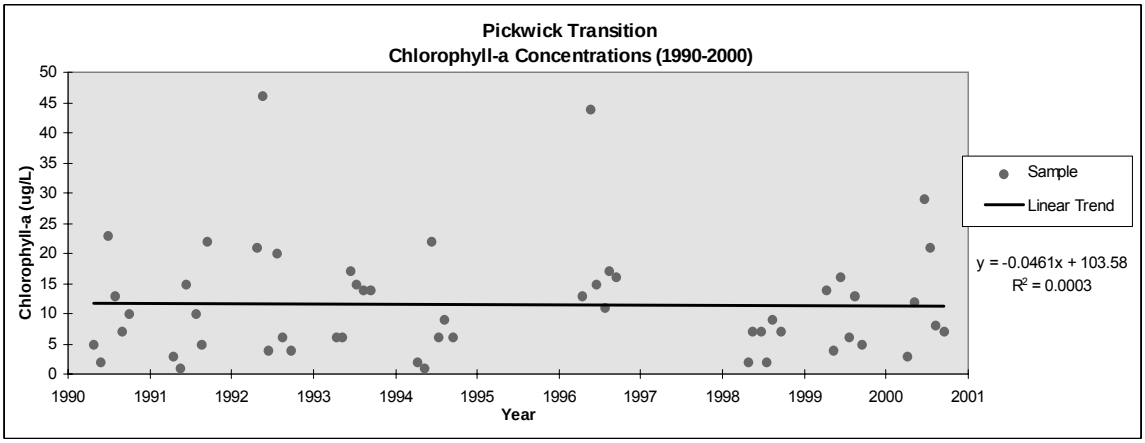

Figure 3.5.3. Chlorophyll Trends in Pickwick Transition Zone

3.6 Aquatic Ecology

Streams in this region of the Tennessee Valley are characterized by course chert gravel and sand substrates interspersed with bedrock areas, moderate gradients, clear waters, and moderate to low productivity, and, thus, little aquatic vegetation except near spring sources (Etnier and Starnes, 1993). Aquatic habitat in the littoral (near shore) zone is greatly influenced by underwater topography and back-lying land use. Underwater topography in Pickwick Reservoir varies from moderately steep land with scattered small bluffs near the river channel to shallow embayments and coves further from the main river channel in larger embayments, such as Yellow Creek and Bear Creek. Natural shoreline is mostly wooded, and fallen trees and brush provide woody cover. In residential development areas, habitats typically include man-made features, such as shoreline stabilization structures (e.g., seawalls or riprap) and water use facilities.

In 2000, aquatic plants colonized an estimated 400 acres on Pickwick Reservoir. Areas with the greatest abundance of plants were Second Creek embayment and small sloughs near Waterloo, areas around the Wright community, the Bruton Branch area,

portions of Yellow Creek embayment, and small areas of Bear Creek embayment. The most common aquatic plants on Pickwick Reservoir are spiny-leaf naiad, southern naiad, coontail, and small pondweed. Shoreline property owners in Second Creek and the Waterloo area, Bruton Branch, and Bear Creek embayment reported that aquatic plant growth in the vicinity of docks and piers was impacting access and activities such as swimming and bank fishing. TVA provides technical assistance to shoreline property owners by identifying nuisance aquatic plants, providing information on how to control aquatic plants with hand tools and mechanical methods, and advising them on rules and regulations regarding the use of herbicides in public waters. On other TVA reservoirs, aquatic plant management plans have been developed through the stakeholder group process that involves a wide range of reservoir users including homeowners, anglers, boaters, tourism councils, local governments, environmental groups, and state and federal agencies.

A shoreline survey was conducted on Pickwick Reservoir in February and March of 2001, to determine the reservoir's Shoreline Aquatic Habitat Index (SAHI) score. The SAHI score is an indication of the quality of aquatic habitat adjacent to the shoreline. Scoring is based on seven physical habitat parameters (i.e., riparian zone condition, amount of canopy cover along the shoreline, bank stability, substrate composition, amount of fish cover within the fluctuation zone, habitat diversity, and degree of slope) important to Tennessee River Valley reservoir's resident sport fish populations. Aquatic populations rely heavily on shoreline areas for reproduction success, juvenile development, and/or adult feeding. Field methods and an explanation of the SAHI process are described in the SMI EIS (TVA, 1998a). The overall average SAHI score for Pickwick Reservoir was 27.03 out of a possible 35 points, with seven being the minimum possible score, which indicates a "good" aquatic habitat condition exists along its shoreline. Sixty-five percent of the shoreline habitat scored good; 33 percent scored fair; while only two percent fell into the poor category.

Results of four cove rotenone surveys conducted on Pickwick Reservoir in 1975 resulted in the capture of 50 species of fish (TVA Summaries of Fish Standing Stock in Tennessee Valley Reservoirs). Collection activities for Vital Signs monitoring on Pickwick Reservoir in 1998 resulted in the capture of 22 species of fish, taken with gill nets and electrofishing gear in the forebay area of the reservoir. Ratings from TVA's Vital Signs monitoring conducted from 1991 to 1998 for fish and benthic communities ranged from fair to good for both communities (see Table 3.5-1). A description of the sampling areas is found in Section 3.5.

Pickwick Reservoir is rich in benthic fauna with a mussel sanctuary starting at the base of Wilson Dam and going downstream to the head of Seven Mile Island. Pickwick contains numerous state- and federal-listed mussel and snail species that are described in the Aquatic Threatened and Endangered Species Section (see Section 3.3.3). Based on historic and recent fisheries data collected in the reservoir, it appears that Pickwick Reservoir is maintaining a diverse and healthy fish community.

3.7 Wetlands and Floodplains

3.7.1 Wetlands

EO 11990 (Protection of Wetlands) directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In addition, activities in wetlands are regulated under the authority of the federal Clean Water Act and various state water quality protection regulations.

Wetlands are defined by TVA Environmental Review Procedures (TVA, 1983) as:

> "Those areas inundated by surface or groundwater with a frequency sufficient to support, and under normal circumstance, do or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, mud flats, and natural ponds."

Wetlands are typically transitional ecosystems between terrestrial and aquatic communities. Wetlands in this region are typically associated with low-lying, poorly drained areas that are linear in feature and associated with the floodplain areas of streams or rivers. In the reservoir area, wetlands represent a small percentage of the landscape relative to uplands, mainly due to the geology of the region (Hefner, et al., 1994).

Pickwick Reservoir wetlands were identified and classified using the USFWS National Wetlands Inventory (NWI) mapping conventions and the system developed by Cowardin, et al. (1979).

Wetlands occurring in Pickwick Reservoir and its tributaries are in the palustrine system (P), and the forested (FO), scrub-shrub (SS), and emergent (EM) subsystems. In the forested and scrub-shrub wetlands, the vegetation class is "broad-leaved deciduous," which is designated by the number 1. In the emergent wetlands, the vegetation class is "persistent," designated by the number 1, and "non-persistent," designated by the number 2. The term "persistent" refers to herbaceous vegetation with aboveground parts that persist through the non-growing season, such as the dry remains of cattail and sedges. "Non-persistent" vegetation dies back completely to ground level during the non-growing season. The hydrologic regimes in these wetlands were judged to include temporarily flooded (A), and seasonally flooded (C), although it is possible that other hydrologic regimes, such as saturated (B) and semi-permanently flooded (F), occur.

The functions of wetlands associated with Pickwick Reservoir include shoreline stabilization, retention of sediments, removal or transformation of contaminants, nutrient cycling, provision of fish and wildlife habitat, and provision of plant species and community diversity. A brief description of wetland functions follows:

<u>Shoreline stabilization</u>

The roots of trees, shrubs, and herbaceous vegetation, and the organic litter layer on the ground, help to stabilize the shoreline soil against erosion that could result from boat

wakes and storm runoff. This function is important throughout the reservoir, but is particularly important to preserve in those areas along the main shoreline which are subject to wave action from boats and increased runoff from developed areas.

Retention of sediments

Vegetation and the litter layer in the wetlands aid in the removal and retention of eroded soil and particulates that wash toward the reservoir from adjacent upland areas and in tributary streams. This function is particularly important where surrounding land uses could result in increased erosion and runoff, including farming operations and land development.

Retention and transformation of contaminants and nutrients

Contaminants and nutrients in dissolved and particulate form can be carried into the reservoir in storm runoff. Potential contaminants could include fertilizers and pesticides from agricultural, residential, and urban areas, excess nutrients and pathogenic bacteria from animal waste and septic system leachate, and oil and grease from roads and watercraft. Through various chemical, biological, and physical means in wetland soils, these contaminants and nutrients can be sequestered, transformed into other chemical form, or assimilated by plants.

Nutrient cycling

Nutrients are contributed to the system internally in leaf litter, plant debris, and animal waste and remains. These nutrients are cycled internally and either taken up by plants in the wetland or exported out of the wetland.

Provision of fish and wildlife habitat

Wetlands provide habitat for a large number of mammal, bird, amphibian, reptile, fish, and invertebrate species. Wetlands are essential habitat for migratory and nesting waterfowl, and many shorebird and songbird species. Many species are wetland-dependent for a part or all of their life-cycle. Other species may not use the wetlands directly, but are dependent on wetlands as a source of carbon and energy. An example of this would be aquatic invertebrates which use the organic material exported from wetlands.

Provision of plant species and community diversity

Wetland plant communities consist primarily of species that can grow under low-oxygen, saturated soil conditions. Although some of the species can grow outside of wetlands, most cannot grow in dry situations. The destruction of wetlands results in local removal of commonly occurring species from the landscape, and thus, over time, can lead to a reduction in the amount of plant, community, and landscape diversity in the local area or region.

Floodflow alteration

Important functions of riverine wetlands are those associated with floodflow alteration. These functions include short- and long-term storage of flood waters and energy reduction. This function is also important for the export of organic carbon. Plant and other organic material produced in the wetland is exported out of the wetland during flood events.

General trends in wetland loss in Mississippi, Alabama, and Tennessee indicate that palustrine forested wetlands have suffered a net loss in acreage over the last ten years, primarily due to agricultural development. Additional losses are due to transportation impacts and the growth of urban/suburban development associated with continued population growth (Hefner, et al., 1994). Prior to impoundment, the Tennessee River system had extensive areas of forested wetlands that were lost as dams were constructed and these floodplain areas were inundated. Depending upon topography, forested wetlands have developed over time in the riparian and floodplain zones now affected by reservoir operations. Emergent and scrub-shrub wetlands have also developed in the embayments and mouths of tributary streams. These wetlands, located on TVA parcels along Pickwick Reservoir and its tributaries, are part of the overall resource assessment for this EIS.

In general, forested wetlands comprise the majority of wetland area associated with Pickwick Reservoir. Extensive areas of forested wetlands occur in the Seven Mile Island area (Parcel 32) and are also found in the floodplains and riparian zones of Second Creek (Parcel 16), Malone Creek (Parcel 57), Yellow Creek (Parcels 134 and 135), Colbert Creek (Parcel 26), Little Bear Creek (Parcel 44), Panther Creek (Parcel 9) and its tributaries, Indian Creek (Parcel 121), and Mulberry Creek (Parcel 55). There is also a unique palustrine forested (PF) wetland dominated by bald cypress trees located in the Coffee Slough area behind Seven Mile Island (Parcel 30). This is the easternmost occurring locale of naturally occurring bald cypress trees on the Tennessee River system.

Palustrine emergent and scrub-shrub wetlands are less common and are commonly found at the head of embayments and where smaller tributary streams enter the reservoir. There are significant areas of emergent wetlands found in Malone Creek (Parcel 57), Little Bear Creek (Parcel 44), and Yellow Creek (Parcels 134 and 135).

Typical wetland plant species in the study area include cherrybark oak, sycamore, sweetgum, cypress, box elder, alder, river birch, rose mallow, buttonbush, *Itea*, giant cut-grass, soft rush, cattail, alligator weed, and water willow.

As stated in Section 2.2.2, this EIS includes two action alternatives that differ in the land use zone category assigned to three parcels (see Tables 2-3 and 2-4). A description of each of these parcels is presented below.

<u>Parcel 37</u>

NWI maps indicate a small forested wetland (PFO1C) at the northern edge of this parcel. Field surveys confirm that while there are small areas (approximately one acre) of a forested wetland present, earth-moving activities and the presence of exotic plants have severely compromised both the extent and functions of this wetland.

<u>Parcel 53</u>

This parcel extends along the shoreline of the Tennessee River and up the east shore of the embayment of Mulberry Creek. Wetlands dominated by water willow and alligator weed are present in and along this embayment. The entire parcel is forested. There are some small areas of forested wetland (PFO1A), particularly on the upstream end of this section. River birch, box elder, silver maple, water oak, and sycamore are the

dominant trees along the shore and bottomlands. A few cypress trees are also present in these areas.

Parcel 156

There are no wetlands indicated along the sections of shoreline fronting Parcel 156.

3.7.2 Floodplains

The 100-year floodplain on Pickwick Reservoir is the area that would be inundated by a 100-year flood event. The 100-year flood elevation for the Tennessee River varies from elevation 419.0 feet above msl at Pickwick Landing Dam (TRM 206.7) to elevation 434.9-feet msl at the upper end of Pickwick Reservoir at TRM 259.4 (downstream of Wilson Dam). A tabulation of the 100-year flood elevations is included in Appendix G.

The Flood Risk Profile (FRP) elevation varies from elevation 419.0-feet msl at Pickwick Landing Dam (TRM 206.7) to elevation 437.2-feet msl at the upper end of Pickwick Reservoir at TRM 259.4. The FRP is used to control residential and commercial development on TVA public land. For Pickwick Reservoir, the FRP elevations are equal to the 500-year flood elevations. A tabulation of FRP elevations is also included in Appendix G.

Any fill material placed between elevations 408.0- and 414.0-feet msl would be subject to a charge for lost power storage. Generally, the quantity of fill required for residential projects such as shoreline stabilization and boat ramps would not result in a charge for lost power storage. Any material placed between elevations 408.0-feet msl and the TVA FRP Elevation would be subject to the requirements of the *TVA Flood Control Storage Loss Guideline* (TVA, 1999b). All development subject to flood damage must be located above the TVA FRP Elevation at that location.

3.8 Land Use and Prime Farmland

3.8.1 Land Use

Use of TVA public land is initiated by submittal of a formal request (land use application) accompanied by information necessary for TVA reviewers to make sound judgment for the best use of the public land. The request is reviewed for consistency with the allocated uses which have been documented in a Board-approved Land Management Plan (currently, the 1981 Pickwick Reservoir Land Management Plan), and is reviewed for site-specific environmental considerations and administrative requirements. Major public land use proposals are presented to the public for their input, and formal TVA Board of Directors' review is necessary before the land use can be approved.

TVA considers the use of TVA public land for agriculture to be a short-term use of the properties. Agriculture licenses can be compatible with Zones 2, 3, 4, 5, 6, and 7. For example, hay crops can be an effective way to manage archeological sites, open fields for certain wildlife species, and reduce maintenance costs for mowing areas of land on recreation, industrial, and residential sites. Current agricultural licenses on Pickwick Reservoir land are listed in Table 3.8-1.

Table 3.8-1. Current Agriculture Licenses on Pickwick Reservoir				
Parcel	**Agriculture License No.**	**Licensed Use**	**Acres Licensed**	**Expiration Date**
1	1092.2	hay	33 +/-	12/31/2001*
29	1092.1	hay	87 +/-	12/31/2006
51	1091.4	hay	5 +/-	12/31/2006
84	1091.8	hay	27 +/-	12/31/2006
99	1091.6	row crop	70 +/-	12/31/2006
101	1091.7	hay	18 +/-	12/31/2006
101	1091.7	row crop	19 +/-	12/31/2006

* Projected to be renewed in December 2002.

3.8.2 Prime Farmland

In general, the soils surrounding the reservoir are silt loams which have developed from limestone, alkaline shale, or Coastal Plain marine sediments. Many of these soils are classified as prime farmland soils. Prime farmland soils, as defined by the USDA, are soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. These soils have properties needed for the economic production of sustained high yields of crops. Prime farmland soils may presently be in use as cropland, pasture land, range land, forest land or other uses but cannot be urban or built-up land. The conversion of farmland and prime farmland to industrial and other nonagricultural uses essentially precludes farming the land in the foreseeable future. Creation of the Farmland Protection Policy Act (FPPA) in 1981 addressed this possibility and set guidelines which require that all federal agencies evaluate land prior to permanently converting to a nonagriculture land use. Under the FPPA, a federal agency must identify and take into account the adverse effects of federal programs on the protection of farmlands. This is done by completing a *Form AD 1006,* "Farmland Conversion Impact Rating," with assistance from the Natural Resources Conservation Service (NRCS). Sites receiving a score greater than 160 must be given further consideration for prime farmland protection.

According to the State Soils Geographic database (STATSGO) statistics, about 75 percent of the soils on the TVA public land surrounding the Pickwick Reservoir are prime farmland soils. STATSGO classifies soils according to large areas of soil associations and not on a soil mapping unit (USEPA, 1994). For areas which have the potential to be converted and are subject to the FPPA, the soil mapping units of the county soil survey must be used for determining prime farmland classifications. Appendix E contains a list of all the soil mapping units, along with descriptions, within the project area.

Land used for agriculture in the affected counties comprises less than half of the total acreage. Percentage in the respective counties are: Lauderdale, 48 percent; Colbert, 34 percent; Hardin, 32 percent; and Tishomingo, 19 percent. This information was

extracted from the USEPA BASINS database (USEPA, 1994). The majority of the land mass in Colbert, Hardin, and Tishomingo Counties contains forest land.

3.9 Cultural Resources

Cultural resources/historic properties include, but are not limited to, prehistoric and historic archaeological sites, historic sites that were the location of important events where no material remains of the event are present, and historic structures. These resources are both finite and nonrenewable and, in many situations, are the only window into the past; therefore, protection, preservation, and management of these fragile resources are important.

Under the National Historic Preservation Act (NHPA), TVA conducts inventories of its land to identify historic properties. For the undertaking addressed in this EIS, the area of potential effects (APE) is all TVA fee land described in the 1981 Plan and private or other non-TVA land which may be affected by an undertaking on TVA fee land. The APE, as defined in 36 CFR Part 800.16(d), is "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist." For the proposed action in this EIS, the APE is the approximately 19,238 acres of committed and uncommitted TVA public land proposed for planning.

3.9.1 Archaeological Resources

Archaeological resources could include, but are not limited to, remains of surface or subsurface structures, such as domestic cooking or ceremonial structures, earthworks, fortifications, cooking or fragmentary tools, weapons and weapon projectiles, containers, ceramics, human remains, rock carvings or rock paintings, and all portions of shipwrecks.

Archaeological research has occurred periodically in the Pickwick Reservoir area before and since the development of the reservoir in 1930s. Research within the Pickwick Reservoir area began in the late nineteenth century when C. B. Moore and others made archaeological expeditions up the Tennessee River. Immediately prior to the impoundment of the reservoir a survey and excavation program was undertaken between 1936-1939 (Webb and DeJarnette, 1942). The survey of the reservoir in 1936 identified 323 archaeological sites in Colbert and Lauderdale Counties, Alabama; Tishomingo County, Mississippi; and Hardin County, Tennessee. During the investigations, excavation of 19 sites was undertaken. Little research was undertaken in the Pickwick Reservoir area between this time and the 1970s. In the 1970s and 1980s, investigations were conducted by Auburn University at Seven Mile Island, and these sites identified later became part of the Seven Mile Island Archaeological District (listed on the National Register of Historic Places[NRHP]).

TVA routinely conducts inventories of TVA public land to identify historic properties in response to federal legislation. In the mid-1980s, TVA contracted with the University of Alabama to conduct a survey of archaeological resources for approximately 17,000 acres located above summer pool level and on land within the Pickwick Reservoir (Meyer, 1995). The survey involved both systematic and opportunistic methods that employed pedestrian survey and systematic shovel testing from existing humus to culturally sterile subsoil. A recent shoreline management zone survey by the University

of Alabama involved the inspection of exposed shoreline by means of systematic pedestrian survey to inventory archaeological resources in areas where residential and commercial development are probable (Spry and Hollis, 1997).

Over 725 archaeological resources have been identified on TVA public land surrounding Pickwick. The eligibility of these previously recorded sites is currently unknown. The eligibility of these or other resources for the NRHP would be determined when specific actions are proposed that could potentially affect historical properties. This review would be undertaken in accordance with Section 106 of the NHPA of 1966.

3.9.2 Historic Structures

The acquisition of land for the Pickwick Reservoir by TVA resulted in the removal of most structures and other man-made features. Very few structures remained, though many historic structures do remain on adjacent non-TVA land.

Initially, white settlement in the early nineteenth century developed into an agricultural economy with farmsteads and small towns. Transportation networks revolved along the Tennessee River. Towns grew and prospered, and a plantation economy developed. Towns became river ports, and many ferry crossings were established. The later development of the railroad resulted in rail lines following the river valley. On Pickwick Reservoir, the rail line is along the south side of the river and continues west where the river turns to flow north at Bear Creek. The Civil War brought destruction and economic devastation to the area. Following this war, development was slow. Agriculture, commerce, industry, and the river and rail systems gradually expanded. The coming of TVA and the development of Pickwick Reservoir (1934-1938) resulted in further significant changes of the region.

Historic structures (and other man-made features) remain from all these historical periods. Partial cultural surveys were conducted for both the 1981 Plan as well as the proposed Plan. These historic structures on TVA public land are identified in Table 3.9-1. As the table shows, very few features are found on TVA public land, with the exception of Pickwick Landing Dam Reservation. Due to their age and architectural character, Pickwick Landing Dam and Powerhouse are considered historically significant. Nothing remains of the former construction village.

Farms, houses, and towns representing these periods are found adjacent to much of the TVA public land. Some are listed on the NRHP, and more are eligible. There are several former ferry crossings which have retained their identity. Following are known historic sites listed under the affected parcels.

<u>Parcel 1</u>

Pickwick Landing Dam and Powerhouse was built between 1934-38. It was the fourth of TVA's nine mainstream dams.

<u>Parcels 11-14</u>

Former river port town of Waterloo, with a number of historic structures remaining.

Table 3.9-1. Historic Structures/Sites on TVA Public Land on Pickwick Reservoir

Name	Parcel	National Register Status	Description
Pickwick Landing Dam and Powerhouse	1	Probably Eligible	Pickwick 1934-38, one of TVA's nine mainstream dams
Natchez Trace Parkway	25, 26, 27, 60	Probably Eligible	Historic Parkway crosses reservoir with visual vistas to these parcels
Old Muscle Shoals Canal and Lock No. 1	36	Potentially Eligible	Remnants of old Muscle Shoals Canal and of Lock No. 1 of Wilson Dam
Keller Quarry Stones	41	Potentially Eligible	Large quarry stones presumed for Muscle Shoals and/or Colbert Shoals Canals
Colbert Shoals Canal	26, 61, 63, 66	Probably Eligible	1891 U.S. Army Corps of Engineers built Colbert Shoals Canal, now underwater
Riverton	67, 68	Potentially Eligible	Portions of former river port town streets and features now under water
White Sulphur Springs Cabins	156	Probably Eligible	Nine historic cabins of TVA program providing lake cabin lots

Potentially Eligible: These sites need further historic research to determine if they are eligible for listing on the NRHP.

Probably Eligible: These sites are likely to be eligible for listing on the NRHP, pending further consultation with the State Historic Preservation Officers.

Parcel 36

Remnants of the old Muscle Shoals Canal and the later Lock No. 1 of the Wilson Dam complex exist along the north side of this parcel. The U.S. Army Corps of Engineers (USACE) initiated work on the Muscle Shoals Canal in 1871.

Parcel 41

Immediately upstream from the mouth of Little Bear Creek is the former Keller Quarry Landing. There is a stack of large quarried stones, presumably unused from the Muscle Shoals and/or Colbert Shoals Canals. Though most are possibly on private land, portions are on TVA public land.

Parcels 25, 26, 27, 60

Where the Natchez Trace Parkway (Parkway) crosses Pickwick Reservoir, there are visual vistas on portions of these tracts. The Parkway, established May 18, 1938, is operated by the NPS. It was designated a National Scenic Byway-All American Road - 1995. Those TVA Parcels that are visible from the Parkway need to be given visual considerations.

Parcels 61, 62, 63, and 66

Along the left shore of the reservoir, generally under water, is the Colbert Shoals Canal, initiated by USACE in 1891 and opened for commercial traffic in 1911. The canal starts at Beech Branch, just downstream from the Natchez Trace, and continues downstream for eight miles, culminating at the Riverton Lock, just upstream of Riverton, Alabama. A concrete structure is still visible on an island and presumed to be part of the Riverton Lock complex. The canal system was constructed of carefully dressed large stone blocks and presently remains intact below the surface of the water along the shoreline.

Parcels 67 and 68

Former river port town of Riverton, with portions of former streets submerged. A number of historic structures remain.

Parcels 116 and 117

Former river port town of Eastport, with a number of historic structures remaining.

Parcel 156

The White Sulphur Springs cabin group. There are nine cabins on the original 23 lots. These cabins were built in the 1940s and early 1950s (one replaced a burned cabin in the 1970s). These are historically important as a remaining example of a TVA program providing lake cabin lots and as good examples of period resort cabin architecture. See section 2.2.2 for further details.

3.10 Air Quality

National Ambient Air Quality Standards establish safe concentration limits in the outside air for six pollutants: particulate matter, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead. These standards are designed to protect public health and welfare. An area where any air quality standard is violated is designated as a nonattainment area for that pollutant, and emissions of that pollutant from new or expanding sources are carefully controlled. All counties that surround Pickwick Reservoir and their surrounding counties are in attainment. However, in July 1997, USEPA promulgated new, more restrictive standards for ozone and particulate matter. These new standards include an 8-hour standard for ozone that would supersede the old 1-hour standard. The EPA is moving forward to develop implementation guidance for both of these standards, and expects to promulgate designations for the 8-hour ozone standard by 2004. There is a likelihood that some of the counties which surround Pickwick Reservoir may not attain the new standards for ozone and particulate matter if these new standards are eventually implemented after collection of the requisite air monitoring data.

In addition, Prevention of Significant Deterioration (PSD) regulations that restrict emissions and any significant reduction in ambient air quality include protection of national parks and wilderness areas that are designated PSD Class I air quality areas. A new or expanding major air pollutant source is required to estimate potential impact of its emissions on the air quality of any nearby Class I area, as specified by the state or local air regulatory agency, with input from the federal land manager(s) having jurisdiction over the given Class I area(s). The only PSD Class I area within 125 miles of Pickwick Reservoir is Sipsey Wilderness Area, about 25 miles to the south-southeast of the upper end of Pickwick Reservoir.

3.11 Navigation

The commercial navigation channel on Pickwick Reservoir extends from the Pickwick Lock and Dam at TRM 206.7 upstream to the Wilson Lock and Dam at TRM 259.4. The commercial channel was prepared prior to impoundment of the reservoir to provide a year-round channel with a minimum 11-foot depth suitable for towboats and barges with a 9-foot draft. The U.S. Coast Guard maintains the navigation channel buoys and onshore daybeacons marking the commercial navigation channel. Navigation safety

landings and harbors (see Table 3.11-1) have been established at various places along the reservoir to provide safe locations for commercial tows to tie off and wait during periods of severe weather, fog, or equipment malfunction. There are public and private use barge terminals (see Table 3.11-2) on Pickwick Reservoir which handle barge shipments of various commodities.

TVA maintains secondary navigation channel markers and aids for seven tributary channels (approximately 15 miles) for recreational boaters and channel markers or boat hazard buoys at four locations. Secondary navigation channel markers consist of buoys and onshore dayboards which mark the navigable limits of the channel.

Table 3.11-1. Navigation Safety Landings and Harbors

Parcel*	TRM	Type of Landing or Harbor
Lock	259.1R	Federal Mooring Cells - Wilson Lock
59	239.1L	1st Class Landing
62	232.7L	1st Class Landing
64	229.8L	1st Class Harbor
119	222.6L	2nd Class Harbor
125	218.7L	1st Class Harbor
139	215.5L	1st Class Landing (Federal Mooring Chains)
155	210.8L	1st Class Landing
155	209.0L	1st Class Harbor (Federal Mooring Cells)
Lock	207.1L	Federal Mooring Cells - Pickwick Lock

*Under Alternatives B and C, Parcels 62, 64, 119, 125, 139, and 156 are allocated to Zone 4, Natural Resource Conservation, and Parcel 59 to Zone 5, Industrial/Commercial Development. All of these allocations are compatible with these safety landings and harbors.

Table 3.11-2. Barge Terminals

Tennessee River Mile	Name	Type of Use	Handling Capabilities	Comments
207.8L	Hardin County Port	Public Owned/ Public Use	Dry Bulk-Loading/ Unloading	
215.1L	Muscle Shoals Marine-Fleeting	Private Owned/ Private Use	Fleeting	448.3R Tenn-Tom
215.1L	Yellow Creek State Inland Port Authority	Public Owned/ Public Use	Dry Bulk-Loading/ Unloading	448.2R Tenn-Tom
215.1L	Ergon, Inc.-Yellow Creek	Private Owned/ Private Use	Liquid-Loading/ Unloading	448.2R Tenn-Tom
215.1L	Tri-State Commerce Park	Public Owned/ Private Use	Roll-On, Roll-Off	446.2L Tenn-Tom
238.8L	Cherokee Nitrogen	Private Owned/ Private Use	Dry Bulk-Loading, Liquid-Loading/ Unloading	
245.3L	TVA Colbert Fossil Plant	Public Owned/ Private Use	Dry Bulk-Unloading/ Liquid-Unloading	

Table 3.11-2 (cont.). Barge Terminals				
Tennessee River Mile	**Name**	**Type of Use**	**Handling Capabilities**	**Comments**
247.4L	Black Eagle Mineral, LLC	Private Owned/ Public Use	Dry Bulk-Loading/ Unloading	
247.9L	Gold Kist Farms	Private Owned/ Private Use	Dry Bulk-Loading/ Unloading	
252.4L	Murphy Oil, U.S.A.	Private Owned/ Private Use	Liquid-Unloading	
253.4L	Estes Oil Company	Private Owned/ Private Use	Liquid-Loading/ Unloading	Inactive
256.6R	AMCOR	Public Owned/ Private Use	Dry Bulk-Unloading	Florence Harbor
256.6R	F & L Sand and Gravel	Public Owned/ Private Use	Dry Bulk-Loading/ Unloading	Florence Harbor
256.6R	Florence-Lauderdale County Port	Public Owned/ Public Use	Dry Bulk-Loading/ Unloading	Florence Harbor
256.6R	Lauderdale County Co-op	Public Owned/ Public Use	Dry Bulk-Loading/ Unloading	Florence Harbor
256.6R	Tennessee Southern Railroad Company	Public Owned/ Private Use	Dry Bulk-Loading/ Unloading	Florence Harbor
256.6R	Muscle Shoals Marine-Fleeting	Public Owned/ Private Use	Fleeting	Florence Harbor
257.9R	Southern Ready Mix	Private Owned/ Private Use	Dry Bulk-Unloading	

3.12 Recreation

Major tributaries include Yellow Creek (Tennessee-Tombigbee Waterway), Bear Creek, Spring Creek and Cypress Creek. Recreation facilities are provided on and adjacent to the reservoir by federal, state, county, municipal, and commercial entities (see Table 3.12 1). Facilities include 12 campgrounds, 21 boat ramps, seven marinas, and three locations with a resort lodge and/or rental cabins.

The Natchez Trace Parkway, a unit of the NPS, Department of the Interior, crosses Pickwick Reservoir at TRM 236.6 and Parkway mile marker 328. It was designated an All-American Road in 1995. In 1983, Congress designated the Parkway as the corridor for the Natchez Trace National Scenic Trail. The Parkway was established to commemorate the original Natchez Trace, a primitive trail stretching 500 miles through the wilderness from Natchez, Mississippi, to Nashville, Tennessee. The original trace followed old American Indian trails and was used by boatmen; traders; and explorers returning to the eastern U.S. after sailing down the Mississippi River; as a federal postal road; and for troop movements during the War of 1812. In 1934, the U.S. Congress commissioned the NPS to survey the old Indian trail known as Natchez Trace and plan a national road along this route. The Parkway was officially established in 1938.

The Tenn-Tom Waterway intersects Pickwick Reservoir at TRM 215.0 via Yellow Creek embayment. It provides opportunities for recreational boating and commercial barge traffic. The waterway provides a direct route to the Gulf of Mexico from the upper Mississippi, Ohio, and Tennessee Rivers. Facilities along the waterway include fishing, camping, wildlife observation, and full-service marinas.

Table 3.12-1. List of Recreation Areas and Associated Facilities

Facility Location	Camping	Boat Ramp	Marina	Lodging/Cabins	Swim Beach	Picnic	Trails
Pickwick Landing Dam Reservation TRM 206.7	Yes	Yes	No	No	No	Yes	No
Pickwick Landing State Resort Park TRM 207.6L	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bruton Branch State Recreation Area TRM 210.0R	Yes	Yes	No	No	No	No	Yes
Aqua Yacht Harbor TRM 215.1L (448.9R Tenn-Tom)	No	Yes	Yes	No	No	No	No
Grand Harbor Marina (previously known as Tenn-Tom Marina) TRM 215.1L (449.8R Tenn-Tom)	No	Yes	Yes	No	No	No	No
Goat Island Recreation Area TRM 215.1L (446.5R Tenn-Tom)	Yes	Yes	No	No	No	Yes	No
USACE - Public Access Area TRM 215.1L (443.5R Tenn-Tom)	No	Yes	No	No	No	Yes	Yes
J. P. Coleman State Park (Mississippi) TRM 220.0L	Yes	Yes	Yes	Yes	No	Yes	No
Eastport Marina TRM 224.8L	No	Yes	Yes	No	No	Yes	No
Colbert County Park TRM 225.0L (4.5R Bear Creek)	Yes	Yes	No	No	No	Yes	No
Mill Creek Boat Dock TRM 225.0L (7.3L Bear Creek)	Yes	Yes	Yes	Yes	No	No	No
Margerum Boat Ramp TRM 225.0L (14.2R Bear Creek)	No	Yes	No	No	No	No	No
Waterloo Boat Ramp TRM 227.2R	No	Yes	No	No	No	No	No
Waterloo Boat Dock and Campground TRM 227.3R (0.5R Second Creek)	Yes	Yes	No	No	No	Yes	Yes
Waterloo Campground TRM 227.3R (1.0L Second Creek)	Yes	No	No	No	No	Yes	No
Brush Creek Park TRM 231.0R	Yes	Yes	No	No	No	Yes	No
Natchez Trace Parkway - Colbert Ferry Park TRM 236.5L	Yes	Yes	No	No	Yes	Yes	Yes
Natchez Trace Parkway - Lauderdale Park TRM 236.7R	No	No	No	No	No	Yes	No
Cane Creek Boat Ramp TRM 244.0L	No	Yes	No	No	No	No	No
Pride Boat Ramp TRM 246.9L	No	Yes	No	No	No	No	No
Spring Creek Boat Ramp TRM 252.1L (0.3R Spring Creek)	No	Yes	No	No	No	No	No
Sheffield Riverfront Park TRM 253.7L	No	Yes	No	No	No	Yes	Yes
Florence Harbor / McFarland Bottoms Park TRM 256.2R	Yes	Yes	Yes	No	Yes	Yes	Yes

ADCNR manages two WMAs along the reservoir for natural resources management and public recreation purposes. These include Lauderdale WMA, located in Lauderdale County near Waterloo, with 8,211 acres managed for big game and small game, and Seven Mile Island WMA, located in Lauderdale County near Florence, with 4,685 acres managed for waterfowl and small game.

3.13 Visual Resources

The resources that are identifiable from the tailwaters of Wilson Dam to the headwaters of Pickwick Landing Dam render diversity and contribute to the reservoir area's sense of place. These resources include naturally scenic and highly valued landscapes.

The process for identifying areas that are visually significant is difficult and can become subjective. Through an exacting process that begins with identifying the landscape character as a whole, specific areas can be judged comparatively. Professional assessment, using defined methodology and judgment, identifies the uniqueness, and scenic value and consideration is given to the fact that people value highly scenic landscapes.

In recognizing areas for resource conservation and scenic protection, aspects of each area must be evaluated, and when considered as a whole, determine an area's visual resources. These aspects are:

- **Scenic Attractiveness**, the principal indicator of inherent beauty found in the landscape, is comprised of unique natural features, vegetation patterns, cultural features, surface water characteristics, and seasonal characteristics.
- **Scenic Integrity**, the measure as to what degree the landscape character has been altered by human activity.
- **Landscape Visibility** consists of a subset of interrelated characteristics including: the viewing distance, the duration of view, the degree of discernible detail available, the number of viewers, and the relative sensitivity indicating the scenic importance of the area.
  - Viewing distance can affect how observers view an area based on the degree of visible detail, and can be classified into three ranges:
    - ⇨ Foreground distance - within one-half mile of the observer.
    - ⇨ Middleground distance - from one-half mile up to four miles from the observer
    - ⇨ Background distance - beyond four miles from the observer
  - Human sensitivity involves the number of viewers, the frequency and duration of views, and expressed public concern for scenic values of the land under study.

The Pickwick Reservoir is, in landscape character, similar to other reservoirs in the Tennessee River system. There are elements that unify the river system in character and landform, yet there are areas within the Pickwick Reservoir that have distinguishing characteristics.

On land surrounding Pickwick Reservoir, development is concentrated near cities, metropolitan areas, and recreational facilities. The primary source for visual character alteration around the reservoir is in the residential developments on the lower end and in some of the larger embayments. As the landscape around the reservoir has evolved, areas remain that are naturally scenic, and commonly perceived as having high scenic attractiveness and high scenic integrity.

The body of water itself is a prominent visual resource. The form and color of the reservoir provide balance and repetition, which contribute to the character of the area. The horizontal plane that the reservoir creates allows for balance and visual continuity, while contrasting with the shoreline. These elements give the area variety, unity, and harmony which can be appealing.

The undisturbed shoreline adds to the visual character of the reservoir by contrasting the horizontal plane that is formed by the reservoir with strong vertical lines that frame views by observers. A wide variety of colors seen in the forested areas, in the foreground and middleground areas, add to diversity and enhance views. The uninterrupted tree canopies seen in many areas, provide balance and repetition. Rock outcroppings are evident along many areas of the shoreline, sometimes forming small to medium-size bluffs that are distinct and visually prominent.

Islands scattered throughout the reservoir contribute to the visual character of the reservoir by creating focal points and visual accents. Their position, in relation to the shoreline, create depth and help to frame views and define scale. There are seven identified islands, and many smaller, unidentified ones.

Other important visual features include secluded coves with vegetation and wildlife populations. Undisturbed, isolated shoreline areas add to the scenic beauty and help to retain the sense of place. The scenic views and attractive physical features are described in Appendix F. The descriptions include the scenic integrity and scenic value ratings for each section.

3.14 Socioeconomic Impacts

Population

The 2000 population of the four counties in the Pickwick Reservoir area is estimated by the U.S. Bureau of the Census to be 187,691, a 9.4 percent increase over the 1990 population of 171,643 (Tables 3.14-1 and 3.14-2). This growth rate is slightly slower than that of the states home to Pickwick Reservoir, at 11.1 percent, as well as slower than the nation, at 13.1 percent. Of the three counties, Hardin County in Tennessee had the fastest growth rate, 13.0 percent, followed by Lauderdale County, Alabama, 10.4 percent, Colbert County, 6.4 percent, and Tishomingo County, Mississippi, 8.4 percent. Projections indicate that the area will grow faster than the states and the nation over the next 20 years.

Table 3.14-1. Population and Population Projections, 1980-2020					
	1980	**1990**	**2000**	**2010**	**2020**
Hardin County (TN)	22,280	22,633	25,578	27,456	29,385
Tishomingo County (MS)	18,434	17,683	19,163	20,767	22,505
Colbert County (AL)	54,519	51,666	54,984	57,311	58,934
Lauderdale County (AL)	80,546	79,661	87,966	97,137	107,264
Area Total	175,779	171,643	187,691	202,671	218,088
Tennessee	4,591,023	4,877,203	5,689,283	6,166,000	6,515,000
Mississippi	2,520,770	2,768,619	2,844,658	2,972,000	3,089,000
Alabama	3,894,025	4,040,389	4,447,100	4,794,000	5,090,000
States Total	11,005,818	11,686,211	12,981,041	13,932,000	14,694,000
United States (100s)	226,542	248,791	281,421	299,862	324,927

Source: Historical data from the U.S. Census Bureau; state and county projections from University of Tennessee, Center for Business and Economic Research, *Population Projections for Tennessee Counties and Municipalities*, March 1999 and TVA projections, 2001; U.S. projections are the middle series from the U.S. Census Bureau, Population Division, Population Projections Program.

Table 3.14-2. Percent Change In Population					
	1980-1990	**1990-2000**	**2000-2010**	**2010-2020**	**1980-2020**
Hardin County (TN)	1.6	13.0	7.3	7.0	31.9
Tishomingo County (MS)	-4.1	8.4	8.4	8.4	22.1
Colbert County (AL)	-5.2	6.4	4.2	2.8	8.1
Lauderdale County (AL)	-1.1	10.4	10.4	10.4	33.2
Area Total	-2.4	9.4	8.0	7.6	24.1
Tennessee	6.2	16.7	8.4	5.7	41.9
Mississippi	9.8	2.8	4.5	3.9	22.6
Alabama	3.8	10.1	7.8	6.2	30.7
States Total	6.2	11.1	7.3	5.5	33.5
United States	9.8	13.2	6.6	8.4	43.4

Labor Force and Unemployment

In 2000, the civilian labor force of the three-county area was 88,365, as shown in Table 3.14-3. Of these, 5,274 were unemployed, yielding an unemployment rate of 6.0 percent. Unemployment rates across Hardin, Tishomingo, Colbert, and Lauderdale Counties were 5.8, 7.6, 6.3, and 5.5 percent, respectively. The four-county rate exceeded that of the states, at 6.0 percent, and the national rate of 4.0 percent.

Table 3.14-3. Labor Force Data, Residents of Pickwick Reservoir Area, 2000			
	Civilian Labor Force	**Unemployment**	**Unemployment Rate (%)**
Hardin County (TN)	11,970	690	5.8
Tishomingo County (MS)	9,500	720	7.6
Colbert County (AL)	25,514	1,606	6.3
Lauderdale County (AL)	41,381	2,258	5.5
Area Total	88,365	5,274	6.0
Tennessee	2,798,400	110,200	3.9
Mississippi	1,326,300	75,300	5.7
Alabama	2,154,273	99,092	4.6
States Total	6,278,973	284,592	4.5
United States	140,863,000	5,655,000	4.0

Sources: Tennessee Department of Employment Security; Mississippi Employment Security Commission; Alabama Department of Industrial Relations

Jobs

In 1999, the four-county Pickwick Reservoir area had 92,988 jobs, an increase of 16.7 percent over the level in 1989, as shown in Table 3.14-4. This represents a slightly faster rate of job growth than in the three home states, 23.0 percent, as well as the nation, 19.3 percent. Three of the counties exceeded a 23 percent job growth rate, with Tishomingo County showing the greatest rate of growth, at 24.7 percent. Colbert County lagged far behind the other counties at only 3.4 percent. Over 46 percent of the jobs in the area in 1999 were in Lauderdale County, Alabama.

Manufacturing employment in the Pickwick Reservoir area increased from 1989 to 1999 by 8.0 percent, in contrast to declines experienced in the three-state area (2.2 percent) and the nation (3.7 percent), as shown in Table 3.14-5. Tishomingo County showed the greatest increase at 23.1 percent, followed by Lauderdale County (0.1 percent), Hardin County (-2.4 percent), and Colbert County (-31.6 percent).

Manufacturing is a larger share of the economy of the Pickwick Reservoir area counties than in the home states or the nation. Over 19 percent of the jobs in the area are manufacturing, compared to 15.7 percent in the three states, and 11.8 percent nationally. Tishomingo County has 36.3 percent of its jobs in manufacturing, followed by Hardin County at 25.7, Lauderdale County at 16.9 percent, and Colbert County at 15.7 percent. But as with the nation and the three states, manufacturing employment as a share of total employment has declined from 1989 to 1999 in the three-county Pickwick Reservoir area. The greatest decline occurred in Colbert County, dropping from 23.9 percent to 15.7 percent. Hardin and Lauderdale County also experienced a decline in manufacturing employment share, while Tishomingo counties also experienced a decline in manufacturing employment share, while Tishomingo County's percentage of manufacturing employment remained nearly constant.

Table 3.14-4. Total Employment

	1989	1999	Percent Change
Hardin County (TN)	9,924	12,254	23.5
Tishomingo County (MS)	7,032	8,768	24.7
Colbert County (AL)t	27,923	28,988	3.4
Lauderdale County (AL)	34,811	42,978	23.5
Area Total	79,690	92,988	16.7
Tennessee	2,753,529	3,437,587	24.8
Mississippi	1,195,967	1,493,441	24.9
Alabama	2,019,441	2,409,612	19.3
States Total	5,968,937	7,340,650	23.0
United States	137,240,800	163,757,900	19.3

Note: Includes full and part-time employment, both wage and salary employees and proprietors.
Source: U.S. Bureau of Economic Analysis, Regional Economic Information System.

Table 3.14-5. Manufacturing Employment

	1989	1999	Percent Change
Hardin County (TN)	3,221	3,144	-2.4
Tishomingo County (MS)	2,586	3,184	23.1
Colbert County (AL)	6,665	4,560	-31.6
Lauderdale County (AL)	7,230	7,240	0.1
Area Total	13,037	13,568	4.1
Tennessee	534,526	525,207	-1.7
Mississippi	250,708	250,824	0.1
Alabama	396,583	379,469	-4.3
States Total	1,181,817	1,155,500	-2.2
United States	19,992,500	19,252,700	-3.7

Note: Includes full and part-time employment, both wage and salary employees and proprietors.
Source: U.S. Bureau of Economic Analysis, Regional Economic Information System.

Occupation Patterns

As shown in Table 3.14-6, the Pickwick Reservoir area (as of 1990) has a smaller proportion of its workers in managerial and professional jobs (18.6 percent) than the three states (22.4 percent) or the nation (26.4 percent). This pattern also holds true for technical, sales, and administrative workers. Conversely, the four-county area has a higher percentage of workers in precision production, craft, and repair, as well as operators, fabricators, and laborers. Operators, fabricators, and laborers constitute 34.4 percent, 22.4 percent, 36.0 percent, and 24.4 percent of workers in Hardin, Lauderdale,

Tishomingo, and Colbert Counties, for a four-county average of 25.9 percent, compared with 20.8 percent for the four states and 14.9 percent for the nation.

Table 3.14-6. Occupation of Workers (Percent Distribution, 1990)

Occupation	Hardin	Colbert	Lauderdale	Tishomingo	Area Total
Managerial and Professional	13.6	18.5	20.9	14.8	18.7
Technical, Sales, Administrative	22.7	26.6	26.8	21.1	25.2
Service Occupations	10.7	12.3	11.7	9.2	11.2
Farming, Forestry, Fishing	4.0	1.9	2.1	2.5	2.5
Precision Production, Craft, Repair	14.7	16.3	16.1	16.5	15.9
Operators, Fabricators, Laborers	34.4	24.4	22.4	36.0	26.6
Occupation	**Alabama**	**Mississippi**	**Tennessee**	**States Total**	**United States**
Managerial and Professional	22.7	21.5	22.6	22.4	26.4
Technical, Sales, Administrative	29.4	28.3	30.1	29.5	31.7
Service Occupations	11.9	12.3	12.4	12.2	13.2
Farming, Forestry, Fishing	2.3	3.4	2.2	2.5	2.5
Precision Production, Craft, Repair	13.0	13.0	12.2	12.6	11.3
Operators, Fabricators, Laborers	20.7	21.6	20.5	20.8	14.9

Source: U.S. Bureau of the Census, Census of Population 1990

Income

Per capita income in the Pickwick Reservoir area ($20,278) trailed the three states ($23,590) and the nation ($28,546), as of 1999. Per capita personal income in the area increased by 51.4 percent from 1989 to 1999 (see Table 3.14-7). This trailed the three state increase of 59.5 percent, and the national increase of 53.8 percent. Hardin County had the greatest increase at 79.5 percent, followed by Tishomingo (57.2 percent), Colbert (51.3 percent), and Lauderdale (44.2 percent).

Table 3.14-7. Per Capita Personal Income			
	1989	**1999**	**Percent Change**
Hardin County (TN)	11,281	20,246	79.5
Tishomingo County (MS)	10,759	16,908	57.2
Colbert County (AL)	14,260	21,575	51.3
Lauderdale County (AL)	14,587	21,036	44.2
Area Total	13,657	20,664	51.3
Tennessee	15,883	25,548	60.9
Mississippi	12,540	20,686	65.0
Alabama	14,899	22,972	54.2
States Total	14,786	23,590	59.5
United States	18,566	28,546	53.8

Source: U.S. Department of Commerce, Bureau of Economic Analysis

3.15 Environmental Justice

Minorities account for 12.7 percent of the population in the Pickwick Reservoir area (Table 3.15-1). This is far below the three state and the national levels, which are 27.9 and 30.9 percent respectively. Minority population is defined as nonwhite persons and white Hispanics (nonwhite Hispanics are included in the nonwhite figure). None of the counties has a minority population that approaches the three state or national percentages. Colbert County is the greatest at 19.1 percent. Overall, the poverty level in the four-county area at 14.3 percent is lower than the three state average of 15.5 percent, but higher than the national figure of 13.3 percent.

Table 3.15-1. Minority Population, 2000, and Poverty, 1997					
	Population	**Minority Population**			**Poverty**
	Total	Nonwhite	White Hispanic	Percent Minority	Percent Below Poverty Level
Hardin County (TN)	25,578	1,301	178	5.1	18.3
Tishomingo County (MS)	19,163	971	125	5.7	13.9
Colbert County (AL)	54,984	10,159	355	19.1	13.5
Lauderdale County (AL)	87,966	10,223	503	12.2	13.3
Area Total	187,691	22,654	1,161	12.7	14.3
Tennessee	5,689,283	1,125,973	57,380	20.8	13.6
Mississippi	2,844,658	1,098,559	18,191	39.3	18.1
Alabama	4,447,100	1,284,292	36,989	29.7	16.2
States Total	12,981,041	3,508,824	112,560	27.9	15.5
United States	281,421,906	69,961,280	16,907,852	30.9	13.3

Source: Estimates by the U.S. Bureau of the Census

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

This chapter describes the environmental consequences on the TVA public land of Pickwick Reservoir potentially affected by the three alternatives. Under all three alternatives, previously unplanned land includes strips of retained land fronting TVA sale tracts. These retained strips of TVA public land that are encumbered with water access rights, have been allocated to Zone 7, Residential Access, in accordance with the SMI decision of 1999. Approximately 5.6 percent (1,085.43 acres) of TVA public land, which comprises 95.8 shoreline miles, on Pickwick Reservoir is proposed for allocation to Zone 7, Residential Access. As explained in Section 1.3 in this EIS, land in the Residential Access Zone has been categorized as shoreline protection, residential mitigation, and managed residential under the TVA SMP. Review of private water use facility requests in Zone 7 would include consideration of the site's shoreline categorization status to ensure that environmental impacts would be negligible. Protective measures presently in place under TVA's land use approval process and SMI (TVA, 1998a) would reduce or minimize impacts of residential development of private property.

Under the No Action Alternative, the land use allocation categories assigned to each parcel in the 1981 Plan would remain in effect. Under the Action Alternatives B and C, TVA would update the allocations originally designated for each parcel in the 1981 Plan to reflect the land use zones defined in Table 2-1 of this EIS. Action Alternatives B and C incorporate alternative land use zone allocations for three parcels.

4.2 Terrestrial Ecology (Plant and Animal Communities)

Alternative A

Historically, TVA resource management activities have been planned and implemented as a means of demonstrating environmentally acceptable and cost-effective strategies for managing publicly owned natural resources. The majority of these activities have occurred on mainstem TVA reservoirs, with Board-approved Plans that were prepared based on technical data and public input. The long-term allocation of land for natural resource management under the wildlife and forest management categories has allowed TVA to invest time and money to maintain and enhance biological diversity, protect sensitive wildlife species, and provide public use and enjoyment of the terrestrial environment of this land.

Under the No Action Alternative, forested areas on TVA public land would remain forested and continue to mature, with forest wildlife species remaining relatively stable at current levels. As old fields and shrub areas continue to revert to forests, there will be a decrease in wildlife species dependent on these habitat types and an increase in forest wildlife species. TVA public land licensed for agricultural purposes and the wildlife species using them would likely remain unchanged, while areas managed for public access (i.e., dam reservations) can increase or decrease with TVA budget fluctuations. Any major changes in use patterns under the 1981 Plan could create a corresponding change in vegetation and wildlife utilizing the affected parcels of land. However, these types of impacts would be localized and negligible on a regional or subregional basis.

Impacts to botanical components of terrestrial ecological resources are anticipated to be insignificant on Parcels 37, 53, and 156, because no sensitive or otherwise uncommon plant communities occur on these parcels.

Under the No Action Alternative, Parcel 128 would remain allocated to the following land use categories as originally designated in the 1981 Plan: General Forest Management, Minor Commercial Landing, Access for Future Development, and a Safety Harbor. The uncommon plant community (open cliff face dominated by alumroot) present on Parcel 128 could be adversely impacted by future development. As stated in Section 2.1, if Alternative A were adopted, future proposed actions on any parcel would be evaluated for their potential environmental impacts on a case-by-case basis using existing environmental review procedures. Provided that potential impacts are identified and the appropriate avoidance and/or mitigation measures successfully implemented, impacts to this uncommon plant community are anticipated to be insignificant under the No Action Alternative. Parcels 16, 32, 44, and 148 were examined during field surveys because of the known presence of wildlife resources. Under the current allocation for natural conservation uses, the terrestrial resources on these four parcels would continue to be protected and would not be affected.

Under Alternative A, 6,060 up to 10,585 acres (31.5 to 55.0 percent) could be managed for conservation uses, and would result in insignificant cumulative impacts to the terrestrial ecology of Pickwick Reservoir.

Alternatives B and C

Under Alternatives B and C, approximately 85 percent of TVA public land on Pickwick Reservoir would be allocated to three land use zones: Zone 2, Project Operations; Zone 3, Sensitive Resource Management; and Zone 4, Natural Resource Conservation. Approximately 145 additional acres would be allocated to Zones 3 and 4 under Alternative C than under Alternative B. The following types of activities could occur on parcels allocated to Zones 3 and 4:

- Vegetation management including forest management to improve the diversity of tree species and sizes, to encourage growth and maturation of fruit and nut-producing trees, to develop wildlife openings, and to protect snags and wildlife-nesting cavities.
- Open land management to provide a diversity of vegetation ranging from planted, warm-season, native grasses to old fields and shrub edges.
- Wetland management to protect and/or enhance the hydrology, soils, and vegetation, as well as to improve overall functions and values.
- Riparian management to allow the development of native vegetation or restoration of riparian vegetation through soil bioengineering.

It is expected that these activities could occur without negative terrestrial or aquatic ecological effects if the size of vegetation management areas were limited, sensitive resources and features were avoided, and appropriate soil erosion controls were implemented. TVA received several comments during scoping that expressed concern for the preservation of natural resources (e.g., natural areas, wildlife habitat, wetlands) and the ways in which these resources may be compromised by increased development (e.g., loss of sensitive habitat, clear-cutting of land along the shoreline). At this time, no

timber harvests are proposed on TVA public land surrounding Pickwick Reservoir. TVA's management of forest resources is the result of stakeholder needs, comments, and issues balanced in Natural Resource Unit Management Plans. When the need arises, timber harvesting may be considered to address stakeholder requests, impacts from insect infestation and storms, safety issues, etc. These actions would incorporate the appropriate level of environmental review.

Ten percent of TVA public land on Pickwick Reservoir is proposed for allocation to Zone 5, Industrial/Commercial Development, and Zone 6, Developed Recreation. Under Alternatives B or C, parcels allocated for Zone 6, Developed Recreation, have recreation facilities present, with the exception of Parcel 37. Any activities proposed in the future would be reviewed for potential impacts to terrestrial resources.

The general mix of TVA forest land and open land in the counties surrounding Pickwick Reservoir is expected to remain relatively unchanged in the near future. Privately-owned forests and open land are, however, likely to be subject to increased development pressure. By maintaining more than 85 percent of TVA public land in forested and open-land parcels, implementation of Alternatives B or C could offset some cumulative effects of development and fragmentation on nearby private land. Because of the relatively small acreage of TVA public land surrounding the reservoir, the choices for management of TVA public land would be unlikely to influence regional trends in forest fragmentation, and any temporary negative natural resource management impacts would be negligible on a regional basis. Selection of Alternative B would have a beneficial effect on the terrestrial ecology on TVA public land and in the region. The greatest benefit would occur from selection of Alternative C, because almost 145 more acres are allocated to Zones 3 and 4.

Under Alternatives B and C, Parcels 16, 32, 42, and 148 would be allocated to Zone 4, Natural Resource Conservation. Parcel 128 would be allocated to Zone 3, Sensitive Resource Management. Therefore, the biological resources on these parcels would continue to be protected and would not be affected. For these parcels, impacts to terrestrial ecological resources under these alternatives would be beneficial because of the protection to the terrestrial resources.

Under Alternative B, 13,430 acres (69.8 percent) are allocated to Zones 3 and 4, and there would be insignificant cumulative impacts to the terrestrial ecology of Pickwick Reservoir. Under Alternative B, Parcel 37 would be allocated to Zone 6, Developed Recreation. This would modify much of the existing wildlife habitat along this parcel. Because of the extensive amount of exotic plants, this parcel does not provide high quality wildlife habitat; therefore, this allocation change is not expected to result in significant impacts to the terrestrial ecology on this portion of the reservoir. Parcel 53 would be changed from general forest management to Zone 5, Industrial/Commercial Development. Industries located in the Barton Industrial Park would likely request water access facilities across this parcel. This parcel contains excellent wildlife habitat, and industrial development could result in adverse impacts to the terrestrial ecology on this portion of the reservoir. These impacts could be minimized by only allowing water intake or discharge structures in a single corridor and maintaining most of the parcel in a forested state to provide a buffer between the back-lying industrial park and Pickwick Reservoir.

Under Alternatives B and C, Parcel 128 would be allocated to Zone 3, Sensitive Resource Management, and designated as a TVA Natural Area. Because this would provide increased protection to the uncommon plant community found on this parcel, Alternatives B and C would be slightly beneficial to the terrestrial ecology of the region.

Alternative C, which allocates 13,571 acres (70.5 percent) to Zones 3 and 4, would have the most beneficial impacts to the terrestrial ecology of Pickwick Reservoir since this alternative considers the most acreage for allocation to these zones. Under Alternative C, Parcels 37 and 53 would be allocated to Zone 4, Natural Resource Conservation. Parcel 128 would be allocated to Zone 3, Sensitive Resource Management.

4.3 Sensitive (Endangered and Threatened) Species

4.3.1 Terrestrial Plants and Animals

Impacts to sensitive plant species associated with each of the three alternatives are discussed below. Under all the alternatives, no impacts to protected plant species on Parcels 37, 53, and 156 are anticipated because none are known or expected to occur on these parcels. Populations of federal-endangered gray bats are inventoried annually on Pickwick Reservoir by state and federal biologists. Population levels remain stable and in some cases have increased throughout Pickwick Reservoir. Also, because colonies of gray bats are sensitive to human disturbance, protective buffers have been placed around caves on Pickwick Reservoir land that are known to be used by gray bats. Reduction of erosion and siltation by maintaining riparian vegetation would benefit populations of gray bats. Because caves are extremely fragile and biologically significant, TVA has placed protective buffer zones around each of the known caves on TVA public land.

Adult and juvenile bald eagles were observed on Parcel 16. This large wetland complex provides suitable nesting habitat for bald eagles as well as habitat for other federal and state-listed species. This parcel would be allocated to Zone 4, Natural Resource Conservation, under Alternatives B and C and remain allocated for wildlife and forest management under Alternative A. Additional parcels on Pickwick Reservoir provide suitable habitat for several protected or uncommon species of terrestrial animals.

<u>Alternative A</u>

Under the 1981 Plan (Alternative A), land was allocated to wildlife management and natural areas to protect sensitive terrestrial animal species, sensitive ecological areas, or specialized habitats identified on land parcels. Additionally, existing environmental review procedures, including compliance with the Endangered Species Act (ESA), assure that TVA actions would not likely adversely affect the habitat of rare species. However, there is some potential for fragmentation of the resource due to case-by-case land use actions and permitting, which, when given the dynamic characteristics of most animals, could result in cumulative loss of habitat over time. Thus, while TVA would protect sensitive species during individual reviews, there is some potential for indirect or cumulative impacts under the No Action Alternative. Protected or uncommon terrestrial animal species would not be affected because most parcels with suitable habitat for these species are allocated for natural conservation uses.

No impacts are anticipated to sensitive plant species on Parcels 37, 53, and 156 under Alternative A, because these species are not known or expected to occur on these parcels. Impacts to sensitive plant species are unknown on Parcel 26, because this parcel was not surveyed for the presence of such species during the preparation of this EIS. However, as part of the NPS, it is expected that sensitive resources would be protected on this parcel.

Under the No Action Alternative, Parcel 128 would remain allocated to the following land use categories as originally designated in the 1981 Plan: General Forest Management, Minor Commercial Landing, Access for Future Development, and a Safety Harbor. The sensitive plant species present on Parcel 128 could be adversely impacted by future development. As stated in Section 2.1, if Alternative A were adopted, future proposed actions on this parcel would be evaluated for their potential environmental impacts on a case-by-case basis using existing environmental review procedures. Provided that potential impacts are identified, and the appropriate avoidance and/or mitigation measures successfully implemented, any impacts to sensitive plant species present on Parcel 128 are anticipated to be insignificant under the No Action Alternative.

Alternatives B and C

Under these alternatives, Parcel 16 would be allocated to Zone 4, Natural Resource Conservation. Comments received during public scoping requested more protection of the natural resources on this parcel. Designation of this parcel to Zone 4 would be suitable for the management of fringe wetlands and the possibility for bald eagle nesting. Potential habitat for protected animal species has been identified on Parcel 128. This habitat is considered to be of excellent quality. Under Alternatives B and C, Parcel 128 would be allocated to Zone 3, Sensitive Resource Management and designated as an HPA within the system of the TVA Natural Areas. This would protect potential suitable habitat for a variety of state-listed amphibians and potential habitat for federal-protected bald eagles and Indiana bats in the Yellow Creek embayment. Because this would provide increased protection to the sensitive plant species found on this parcel, Alternatives B and C would be beneficial to this resource.

Under Alternative B, Parcel 53 would be allocated to Zone 5, Commercial/Industrial Development. This could result in the loss or severe modification of suitable nesting habitat for bald eagles. This loss of habitat is not likely to have an adverse effect considering the large amounts of suitable bald eagle habitat on this portion of the reservoir. Impacts could be minimized by only allowing water intake or discharge structures in a single corridor along the edge of the parcel and maintaining most of this forested parcel to provide a buffer between the back-lying industrial park and Pickwick Reservoir. Under Alternative C, Parcel 53 would be allocated to Zone 4, Natural Resource Conservation.

In conclusion, adoption of the proposed Plan alternatives would not adversely affect populations of threatened and endangered terrestrial plants and animals in the region. Adoption of Alternative A would result in insignificant cumulative impacts to protected species on Pickwick Reservoir.

4.3.2 Aquatic Animals

Alternative A

In the present plan, many sections in Parcel 32 are adjacent to areas which contain habitat for most of the sensitive aquatic animals discussed in Section 3.3.2. Most of the allocation categories given to these parcels (wetland wildlife, upland wildlife, waterfowl wildlife, archeology, special management area, including a mussel sanctuary and TVA HPA) are adequate to protect these sensitive aquatic animal species or their specialized habitats. Parcels allocated for general forest research or agriculture and the previously unplanned marginal strip have a lesser degree of protection for these resources. Existing environmental review procedures on these parcels including compliance with the ESA, would assure that TVA actions would not likely adversely affect the habitat of protected aquatic species in adjacent areas. While TVA would protect sensitive species during individual reviews, there is some potential for indirect or cumulative impacts under this No Action Alternative.

Alternatives B and C

Under both of these alternatives, Parcel 32 would be allocated to Zone 4, Natural Resource Conservation, consistent with the Plan Revision Process (see Section 2.2.1) because it is under an existing agreement with ADCNR for management as a WMA. Parcel 31, the entrance to Key Cave, would be allocated to Zone 3, Sensitive Resource Management, because of the sensitive resources identified and the parcel's consideration for addition to the Key Cave National Wildlife Refuge.

The cumulative effects of these actions could result in improved riparian buffer zones, and may help improve water quality and aquatic habitats downstream of the project areas, including the areas where sensitive aquatic species are known to occur.

Parcel 47 is allocated for industrial use under both Alternatives B and C, and the sensitive aquatic resources present near this parcel would receive the same level of protection as they would under the current allocations under Alternative A.

4.4 Managed Areas and Sensitive Ecological Sites

Field surveys were conducted in July 2001. The purpose of the surveys was to evaluate the parcels for their scenic and aesthetic qualities, ecological significance, and suitability for designation as TVA Natural Areas. TVA Natural Areas include SWAs, Ecological Study Areas, HPAs, and Wildlife Observation Areas. Parcel 128 was found to contain resources that would benefit from designation as a TVA Natural Area under the HPA category. The remaining parcels were not found suitable, and, therefore, environmental consequences under any of the three alternatives would be insignificant from a Natural Areas perspective.

No Action Alternative

Under the No Action Alternative, use of TVA public land on Pickwick Reservoir would continue to be based on the 1981 Plan. Under this system, impacts to Natural Areas and Ecologically Significant Sites would be assessed during site-specific reviews. Each proposed land use would be reviewed, and the impacts to significant natural features

from such use would be evaluated. However, additional Natural Area designations would not be proposed.

Alternatives B and C

Under Alternatives B and C, Natural Areas are included in Zone 3, Sensitive Resource Management, or Zone 4, Natural Resource Conservation. Parcel 126, Cooper Falls TVA HPA is allocated to Zone 3, Sensitive Resource Management. Parcel 32, Coffee Bluff TVA HPA is allocated to Zone 4, Natural Resource Conservation. Parcels 121, 125, 129, and 134, include Sandstone Outcrops/Pickwick Lake Protection Planning Site and are allocated to Zones 3, Sensitive Resource Management, and 4, Natural Resource Conservation. Parcel 117, which includes the Eastport Bluffs, is allocated to Zone 3, Sensitive Resource Management. Parcel 31, Alabama Cave Fish Designated Critical Habitat (Key Cave) is allocated to Zone 3, Sensitive Resource Management.

During the field surveys, Parcel 128 contained significant communities of rare plants and animals, and, therefore, has been allocated to Zone 3, Sensitive Resource Management, under Alternatives B and C. These species and their habitats are described in section 3.3. Impacts as a result of this allocation would be beneficial because of the protection provided to the rare plants and uncommon plant community found here.

Under Alternatives B and C, the TVA environmental review process would continue to be used to address potential impacts of actions on TVA public land to sensitive resources. These alternatives provide enhanced protection of significant natural features, rare plants, and rare animals through the allocation of land to Zone 3, Sensitive Resource Management, and Zone 4, Natural Resource Conservation. By identifying significant Natural Areas and protecting them from development, selection of either of these alternatives would have a beneficial effect on the preservation of Ecologically Significant Sites on TVA public land and in the region. In addition, these alternatives address public requests for greater protection of endangered species, natural land, and land with unique features by protecting such areas as TVA HPAs. In addition, there would be increased opportunities for wildlife observation, wildlife management, and conservation zones. As indicated by public responses through questionnaires and public meetings, managing more TVA public land under Sensitive Resource Management and Natural Resource Conservation zones would address TVA public land use preferences. Any proposed action under either Alternative B or C would be subject to the environmental review process. At that time, compatibility of the proposed action and management objectives for any subject TVA Natural Areas land would be evaluated. Alternative C would protect the most TVA public land in a natural state.

4.5 Water Quality

Under all three alternatives, residential shoreline development on private property would likely increase. Additional development from Zone 7, Residential Access, would have potential to result in increased runoff from agricultural/lawn chemicals and in increased sewage/septic loadings. Negative potential impacts to water quality associated with residential development activities may include increased turbidity, increased levels of substances toxic to aquatic life, increased bacteriological concentrations, and a further increase in nutrient loading. Protective measures presently in place under TVA's land

use approval process and SMI (TVA, 1998a) would substantially offset impacts of residential development of private property.

Activities in Zone 2, Project Operations, have the potential to affect water quality under all three alternatives, also. Most Zone 2 land is used for the Pickwick Landing Dam Reservation, Colbert Fossil Plant Reservation, and various local utility water intakes and facilities. Runoff impacts can likely be minimized by the use of vegetative buffers and runoff control measures.

Alternative A

Under Alternative A, the extent to which a proposed land use might affect water quality depends on the nature and extent of development. Proposed land uses under the 1981 Plan are somewhat less restrictive than the proposed new zones. Future industrial/commercial and recreational developments have the potential to result in some degree of increased soil erosion due to clearing of woody vegetation and brush, increased runoff of agricultural/lawn chemicals, or increased sewage/septic loadings. Negative impacts to water quality associated with these activities may potentially include an increase in the levels of chemicals and substances toxic to aquatic life, an increase in turbidity, an increase in bacteriological concentrations, and further increases in nutrient loading. Under the No Action Alternative, any proposed use of TVA public land would be evaluated on a case-by-case basis to ensure it fits the allocated use and that the proposed use best serves the needs and/or interests of the public.

Alternatives B and C

Under Alternatives B and C, a better opportunity to protect water quality is provided by allocating some parcels that had a more general land use (such as open space or natural areas) in the 1981 Plan to Zone 3, Sensitive Resource Management, and Zone 4, Natural Resource Conservation. Activities in Zones 3 and 4 also have the potential to affect water quality, although to a lesser extent. Forest and wildlife management activities, and agricultural uses would be allowed with rigorous implementation of BMPs to control soil erosion and with designated streamside buffers. Environmental reviews for any proposed use of land would require the protection of water quality either through restricted development or the assurance to use BMPs that would minimize negative impacts. Also, the public's desire for increased protection of natural resources and water quality is incorporated.

In comparing Alternatives B and C, allocations for only three parcels are different (Parcels 37, 53, and 156). Under Alternative B, Parcel 37 would be allocated to Zone 6, Developed Recreation. This could modify much of the existing riparian vegetation along this parcel and would increase impervious surfaces along the Florence Canal. Parcel 53 would be allocated to Zone 5, Industrial/Commercial Development. These type of developments would lead to extensive impervious surfaces throughout the back-lying properties (paved trail, parking lots, etc.). Increased imperviousness contributes to increased runoff during rain events. Runoff, especially from parking lots and industrial sites can often contain high levels of nutrients (nitrates). Lack of proper filtration systems, as well as increased volumes of runoff, allows large volumes of contaminants to enter the reservoir. Other contaminants, such as oils, grease, antifreeze, etc., would also be present in runoff from these surfaces and could contribute to a decline in water quality in the reservoir. Runoff impacts can likely be minimized by the use of vegetative buffers and runoff control measures. Under Alternative B, Parcel 156 would be

allocated to Zone 7, Residential Access. Requests for the alteration or further development of this parcel would need to include BMPs and maintenance of a 50-foot SMZ to reduce potential impacts. Insignificant impacts as a result of these allocations are anticipated because these parcels are already developed for these land uses.

Under Alternative C, Parcels 37 and 53 would be allocated Zone 4, Natural Resource Conservation. This allocation would best protect the overall water quality in the reservoir by providing a filter (riparian buffer) for the runoff of back-lying properties. Parcel 156 would also be allocated to Zone 4, Natural Resource Conservation. However, because residential development already exists on this parcel, the potential impacts would be similar to Alternative B. Allocation to Zone 4 could allow more potential to enhance the riparian buffer fronting these lots, reducing any potential for nutrient loading from lawn maintenance activities.

4.6 Aquatic Ecology

Under all three alternatives, future development in the marginal strip, could lead to additional lawn and septic system runoff and riparian buffer loss. These problems could further exacerbate the trend of increasing nutrient loading and chlorophyll levels in lower Pickwick. These impacts were assessed in SMI (TVA, 1998a). Protection of the riparian buffer under this initiative would help protect the reservoir from additional nutrient runoff from such developments, thus providing a more stable habitat for the aquatic communities.

Alternative A

Under Alternative A, proposed land uses under the 1981 Plan are somewhat less restrictive than the proposed new zones. Activities associated with future industrial/commercial and recreational developments have the potential to result in increased negative impacts to aquatic ecology. These activities may potentially include an increase in the levels of chemicals and substances toxic to aquatic life, an increase in turbidity, an increase in bacteriological concentrations, and further increases in nutrient loading. Under the No Action Alternative, any proposed use of TVA public land would be evaluated on a case-by-case basis to ensure it fits the allocated use and that the proposed use best serves the needs and/or interests of the public.

Alternatives B and C

Alternatives B and C would provide an opportunity to protect and enhance aquatic habitats by allocating the majority of TVA public land (69.8 to 70.5 percent) to Zone 3, Sensitive Resource Management, or Zone 4, Natural Resource Conservation. Under the 1981 Plan, these habitats have less specific, multiple allocated uses, and allow the protection or enhancement of aquatic habitats through the preservation of existing natural shorelines, which offers a variety of cover types. The extent of woody shoreline cover on parcels allocated to Zones 3, Sensitive Resource Management, and 4, Natural Resource Conservation, is expected to increase in the future as natural succession continues. This woody shoreline cover is important to the littoral zone because it provides shade to cool the water temperature and provides woody debris for benthic organisms. The littoral zone is the most productive habitat of a reservoir environment. Fish utilize littoral habitats because of their spawning requirements, the availability of submerged cover (i.e., rocks, logs, brush, etc.), and the presence of smaller fish and aquatic invertebrates as a food source for the fingerlings.

Forest, agricultural, and wildlife management activities in Zones 3 or 4 could potentially affect aquatic ecology through runoff of nutrients and soils. These potential impacts would be avoided through careful planning and mitigation to limit the sizes of activities and use of rigorous BMPs during implementation.

Allocation of TVA public land to Zone 6, Developed Recreation, would allow locations for public access for bank fishing, as well as the construction of fishing piers, artificial fish attractors, and other fish habitat enhancements. Approval requirements for proposed developments, such as public parks, recreation areas, and water-access sites, in addition to permitting greater opportunity for public use, would require protection of important natural features. The quality of shoreline aquatic habitats would improve with the protective zones mentioned above, through the enhanced opportunity for natural succession, as well as protective vegetation management now required through TVA's SMP standards for private water use facilities.

TVA public land fronting Zone 5, Industrial/Commercial Development, can be maintained in a natural condition, since industrial/commercial development seldom requires extensive clearing of shoreline vegetation. Some negative aquatic habitat impacts would occur under either alternative but can be kept to an insignificant level with proper planning and by requiring protective measures during land use approvals. TVA has rated the aquatic habitat on Pickwick Reservoir "good" overall. In order to maintain this rating, impacts to near shoreline aquatic habitats would continue to be considered in the proposed use of TVA public land under either alternative.

Under Alternative B, Parcel 53 would be allocated to Zone 5, Industrial/Commercial Development. This type of development could lead to extensive soil-disturbing activities and resulting erosion and sedimentation of receiving waters unless strict erosion control measures are installed and maintained before any construction activities began. In addition, extensive impervious surfaces throughout the back-lying properties contribute to increased runoff during rain events. Runoff, especially from parking lots and industrial sites, can often contain high levels of nutrients (nitrates). Lack of proper filtration systems, as well as increased volumes of runoff, allows large volumes of contaminants to enter the reservoir. Other contaminants, such as oils, grease, antifreeze, etc., could also be present in runoff from these surfaces and would result in greater impact to the aquatic communities in the reservoir. These impacts could be rendered insignificant with proper containment and filtration of runoff waters from industrial development and use of BMPs during construction activities. Cumulative impacts resulting from industrial/commercial development under Alternative B, in addition to existing development on the reservoir could degrade the aquatic communities of the reservoir unless strict runoff filtration measures are implemented to prevent these impacts.

Under Alternative C, Parcel 53 would be allocated to Zone 4, Natural Resource Conservation. This allocation would best protect the aquatic community in this section of the reservoir by providing a filter (riparian buffer) for the runoff of back-lying properties.

4.7 Wetlands and Floodplains

4.7.1 Wetlands

All of the wetlands, whether they were determined to be functionally significant or not, would be protected from most direct impacts through compliance with federal mandates and legal requirements for protection of wetlands. Regulatory protection is extended to wetlands under Section 404 of the Clean Water Act, and TVA is subject to EO 11990, Protection of Wetlands, which mandates that federal agencies take such actions as may be necessary to "minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands…" Consistent with this requirement, TVA would, to the extent practicable, take measures to either avoid adverse impacts to wetlands or mitigate unavoidable effects to wetlands in decisions relating to transactions of land rights or during its Section 26a review of water use facilities.

Under all three alternatives, wetlands present in the marginal strips (Zone 7 for Alternatives B and C) would be protected under federal law, and any potential impacts to wetlands would be regulated under these programs. In site-specific cases where some wetland impacts do occur, mitigation requirements would offset any long-term loss of wetland functions. However, there would be some short-term loss of wetland functions during the time required for the mitigated wetland to mature. There may also be some incremental clearing of wetland vegetation by landowners resulting in some minor, cumulative loss of wetland function, primarily shoreline stabilization, wildlife habitat provision, and plant community diversity.

<u>Alternative A - No Action Alternative</u>

Under the No Action Alternative, TVA would continue to use the 1981 Plan to guide decision making regarding land use on TVA public land surrounding Pickwick Reservoir. Land use requests for parcels containing wetlands and allocated for wetland wildlife management, waterfowl management, and HPAs would be evaluated to ensure the proposed request would protect the integrity of wetland resources.

<u>Alternative B</u>

Under this alternative, Parcel 37 would change from a current allocation of Barge Terminal/Industrial Site to Zone 6, Developed Recreation, which could protect small areas of forested wetland and would ultimately be beneficial. For Parcel 53, a change from the current allocation of Upland Wildlife/General Forest Management to Zone 5, Commercial/Industrial Development, could result in the loss of emergent and forested wetlands present on the site.

There could be wetland impacts/loss associated with changing the land use allocation for Parcel 53. Total acreage loss could be relatively small (<5 acres). Wetland impacts to this parcel would be mitigated by setting aside these areas for protection, including small upland buffers. However, there may be a loss of some wildlife habitat function, due to human encroachment and disturbance. There may also be contamination of the wetlands from upland industrial/commercial runoff, further diminishing their overall ecological health. This incremental loss may not be individually significant, but together

with the cumulative loss and alteration of wetlands in the general project area, they would add minimally to a cumulative loss of wetland function.

Alternative C

Under Alternative C, Parcel 37 would be allocated to Zone 4, Natural Resource Conservation. This parcel does contain a small area of forested wetland, and would be protected under the Zone 4 allocation. For Parcel 53, a change in allocation from Upland Wildlife/General Forest Management to Zone 4, Natural Resource Conservation, would protect the wetlands on this parcel. There may also be contamination of the wetlands from upland industrial/commercial runoff, diminishing their overall ecological health. This incremental loss may not be individually significant, but, together with the cumulative loss and alteration of wetlands in the general project area, it would minimally add to an overall cumulative loss of wetland function.

4.7.2 Floodplains

Any development proposed in the 100-year floodplain is subject to the requirements of EO 11988 (Floodplain Management). The first step is to determine if the activity is covered under TVA's "Class Review of Certain Repetitive Actions in the 100-Year Floodplain" (TVA, 1981b). As a result of this review, TVA has already determined that there were no practicable alternatives to several actions that would avoid siting in the floodplain. A set of review criteria was also established to ensure that natural and beneficial floodplain values are not significantly affected by the repetitive actions. If these criteria are followed, adverse floodplain impacts would be minimized.

If an activity is not a repetitive action in the 100-year floodplain, EO 11988 requires the applicant and the initiating TVA organization to evaluate alternatives to the floodplain siting which would either identify a better option or support and document a determination of "no practicable alternative" to siting within the 100-year floodplain. Land in Zone 2 is virtually all above the 100-year flood elevation for Pickwick Reservoir. Some of the land being allocated to Zones 6, Developed Recreation, and 7, Residential Access, is within the 100-year floodplain. However, there is no practicable alternative to making such allocations. The small acreage in Zone 6 that is within the floodplain is contiguous with the existing recreation areas on upland sites; likewise, land in Zone 7, Residential Access, is by definition on the shoreline providing access to the water. Further, development that could impact land in the 100-year floodplain would include measures to minimize impacts to the floodplain. Such measures could include location of the project above the flood elevation, flood proofing the project, constructing and designing the project to make structures withstand flood damage, or other appropriate measures.

Under any of the alternatives, any development proposed in the 100-year floodplain would be subject to the requirements of EO 11988 when TVA proposes to approve requests for the development. Case-by-case evaluations would verify compliance with EO 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that should result in minor floodplain impacts. Alternative A would likely have greater potential for adverse impacts to natural and beneficial floodplain values than Alternative B or C because less land is allocated for resource management and conservation activities in the 1981 Plan. On a comparative basis, Alternatives B and C would have far less impacts on floodplains since a substantial portion of the TVA public land (69.8 to 71.4 percent) would be allocated to

Zones 3 and 4 in which there would be no development. Under any of the alternatives, any anticipated and cumulative impacts to floodplain values would be insignificant.

4.8 Land Use and Prime Farmland

4.8.1 Land Use

Under Alternatives B and C, TVA has proposed allocations that are compatible with the local zoning ordinances of the cities of Florence, Muscle Shoals, Sheffield, and Waterloo on properties that are adjoining TVA public land and are within city limits. Proposed new development would result in changes to the original land plan. The acreage of land use change resulting under each alternative is listed in Table 2-5. Parcels that would result in land use changes under Alternatives B and C are listed in Tables 2-3 and 2-4.

Potential Industrial/Commercial Development for Pickwick Reservoir could consist of fleeting areas, ports, an industrial park, industrial access, barge terminal sites, and minor commercial landings. Under Alternative A, requests on a total of 2,499.63 acres could be considered for Zone 5, Industrial/Commercial Development, on a case-by-case basis. Under Alternatives B and C, the amount of land to be allocated to Zone 5, Industrial/Commercial Development, would decrease to 534.45 and 450.34 acres, respectively.

Under all alternatives, allocations would be made so that current recreation use would continue. For a more detailed discussion, refer to Section 4.12 on recreation.

During public scoping, members of the general public expressed concern over the increased amount of boat traffic. The comments collected were in direct relation with the heavy residential development on the lower end of the reservoir. Areas that are allocated to Zone 7, Residential Access (areas with existing deeded access rights), will continue to be able to apply for a permit for water use facilities. Under all alternatives, no new residential access will be allocated thus not contributing to recreational boat crowding on busy weekends.

4.8.2 Prime Farmland

<u>Alternative A</u>

To determine impacts to farmland, parcels with the potential to be converted to nonagricultural land use must be evaluated. Parcels allocated to Zones 5, 6, or 7 have this potential. Allocations to Zones 3 and 4 would protect farmland from development. Under Alternative A, 6,060 up to 10,585 acres could be allocated to Zones 3 and 4 (see Table 2-5) compared to 13,435.8 acres under Alternative B, and 13,727 acres under Alternative C. There are a total of 259.13 acres that were previously unplanned and 1,070.99 acres on which requests for private water use facilities could be considered because of existing water access rights. In the 1981 Plan (Alternative A), many of the parcels were designated for multiple uses. Many included allocations for future development access. Because of this potential for future development under Alternative A, the farmland on 4,067.9 acres could potentially be converted. The effects of prime farmland were not considered in the 1981 Plan because the FPPA was not created until 1981. Future land use requests for parcels under the 1981 Plan would be evaluated to ensure the proposed request would comply with the FPPA.

Alternative B

For comparison of the impacts of implementing Action Alternative B or C, the parcels allocated for new development, Zones 5, 6, and 7, were evaluated. Only ten parcels meet this criteria for Alternative B. These are Parcels 21, 43, 53, 61, 63, 94, 98, 102, 105, and 118. None are located in Hardin County. Soils which occur in these parcels are listed in Table 4.8-1. The most frequently occurring soil classified as prime farmland is the associated Pruitton-Dullivan silt loam located on slopes from 0 to 2 percent. These soils occupy 57.35 acres of the Colbert County parcels. These very deep, well-drained, nearly level soils are well suited to row crops of cotton, corn, and soybeans, and to grasses and legumes for hay and pasture.

Acreage of prime farmland for each of the parcels allocated for new development by this alternative is listed in Table 4.8-2. A total of 84.84 acres have the potential to be converted. The "Farmland Conversion Impact Rating" was completed with assistance from Bobby Fox, Resource Soil Scientist, of the NRCS-USDA as required by the FPPA (Appendix E). If the total rating exceeds the 160-score threshold, then the FPPA suggests that another site be selected. For the parcels in Colbert County, a relative farmland rating of 90 was assigned, the site assessment score is 58, for a total rating of 148. For the parcel in Lauderdale County, the relative farmland rating assigned is 83, the site assessment rating is 47, for a total score of 130. Both these ratings are below the 160 threshold. The parcel located in Tishomingo County did not contain prime farmland soils. The impact of converting the farmland in these parcels would be insignificant.

Table 4.8-1. Soils Occurring on Parcels With Potential for New Development

County	Parcel No.	Soil Symbol	Soil Description *Prime Farmland	Total Acres
Colbert [1]	43	FbF	Fullerton-Bodine complex, 15-45% slope	3.74
		PUA	*Pruitton and Dullivan silt loams, 0-2% slope	33.11
	53	FaD	Fullerton cherty silt loam, 6-15% slope	14.41
		FbF	Fullerton-Bodine complex, 15-45% slope	46.19
		DaB	*Decatur silt loam, 2-16% slope	13.66
		FaB	*Fullerton cherty silt loam, 2-6% slope	8.46
		PUA	*Pruitton and Dullivan silt loams, 0-2% slope	5.87
	61	FaD	Fullerton cherty silt loam, 6-15% slope	1.54
		FbF	Fullerton-Bodine complex, 15- 45% slope	5.72
		SaF	Saffell-Pikeville complex, 15-45% slope	14.03
	63	SaF	Saffell-Pikeville complex, 15-45% slope	25.18
	94	CbA	*Chenneby silt loam, 0-2% slope	3.41
	98	CnF	Chisca-Nella-Nectar complex, 10-45% slope	3.77
		EtB	*Etowah silt loam, 2-6% slope	1.54
		PUA	*Pruitton and Dullivan silt loams, 0-2% slope	3.09

Table 4.8-1 (cont.). Soils Occurring on Parcels With Potential for New Development				
County	**Parcel No.**	**Soil Symbol**	**Soil Description *Prime Farmland**	**Total Acres**
	102	ChD	Chisca loam, 6-15% slope	0.57
		CnF	Chisca-Nella-Nectar complex, 10-45% slope	3.27
		PUA	*Pruitton and Dullivan silt loams, 0-2% slope	9.46
	105	CnF	Chisca-Nella-Nectar complex, 10-45% slope	1.57
		ShB	Savannah loam, 1-5% slope	0.22
		PUA	*Pruitton and Dullivan silt loams, 0-2% slope	5.82
Lauderdale [2]	21	BoE	Bodine cherty silt loam, 10-35% slope	0.29
		Le	Lee cherty silt loam, level	7.57
		SBF	Saffell and Bodine soils, steep	2.07
		DoA	*Dickson silt loam, 0-2% slope	0.29
		EtB	*Etowah silt loam, 2-8% slope	0.15
Tishomingo [3]	118	SA	Saffell-Smithdale association, hilly	17.91

[1]USDA – Soil Conservation Survey (SCS), Soil Survey of Colbert County, Alabama, 1994
[2]USDA – SCS, Soil Survey of Lauderdale County, Alabama, 1977
[3]USDA – SCS, Soil Survey of Tishomingo County, Mississippi, 1983

Table 4.8-2. Prime Farmland Allocated to Zones 5 or 7 for Alternative B				
County	**Parcel No.**	**Zone**	**Total Acres**	**Prime Farmland Acres**
Colbert [1]	43	7	36.85	33.11
	53	5	88.59	27.98
	61	7	21.29	0.0
	63	7	25.18	0.0
	94	7	3.41	3.41
	98	7	8.39	4.62
	102	7	13.30	9.46
	105	7	7.60	5.82
Lauderdale [2]	21	7	10.36	0.44
Tishomingo [3]	118	7	17.91	0.0
Total			232.88	84.84

[1]USDA – SCS, Soil Survey of Colbert County, Alabama, 1994
[2]USDA – SCS, Soil Survey of Lauderdale County, Alabama, 1977
[3]USDA – SCS, Soil Survey of Tishomingo County, Mississippi, 1983

Alternative C

With regard to impacts to farmland, the only difference between Alternative Bs and C is allocation of Parcel 53. For this alternative, this parcel is allocated to Zone 4, Natural Resource Conservation, and would be protected from development. The total acreage of prime farmland allocated for new development by this alternative is 56.86 acres (Table 4.8-3). As with Alternative B, the associated Pruitton - Dullivan silt loam soils located on slopes from 0 to 2 percent are the most prevalent prime farmland soils. Only one "Farmland Conversion Impact Rating" was completed using the maximum acreage of prime farmland potentially to be converted. Since the ratings which are described for Alternative B do not exceed the 160 threshold score, the rating for Alternative C would not exceed the threshold. Impacts to farmland by selection of this alternative would be insignificant.

Table 4.8-3. Prime Farmland on Parcels Allocated to Zone 7 by Alternative C

County	Parcel No.	Zone	Total Acres	Prime Farmland Acres
Colbert [1]	43	7	36.85	33.11
	57	7	21.29	0.0
	94	7	3.41	3.41
	98	7	8.39	4.62
	102	7	13.30	9.46
	105	7	7.60	5.82
Lauderdale [2]	21	7	10.36	0.44
Tishomingo [3]	118	7	17.91	0.0
Total			119.11	56.86

[1]USDA – SCS, Soil Survey of Colbert County, Alabama, 1994
[2]USDA – SCS, Soil Survey of Lauderdale County, Alabama, 1977
[3]USDA – SCS, Soil Survey of Tishomingo County, Mississippi, 1983

Comparison of Alternatives

The potential for converting prime farmland is greatest with allocations defined by Alternative A, because more acreage is allocated for development zones than by the other alternatives.

Under Alternative C, less acreage of prime farmland is allocated for potential development than under Alternative B, 56.86 compared with 84.84 acres. However, the Farmland Conversion Impact Rating for either alternative is below the 160 threshold. Selection of either Alternative B or C would have insignificant impacts to prime farmland.

Residential access lands containing prime farmland are the most likely parcels to be developed on Pickwick Reservoir. Development of privately-owned land in the adjacent areas could potentially result from these allocations. These indirect impacts are expected to be minimal. Development trends would probably continue as a function of population growth.

4.9 Cultural Resources

A Programmatic Agreement (PA) for the identification, evaluation and treatment of historic properties that are eligible for inclusion in the NRHP on TVA public land has been executed for the state of Alabama and one is under development and will be executed within the state of Tennessee. Until the PA is executed in the state of Tennessee, a phased identification and evaluation procedure will be used. The remaining land in the state of Mississippi will incorporate a phased identification and evaluation procedure to take into consideration the effects on historic properties. Together, these agreements and commitments address all TVA fee-owned land and other land that would be affected by TVA and undertakings associated with the Pickwick Reservoir Land Management Plan. The National Register eligibility for identified historic properties will be evaluated in consultation with the Alabama, Mississippi, and Tennessee State Historic Preservation Officers (SHPOs) and other consulting parties according to stipulations of the PAs and the requirements of Section 106 of the NHPA. Furthermore, mitigation of adverse effects to any historic property will be conducted according to the stipulations in the appropriate PA.

4.9.1 Archeological Resources

The majority of the land (77 percent) has been opportunistically surveyed for archaeological resources, while the remaining land (23 percent) has not been surveyed. Under any of the alternatives, the land that has not been investigated will require a systematic survey in order to identify and evaluate any archaeological resources that may exist. If a land use proposal has the potential to affect archaeological resources, then TVA, in consultation with the SHPO and other consulting parties, would conduct further evaluations to determine the resources' eligibility for inclusion in the NRHP, and appropriate review under Section 106 of the NHPA would be conducted.

Under the No Action Alternative, site-specific activities proposed in the future would be approved, mitigated, or denied according to the significance of the resource. If mitigation is required, appropriate archaeological investigation would be necessary and potentially affected resources would be properly recorded and removed. The 1981 Plan does not provide for specific preservation of archaeological resources; however, TVA will comply with regulatory requirements of NHPA and the Archeological Resources Protection Act (ARPA).

Under Action Alternatives B and C, TVA would incorporate a phased identification and evaluation procedure to take into consideration the effects on historic properties. Early identification of historic properties and allocation to Zone 3, Sensitive Resource Management, would avoid potential adverse effects. This would in turn save time, reduce costs, and ensure more efficient compliance with Section 106 of the NHPA than does Alternative A. Any activity that could affect historic properties would require identification and evaluation surveys pursuant to 36 CFR § 800.

Archaeological resources have been identified in all land plan zones. Under Alternatives B and C, approximately 76 percent of identified archaeological resources are allocated to Zone 3, Sensitive Resource Management, and Zone 4, Natural Resource Conservation, where TVA would emphasis preservation and protection. Approximately 24 percent of the archaeological resources are on land allocated to Zone 2, Project Operations, Zone 5, Industrial/Commercial Development, Zone 6, Developed

Recreation, and Zone 7, Residential Development. Activities proposed in Zones 2 through 7 would require further environmental and Section 106 review prior to the implementation of a project.

Alternatives B and C propose differing zone allocations for three parcels that contain approximately 145 acres. There is one known archaeological site located within this acreage. Alternatives B would allocate this site in Zone 5, Industrial/Commercial Development. Alternative C would place the known archaeological site and any unrecorded archaeological sites into Zone 4, Natural Resource Conservation. Alternative C would protect more historic properties by reducing the potential for adverse effects that may be associated with industrial or recreational development.

Fewer archaeological resources would be affected under Alternatives B or C than under Alternative A because many recreation parcels would be allocated to Zone 4, Natural Resource Conservation, or Zone 3, Sensitive Resource Management, and, therefore, subject to less proposed disturbance. Between Alternatives B and C, Alternative C would slightly more protective of archeological resources than Alternative B because of the placement of three parcels in Zone 4, Natural Resource Conservation, under Alternative C.

4.9.2 Historic Structures

Under the No Action Alternative, site-specific activities proposed in the future would be approved, mitigated, or denied according to the significance of any historic structures. This would require a survey of the APE to determine what features exist on TVA public land or adjacent non-TVA public land.

Under Alternatives B and C, all uncommitted TVA public land with historic structures would be allocated to Zone 3, Sensitive Resource Management, or Zone 4, Natural Resource Conservation, for protection. Alternatives B and C place more historic resources in land use categories that will provide cultural resource protection than Alternative A. There does not appear to be significant differences between Alternatives B and C for historic structures with information currently known. Under all alternatives, assessment under Section 106 of the NHPA would take place for any proposed activities that have the potential to affect historic resources identified on or adjacent to TVA parcels.

Under all three alternatives, Parcel 36 is allocated to Zone 5, Industrial/Commercial Development. This parcel includes remnants of the old Muscle Shoals Canal, and the later Lock No. 1 of the Wilson Dam complex. All soil-disturbing activities, such as dredging, shoreline excavations, etc., would need to be reviewed for remains of these historic features. Parcel 41 is allocated to Zone 7 and includes the former Keller Quarry Landing. A stack of large quarried stones is present. Though most of the stones are possibly on private land, portions are on TVA public land. All activities along this shoreline would need to be reviewed for effects on these cultural resources. Parcels 26, 61, 63, and 66 are allocated to Zones 6 and 7. Along this shoreline, generally under water, is the Colbert Shoals Canal (see Section 3.9). Any activities involving offshore dredging or below-surface excavation will need to be reserved to avoid impacts to this resource. Parcels 67 and 68 are allocated to Zones 3 and 7. The former river port town

of Riverton is located here. Dredging in the vicinity of the previous streets would need to be avoided. For Parcel 156, the White Sulphur Springs cabins are currently owned by the individual leasees, who can legally make any alterations to the cabins, including demolition. Therefore, the action of selling the land to the cabin owners would not result in any adverse impact. However, sale of the land could give the cabin owners expanded options. Should this be determined an adverse effect by the TN SHPO, TVA will negotiate mitigation measures with the SHPO. Beneficial mitigation could be documentation of these cabins before they inevitably are changed. Information including interior and exterior photographs with a basic floor plan should be collected and put in a report for limited distribution.

Cumulative impacts, both adverse and positive, are always a reality concerning historic structures. This is further complicated because most of these historic structures are not on TVA public land but are on adjacent private property. What TVA does on an individual tract could have a ripple effect on what happens on adjacent private land. For instance, if TVA enhances a tract which in turn encourages nearby residential development, then the possible historic farm complex becomes subdivided for lots; then the farm buildings are abandoned and demolished; the remaining historic farmhouse may or may not survive, but has lost its historic setting. These cumulative impacts would be addressed while assessing the impact of any undertaking proposed in the future.

4.10 Air Quality

Industrial/Commercial Development

Any new or expanding industrial or commercial facilities would be required to meet applicable federal and state requirements in effect at the time of their development or expansion. Any facilities on TVA public land or facilities in the surrounding area with potentially significant air pollutant emissions would be required to obtain an air quality permit from the applicable state. The permit application and review process would evaluate the magnitude of air emissions from the proposed source and from existing sources, meteorological factors that affect dispersion of the pollutants, and the potential for effects on areas with special air quality requirements, such as nonattainment areas and PSD Class I areas. The appropriate level of environmental review would be conducted for future specific proposed actions involving TVA-controlled land. Commitments or restrictions, such as covenants to mitigate potential impacts, could result from these reviews. Effects from site preparation and construction activities, from post-construction traffic, and from operation of minor sources would be similar to those discussed below for residential development and the same state rules would apply.

Residential Development

For any TVA allocation decisions, including residential development, any direct, indirect, and cumulative air emissions impact is to be minimized. Pollution from fossil-fuel combustion in construction equipment, fugitive dust emissions from operation of this equipment during dry conditions, increased traffic during construction, and any open burning would cause some minor and temporary air quality degradation in the vicinity of the reservoir. However, State air pollution rules require construction projects to use reasonable precautions to prevent fugitive dust emissions and to avoid open burning under adverse conditions such as air quality advisories or fire alerts. After construction is completed, normal residential activities, such as using wood stoves, fireplaces, and

gas-powered, grounds-keeping equipment, and increased traffic would contribute somewhat to deterioration in local air quality but would have little or no impact on regional air quality.

No Action Alternative (Alternative A)

Under Alternative A, the 1981 Plan would remain in place which currently guides land use decisions on TVA public land surrounding Pickwick Reservoir. The 1981 Plan used 10 allocation categories which would continue to be used by TVA to make land use decisions. A total of 434 up to 2,499.6 acres could be considered for Industrial/Commercial Development and the 1981 Plan did not allocate residential shoreline or other shoreline strips along the reservoir. Appropriate level of environmental reviews would be done to document the extent of expected air quality impacts whenever a proposed land use request is received.

Alternatives B and C

Under Alternatives B and C, TVA would update land allocations using resource data, computer analyses, stakeholder input, and TVA staff input to generate a proposed mix of land allocations. Under Alternative B, 534.45 acres would be allocated to Zone 5, Industrial/Commercial Development. Under Alternative C, 450.34 acres would be allocated to Zone 5, Industrial/Commercial Development. An environmental review would be performed for each expansion or development proposal to document that insignificant impacts on air quality would be expected.

4.11 Navigation

Alternative A

The current land plan identifies and allocates shoreline for seven safety landings and harbors on Pickwick Reservoir. TVA prohibits the construction of water-use facilities and shoreline alterations within the marked limits of safety landings and harbors. The only acceptable shoreline alteration within these limits would be the placement of riprap for control of erosion. Under this alternative, the safety landings would continue to be available for use by the towing industry and private recreational vessels, and there would be no impact on commercial and recreational navigation.

Alternatives B and C

Under Alternatives B and C, the land use allocation for the shoreline area where the safety landings and harbors are located would include an allocation for the continued use of the facilities and would have little impact on navigation. To avoid interference with commercial navigation, the current practice of prohibiting the construction of water use facilities and shoreline alterations within the marked limits of the safety landings and harbors would be continued. In addition, requests for water use facilities on shoreline immediately upstream and downstream of the safety landings and harbors would continue to be reviewed to ensure that barge tows would have sufficient room to maneuver in and out of the safety landings and harbors without the risk of damaging private property.

4.12 Recreation

Alternative A

Under the 1981 Plan, the only two recognized activities for Developed Recreation were boat ramps and campgrounds. The 1981 Plan does not consider recent public input in the management of public land nor the benefit of approximately 20 years of public land management experience since the 1981 Plan was prepared.

Alternatives B and C

Under these alternatives, land with concentrated, active recreation activities that require capital improvement and maintenance would be allocated to Zone 6, Developed Recreation. The allocation of Parcel 128 to Zone 3, Sensitive Resource Management, would provide a buffer for the large amount of recreational and commercial boating traffic at that location. Existing uses such as state and local government recreation developments are recognized, and public comments considered.

Under Alternative B, informal public use of 1,351.78 acres in Zone 3 and 12,078.52 acres in Zone 4 categories is continued. Parcel 37 would be allocated to Zone 6, Developed Recreation, to accommodate the city of Florence's request for public recreation facilities including trails and an overlook.

Under Alternative C, informal public use of 1,351.78 acres in Zone 3 and 12,219.60 acres in Zone 4 would be continued. More land is allocated to Zones 3, Sensitive Resource Management, and 4, Natural Resource Conservation, and less land to Zone 6, Developed Recreation, under Alternative C than under Alternative B. Under Alternatives B and C, Parcel 85 would be allocated for future public recreation development. It currently receives considerable informal camping and day use pressures. Public requests for additional boat access areas can be accommodated in existing Zone 6 areas and also are compatible with Zone 4, Natural Resource Conservation, areas including the Lauderdale and Seven Mile Island WMAs. The cumulative effects of either alternative are insignificant. Under either action alternative, TVA would respond to inquiries for new public recreation opportunities on a case-by-case basis and would seek partnerships with other public entities to develop, manage, and maintain the facilities.

4.13 Visual Resources

Impacts to the visual resources throughout Pickwick Reservoir are assessed on the basis of how proposed actions will affect the visual character as viewed by observers.

Alternative A

Under the No Action Alternative, areas were designated for visual protection to encourage management techniques that would result in either no change or a positive change to the visual character. Under this alternative, requests for land use would continue to be processed and assessed on a case-by-case basis. This would provide minimal oversight in regard to the visual resource management of the entire reservoir. Increasing development and disturbance would further generate adverse visual contrast and congestion. The site specific reviews would have to include evaluation of

cumulative impacts to satisfy the objective of either change or a positive change to the visual character throughout the reservoir.

Alternatives B and C

Public comments were considered when parcels were inventoried and analyzed for scenic attractiveness and integrity. Generally, land that is appreciated for its intrinsic visual quality is also the most sought after for private development. Alternatives B and C would address the protection and preservation of valued scenic resources by allocating parcels in one of two categories.

- Parcels with the highest scenic attractiveness and scenic integrity would be allocated to Zone 3, Sensitive Resource Management. Parcels would be managed in a manner that preserves and protects sensitive and unique visual resources. This approach would serve to balance increasing development throughout the reservoir and provide observers with unaltered, naturally appearing landscapes.

- Parcels with similar, but less outstanding and less distinct, visual resources would be allocated to Zone 4, Natural Resource Conservation. Under this allocation, land that is valued for landscape character would be more accessible to the public by allowing low-impact human alteration without significantly altering the established visual character of the area.

Public comments showed more concern about the environment and scenic areas (see Appendix A). Alternatives B and C would address the concerns voiced in public meetings by protecting visual resources and managing public land to preserve naturally appearing landscapes. Under Alternatives B and C, 13,430 and 13,571 acres would be allocated to Zones 3, Sensitive Resource Management, and 4, Natural Resource Conservation, respectively. Compared to Alternative A, this is an increase of up to 38.3 and 39.0 percent, respectively. Both alternatives would provide protection for existing visual resources with little cumulative impact. As acknowledged in the public comments, current development patterns and construction practices can often adversely impact the visual resources of Pickwick Reservoir. Therefore, under Alternative B, requests for the alteration or development of Parcel 156 would need to include mitigation measures, such as vegetation management plans, use of architecturally compatible styles/colors, and height restrictions to maintain the scenic attractiveness without adversely impacting the scenic integrity. Alternative C would maintain scenic integrity and attractiveness at a moderate to high level with the least impact. This alternative would provide for the greatest protection of naturally appearing landscapes.

4.14 Socioeconomic Impacts

Under the No Action Alternative, Alternative A, TVA would continue to follow the 1981 Plan. Two alternative actions, B and C, have been proposed. These two differ very little in terms of the acreage allocated to various land use zones. Hence, there would be no important differences between Alternatives B and C with regard to socioeconomic impacts. However, the differences between Alternatives B and C and Alternative A in terms of land use do have socioeconomic implications. The major changes in proposed land use under B and C include (1) a 5.2 percent increase (142 acres) in Zone 2, Project Operations, (2) up to a 78.7 and 82.2 percent decline (1,970 and 2,055 acres) in Zone 5, Industrial/Commercial Development, and (3) up to a 45.6 and 53.8 percent decline

(1,130 and 1,166 acres) in Zone 6, Developed Recreation, respectively. These percentages reflect the change in acreage allocated to the zone. For example, Zone 2 has increased by 5.2 percent (from 2,718 to 2,861 acres), using the original acreage for a given zone as the baseline. The second and third major changes have socioeconomic implications.

The decline in land allocated to Zone 5, Industrial/Commercial Development, may result in the creation of fewer manufacturing jobs compared with Alternative A. The decline in land allocated to Zone 6, Developed Recreation, may result in the creation of fewer retail and service jobs. Any loss of potential manufacturing jobs is likely to be of greater economic significance than in the loss of potential retail and service jobs associated with a decline in recreational development opportunities for two reasons: (1) manufacturing jobs tend to be higher paying, (2) manufacturing firms tend to have greater indirect economic impacts on the surrounding area.

However, the loss of potential jobs and any associated decline in income relative to Alternative A would not materialize if comparable, alternative development sites exist within the four-county area. In this case, development could shift from reallocated Pickwick Reservoir land to other sites in the area. It is even possible that other sites would be the first choice for development anyway. Existing industrial development sites (land that is currently being marketed) in the four-county area total over 3,500 acres, compared with the approximately 2,000 acres of industrial/commercial zoned land that could be potentially lost under Alternatives B and C. The majority of this acreage is located in Tishomingo and Lauderdale Counties. Unless much of this acreage becomes unavailable, it will likely be able to absorb most of the development that might otherwise have occurred in the Pickwick Reservoir area. This land even includes considerable waterfront acreage, which is one feature of Pickwick Reservoir land that is not always duplicated at other sites.

4.15 Environmental Justice

TVA is not aware of any minority or lower income communities adjacent to its properties that would be affected by the allocations. Any socioeconomic impacts associated with development projects under any of the alternatives are unlikely to disproportionately affect minorities or the poor, given the lower percentage of these groups in the area as compared with the three states home to the Pickwick Reservoir counties.

The determination of (the potential for) disproportionate adverse health and environmental effects on minority or poor populations hinges on the geographic scale of analysis and the reference population. Minorities and those living below the poverty level in the four-county area make up a smaller percentage of the population than they do in the three-state area, whereby no disproportionate effects are possible at this scale. The total minority and poor population in just those census tracts that include retained TVA public land on Pickwick Reservoir is similarly proportionately less than (or no more than) the same population groups in the four-county area and the three-state area. Again, at this level, disproportionate effects are precluded. A comparison of these census tract populations with just the population of the county in which they are located indicates that total minority and poor populations in these census tracts within Colbert, Hardin, and Tishomingo counties are not disproportionately high. However, those census tracts in Lauderdale County have a slightly higher proportion of minorities and

poor (15.7 and 17.4 percent versus 12.2 and 14.6 percent) than the county as a whole. Any development project requiring TVA approval would receive the appropriate level of environmental review, including environmental justice review.

4.16 Other Issues - Noise

The greatest potential for community noise impacts comes from industrial and commercial development, commercial transportation, and, to a lesser extent, from commercial recreational development. In comparing the land use allocations in Alternatives B and C, the potential for community noise impacts is substantially reduced because of the large potential decrease in land available for noise-producing activities compared to Alternative A. Under Alternatives B and C, the land available for Zone 5, Industrial/Commercial Development, could change from an increase of about 99 acres to a decrease of up to 2,055 acres. Any potential increase would not likely be new industrial/commercial land, but would be adjacent to current industrial/commercial land with similar activities, and its potential for increased noise effects would be insignificant. The decrease of up to 2,055 acres would significantly lower the potential for future noise effects. Decreasing the industrial/commercial allocation would also reduce the potential for noise impacts from commercial transportation in those areas.

Maximum land allocated for Developed Recreation will decrease if either Alternative B or C is approved. These reductions range up to 1,131 acres for Alternative B and 1,166 acres for Alternative C. The Zone 7, Residential Access, allocations of 1,085 and 1,064 acres for Alternatives B and C have no base for comparison, since residential was not a classification in the 1981 allocation categories. Noise from new residential development should follow the established noise patterns of the reservoir. New residents will use the reservoir for recreation, such as boating, at the same time current users do, usually in the warm months and on weekends. This would cause an insignificant effect on the noise environment.

There is a substantial increase in the land allocated to Sensitive Resource Management and natural resource conservation. This would decrease the potential for noise effects in those allocations.

Based on the amount of TVA public land available for development and the additional environmental evaluations, there would be no—or an insignificant increase in the potential for—community noise impacts from implementation of the action alternatives in comparison with Alternative A; Alternative C would have the least impacts.

4.17 Unavoidable Adverse Effects

Because of the requirement that site-specific environmental reviews will be conducted prior to implementation, there are currently few, if any, adverse environmental effects which cannot be avoided should Alternative B or C be implemented. However, regional development trends, such as residential shoreline development, will continue to result in losses of aquatic and terrestrial habitat. These losses would occur anyway and are not related to implementation of the Plan.

Under Alternative A, Parcel 128, an uncommon plant community (open cliff face dominated by alumroot) would be under some threat from future development. Impacts

to terrestrial ecological resources would be potentially significant because of this threat. Significant impacts to state-listed plant species would be expected. Because of the potential for future development under Alternative A, the farmland on 4,067.9 acres could potentially be converted.

Under Alternatives B and C, Parcel 128 would be allocated to Zone 3 (Sensitive Resource Management). This allocation would afford protection to the state-listed species that occur here. Therefore, impacts to state-listed plant species are expected to be beneficial. The decline in land allocated to Zone 5, Industrial/Commercial Development, may result in the creation of fewer manufacturing jobs compared with Alternative A. The net consequence of Alternative B and C is likely to be lower per capita income growth for the Pickwick Reservoir area.

4.18 Relationship of Short-term Uses and Long-term Productivity

Commitments of the shoreline to residential access, commercial, industrial, and some types of recreational development are essentially long-term decisions that would decrease the productivity of land for agricultural, forest, wildlife, and natural area management. Long-term productivity decreases would likely be greatest under Alternative A. As described in earlier sections, the types of changes that occur with residential development would result in a decline in the habitat quality for some terrestrial species and increase the habitat for others. Many of the water-related impacts of shoreline development could be minimized by the use of appropriate controls on erosion, added nutrients, and pesticide input.

Increased residential development could occur under all alternatives and result in population increase along the shoreline. New jobs and income would be generated by the spending activities of these new residents, leading to enhanced long-term socioeconomic productivity. This would be the case as long as the desirable features that prompted their move to the shoreline were maintained or enhanced.

4.19 Irreversible and Irretrievable Commitments of Resources

Irretrievable use of nonrenewable resources (i.e., fuel, energy, and some construction materials) could occur under Alternatives A, B, and C due to residential shoreline development as well as commercial, industrial, and some types of recreational development. The residential development would result in region-wide population increase. This means that the same development could occur somewhere else in the region. Therefore, use of most (if not all) of these resources could occur somewhere else in the region to provide the same residential development services regardless of the alternative chosen.

As shoreline is converted to residential, commercial, industrial, and some types of recreational use, the land is essentially permanently changed and not available for agricultural, forestry, wildlife habitat, natural area, and some recreation uses in the foreseeable future. This is an irreversible commitment of land which would occur under all alternatives; over the long term, it would likely be greater in magnitude under Alternative A.

4.20 Energy Requirements and Conservation Potential

Energy is used by machines for fuel to maintain grassy areas on the dam reservation and by the operation of the hydroelectric plant located at Pickwick Landing Dam. There are no short-term energy uses required for the dam reservation as it is already established.

Energy is also used by machines to maintain areas set aside for Natural Resource Conservation. Although these activities are not likely to have much influence on regional energy use demands either, there would be some short-term energy use for fuel to conduct prescribed natural resource conservation activities, such as mowing, timber management, controlled burning, disking, planting of small grain crops, etc. Alternative C would have a greater requirement for this type of energy use, since it contains the largest amount of acreage allocated for Natural Resource Conservation.

Comparable amounts of TVA public land (6.3 up to 7.0 percent) are allocated to Zone 3, Sensitive Resource Management, under all three alternatives. Some areas set aside for protection of archeological sites could potentially be maintained by mowing, light disking, or controlled burning. There would be some short-term energy use of fuel for machines to conduct these types of activities. The level of these activities is considered minimal.

4.21 Mitigation Commitments

The following commitments would be used in preparing the Record of Decision for the FEIS.

Under all alternatives:

- All soil-disturbing activities, such as dredging, shoreline excavations, etc., on Parcels 26, 36, 41, 61, 63, 66, 67, and 68 would be conducted in a manner to avoid impacts to cultural resources.
- The construction of water use facilities and shoreline alterations within the marked limits of the safety landings and harbors would be prohibited.
- Requests for water use facilities on shoreline immediately upstream and downstream of the safety landings and harbors would continue to be reviewed to ensure that barge tows would have sufficient room to maneuver in and out of the safety landings and harbors without the risk of damaging private property.
- Because caves are extremely fragile and biologically significant, TVA has placed and would continue to maintain protective buffer zones around each of the known caves on TVA public land on Pickwick Reservoir.

Under Alternative B:

- Wetlands on Parcel 37 would be mitigated by avoiding wetland areas, including small upland buffers.
- Corridors for water access across Parcel 53 would be designed to avoid impacts to terrestrial habitat and wetlands.

- Requests for the alteration or further development of this Parcel 53 would need to include BMPs and maintenance of a 50-foot SMZ to reduce potential impacts.
- Should TN SHPO determine an adverse effect for the allocation of Parcel 156 to Residential Access, TVA will negotiate mitigation measures with the SHPO.
- Requests for the alteration or development of Parcel 156 would need to include mitigation measures, such as vegetation management plans, use of architecturally compatible styles/colors, and height restrictions to maintain the scenic attractiveness without adversely impacting the scenic integrity.

5.0 Supporting Information

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5.4 Glossary

100-year floodplain - The area inundated by the 1 percent annual chance (or 100-year) flood.

agricultural licensing - Some parcels or portions of parcels designated for other purposes or uses may also be suitable for interim agricultural licensing. These parcels have been identified, using the criteria contained in TVA's agriculture instruction. Normal tenure for a TVA agricultural license is five years. Land with extreme erosion potential may not be licensed for agricultural use unless erosion and sediment controls, including the use of BMPs, can be successfully implemented. Further investigation and/or mitigation of adverse impacts to natural or cultural resources may be required prior to approval of license agreements.

attainment areas - Those areas of the U.S. that meet National Ambient Air Quality Standards as determined by measurements of air pollutant levels.

benthic - Refers to the bottom of a stream, river, or reservoir.

cumulative impacts - Impacts which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7).

dam reservation - Lands generally maintained in a park-like setting by TVA to protect the integrity of the dam structure, hydroelectric facilities, and navigation lock. The reservation also provides for public visitor access to the TVA dam facilities and recreation opportunities, such as public boat access, bank fishing, camping, picnicking, etc.

direct impacts - Effects which are caused by the action and occur at the same time and place (40CFR 1508.4).

dissolved oxygen - The oxygen dissolved in water, necessary to sustain aquatic life. It is usually measured in milligrams per liter or parts per million.

drawdown - Area of reservoirs exposed between full summer pool and minimum winter pool levels during annual drawdown of the water level for flood control.

dredging - The removal of material from an underwater location, primarily for deepening harbors and waterways.

embayment - A bay or arm of the reservoir.

emergent wetland - Wetlands dominated by erect, rooted herbaceous plants, such as cattails and bulrush.

endangered species - Any species in danger of extinction throughout all or a significant portions of its range or territory.

floodplains - Any land area susceptible to inundation by water from any source by a flood of selected frequency. For purposes of the National Flood Insurance Program, the floodplain, as a minimum, is that area subject to a 1 percent or greater chance of flooding (100-year flood) in any given year.

flowage easement tracts - Privately owned lakeshore properties where TVA has (1) the right to flood the land as part of its reservoir operations, (2) no rights for

vegetation management, and (3) the authority to control structures, under Section 26a of the TVA Act.

fragmentation - The process of breaking up a large area of relatively uniform habitat into one or more smaller, disconnected areas.

indirect impacts - Effects which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR 1508.4).

mainstream reservoirs - Impoundments created by dams constructed across the Tennessee River.

marginal strip - The narrow strip of land owned by TVA between the water's edge and the adjoining private property, on which the property owner may construct private water use facilities upon approval of plans by TVA.

maximum shoreline contour - An elevation typically 5 feet above the top of the gates of a TVA Dam. It is often the property boundary between TVA marginal strip property and adjoining private property.

National Ambient Air Quality Standards - Uniform, national air quality standards established by the Environmental Protection Agency that restrict ambient levels of certain pollutants to protect public health (primary standards) or public welfare (secondary standards). Standards have been set for ozone, carbon monoxide, particulates, sulfur dioxide, nitrogen, nitrogen dioxide, and lead.

physiographic provinces - General divisions of land with each area having characteristic combinations of soil materials and topography.

plan tract - A numbered parcel of TVA fee-owned land which, prior to the plan, has had no long-term commitments affecting future land uses as assigned through the reservoir land planning process.

prime farmland - Generally regarded as the best land for farming, these areas are flat or gently rolling and are usually susceptible to little or no soil erosion. Prime farmland produces the most food, feed, fiber, forage, and oil seed crops with the least amount of fuel, fertilizer, and labor. It combines favorable soil quality, growing season, and moisture supply and, under careful management, can be farmed continuously and at a high level of productivity without degrading either the environment or the resource base. Prime farmland does not include land already in or committed to urban development, roads, or water storage.

riparian zone - An area of land that has vegetation or physical characteristics reflective of permanent water influence. Typically a streamside zone or shoreline edge.

riprap - Stones placed along the shoreline for bank stabilization and other purposes.

riverine - Having characteristics similar to a river.

Section 26a review process - Section 26a of the TVA Act requires TVA review and approval of plans for obstructions, such as docks, fills, bridges, outfalls, water intakes, and riprap, before they are constructed across, in or along the Tennessee River and its tributaries. Applications for this approval are coordinated appropriately with TVA programs and USACE. USACE issues a joint public notice for those applications that are not covered by a USACE nationwide, general, or regional permit. The appropriate state water pollution control agency must also certify that the effluent from outfalls meets the applicable water quality standards.

scrub-shrub - Woody vegetation less than about 20-feet tall. Species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions.

shoreline - The line where the water of a TVA reservoir meets the shore when the water level is at the normal summer pool elevation.

Shoreline Management Zone - A barrier of permanent vegetation established or left undisturbed around a reservoir in order to buffer the adverse impacts resulting from development and increased human activity.

significant cultural resources - Some of the parcel descriptions state that "the parcel contains significant cultural resources" or that "cultural resource considerations may affect development of the parcel." However, many of the parcel descriptions contain no reference to archaeological or other cultural resources. The lack of such references within a parcel description does not necessarily indicate that significant cultural resources do not exist. The use of any parcel for developmental purposes may require additional archaeological testing or mitigation of adverse impact to archaeological sites. The costs of required testing or mitigation would be the responsibility of the developer.

stratification - The seasonal layering of water within a reservoir due to differences in temperature or chemical characteristics of the layers.

substrates - The base or material to which a plant is attached and from which it receives nutrients.

summer pool elevation - The normal upper level to which the reservoirs may be filled. Where storage space is available above this level, additional filling may be made as needed for flood control.

tributary reservoirs - Impoundments created by dams constructed across streams and rivers that eventually flow into the Tennessee River.

turbidity - All the organic and inorganic living and nonliving materials suspended in a water column. Higher levels of turbidity affect light penetration and typically decrease productivity of water bodies.

upland - The higher parts of a region, not closely associated with streams or lakes.

wetlands - As defined in *TVA Environmental Review Procedures*, "Wetlands are those areas inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances do or would support a prevalence of vegetation or aquatic life that requires saturated or seasonably saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas, such as sloughs, potholes, wet meadows, mud flats, and natural ponds.

5.5 Index

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Appendix A - Public Scoping and Summary Report

Pickwick Reservoir Land Management Plan

Summary of Public Participation

Tennessee Valley Authority

Resource Stewardship

July 2001

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Overview

From March 2001 through May 2001, public participation was sought to assist the Pickwick Watershed Team in developing a land management plan to identify specific future uses for TVA managed lands around Pickwick Reservoir. To gather public input regarding Pickwick public land, TVA hosted four separate public meetings. A total of 203 participants attended public meetings in Memphis, Tennessee; Iuka, Mississippi; Pickwick Landing State Park, Tennessee; and Muscle Shoals, Alabama. In addition, 115 questionnaires were completed regarding preferences around Pickwick Reservoir (see Attachment I). This report provides a summary of all comments received during public participation opportunities.

Public Meeting Input:

During the public meetings, participants were asked to respond to the following questions:

> *Are there any parcels of land that should be changed from the proposed allocations? What do you suggest they be changed to and why?*
>
> *Looking at the TVA public lands on Pickwick, what type of uses would you like to see occur?*

Participants were divided into small groups and responses to these questions were recorded on flip-charts. Duplicate comments were not recorded; therefore, a comment recorded on the flip chart may have been endorsed by one person, several persons, or the entire group. The process was as follows:

> Respondent #1 offers a comment regarding "X."
>
> The note-taker records the comment verbatim.
>
> Respondent #2 offers a comment regarding "X."
>
> Respondent #2 is asked whether the initial comment regarding "X" reflects their opinion.
>
> If yes, the comment is not recorded a second time.
>
> If no, Respondent #2's comment is recorded verbatim.

Following the meeting, all comments were transcribed verbatim for analysis. For clarity, some comments required minor editing (e.g., adding words for context); all edits are denoted by brackets ([…]).

The Pickwick Watershed Team also received comments via questionnaires (i.e., comments included with the questionnaire) and letters—these comments were also transcribed for analysis and combined with the meeting comments. Questionnaires were distributed at the public meeting or mailed to individuals on the Pickwick Mailing List. Respondents were asked to rate their preference regarding services, facilities, and recreation around Pickwick Reservoir.

Additional Public Input:

In addition to conducting public meetings, TVA advertised public participation opportunities (i.e., through local newspapers, paid ads, individual letters, Notice of Intent in the Federal Register) encouraging individuals to submit comments regarding the Pickwick Reservoir Land Management Plan. The Pickwick watershed team received comments via phone-calls, e-mails, and letters.

Analysis:

Using qualitative methodology and software (i.e., Ethnograph), all public comments were compiled and analyzed to identify the range of issues and concerns that should be considered as part of the public scoping process. Though some comments may be appropriately categorized into several categories (e.g., opposition to development and preservation of natural resources), each comment was categorized by what was considered its major issue. Therefore, comments were only categorized into one theme. Questionnaire results were computed using quantitative software (i.e., Statistical Package for the Social Sciences).

Report Overview

This report is divided into three parts:

Part I

All comments gathered from public meetings, questionnaires, and written correspondence are listed in Part I. Each comment is identified by the issue it represents (e.g., development, recreation), a parcel it references (if applicable), and its source (i.e., public meeting location, questionnaire, or letter). Miscellaneous questions from respondents are included at the conclusion of Part I.

Part II

All comments that referenced a specific parcel of land are listed in Part II. Although these comments are also seen in Part I, Part II allows the reader to efficiently identify all comments associated with a specific parcel.

Part III

Public meeting participants and other stakeholders completed a questionnaire regarding preferences around Pickwick Reservoir. Results of this questionnaire are presented in Part III of this report.

Summary

Overall Public Comment Themes:

From all the comments provided, eleven (11) predominant themes or general issues were identified: Development, Economy, Land Management, Land Use Allocation, Policing, Preservation, Proposals (i.e., Montana Land Exchange, White Sulphur Springs cabin sites), Programs/Partnerships, Public Involvement, and Recreation. Of these, most comments concerned Recreation, Natural Resource Preservation, Land Use Allocation, Development, and Proposals.

Summary of Predominant Themes:

Recreation

The majority of comments focused on recreation (e.g., water recreation, recreational opportunities, limiting recreation). Of these issues, topics revolving around water recreation were the most common. Opinions were divided between respondents who expressed a need for more water recreation opportunities/facilities and respondents who requested greater restrictions on water recreation. For instance, those in favor of more water recreation expressed a need for more boat ramps, marinas, access points, dry stack storage, or pump-out stations. Other respondents expressed concern about increased boat traffic and its potential consequences on the environment (e.g., water pollution, erosion, noise) and safety (e.g., unsafe speed, under-aged boaters).

Natural Resource Preservation

Many respondents also expressed concern for the preservation of natural resources (e.g., natural areas, wildlife habitat, wetlands) and the ways in which these resources may be compromised by increased development (e.g., loss of sensitive habitat, clear-cutting of land). Erosion caused by wave action from boats was also a concern among many respondents.

Development

Another major issue involved development (e.g., limiting or stopping development, increasing development). Participants commented on the need to limit or stop industrial, commercial (e.g., hotels, marinas, boat houses) and residential development (e.g., condominiums, mansions). They also expressed concern for the destruction of natural surroundings due to continued development.

Land Use Allocations & Proposals

Many respondents expressed opposition to the Montana Land Company Land Exchange Proposal. Opponents expressed concern that it would endanger wildlife and over-populate the area. Proponents of the land exchange expressed that it would result in an increased tax base and a net acreage gain in shoreline with no upset to the ecological balance in the area.

Summary of Public Comments by Parcel:

TVA received comments regarding 29 specific parcels of land around Pickwick Reservoir. Many of the comments referenced the following parcels; 4/5, 8, 9, 26, 53, and 133, 134 and 141. When a specific parcel was referenced, most comments involved a request for specific land use allocation (e.g., change the allocated zone, maintain the zone as is).

4 and 5: Participants from the Pickwick and Iuka public meetings primarily expressed a need to see these parcels maintained for natural resource preservation. In addition, many participants from the Memphis and Pickwick meetings opposed the Montana Land Co. Land Exchange proposed for these parcels while other respondents from the Memphis, Pickwick, and Iuka meetings supported the land exchange.

8: Respondents (primarily from the Memphis public meeting) preferred this parcel to remain public (i.e., with road access, boat ramp, primitive campsites, and hiking trails) in association with natural resource management.

9: Memphis public meeting attendees indicated a preference for more recreational opportunities (e.g., road access, boat ramp, primitive campsites, and hiking trails) in association with natural resource management.

26: Individuals commenting on this parcel preferred the sensitive habitat and archeological sites in the area be maintained.

53: Participants from Muscle Shoals expressed that this parcel would be appropriate for industrial development; others reported that a vegetative buffer was needed in the commercial areas as well as more recreational opportunities (i.e., trails for hiking).

133 and 134: Several participants questioned and/or expressed concern for a potential plan to build a casino on this parcel.

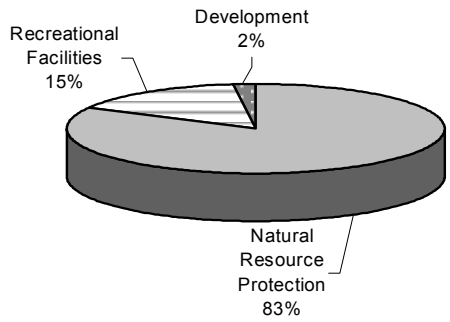
141: Participants from the Pickwick and Memphis public meetings expressed concern over the erosion and pollution associated with this parcel and wished to see the parcel preserved.

Summary of Questionnaire Results:

Respondents were asked to indicate their preferences regarding facilities, areas, and services throughout the Pickwick area. Respondents indicated the level of change needed using the following categories: a) need more; b) about the right amount; or c) need less. The needs identified by the public are shown in the figures below.

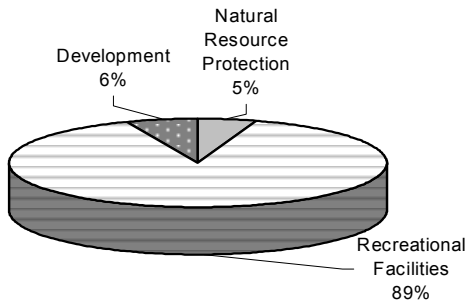
Many respondents expressed a *need for more* recreation facilities in the form of fishing piers, dirt and paved hiking trails; natural resource conservation uses in the form of observation areas and study areas, protection of water, shoreline, wetlands, endangered species, cultural artifacts, and public land; and development in the form of public works projects. The proportion of responses for the *need more* category is shown in Figure 1.

Figure 1: Need More



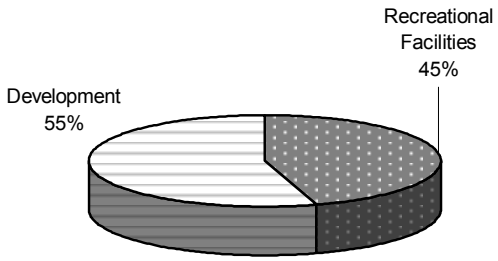
Many respondents indicated that the *right amount* of recreational facilities in the form of boating facilities, beaches, public recreational areas, trails, lodging, museums, hunting areas, equestrian trails, campgrounds, and brochures/signs; natural resource protection in the form of ecological study areas; and development in the form of public work projects exists. The proportion of responses for the *right amount* category is shown in Figure 2.

Figure 2: Right Amount



Some respondents expressed a need for less recreational facilities in the form of hunting areas and boat storage and industrial/economical development. The proportion of their responses are shown in Figure 3.

Figure 3: Need Less



Part I:
Public Comments Identified by Issue

ISSUE	COMMENT	PARCEL	SOURCE
	DEVELOPMENT		
Favor Development	Good for industrial development	53	Muscle Shoals
	Make commercial sites available for public bid or for development		Muscle Shoals
	In favor of commercial development along the shoreline		Muscle Shoals
	Change Parcels 3 and 4 to allow development—it will help the economy for years to come—we need more residential	3; 4	Pickwick
	The Yellow Creek State Inland Port Authority Board of Directors agree with the proposed allocation of Industrial Property for Parcel 140. This parcel contains the port operating facilities and several industrial buildings and has substantial acreage available for future industrial prospects. We are working with TVA to market this property to industrial clients, and the continued designation as "Industrial Property" is critical to our success.	140	Letter—Yellow Creek State Inland Port Authority
Infrastructure Needs	When areas develop, there are infrastructure needs		Iuka
	Need more recreation infrastructure	Second Creek	Muscle Shoals
	Set aside rustic residential area		Memphis
Limited Development	[Need] strict guidelines to protect areas—development standards appear to be lacking—TVA needs standards to be mandated where development is allowed		Memphis; Pickwick
	[Would like to] see a goal set for a percentage of undeveloped land—would like to see limited development		Iuka
	Industrial development should be considered in specific areas [only]		Iuka
	Interested in things staying the same but staying flexible enough to consider individual cases—have to recognize various demands on the river (development and conservation)		Iuka
	Need contact clause on TVA land sales citing restrictions on future use and land clearing and non interference of navigation aids		Questionnaire
	[…] EIS should address alternative to economic development adjacent to, or ancillary to the TVA parcels. Alternatives to shoreline development could be implemented using commercially available and private properties using the TVA land. Properly protected shoreline zones are perhaps more economically valuable, in the long term, than those federal lands that are allowed to deteriorate by furthering residential or commercial development […] Perhaps TVA should explore further developing land parcels owned by TVA, but not adjacent to shorelines, for the purpose of economic development. The TVA EIS should consider further industrial or residential development for these parcels rather than the shoreline areas […]		Letter—Department of Environment and Conservation

ISSUE	COMMENT	PARCEL	SOURCE
Oppose Development	Bottom land at the back of cove is not as valuable as points on the river— should benefit tax payers instead of developers		Memphis
	No more disposal of TVA land—I am not in favor of opening up any lands protected to residential and commercial development		Muscle Shoals; Questionnaire
	Giving up one cove is a possibility—2 coves is definitely out		Memphis
	No more development—the less change the better		Pickwick; Iuka
	When developers put so much "clutter" on the banks, it destroys the beauty of nature—I know it is big dollar signs for them, but so much of our country's natural beauty is being destroyed by those big dollar signs for a special few—developers have run rough-shod over those of us who come to Pickwick for the pursuit of nature and relaxation—the land, shoreline, and water has been sacrificed to the real-estate pursuit of the dollar		Iuka; Letter
	Concerned about development in Red Sulphur Springs		Memphis
	Destructive development on Northshore—no more development on Northshore		Pickwick
	Keep development down		Iuka; Questionnaire
	Commercial and residential development should be kept to a minimum		Muscle Shoals
	Needs to be preserved and no more marinas added	141	Pickwick
	Land should be kept natural	8	Iuka
	No more hotels, marinas, boat houses on Yellow Creek	Yellow Creek	Memphis
	[There is] enough residential, commercial, recreational, or industrial development on Pickwick—no more undeveloped areas should be developed—do not want to see land raped—Pickwick should not be a suburb		Memphis; Pickwick; Iuka; Questionnaire
	Need less development of subdivisions at or near shoreline—a river lined with condos, mansions, etc. is neither natural nor beautiful		Questionnaire
	Need safe harbor with no development in it		Pickwick
	No more development	157	Iuka
	No more industry—[concerned about] destruction of natural surroundings—the natural beauty of the lake has deteriorated primarily because of the increase of industrial and boat repair facilities—they are ugly and reducing property values		Memphis; Questionnaire; Letter
	Declare a moratorium on all lake access and development		Questionnaire
	We observe construction everywhere and wonder if Pickwick is going to turn into Miami Beach. We are witness to 2 store docks, decks, patios, and storage sheds—high rise condos have replaced beautiful old trees and shrubs which were leveled indiscriminately		Questionnaire

ISSUE	COMMENT	PARCEL	SOURCE
	ECONOMY		
	Emphasize the long-term economic benefit that will result from protecting natural areas from development and retaining biological integrity		Muscle Shoals
	Interested in increased tax base		Pickwick
	LAND MANAGEMENT		
Dredging	Opposed to dredging of Red Sulphur Springs		Memphis
	Allow dredging		Pickwick
	Need slough to be dredged at the boat ramp/swim beach/dock	26	Pickwick
Litter	Any way to get Spring Creek cleaned up?		Muscle Shoals
	Trash in public use (recreation) areas		Memphis; Iuka
	Need more litter control		Questionnaire
	What can be done about trash and trees—trimming being put in the reservoir		Muscle Shoals
TVA	Great job on everything—doing a good job		Memphis; Muscle Shoals; Pickwick; Questionnaire
	[We are] happy with what is going on		Memphis
	TVA does a good job of shoreline management		Iuka
	[…] We believe that TVA should also explore the re-purchasing of high quality habitat and areas deemed necessary for shoreline protection zones. This buy back process could also include the re-purchase of access easements to previously owned parcels, thereby protecting additional shoreline from urban encroachment […] The TVA should consider developing a "comprehensive set of standards" by which to develop shorelines and manage TVA lands within the reservoir management plan. The costs associated with developing, implementing, and maintaining these standards (including personnel, travel, salaries, benefits, and other administrative expenses) should be included as part of the evaluation of proposed EIS. Given the national trend for reduced funding of such TVA fundings, the opportunity to implement such a program would be an important initiative […]		Letter—Department of Environment and Conservation
	There is a public notice #01-20 from the Corps of Engineers for an earthen dam construction permit on Colbert Creek. Please review this.		Pickwick
	LAND USE ALLOCATION		
	Change to sensitive resources [from Zone 4 to Zone 3]	16	Muscle Shoals
	Change from Zone 5 to Zone 4	109	Pickwick
	Change from Zone 5 to Zone 4	157	Iuka
	Change from Zone 6 to Zone 4	141	Pickwick; Memphis
	Change from Zone 6 to Zone 4	133 and 134	Memphis
	Want to see less Zone 5 and more of Zone 3 and 4		Pickwick
	Stay as Zone 4	8	Memphis; Iuka

ISSUE	COMMENT	PARCEL	SOURCE
	Stay as Zone 4	9	Memphis
	Stay in Zone 4	148	Iuka
	No more recreation areas (Zone 6) converted to commercial (large hotels, high rises)		Memphis
	Like Zone 6, but no gambling houses	123	Memphis
	Would like to see percentage of land use allocated (i.e., X% to Zone 1)—TVA needs to do better marketing of what they are doing (i.e., moving towards Zone 4)		Iuka
	Do not want to see Zone 6 changed to residential [Zone 7]		Memphis
	Maintain as is	4; 5	Pickwick
	Maintain in natural resource conservation	3; 4	Iuka
	Maintain Zones 3 and 4—do not want to see a lot of changes		Pickwick
	Mayor […] had mentioned she would be interested to know if Waterloo City could get the land back from TVA		Muscle Shoals
	Present allocations are OK—we are pleased with the present TVA zoning		Memphis; Iuka
	29 is currently Zone 6 on the Lauderdale Co. bank. There are old TVA wood duck boxes there. Please consider a change to Zone 3.		Pickwick
	Should be in federal possession	30	Muscle Shoals
	There are sensitive archeological sites associated with the area—would a change to Zone 3 be appropriate?	26	Pickwick
	30 is Zone 3 on the Lauderdale Co. bank—there is agricultural lease parcels adjoining this—can this coexist in agriculture?	27	Pickwick
	[Want] more responsible use of land		Memphis
	I am extremely concerned about the talk of changing the area of 156, 157, and 155. We would like to preserve the area the best way we can under TVA guidelines	155; 156; 157	Iuka
	POLICING		
	TVA needs more patrol officers		Muscle Shoals; Pickwick
	Need more enforcement of boaters littering		Memphis
	Cabin areas need policing		Memphis
	[Need] increased policing of reservoir for safety—more patrolling to eliminate reckless boating		Memphis; Iuka
	PRESERVATION/NATURAL RESOURCES		
Aquatic Plants/Habitat	Aquatic plants [are a problem]		Memphis
	Seaweed comes from upstream		Pickwick
	Against spraying aquatic plants		Pickwick
	What plans are being taken to eradicate the milfoil submersed weeds that are taking over the beaches and shallow water areas of the lake? If this problem is not properly addressed, it will ruin water sports for those who like to swim and boat		Questionnaire
	Spiney leaf naiad was bad last year		Iuka

ISSUE	COMMENT	PARCEL	SOURCE
	[…] It is probable that any proposed development that will increase stream crossings, will affect instream, aquatic, and riparian habitat, and thereby significantly degrade habitat as part of proposed residential or shoreline project implementation. The proposed EIS should evaluate, at a minimum, available shoreline buffer of 100 feet in order to avoid any undisturbed and unprotected land as well as significant habitat loss […] We believe the EIS should evaluate the loss of riverine and aquatic habitat within the region in order to plan for long-term protection of large undeveloped parcels of Federal land […]		Letter—Department of Environment and Conservation
Erosion	Creek embayment washing out	Bear Creek	Muscle Shoals
	[Need] less erosion	141	Memphis
	Need more shoreline stabilization		Muscle Shoals; Memphis; Iuka
	Shoreline erosion is a problem		Memphis
	Large wake (from boats/yachts) is damaging shoreline		Memphis; Iuka
	Erosion [is a concern]	Northshore	Pickwick
	Erosion is bad here	158	Iuka
	Limit new marinas for larger boats as a way of limiting shoreline erosion		Memphis
	TVA [should] exercise authority over erosion/runoff from adjacent lands		Memphis
	Erosion is worse since Tenn Tom opened		Iuka
Cultural Resources	Our main concern is for any Native American cultural resources, such as cemetery areas and archeological sites, that would be affected by any land management plans. The environmental review should address how known sites would be affected and how unknown sites would be identified. Any future Land Management Plans for Guntersville and Pickwick Reservoirs should give careful consideration to cultural resources.		Letter—Tennessee Commission of Indian Affairs
Natural Resources	Would like to see a vegetative buffer in the commercial area	53	Muscle Shoals
	Put vegetative buffer between industry and shoreline	53	Pickwick
	Protect and preserve islands in 7-mile area		Muscle Shoals
	Ecological study areas for schools and universities are a good idea		Memphis
	Protection of forest, wildlife, and wetlands is paramount because there is just so little left		Memphis
	Keep public with wildlife and natural management	8	Memphis; Iuka
	Concern about sensitive resources compromised in development—continue appearance of natural shoreline—restrict development on the lake to ensure cleanliness and preservation of this beautiful reservoir—would like to see maximum amount of TVA land used for nature/wildlife areas		Memphis; Pickwick; Muscle Shoals; Iuka; Questionnaire

ISSUE	COMMENT	PARCEL	SOURCE
	Protection of natural existing areas and enhancement of other somewhat natural areas—enhance shoreline areas through establishment of native vegetation		Muscle Shoals
	Part of parcel and parcel (cave and bluff) are sensitive habitat—maintain natural resources	26	Muscle Shoals
	Passive natural resource management is desirable as opposed to very active (such as timber harvesting)		Iuka
	[No more] clear-cutting of land—don't cut trees along shoreline—[need] better control for removal of trees along reservoir—ruined aesthetics of whole river by bulldozing bluffs—like to see tree law prior to cutting—When will the rape of our land stop?		Memphis; Pickwick; Iuka; Questionnaire
	Preserve TVA land in 2 coves		Pickwick
	[Need] more natural resource conservation and less boats		Pickwick
	Care should be taken to protect wetland areas and the habitat that depends on those areas		Questionnaire
	Preserve for natural beauty and forest […] We strongly support a *no-net- loss*…approach to the management of public lands and our State natural resources. We oppose the precedent action of opening additional acres of public land for development. The region can increasingly expect to see greater pressure to turn over public lands for private gain as human pressures on protected federal lands increase over time…The TVA EIS should explore exchanging land currently assigned for economic development for land assigned for natural resource or habitat protection. This would ensure that the land most suitable for development…is available, while land most suited for wildlife habitat and recreation is protected. The TVA EIS should evaluate alternative management strategies that will not contribute to increases in the fragmentation of forest communities and a significant decrease in forest canopy…we oppose the loss of public resources that are currently available to many, in exchange for private uses of federal lands as a short-term solution to development, economic, and fiscal pressures […]		Pickwick Letter—Department of Environment and Conservation
Water Level	Keep water levels stable during waterfowl nesting season (March 1st – end of season)		Muscle Shoals
	There is strong fluctuation—keep water levels higher		Muscle Shoals; Memphis; Pickwick; Questionnaire
Water Quality/ Pollution	Wastewater problems from septic lines/tanks		Pickwick
	[Need] less pollution	141	Memphis
	Improve water quality	Spring Creek	Muscle Shoals
	Water quality is far too marginal		Muscle Shoals

ISSUE	COMMENT	PARCEL	SOURCE
	We have concerns about the potential water contamination created by the discharge of the paper mill		Questionnaire
	Problem with sedimentation filling the streams		Muscle Shoals
	Need more paper mill odor control		Questionnaire
	Good maintenance means clean exhausts, clean bilges and floating docks—poor maintenance means dirty exhaust and bilges, and fuel spills from damaged boats—this leads to more polluted water		Iuka
	We are very concerned with water quality in and around the Tenn Tom marina—the marina has pump-out stations, but I have never seen anyone using them—we feel the water quality has been compromised by this facility		Memphis
Wildlife	Wildlife concerns with increased development		Memphis; Pickwick
	Support public use if threatened and endangered species are protected		Pickwick
	Resume mosquito spraying		Memphis
	Consider wildlife when developing Patton Island and Northshore shoreline—birds, rookeries, and other wildlife are sensitive to noise		Muscle Shoals
	Eagle nesting habitat needs protection	61; Mill Creek	Muscle Shoals
	[Need] consideration of endangered species—reserve for preservation of wildlife		Pickwick
	There are several caves in this area that contain several very rare species, including an undescribed, new species of cave shrimp in McKinney Pit that should (and probably will be) listed as an endangered species.	46	Muscle Shoals
	HAW branch should be kept undeveloped so it will serve as a wildlife refuge and protect endangered species	4; 5	Questionnaire; Iuka
	[…] our departmental data bases indicate recorded species with State or Federal protection status within TVA project boundaries and within one mile radius of the proposed managed lands. Our records also indicate additional species occurrence within an approximate four mile radius of the proposed managed sites(s)…the proposed EIS should evaluate TVA's policy for protection of natural resources, specifically long-term protection of habitat and species.		Letter—Department of Environment and Conservation
	PROPOSALS		
White Sulphur Springs Cabin Site	Should be given the opportunity to purchase property at fair market value		Pickwick
	In favor of terminating lease agreements with the current lessees providing for an established period for the lessees to remove improvements and vacate the premises		Memphis
	9 lots should be auctioned only		Memphis
	Need to sell the homeowners at White Sulphur Springs their cabin sites		Pickwick

ISSUE	COMMENT	PARCEL	SOURCE
	The request for White Sulphur Springs should be honored with commitment to maintain natural beauty, etc. (no multi dwellings)		Pickwick
	Support cooperation between White Sulphur Springs and TVA for erosion prevention and natural resource conservation		Memphis
	Continue leasing to current lessees or sell 9 lots to individual lessees		Memphis
	White Sulphur Springs proposal should be granted with self restrictions intact		Muscle Shoals
Favor Montana Land Co. Land Exchange Proposal	For Montana Land Co. proposal because of quality of development		Memphis; Pickwick; Questionnaire
	I am in favor of this land exchange because I am pro-development—this increases the tax base and helps our schools and roads—we need more growth in the private sector—this would be a good opportunity for more growth in new housing starts and in the increase of revenue for state, local, and federal governments		Questionnaire; Letter
	This development will in no way upset the ecological balance of this area—it promotes land conservation and will serve as wildlife habitat		Questionnaire; Letter
	I support this exchange because it is not a shoreline gain, a net acreage gain—it protects endangered species and will provide a recreational area for those not able to afford boating—getting shoreline with land access		Questionnaire
	I am in favor of keeping the “maintain and gain” policy for the shoreline management (like the swap between Northshore and TVA)		Questionnaire
	This exchange is in the best interest of TVA and the public		Questionnaire; Iuka
	Montana land will have lagoon system		Pickwick
Oppose Montana Land Co. Land Exchange Proposal	Against Montana Land Co. proposal from a boater’s standpoint		Memphis
	Against allowing Montana Land Co. controlling the coves from boaters—boaters have rights to sheltered coves		Pickwick
	Deny request for Montana Land—[land] should be preserved as public owned land		Memphis
	Opposed to Montana Land [Exchange] We are very much opposed to the proposed development—if built as proposed, it will endanger wildlife, over populate the area, and boat traffic will greatly increase		Pickwick Questionnaire
Oppose Tishomingo Development	The proposal to develop a marina/convention center in Tishomingo County needs to be stopped—the additional boat traffic would add to an already congested area—this poses a safety issue—the property should remain undeveloped		Questionnaire

ISSUE	COMMENT	PARCEL	SOURCE
	I do not support the Tishomingo County development—there are too many boats already in that area—this will negatively impact the wildlife, increase pollution, cause boating congestion, and safety problems		Questionnaire
	PROGRAMS/PARTNERSHIPS		
	Would like land plan tied more with state programs		Muscle Shoals
	Is River Heritage Program still around?	Second Creek	Muscle Shoals
	More partnership for creating more trails		Pickwick
	PUBLIC INVOLVEMENT		
Public Involvement/ Education	Get local groups and organizations involved in shoreline clean-up		Muscle Shoals
	Educate school children		Muscle Shoals
	Need educational program for ignorance of environmental protection		Muscle Shoals
	Educate boaters on pollution issues		Muscle Shoals
	Need more educational programs (including under privileged children)		Muscle Shoals
	Flyers or information should go out with boat registration		Iuka
	Need more education [about current laws on dumping]		Iuka
	Would like to see stream survey of Mill and Dry Creek	Mill Creek; Dry Creek	Muscle Shoals
	Maintain coordination of stakeholders for managing property		Muscle Shoals; Memphis
	[Public] meetings have helped give people a better perspective on what is going on in the entire reservoir—like TVA having public meetings for gathering input		Muscle Shoals; Memphis
	[Want] better information for public meetings		Memphis
	[There was] no public input for Tenn Tom development (this development blocks views from homeowners)		Memphis; Questionnaire
	[There was] no advertisement for public input—no one at our group meeting knew of prior meetings		Memphis; Questionnaire
	Need cooperation between property owners, TVA, and others to solve problems—involve public in all aspects of land development		Muscle Shoals; Memphis
	[Want] maps available for recreation—maps should be made available at local marinas, camping stores, etc.		Memphis; Questionnaire
	Request that those who are here get a copy of the draft plan		Memphis
	Want a copy of the map with XPR parcels listed on it		Pickwick
	RECREATION		
Recreational Access	Need more road access	8, 9	Memphis
	Help development of tourist access		Muscle Shoals
	Need better access upstream		Pickwick

	Like idea of limited access area		Memphis
	Request use of trails for continued use		Memphis
Limited Recreation	Stop camping in areas without formal campgrounds—camping in designated areas only		Pickwick
	Undeveloped campgrounds should not be within 1,000 feet of residential areas—they create garbage and sanitation issues		Questionnaire
	60 is Zone 4—there is primitive camping there—access should be denied and the camping curtailed	60	Pickwick
	Can we control ATV traffic in Dry Creek and Mill Creek in Hardin County, TN?	Dry Creek; Mill Creek	Muscle Shoals
	Four-wheelers/dune buggies ran the ground down—on Sundays there are 100 ATVs in the area—there used to be signs for “No ATVs”—[ATVs cause] the destruction of streams		Muscle Shoals
	Need special event permits for motorized track usage		Questionnaire
	No further growth of marina areas, overnight lodging, public fishing piers, swimming beaches, public launch ramps, etc.		Letter
	No more public recreation development—rehabilitate existing picnic areas and restrooms	17	Muscle Shoals
	Recreational areas should be developed with a natural appearance		Iuka
	[There is] preferential treatment in granting recreational permits		Memphis
Recreational Opportunities	Need more public recreation	Bear Creek; Goat Island	Iuka
	Consider more commercial recreation sites		Memphis
	Development of Goat Island area for sailing adds to the value of the reservoir		Memphis
	[Would like] more recreational camping and trails, but not adjacent to residential areas		Memphis
	4-wheelers provide handicapped and senior citizens a method of enjoying nature and are a great family outing—we paid our taxes. Why ignore us?		Questionnaire
	Provide public recreation in Second Creek	Second Creek	Muscle Shoals
	[Would like more] hiking trails and camping areas		Pickwick
	No objection to trails project—area is good for trails and natural areas	37	Muscle Shoals
	Not enough camping and trails		Memphis; Pickwick
	Excellent recreation for motorcyclists—trails for off-road riding (bikes, horses, motorcycles, pedestrians, etc.)	12; 14	Memphis
	No motorized trails are offered		Memphis
	Interested in seeing maximum amount of TVA land used for recreation (undeveloped trails)		Iuka
	I am a strong proponent of perpetuating Pickwick Lake as a recreational area		Letter
	Need more trails and hiking areas	53	Muscle Shoals
	Create natural trails for hiking		Iuka
	Would prefer more informal (less commercial) recreation either sponsored by state agency or TVA		Iuka

	Need more off-road motorcycle access to existing trails between Waterloo, Alabama, and Pickwick dam		Questionnaire
	Needs more primitive campsites and hiking trails—Need more road access, and boat ramp	8, 9	Memphis
	The city of Waterloo would like to request a marina—we need public fishing piers, picnic pavilions, swimming beach, updated campgrounds and restrooms—we have no money as a city, and could sure use your help		Muscle Shoals
	[Use] state park development (west side main lake) for camping and docking		Memphis
	Need more marked hiking trails—would like to see plants identified and interpretive trails of history of land use		Memphis; Iuka
Water Recreation Concerns	Environmental concerns for increased boat and Sea-Doo traffic		Muscle Shoals; Memphis
	Concerned about poor sanitation on boat and boat houses—barges dump overboard their raw waste—is there no policing the waterways for something like that?		Memphis; Iuka
	Need more public waste disposal		Iuka
	Confusion about current laws on dumping—need more education		Iuka
	[Require] boat drivers licenses		Pickwick
	Need more control of silt buildup caused by large traffic in lower Yellow Creek		Questionnaire
	Too much traffic up and down the lake—minimize boat traffic—congestion is too much—safety is an issue		Memphis; Pickwick; Iuka; Letter
	Lake use is congested in Yellow Creek Area	Yellow Creek	Memphis; Pickwick
	Overcrowded around marinas and ramps		Memphis
	Limit expansion of marinas to cut down on traffic		Memphis; Pickwick; Iuka
	Would not like to see more commercial recreation sites, such as large boat slips		Memphis
	Big boats run through fast so it is not safe to recreate—need speed limit on cruisers		Pickwick; Iuka
	Children on wave runners [is a] safety issue		Pickwick
	Cruisers almost wash away docks—too much wave action		Iuka
	Boaters are not considerate of other users		Iuka
	Limit marina licenses		Iuka
	Noise from jet skis is very bad on weekend—reduce noise level in heavily congested areas		Iuka; Pickwick
	No more boat slips in Yellow Creek because of erosion, safety, and noise		Pickwick
	TVA's assessment of boat traffic are conducted on quiet weekdays—make your assessments on busy weekend days		Pickwick
	Rules [should be] enforced on navigation	Grand Harbor Marina	Pickwick

	Why not a speed limit at Tenn-Tom (now known as Grand Harbor Marina)? Consider making "no wake zone" from Tenn-Tom Marina (now known as Grand Harbor Marina) to Parcel 129	Grand Harbor Marina	Pickwick
	[Need] speed limit in Yellow Creek instead of "No Wake Zone"	Yellow Creek	Pickwick
	Docking facilities in navigable waters at Tenn-Tom (now known as Grand Harbor Marina) should be removed—[it is a] safety issue for boaters	Grand Harbor Marina	Memphis
	There are too many marinas in Yellow Creek—the water quality is bad and there are many empty slips in the marinas—the proposal to add 100 boat slips should not be approved		Questionnaire; Pickwick
	Jet skis tear up the beaches and are a formidable threat to the swimmer, fisherman, and sailor		Letter
Water Recreation Needs	[Need] restriction on age for boaters/jet skier		Memphis
	Want a place to safely anchor overnight		Memphis
	Not enough anchorage		Pickwick; Questionnaire
	Maintain anchorage for larger boats		Pickwick
	[Need] more dry dock boat storage		Memphis; Iuka
	Need boat ramp	8, 9	Memphis
	Need more access points on other parts of the stream—need alternative launching ramps		Memphis; Questionnaire
	Not enough commercial development on Pickwick to support boaters and home owners (beetle salvage area is a suggested site)		Memphis
	Not enough public access for boaters and immediate access to reservoir—need coves for unrestricted public access (mooring, anchoring)		Memphis
	Preserve Dry Creek inlet for boating and recreation with No Wake Zone	Dry Creek	Pickwick
	Need money to help raise the bridge for a marina		Muscle Shoals
	Expand to be a marina—extend marina slips fronting parcel	144	Memphis
	Still want to pursue Sheffield Marina proposal—want something for the smaller boaters		Muscle Shoals
	Ramp needs expanding (parking)	145	Pickwick
	More safety harbors and anchorage cones are needed		Pickwick
	Need commercial dry stack storage for 24-foot boats		Questionnaire
	More ramps may cut down on the amount of traffic on the river		Pickwick; Muscle Shoals
	The land planning powers seem to have no knowledge, no understanding, and no sympathy for a segment of the recreational community that might be termed "boaters who like to anchor out"—land planning is a term which implies exclusion of recreational boaters needs		Questionnaire
	Would like to see more pump-out stations on the lake		Iuka; Pickwick; Questionnaire
	Need lower cost pumping areas		Iuka
	Remove stumps along Parcels 11, 18, 63, and 8—they are a safety issue for skiers and boaters	11, 18, 63, 8	Memphis

Keep undeveloped coves for anchoring and harboring—keep undeveloped coves for safety to boaters during storms		Memphis
Will we restrict recreational use after the saturation point is reached?		Memphis
Who is responsible for No Wake Zones?		Memphis
Does TVA conduct surveys to count actual number of boats, etc.? How many days per year is overcrowding a problem?		Memphis
How do we deal with the disposal of waste? Are there enough pump-out stations?		Memphis
Is water quality different on weekends from weekdays?		Memphis
Should there be restrictions on erosion caused by wakes that are too large?		Memphis
What is the systematic process for considering future recreational requests?		Memphis
How many new parcels are there for commercial use since the 1983 land use plan?		Muscle Shoals
When will appraisals be available for public access on the Montana project?		Memphis
Are there any plans for new steam generation plants on Pickwick?		Memphis
How long is the state allowed to store old dilapidated docks? How can we get them removed?		Memphis
How much monitoring of water quality is done around sewage treatment plants?		Memphis
Why doesn't TVA spend money on maintaining existing facilities?		Memphis
Who has right-of-way access?		Memphis
If archeological artifacts are present, should it be Zone 3?		Pickwick
Is 133 and 134 proposed to be sold for a casino?	133 and 134	Pickwick
Any plans for the islands?		Pickwick
Who controls the places where the barges are tied up?		Pickwick
Why are they guaranteed due to a lease?		Pickwick
Do aquatic plants affect water quality? How do we manage aquatic plants?		Iuka
What is the time frame of proposed sites?		Iuka
Why can't TVA sell property to fund high priority projects?		Muscle Shoals

Part II:
Public Comments Identified by Parcel

ISSUE	COMMENT BY PARCEL	SOURCE
	3	
Natural Resource Preservation	Maintain in natural resource conservation	Iuka
Favor Development	Change Parcels 3 & 4 to allow development—it will help the economy for years to come—we need more residential	Pickwick
	4 and 5	
Land Allocation	Maintain as is	Pickwick
	Maintain in natural resource conservation	Iuka
Favor Development	Change Parcels 4 and 5 to allow development—it will help the economy for years to come—we need more residential	Pickwick
Natural Resource Preservation	Areas should be maintained for wildlife conservation and resource management	Iuka
Favor Montana Land Exchange	For Montana Land Co. proposal because of quality of development	Memphis; Pickwick; Questionnaire
	I am in favor of this land exchange because I am pro-development—this increases the tax base and helps our schools and roads—we need more growth in the private sector—this would be a good opportunity for more growth in new housing starts and in the increase of revenue for state, local, and federal governments	Questionnaire; Letter
	This development will in no way upset the ecological balance of this area—it promotes land conservation and will serve as wildlife habitat	Questionnaire; Letter
	I support this exchange because it is not a shoreline gain, a net acreage gain—it protects endangered species and will provide a recreational area for those not able to afford boating—getting shoreline with land access	Questionnaire
	I am in favor of keeping the “maintain and gain” policy for the shoreline management (like the swap between Northshore and TVA)	Questionnaire
	This exchange is in the best interest of TVA and the public	Questionnaire; Iuka
	Montana land will have lagoon system	Pickwick
	4 and 5	
Oppose Montana Land Exchange	Deny request for Montana Land—[land] should be preserved as public owned land	Memphis
	Opposed to Montana Land [Exchange]	Pickwick
	We are very much opposed to the proposed development—if built as proposed, it will endanger wildlife, over populate the area, and boat traffic will greatly increase	Questionnaire
	Against Montana Land Co. proposal from a boater’s standpoint	Memphis
	Against allowing Montana Land Co. controlling the coves from boaters—boaters have rights to sheltered coves	Pickwick

ISSUE	COMMENT BY PARCEL	SOURCE
	8	
Natural Resource Preservation	Keep public with wildlife and natural management	Memphis; Iuka
Recreational Access	Need more road access	Memphis
Boating Needs	Need boat ramp	Memphis
	Remove stumps along Parcels 14, 21, 61, and 9—they are a safety issue for skiers and boaters	Memphis
Recreational Opportunities	Needs more primitive campsites and hiking trails—Need more road access, and boat ramp	Memphis
Land Allocation	Stay as Zone 4	Memphis; Iuka
	9	
Recreational Access	Need more road access	Memphis
Boating Needs	Need boat ramp	Memphis
Recreational Opportunities	Needs more primitive campsites and hiking trails—Need more road access, and boat ramp	Memphis
Land Allocation	Stay as Zone 4	Memphis
	11	
Boating Needs	Remove stumps along Parcels 14, 21, 61, and 9—they are a safety issue for skiers and boaters	Memphis
	12	
Recreational Opportunities	Excellent recreation for motorcyclists—trails for off-road riding (bikes, horses, motorcycles, pedestrians, etc.)	**Memphis**
	14	
Recreational Opportunities	Excellent recreation for motorcyclists—trails for off-road riding (bikes, horses, motorcycles, pedestrians, etc.)	Memphis
	16	
Land Allocation	Change to sensitive resources [from Zone 4 to Zone 3]	Muscle Shoals
	17	
Limited Recreation	No more public recreation development—rehabilitate existing picnic areas and restrooms	Muscle Shoals
	18	
Boating Needs	Remove stumps along Parcels 11, 18, 63, and 8—they are a safety issue for skiers and boaters	Memphis
	26	
Natural Resource Preservation	Part of parcel and parcel (cave and bluff) are sensitive habitat—maintain natural resources	Muscle Shoals
Dredging	Need slough to be dredged at the boat ramp/swim beach/dock	Pickwick

ISSUE	COMMENT BY PARCEL	SOURCE
Land Allocation	There are sensitive archeological sites associated with the area—would a change to Zone 3 be appropriate	Pickwick
	27	
Land Allocation	30 is Zone 3 on the Lauderdale Co. bank—there is agricultural lease parcels adjoining this—can this coexist in agriculture?	Pickwick
	30	
Land Allocation	Should be in federal possession	Muscle Shoals
	37	
Recreational Opportunities	No objection to trails project—area is good for trails and natural areas	Muscle Shoals
	46	
Wildlife Preservation	There are several caves in this area that contain several very rare species, including an undescribed, new species of cave shrimp in McKinney Pit that should (and probably will be) listed as an endangered species	Muscle Shoals
	53	
Development	Good for industrial development	Muscle Shoals
Natural Resource Preservation	Would like to see a vegetative buffer in the commercial area	Muscle Shoals
Recreational Opportunities	Need more trails and hiking areas	Muscle Shoals
	55	
Natural Resource Preservation	Put vegetative buffer between industry and shoreline	Pickwick
	60	
Land Allocation	58 is Zone 4—there is primitive camping there—access should be denied and the camping curtailed	Pickwick
	61	
Natural Resource Preservation	Eagle nesting habitat needs protection	Muscle Shoals
	63	
Boating Needs	Remove stumps along Parcels 8, 11, 18, 63—they are a safety issue for skiers and boaters	Memphis
	133 and 134	
Land Allocation	Like Zone 6, but no gambling houses	Memphis
	Is 134 proposed to be sold for a casino?	Pickwick
	Change from Zone 6 to Zone 4	Memphis
	109	
Land Allocation	Change from Zone 5 to Zone 4	Pickwick
	141	
Erosion	[Need] less erosion	Memphis

ISSUE	COMMENT BY PARCEL	SOURCE
Pollution	[Need] less pollution	Memphis
Land Allocation	Change from Zone 6 to Zone 4	Pickwick; Memphis
Oppose Development	Needs to be preserved as is and have no more marinas added	Pickwick
	144	
Boating Needs	Expand to be a marina—extend marina slips fronting parcel	Memphis
	145	
Boating Needs	Ramp needs expanding (parking)	Pickwick
	148	
Land Allocation	Stay in Zone 4	Iuka
	157	
Oppose Development	No more development	Iuka
Land Allocation	Change from Zone 5 to Zone 4	Iuka
	130	
Erosion	Erosion is bad here	Iuka
Land Allocation	Land should be kept natural—good job; the facilities are full	Iuka

Part III:
Questionnaire Results

Questionnaire Results

Respondents were asked to indicate their preferences regarding facilities, areas, and services throughout the Pickwick area. One hundred and fifteen (115) questionnaires were completed at the public meeting or mailed to the Pickwick Watershed Team. The questions were divided into three themes: recreation, natural resource, and development preferences; questions from each theme were analyzed independently.

Recreational Preferences

The number of respondents for each preference option—*need more, right amount, need less* is displayed in Figure 4. The number in parentheses reflects the percentage of respondents who responded to that specific item and selected that preference.

Need More: Respondents expressed a *need for more*

dirt *(59%)* and paved hiking trails, and signs/observation towers *(41%)*
public fishing piers *(46%)*

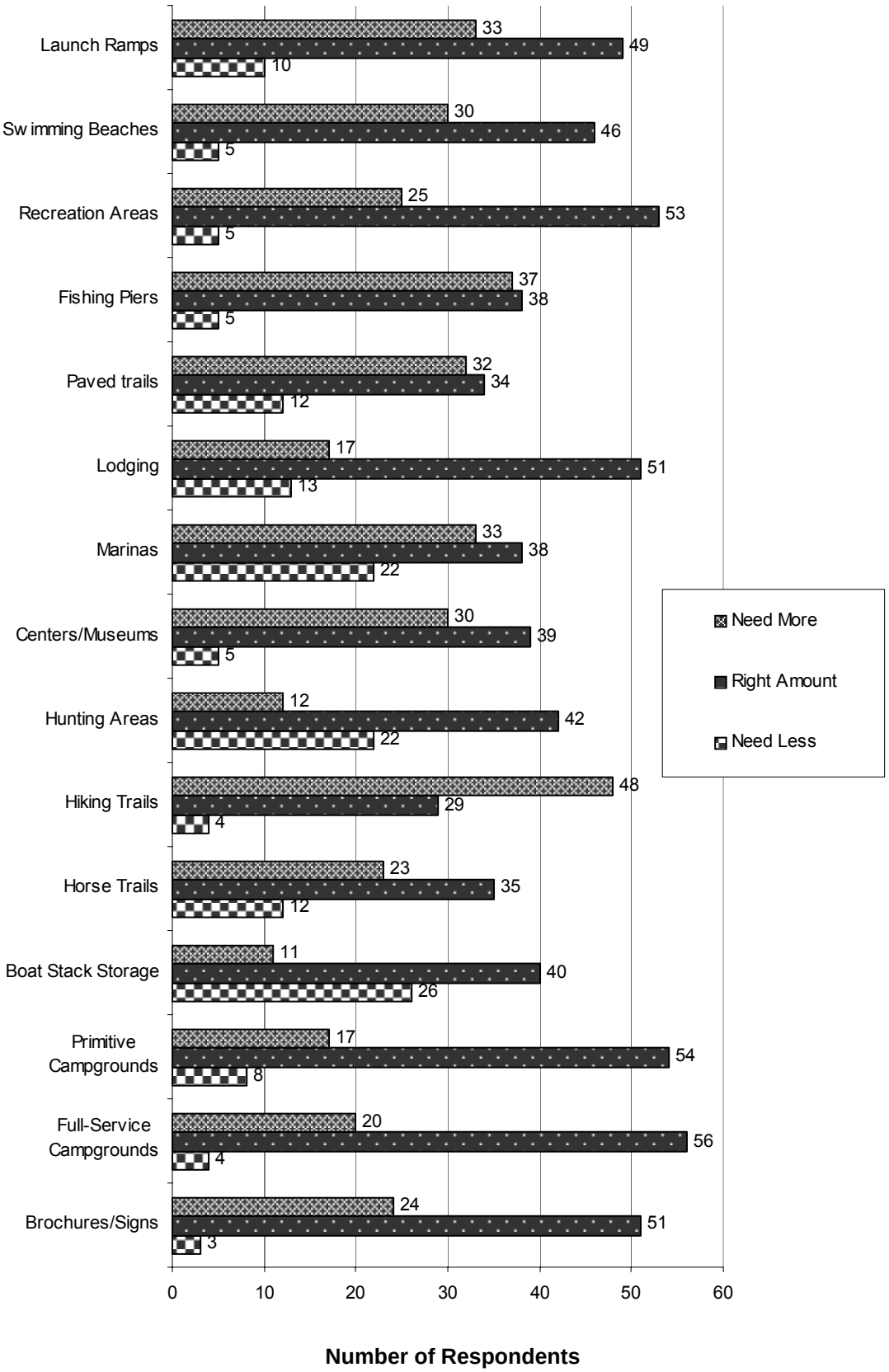
Right Amount: Respondents indicated that there was already the *right amount* of

undeveloped campgrounds (i.e., no hookups) *(68%)* and full-service campgrounds (i.e., electric, water, sewer) *(70%)*
brochures and signs directing the public to natural areas *(65%)*
public recreational areas (i.e., campgrounds, parks, picnic pavilions) *(64%)*
overnight lodging (i.e., cabins, cottages, resort lodges) *(63%)*
swimming beaches *(57%)*
hunting areas *(55%)*
interpretative centers/museums *(53%)*
public launch ramps *(53%)*, fishing piers *(48%)*, commercial boat stack storage *(52%)*, and marinas *(41%)*
equestrian trails *(50%)*
paved hiking trails *(44%)*

Need Less: Few respondents selected this preference option. However, comparing responses with those indicating there is a need for more facilities, services, and areas, provides useful information for prioritizing recreational needs. For instance, more respondents indicated *a need for less* (rather than more)

commercial boat stack storage *(34%)*
hunting areas *(29%)*

Figure 4: Preferences For Recreational Facilities, Services, and Areas



Natural Resource Preferences

Respondents were asked to indicate their preferences regarding natural resources throughout the Pickwick area. The number of respondents for each preference option—*need more, right amount, need less* is shown in Figure 5. The number in parentheses reflects the percentage of respondents who responded to that specific item and selected that preference.

Need More

Respondents expressed a *need for more*

shoreline erosion control *(80%)*
protection of water quality *(74%)*, wetlands *(73%)*, endangered species *(68%)*, cultural artifacts/historic sites *(61%)*, and public land that has unique features *(77%)*
shoreline conservation zone (i.e., shoreline vegetation for wildlife, water quality, visual) *(72%)*
preservation of natural/open spaces *(65%)*
wildlife observation areas *(61%)*
forest and wildlife management *(57%)*
ecological study areas for local schools and universities *(48%)*

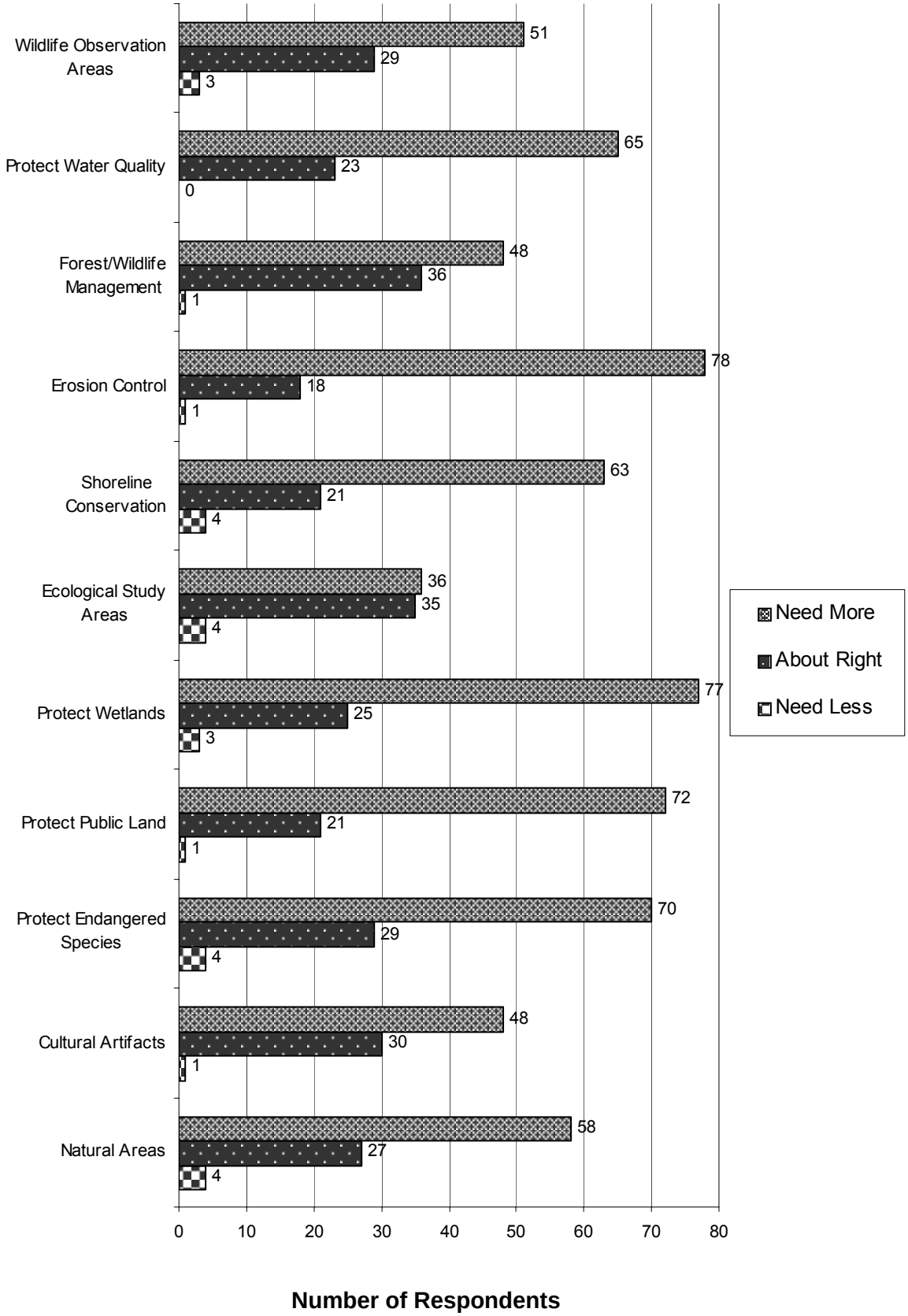
Right Amount

Respondents indicated that there was already the *right amount* of ecological study areas for local schools and universities *(47%)*

Need Less

Very few respondents selected this preference option.

Figure 5: Preferences For Natural Resources



Development Preferences

Respondents were asked to indicate their preferences regarding development throughout the Pickwick area. The number of respondents for each preference option—*need more, right amount, need less* is displayed in Figure 6. The number in parentheses reflects the percentage of respondents who responded to that specific item and selected that preference.

Need More

Only a few respondents selected this preference option. However, comparing responses with those indicating there is a need for less development provides useful information for prioritizing development needs. For instance, slightly more respondents indicated a need for more (rather than less) public work projects (i.e., water intakes, sewer lift stations) *(20%).*

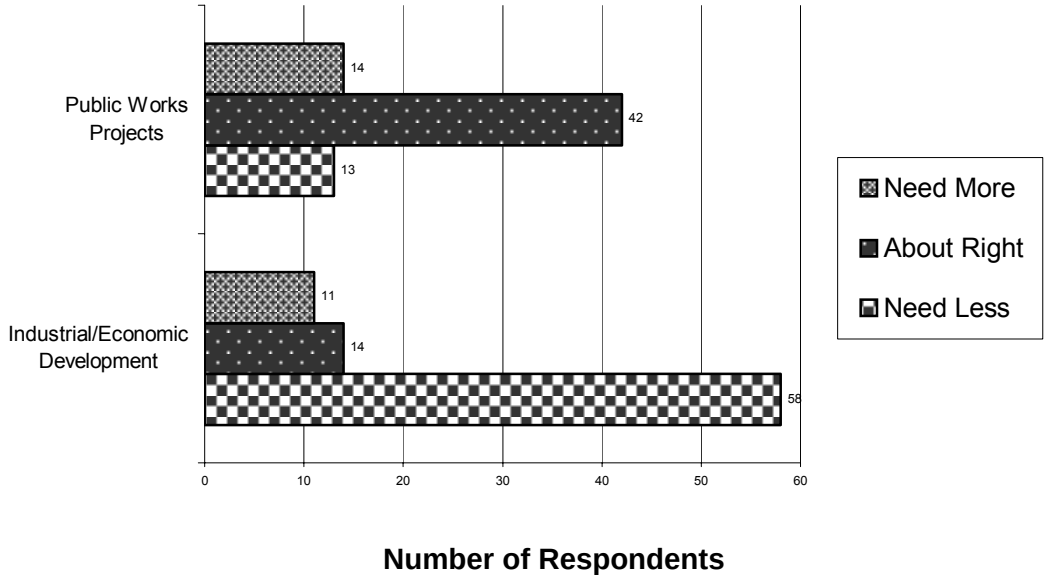
Right Amount

Several respondents indicated that there was already the right amount of public work projects (i.e., water intakes, sewer lift stations) *(61%).*

Need Less

Many respondents expressed a *need for less* industrial and economic development *(70%).*

Figure 6: Development Preferences



Attachment I: Questionnaire

Facilities, Areas, and/or Services	*Need Less*	*About the Right Amount*	*Need More*
Brochures and signs directing the public to natural areas			
Campgrounds full-service (electric, water, sewer, etc.)			
Primitive/Undeveloped camping (no hookups)			
Commercial boat stack storage			
Equestrian trails			
Hiking trails (dirt paths)			
Hunting areas			
Industrial and economic development			
Interpretive centers/museums			
Marina areas			
Overnight lodging (cabins, cottages, resort lodges, etc.)			
Paved hiking trails, signs, and observation towers			
Preserve natural areas/open space			
Protection of cultural artifacts/historic sites			
Protection of endangered species			
Protection of public land that has unique natural features			
Protection of wetlands			
Public fishing piers			
Public recreation areas (campgrounds, parks, picnic pavilions, etc.)			
Ecological study areas for local schools or universities			
Shoreline conservation zone (shoreland vegetation for wildlife, water quality, visual)			
Shoreline erosion control			
Swimming beaches			
Public work projects (water intakes, sewer lift stations)			
Forest & wildlife management			
Water quality protection			
Wildlife observation areas			
Public launch ramps			
_____Other (please specify)			

For additional comments, please use back.

Mail completed form to: **Chellye L. Campbell**
Tennessee Valley Authority
SB 1H
P. O. Box 1010
Muscle Shoals, Alabama 35662-1010

Appendix B - List of Parcels with 1981 Plan Tract Numbers and Allocations and Allocations by Alternative

List of Parcels with 1981 Plan Tract Numbers and Allocations, and Allocations by Alternative

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
1	Retained A	Pickwick Landing Dam Reservation	1,067.41	This parcel is used for operation and maintenance of the dam and hydro facilities and for public recreation use.	Zone 2	Zone 2
2	Previously unplanned	Previously unplanned - Marginal Strip	69.09	This parcel fronts Points of Pickwick and Northshore Subdivisions.	Zone 7	Zone 7
3	1	Open Space	18.59	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
4	2	Safety Harbor, Open Space	26.18	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
5	2	Safety Harbor, Open Space	10.26	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
6	Transferred A	Transferred to state of Tennessee	21.83	This parcel fronts Bruton Branch State Recreation Area.	Zone 6	Zone 6
7	Previously unplanned	Previously unplanned - Marginal Strip	83.22	This parcel fronts Bruton Branch Subdivision.	Zone 7	Zone 7
8	21,22,24	Fleeting Harbor, Visual Protection, Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, General Forest, Campground, Minor Commercial Landing	1,549.13	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
9	23, 25, 26, 27, 28, 29, 30, 31, 32, 33	Upland Wildlife, Forest Demonstration/Res., General Forestry, Wetland Wildlife, Minor Commercial Landing, Boat Ramp, Campground	4,648.64	This is under easement to ADCNR for management of the Lauderdale WMA.	Zone 4	Zone 4
10	Previously unplanned	Previously unplanned - Marginal Strip	31.98	This parcel fronts Sportsman's Paradise Subdivision.	Zone 7	Zone 7
11	52	Historical, Minor Commercial Landing, Open Space	18.50	To protect historical resources.	Zone 3	Zone 3
12	Transferred J	Transferred to the city of Waterloo	24.04	This parcel fronts Waterloo City Park.	Zone 6	Zone 6
13	Previously unplanned	Previously unplanned - Marginal Strip	9.77	This parcel fronts Hart Marina.	Zone 6	Zone 6
14	53	Upland Wildlife, General Forest, Historical, Visual Protection	70.20	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
15	Previously unplanned	Previously unplanned - Marginal Strip	18.09	This parcel fronts Second Creek Subdivision.	Zone 7	Zone 7

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
16	54	Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, Forest Demonstration/Res. Visual Protection	154.66	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
17	Retained D	Second Creek Public Use Area	35.31	This parcel fronts city of Waterloo campground.	Zone 6	Zone 6
18	55, 56, 57	Minor Commercial Landing, Visual Protection, Wetland Wildlife	28.34	This parcel has historical and visual significance.	Zone 3	Zone 3
19	58	General Forest, Visual Protection	90.62	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
20	Transferred K	Lauderdale County Park	92.38	This is Brush Creek Park.	Zone 6	Zone 6
21	Previously unplanned	Previously unplanned - Marginal Strip	10.36	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
22	59	General Forest, Visual Protection	122.66	To protect historical and visual resources.	Zone 3	Zone 3
23	Previously unplanned	Previously unplanned - Marginal Strip	42.20	This parcel fronts O'Neal Shores and Lake Bend Shores Subdivisions.	Zone 7	Zone 7
24	60	Minor Commercial Landing	11.90	To protect historical resources.	Zone 3	Zone 3
25	61	General Forest, Boat Ramp, Visual Protection	87.59	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
26	Transferred L	Transferred to the U.S. Department of the Interior	150.65	This is part of the Natchez Trace Parkway. Colbert Park Recreational Area is on the left bank.	Zone 6	Zone 6
27	62	General Forest, General Agriculture, Visual Protection	174.89	To protect historical and visual resources.	Zone 3	Zone 3
28	Previously unplanned	Previously unplanned - Marginal Strip	42.74	This parcel fronts Sunset Beach Subdivision.	Zone 7	Zone 7
29	69, 70	Forest Demonstration/Res., General Forest, General Agriculture, Visual Protection	304.14	To protect historical and visual resources.	Zone 3	Zone 3
30	70	Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, General Forest, General Agriculture, Archaeological, Historical, Visual Protection	443.25	Under easement to ADCNR for management of the Seven Mile WMA.	Zone 4	Zone 4
31	70	Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, General Forest, Research, General Agriculture	0.79	Under easement to USFWS for the management of Key Cave	Zone 3	Zone 3

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
32	75, 76, 77, 78	Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, General Forest, Research, General Agriculture, Archaeological, Visual Protection, Mussel Sanctuary, Safety Harbor, Forest Demonstration/Res., Fleeting Area	1,844.30	Under easement to ADCNR for management of the Seven Mile WMA.	Zone 4	Zone 4
33	79	Open Space	123.18	This parcel is under easement for the operation of Florence Municipal Water Treatment Plant.	Zone 2	Zone 2
34	79, 80	Open Space, Waterfowl Wildlife, General Forest, Visual Protection	94.55	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. The city of Florence has a license for public recreation on this property.	Zone 4	Zone 4
35	Transferred M	Transferred to the city of Florence	343.80	This is McFarland Park and Florence Harbor and Marina.	Zone 6	Zone 6
36	81	Barge Terminal, Industrial Site	25.63	This is part of the Florence Port.	Zone 5	Zone 5
37	81	Barge Terminal, Industrial Site	35.97	To accommodate the city of Florence's request for development of a public trails system.	Zone 6	Zone 4
38	81	Barge Terminal, Industrial Site	4.06	To protect historical resources and a Resource Conservation and Recovery Act remediation site.	Zone 3	Zone 3
39	82	Visual Protection	380.72	To protect historical, visual, and sensitive species habitat. This is Patton Island.	Zone 3	Zone 3
40	74	Open Space	4.16	This parcel is used to protect and manage for important wildlife habitat and shoreline.	Zone 4	Zone 4
41	Previously unplanned	Previously unplanned - Marginal Strip	33.96	This parcel fronts Pickwick Bluff Subdivision.	Zone 7	Zone 7
42	72	Forest Demonstration/Res., General Forest, General Agriculture, Visual Protection	167.49	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
43	Previously unplanned	Previously unplanned - Marginal Strip	36.85	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
44	73	General Forest, Visual Protection	34.50	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
45	72	Forest Demonstration/Res., General Forest, General Agriculture, Visual Protection	18.78	This parcel is under easement for the operation of Hawk Pride Water Treatment Plant.	Zone 2	Zone 2

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
46	Previously unplanned	Previously unplanned - Marginal Strip	28.82	This parcel fronts Raintree Subdivision.	Zone 7	Zone 7
47	Previously unplanned	Previously unplanned	9.58	This parcel fronts Norfolk Southern and Goldkist Industries.	Zone 5	Zone 5
48	71	General Forest, General Agriculture, Access for Future Development	53.76	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
49	71	General Forest, General Agriculture, Access for Future Development	13.48	This parcel fronts Black Eagle Minerals. There is a barge terminal located here.	Zone 5	Zone 5
50	84	Minor Commercial Landing	3.28	This parcel is under license to the state of Alabama for public recreation. Pride Landing boat ramp is here.	Zone 6	Zone 6
51	Retained E	Colbert Fossil Plant	1,651.52	This parcel is used for the operation of Colbert Fossil Plant. Cane Creek public launching ramp is located here.	Zone 2	Zone 2
52	Previously unplanned	Previously unplanned - Marginal Strip	5.40	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
53	Previously unplanned, 68	Previously unplanned - Marginal Strip, Upland Wildlife, General Forest Management	84.11	To accommodate anticipated industrial development in the Barton Industrial Park.	Zone 5	Zone 4
54	68	Upland Wildlife, General Forest Management	39.32	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
55	Previously unplanned	Previously unplanned - Marginal Strip	5.44	This parcel fronts Mulberry Creek Subdivision.	Zone 7	Zone 7
56	67	General Forest, Access for Future Development	28.38	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
57	66	General Forest, Boat Ramp	102.51	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
58	63	Wetland Wildlife, Upland Wildlife, Waterfowl Wildlife, General Forest, Archaeological, Visual Protection	64.30	To protect for historical and visual resources.	Zone 3	Zone 3
59	Previously unplanned, 64, 65	Previously unplanned - Marginal Strip, Minor Commercial Landing, General Forest, Access for Future Development	53.82	This parcel fronts Cherokee Nitrogen. There is a barge terminal located here.	Zone 5	Zone 5
60	51	Visual Protection	8.86	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
61	Previously unplanned	Previously unplanned - Marginal Strip	21.29	This parcel fronts property with deeded access rights.	Zone 7	Zone 7
62	50	Safety Harbor, Open Space, Access for Future Development	17.86	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
63	Previously unplanned	Previously unplanned - Marginal Strip	25.18	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
64	49	Safety Harbor, Open Space, Access for Future Development	20.82	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
65	Previously unplanned	Previously unplanned - Marginal Strip	9.00	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
66	Previously unplanned	Previously unplanned - Marginal Strip	26.37	This parcel fronts Eagle Point Subdivision.	Zone 7	Zone 7
67	35	Historical, Visual Protection	12.55	To protect for visual and historical resources.	Zone 3	Zone 3
68	Previously unplanned	Previously unplanned - Marginal Strip	8.42	This parcel fronts Carrol-Mullens Subdivision.	Zone 7	Zone 7
69	36	Boat Ramp	13.03	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. There is an unimproved boat ramp here.	Zone 4	Zone 4
70	Previously unplanned	Previously unplanned - Marginal Strip	0.59	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
71	36	Boat Ramp	10.82	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
72	36	Boat Ramp	2.44	This parcel is under a license for a minor commercial landing.	Zone 5	Zone 5
73	Previously unplanned	Previously unplanned - Marginal Strip	1.83	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
74	Previously unplanned	Previously unplanned - Marginal Strip	1.14	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
75	Previously unplanned	Previously unplanned - Marginal Strip	4.76	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
76	Previously unplanned	Previously unplanned - Marginal Strip	1.78	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
77	Previously unplanned	Previously unplanned - Marginal Strip	2.84	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
78	Previously unplanned	Previously unplanned - Marginal Strip	1.72	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
79	37	Minor Commercial Landing/visual protection	9.24	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
80	Transferred H	Transferred to Colbert County	28.86	Used for public recreation by Colbert County. There is a campground and boat ramp here.	Zone 6	Zone 6
81	Previously unplanned	Previously unplanned - Marginal Strip	8.00	This parcel fronts Aurora Springs, Keeton, and Worsham Subdivisions.	Zone 7	Zone 7
82	38	General Forest, General Agriculture, Visual Protection	36.19	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
83	Previously unplanned	Previously unplanned - Marginal Strip	17.89	This parcel fronts Buchanan Peninsula Subdivision.	Zone 7	Zone 7
84	39	Wetland Wildlife, Waterfowl Wildlife, General Forest, Visual Protection	121.17	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
85	40	General Forest, Boat Ramp, General Agriculture, Minor Commercial Landing, Visual Protection	135.37	The Phillips Hill public recreation area is located here.	Zone 6	Zone 6
86	Previously unplanned	Previously unplanned - Marginal Strip	0.98	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
87	40	General Forest, Boat Ramp, General Agriculture, Minor Commercial Landing, Visual Protection	13.71	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
88	Previously unplanned	Previously unplanned - Marginal Strip	32.18	This parcel fronts Spring Valley Subdivision.	Zone 7	Zone 7
89	Previously unplanned	Previously unplanned - Marginal Strip	0.75	Johnson's Fish Camp Marina is located here.	Zone 6	Zone 6
90	42	Forest Demonstration/Res. General Forest, General Agriculture, Historical, Visual Protection	67.38	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
91	42	Forest Demonstration/Res. General Forest, General Agriculture, Historical, Visual Protection	1.53	The Buzzard Roost recreational area is located here.	Zone 6	Zone 6
92	Previously unplanned	Previously unplanned - Marginal Strip	4.04	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
93	42, 43	Forest Demonstration/Res. General Forest, General Agriculture, Historical, Visual Protection, Wetland Wildlife	168.18	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
94	Previously unplanned	Previously unplanned - Marginal Strip	3.41	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
95	45	Wetland Wildlife, Waterfowl Wildlife, General Agriculture, Visual Protection	56.81	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
96	Previously unplanned	Previously unplanned - Marginal Strip	46.01	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
97	Previously unplanned	Previously unplanned - Marginal Strip	4.07	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
98	Previously unplanned	Previously unplanned - Marginal Strip	8.39	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
99	47, 48	Forest Demonstration/Res., Wetland Wildlife, Waterfowl Wildlife, General Agriculture	197.94	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. There is an agricultural license on this parcel.	Zone 4	Zone 4
100	Previously unplanned	Transferred to the U.S. Department of the Interior	32.85	This is part of the Natchez Trace Parkway.	Zone 6	Zone 6
101	48	Wetland Wildlife, Waterfowl Wildlife, General Agriculture	224.78	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. There is an agricultural license on this parcel.	Zone 4	Zone 4
102	Previously unplanned	Previously unplanned - Marginal Strip	13.30	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
103	Part of 46	Wetland Wildlife, General Forest, Visual Protection	10.70	This parcel fronts land transferred to the state of Alabama for public recreation. There is a boat ramp here.	Zone 6	Zone 6
104	46	Wetland Wildlife, General Forest, Visual Protection	248.63	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
105	Previously unplanned	Previously unplanned - Marginal Strip	7.60	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
106	44	Wetland Wildlife, General Forest, General Agriculture, Visual Protection	32.30	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
107	Previously unplanned	Previously unplanned - Marginal Strip	15.64	This parcel fronts Bear Creek Fish Camp Subdivision.	Zone 7	Zone 7
108	41	General Forest	145.11	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
109	Previously unplanned	Previously unplanned - Marginal Strip	42.49	This parcel fronts Randle Beach, Newport Beach, Wilemon Miller, River Oaks, and Bear Creek Retreat Subdivisions.	Zone 7	Zone 7
110	Transferred C	Transferred to the state of Mississippi	25.24	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
111	Previously unplanned	Previously unplanned - Marginal Strip	42.61	This parcel fronts Bay Point Estates and Pickwick Limited.	Zone 7	Zone 7
112	Previously unplanned	Previously unplanned - Marginal Strip	6.58	Mill Creek Marina is located here.	Zone 6	Zone 6
113	Transferred C	Transferred to the state of Mississippi	15.33	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
114	Previously unplanned	Previously unplanned - Marginal Strip	13.11	This parcel fronts River Bluff, Y & G Enterprises, and Hills of the Bear Subdivisions.	Zone 7	Zone 7
115	Previously unplanned	Previously unplanned - Marginal Strip	9.31	This parcel was sold with commercial recreation restrictions. This is Eastport Marina and Eastport Subdivision.	Zone 6	Zone 6
116	Transferred C	Transferred to the state of Mississippi	3.02	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
117	34	Historical, Safety Harbor	15.63	To protect wetlands and historical resources.	Zone 3	Zone 3
118	Previously unplanned	Previously unplanned - Marginal Strip	17.91	This parcel fronts River Trace Subdivision.	Zone 7	Zone 7
119	20	Upland Wildlife, General Forest, Safety Harbor	119.60	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. This is a Navigation Safety Harbor.	Zone 4	Zone 4
120	Previously unplanned	Previously unplanned - Marginal Strip	4.31	This parcel fronts River Trace Subdivision.	Zone 7	Zone 7
121	Transferred C	Transferred to the state of Mississippi	102.60	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
122	19	Wetland Wildlife, Upland Wildlife, Safety Harbor, Visual Protection	25.66	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
123	Transferred C	Transferred to the state of Mississippi	154.64	J. P. Coleman State Park is located here.	Zone 6	Zone 6

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
124	18	Wetland Wildlife, Safety Harbor, Visual Protection	10.99	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
125	17	Wetland Wildlife, Safety Harbor, Visual Protection	23.44	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation. This is a Navigation Safety Harbor.	Zone 4	Zone 4
126	16	Safety Harbor, Habitat Protection Area	145.53	Cooper Falls SWA is located here. To protect important wildlife habitat and shoreline stabilization.	Zone 3	Zone 3
127	Transferred C	Transferred to the state of Mississippi	16.07	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
128	8	General Forest, Safety Harbor, Minor Commercial Landing, Access for Future Development	50.26	To protect important wildlife habitat, and visual resources. Designated as a TVA Natural Area.	Zone 3	Zone 3
129	Transferred C	Transferred to the state of Mississippi	71.20	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
130	Previously unplanned	Previously unplanned	56.11	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
131	Yellow Creek Nuclear Plant	Yellow Creek Nuclear Plant	12.60	This parcel fronts the Tri-State Commerce Industrial Park.	Zone 5	Zone 5
132	13	General Forest, Minor Commercial Landing, Area for future development	117.51	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
133	Transferred C	Transferred to the state of Mississippi	59.49	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
134	Transferred C	Transferred to the state of Mississippi	82.98	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
135	Previously unplanned	Previously unplanned - Marginal Strip	20.53	This parcel fronts Whippoorwill Hills, East Ridge, East Ridge Addition, Yellow Creek, S. L. Stanley, and Spring Hollow Subdivisions.	Zone 7	Zone 7
136	Transferred G & Retained C	Yellow Creek Watershed Authority Marina and Goat Island Campground	48.55	Goat Island Recreation Area is located here.	Zone 6	Zone 6
137	Retained B	Goat Island	16.16	Island associated with Tri-State Commerce Industrial Park.	Zone 4	Zone 4

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
138	Previously unplanned	Previously unplanned - Marginal Strip	17.45	This parcel fronts Sleepy Hollow, Dickerson, and High Point Subdivisions.	Zone 7	Zone 7
139	Transferred C	Transferred to the state of Mississippi	1.75	This parcel is under license to the state of Mississippi for wildlife conservation.	Zone 4	Zone 4
140	12	Industrial site	307.07	Yellow Creek Port Authority is located here.	Zone 5	Zone 5
141	Transferred E	Minor Commercial Landing	31.48	This parcel is for future TCDF recreation development.	Zone 6	Zone 6
142	Previously unplanned	Previously unplanned - Marginal Strip	35.91	This parcel fronts Yellow Creek, Sandy Creek, and Holiday Hills Subdivisions.	Zone 7	Zone 7
143	11	General Forest, Minor Commercial Landing	5.33	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
144	Previously unplanned	Previously unplanned - Marginal Strip	1.16	Aqua Yacht Marina is located here.	Zone 6	Zone 6
145	Transferred	Transferred to state of Tennessee	7.30	This parcel fronts land transferred to the state of Tennessee for public recreation. There is a public boat ramp located here.	Zone 6	Zone 6
146	Previously unplanned	Previously unplanned - Marginal Strip	18.16	This parcel fronts State Line, Red Sulphur Springs, and Tishomingo Lakeside Subdivisions.	Zone 7	Zone 7
147	10	Open Space	0.99	This parcel is retained land and used to protect and manage for important wildlife habitat and shoreline vegetation. This is an old malaria control base.	Zone 4	Zone 4
148	9	General Forest	45.13	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
149	Previously unplanned	Previously unplanned - Marginal Strip	8.86	This parcel fronts Pickwick Coves and River Cliff Subdivisions.	Zone 7	Zone 7
150	Previously unplanned	Previously unplanned - Marginal Strip	3.23	This parcel fronts Grand Harbor Marina (previously named the Tenn-Tom Marina).	Zone 6	Zone 6
151	7	Safety Harbor, Minor Commercial Landing	17.51	To protect for visual resources.	Zone 3	Zone 3

New Parcel Number	1981 Plan Tract Number(s)	Alternative A - Current Allocation	Acres	Comments	Alternative B	Alternative C
152	Previously unplanned	Previously unplanned - Marginal Strip	77.79	This parcel fronts River Cliff, Caney Hollow, Winn Springs, Pine Cove, Holiday Hills, Eagle Point, Lakeshore Estates, Lands of Pickwick Estates, and Shiloh Falls Subdivisions.	Zone 7	Zone 7
153	6	Safety Harbor, Visual Protection	92.92	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
154	Previously unplanned	Previously unplanned - Marginal Strip	0.84	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
155	4, 5, 6	Forest Management, Visual Protection, Safety Harbor	199.68	This parcel is used to protect and manage for important wildlife habitat and shoreline vegetation.	Zone 4	Zone 4
156	3, 4	Forest Management, Visual Protection, Safety Harbor	21.00	This parcel is pending a land use request for the White Sulphur Springs cabin sites.	Zone 7	Zone 4
157	4	Forest Management, Visual Protection, Safety Harbor	25.72	Hardin County Port Authority is located here.	Zone 5	Zone 5
158	Transferred B	Visual Protection, General Forest Protection	137.99	Pickwick Landing State Park is located here.	Zone 6	Zone 6
159	Islands		126.93	This parcel contains all islands that are less than 10 acres in size that are not committed. These are too numerous to label on the maps.	Zone 4	Zone 4
160	Previously unplanned	Previously unplanned - Marginal Strip	84.87	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7
161	Previously unplanned	Previously unplanned - Marginal Strip	4.48	This parcel fronts property that has deeded access rights.	Zone 7	Zone 7

Note: Gray shading denotes parcels committed due to existing land use agreements.

Appendix C - Table of Rare Plant Species Bordering Pickwick Reservoir from Alabama (AL), Mississippi (MS), and Tennessee (TN) Counties

Rare Plant Species Bordering Pickwick Reservoir from Alabama (AL), Mississippi (MS), and Tennessee (TN) Counties

Common name	Scientific name	Distance to parcels	Federal status[††]	AL state status[§]	MS state status[§]	TN state status[§]	County [†]
Lyre-leaf bladderpod	*Lesquerella lyrata*		THR	NOST			C
Fleshy-fruited gladecress	*Leavenworthia crassa*		C	NOST			L
Monkey-face orchid	*Platanthera integrilabia*	**	C	NOST	NOST		T
Alabama glade-cress	*Leavenworthia alabamica*	**	none	NOST			C
Allegheny-spurge	*Pachysandra procumbens*	**	none	NOST	NOST		C, L, T
Alumroot*	*Heuchera villosa* var. *macrorhiza*	**	none		NOST		T
American columbo	*Frasera caroliniensis*		none	NOST	NOST		C
Anise-root	*Osmorhiza longistylis*	**	none		NOST		T
Bastard-toadflax	*Comandra umbellata*		none	NOST			C
Beard-tongue*	*Penstemon tenuiflorus*		none		NOST		T
Bent trillium	*Trillium flexipes*	**	none	NOST	NOST		T
Black snakeroot*	*Cimicifuga racemosa*	**	none		NOST		T
Blackstem spleenwort	*Asplenium resiliens*	**	none		NOST		T
Blue ash	*Fraxinus quadrangulata*	**	none		NOST		T
Blue sage	*Salvia azurea* var. *grandiflora*	**	none		NOST	SPCO	H
Bluebells	*Mertensia virginica*		none		NOST		T
Bristle fern	*Trichomanes boschianum*		none		NOST	THR	T
Broadleaf toothwort	*Dentaria diphylla*	**	none		NOST		T
Bunchflower*	*Melanthium virginicum*		none		NOST	END	H
Clematis*	*Clematis beadlei*		none		NOST		T
Crested coral-root	*Hexalectris spicata*		none		NOST		T
Crested fringed orchid	*Platanthera cristata*	**	none		NOST		T
Dogtooth-violet*	*Erythronium rostratum*	**	none		NOST	SPCO	H, T
Dutchman breeches	*Dicentra cucullaria*	**	none	NOST	NOST		C, L, T

Common name	Scientific name	Distance to parcels	Federal status[††]	AL state status[§]	MS state status[§]	TN state status[§]	County [†]
Dwarf larkspur	*Delphinium tricorne*	**	none		NOST		T
Foamflower	*Tiarella cordifolia*		none		NOST		T
Gattinger prairie clover	*Dalea gattingeri*		none	NOST			C
Ginseng	*Panax quinquefolius*	**	none		NOST	S-CE	T
Goldenrod*	*Solidago sphacelata*	**	none		NOST		T
Goldenseal	*Hydrastis canadensis*	*	none	NOST	NOST	S-CE	H
Great Indian-plantain	*Cacalia muehlenbergii*		none		NOST		T
Great plains ladies-tresses	*Spiranthes magnicamporum*		none	NOST	NOST		C
Greek valerian	*Polemonium re ans*	**	none		NOST		T
Green violet	*Hybanthus concolor*	**	none		NOST		T
Harper umbrella plant	*Eriogonum longifolium* var. *harperi*		none	NOST		END	C
Heartleaf plantain	*Plantago cordata*		none	NOST		END	C
Horse-gentian*	*Triosteum angustifolium*		none	NOST	NOST		C, T
Horsemint*	*Monarda clinopodia*		none	NOST			L
Jamesianthus	*Jamesianthus alabamensis*		none	NOST			C
Kentucky coffee-tree	*Gymnocladus dioicus*	**	none		NOST		T
Lamance iris	*Iris brevicaulis*		none			END	H
Leatherwood	*Dirca palustris*	**	none		NOST		T
Loose-flowered sedge	*Carex laxiflora*	**	none		NOST		T
Loosestrife*	*Lysimachia fraseri*	**	none			END	H
Lovage*	*Ligusticum canadense*	**	none		NOST		T
Maidenhair spleenwort	*Asplenium trichomanes*		none	NOST	NOST		T
Meadowrue*	*Thalictrum debile*		none	NOST	NOST		C
Milk-vetch*	*Astragalus canadensis*	**	none		NOST		T
Milkwort*	*Polygala mariana*		none			SPCO	H

Common name	Scientific name	Distance to parcels	Federal status[††]	AL state status[§]	MS state status[§]	TN state status[§]	County [†]
Mock-orange*	*Philadelphus hirsutus*	**	none		NOST		T
Mountain winterberry	*Ilex montana*	**	none		NOST		T
Muhly*	*Muhlenbergia tenuiflora*	**	none		NOST		T
Oval ladies-tresses	*Spiranthes ovalis*		none		NOST		T
Ovate catchfly	*Silene ovata*	**	none	NOST	NOST	END	H
Perideridia*	*Perideridia americana*	**	none		NOST	END	T
Phacelia*	*Phacelia bipinnatifida*	**	none		NOST		T
Pinnatifid spleenwort	*Asplenium pinnatifidum*		none		NOST		T
Poppy-mallow*	*Callirhoe triangulata*		none		NOST		T
Prairie trillium	*Trillium recurvatum*		none	NOST			C
Purple cliff-brake	*Pellaea atropurpurea*	**	none		NOST		T
Purple fringed orchid	*Platanthera peramoena*		none	NOST	NOST		L, T
Purple-coneflower*	*Echinacea purpurea*		none		NOST		T
Pussy-toes*	*Antennaria solitaria*	**	none		NOST		T
Putty-root	*Aplectrum hyemale*	**	none	NOST	NOST		T
Quillwort	*Isoetes engelmannii*		none		NOST		T
Ragged fringed orchid	*Platanthera lacera*		none	NOST	NOST		T
Ribbed sedge	*Carex virescens*		none		NOST		T
Rockcress*	*Arabis canadensis*	**	none		NOST		T
Sage*	*Salvia urticifolia*		none		NOST		T
Scorpion-weed	*Phacelia dubia*	**	none		NOST		T
Sedge*	*Carex jamesii*	**	none		NOST		T
Sedge*	*Carex lacustris*		none			THR	H
Sedge*	*Carex picta*	**	none		NOST		T
Sedge*	*Carex prasina*	**	none		NOST		T

Common name	Scientific name	Distance to parcels	Federal status[††]	AL state status[§]	MS state status[§]	TN state status[§]	County [†]
Sedge*	*Carex stricta*	**	none		NOST		T
Shellbark hickory	*Carya laciniosa*	**	none		NOST		T
Shooting star*	*Dodecatheon meadia*	**	none		NOST		T
Silvery glade fern	*Athyrium thely erioides*	**	none		NOST		T
Snow-wreath	*Neviusia alabamensis*	**	none	NOST	NOST	THR	T
Spotted wintergreen	*Chimaphila maculata*	**	none		NOST		T
Sunnybell*	*Schoenolirion croceum*		none	NOST		THR	C
Swamp hickory	*Carya leiodermis*		none		NOST		T
Tennessee milk-vetch	*Astragalus tennesseenis*		none		NOST		C
Three-birds-orchid	*Triphora trianthophora*		none		NOST		T
Tickseed*	*Coreopsis auriculata*		none		NOST		T
Toothwort*	*Dentaria heterophylla*	**	none		NOST		T
Tuberous scurfpea	*Pediomelum subacaule*		none	NOST			C
Turkscap lily	*Lilium superbum*	**	none	NOST	NOST		T
Turtlehead*	*Chelone glabra*	**	none		NOST		T
Virginia pine	*Pinus virginiana*	**	none		NOST		T
Wahoo	*Euonymus atropurpureus*	**	none		NOST		T
Walking fern	*Asplenium rhizophyllum*	**	none		NOST		T
Wall-rue spleenwort	*Asplenium ruta-muraria*		none	NOST			C
Water purslane	*Didiplis diandra*		none			THR	H
Waterleaf*	*Hydrophyllum appendiculatum*	**	none	NOST	NOST		T
Water willow	*Decodon verticillatus*		none		NOST		T
Weak stellate sedge	*Carex serosa*		none		NOST		T
White dogtooth-violet	*Erythronium albidum*		none	NOST	NOST		C
Wild columbine	*Aquilegia canadensis*	**	none		NOST		T

Common name	Scientific name	Distance to parcels	Federal status††	AL state status§	MS state status§	TN state status§	County †
Wild ginger*	*Asarum canadensis*	**	none		NOST		T
Wild hyacinth	*Camassia scilloides*	**	none		NOST		T
Wood anemone	*Anemone quinquefolia*		none		NOST		T
Woodrush*	*Luzula acuminata*	**	none		NOST		T
Wood-sorrel*	*Oxalis grandis*		none	NOST			C
Wooly lip-fern	*Cheilanthes lanosa*	**	none		NOST		T
Yellow parilla	*Menispermum canadense*	**	none		NOST		T
Yellowwood	*Cladrastis kentukea*	**	none		NOST		T

* This species does not have a unique common name.

** This species is known from within five miles of one or more of the five parcels surveyed during this environmental review.

§ State status: END = Endangered, NOST = State Listed, But No Status Assigned, S-CE = State Special Concern, Commercially Exploited, SPCO = State Special Concern, THR = Threatened.

† Counties of occurrence: C = Colbert, AL; H = Hardin, TN; L = Lauderdale, AL; T=Tishomingo, MS.

†† Federal status: THR = Threatened; C = Candidate for Federal Listing

Appendix D - Terrestrial Animal Species and Their Habitats Observed

Terrestrial Animal Species and Their Habitats Observed

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Amphibians				
American toad	*Bufo americanus*	•	•	
Bullfrog	*Rana catesbiana*			•
Cave salamander	*Eurycea lucifuga*	•		•
Dusky salamander	*Desmognathus fuscus*	•		•
Eastern hellbender	*Cryptobranchus alleganiensis*			•
Fowler's toad	*Bufo woodhousei fowleri*	•	•	•
Gray treefrog	*Hyla versicolor/chrysoscelis*	•		•
Green frog	*Rana clamitans*			•
Green treefrog	*Hyla cinerea*			•
Green salamander	*Aneides aeneus*	•		•
Northern cricket frog	*Acris crepitans*		•	•
Northern slimy salamander	*Plethodon glutinosus*	•		
Red salamander	*Pseudotriton ruber*	•	•	•
Red-spotted newt	*Notophthalmus viridescens*			•
Slimy salamander	*Plethodon glutinosus*	•		•
Southern leopard frog	*Rana utricularia*	•	•	•
Southern two-lined salamander	*Eurycea cirrigera*	•		
Spotted salamander	*Ambystoma maculatum*	•		•
Spring peeper	*Pseudacris crucifer*	•	•	•
Upland chorus frog	*Pseudacris triseriata*		•	•
Reptiles				
Black king snake	*Lampropeltis getula nigra*	•	•	•
Black racer	*Coluber constrictor*		•	•
Broadhead skink	*Eumeces laticeps*	•		•
Common musk turtle	*Sternotherus odoratus*			•
Common snapping turtle	*Chelydrya serpentina*			•
Eastern box turtle	*Terrapene carolina*	•	•	
Eastern garter snake	*Thamnophis sirtalis*	•	•	•
Five-lined skink	*Eumeces faciatus*	•	•	•

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Black/gray rat snake	*Elaphe obsoleta*	•	•	•
Green anole	*Anolis carolinensis*	•	•	•
Ground skink	*Scincella lateralis*	•	•	•
Midland water snake	*Nerodia sipedon pleuralis*			•
Mud turtle	*Kinosternon subrubrum*			•
Northern copperhead	*Agkistrodon contortrix*	•	•	•
Northern fence lizard	*Sceloporus undulatus*		•	•
Northern water snake	*Nerodia sipedon*			•
Ouachita map turtle	*Graptemys ouachitensis*			•
Painted turtle	*Chrysemys picta*			•
Prairie king snake	*Lampropeltis calligaster calligaster*		•	
Queen snake	*Regina septemvittata*			•
Red-eared slider	*Trachemys scripta elegans*			•
Ringneck snake	*Diadophis punctatus*	•		•
River cooter	*Pseudemys concinna*			•
Rough green snake	*Opheodrys aestivus*	•	•	•
Speckled king snake	*Lampropeltis getula holbrooki*		•	•
Spiny softshell turtle	*Apalone spinifera*			•
Stripe-necked musk turtle	*Sternotherus minor*			•
Timber rattlesnake	*Crotalus horridus*	•	•	•
Worm snake	*Carphophis amoenus*	•	•	
Yellow-bellied slider	*Trachemys scripta scripta*			•
Birds				
American coot	*Fulica americana*			•
American crow	*Corvus brachyrhynchos*	•	•	•
American goldfinch	*Carduelis tristis*		•	
American kestrel	*Falco sparvarius*		•	
American pigeon	*Anas americana*			•
American robin	*Turdus migratorius*		•	
Bald eagle	*Haliaeetus leucocephalus*	•		•
Barred owl	*Strix varia*	•		•
Belted kingfisher	*Ceryle alcyon*			•

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Black-crowned night heron	*Nycticorax nycticorax*			•
Black vulture	*Coragyps atratus*	•		
Blue-gray gnatcatcher	*Polioptila caerulea*			•
Blue grosbeaks	*Guiraca caerulea*		•	
Bluejay	*Cyanocitta cristata*	•		
Blue-winged teal	*Anas discors*			•
Bonaparte's gull	*Larus philadelphia*			•
Broad-winged hawk	*Buteo platypterus*	•		
Brown creeper	*Certhia americana*	•		
Brown thrasher	*Toxostoma rufum*		•	
Bufflehead	*Bucephala albeola*			•
Canada goose	*Branta canadensis*		•	•
Carolina chickadee	*Parus carolinensis*	•		•
Carolina wren	*Thryothorus ludovicianus*	•		
Caspian tern	*Sterna caspia*			•
Cedar waxwing	*Bombycilla cedrorum*	•		
Chimney swift	*Chaetura pelagica*		•	
Cliff swallow	*Hirundo pyrrhonota*			•
Common goldeneye	*Bucephala clangula*			•
Common grackle	*Quiscalus quiscula*		•	
Common loon	*Gavia immer*			•
Common snipe	*Gallinago gallinago*		•	•
Cooper's hawk	*Accipiter cooperii*	•	•	
Double-crested cormorant	*Phalacrocorax auritus*			•
Downy woodpecker	*Picoides pubescens*	•		
Eastern bluebird	*Sialia sialis*		•	
Eastern kingbird	*Tyrannus tyrannus*		•	
Eastern meadowlark	*Sturnella magna*		•	
Eastern phoebe	*Sayornis phoebe*	•	•	
Eastern screech owl	*Otus asio*	•		•
Eastern towhee	*Pipilo erythrophtalmus*		•	
Eastern wild turkey	*Meleagris gallopavo*	•	•	•
European starling	*Sturnus vulvaris*		•	

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Field sparrow	*Spizella pusilla*		•	
Forster's tern	*Sterna forsteri*			•
Gadwall	*Anas strepera*			•
Golden-crowned kinglet	*Regulus satrapa*	•		
Great blue heron	*Ardea herodias*	•	•	•
Great egret	*Ardea alba*			•
Great horned owl	*Bubo virginianus*	•	•	•
Green-backed heron	*Butorides virescens*	•	•	•
Hairy woodpecker	*Picoides villosus*	•		
Hooded merganser	*Lophodytes cucullatus*			•
Horned grebe	*Podiceps auritus*			•
Indigo bunting	*Passerina cyanea*		•	
Killdeer	*Charadrius vociferus*		•	
Lesser scaup	*Aythya affinis*			•
Little blue heron	*Egretta caerulea*			•
Loggerhead shrike	*Lanius ludovicianus*		•	
Louisiana waterthrush	*Seiurus motacilla*			•
Mallard	*Anas platyrinchos*			•
Mourning dove	*Zenaida macroura*		•	
Northern bobwhite	*Colinus virginianus*		•	
Northern cardinal	*Cardinalis cardinalis*	•	•	
Northern flicker	*Colaptes auratus*	•		
Northern harrier	*Circus cyaneus*		•	
Northern mockingbird	*Mimus polyglottos*		•	
Northern rough-winged swallow	*Stelgidopteryx serripennis*			•
Northern shoveler	*Anas clypeata*			•
Northern parula	*Parula americana*			•
Osprey	*Pandion haliaetus*	•		•
Pied-billed grebe	*Podilymbus podiceps*			•
Pileated woodpecker	*Dryocopus pileatus*	•		
Pine warbler	*Dendroica pinus*	•		
Prothonotary warbler	*Protonotaria citrea*			•
Purple martin	*Progne subis*		•	•

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Red-bellied woodpecker	*Melanerpes carolinus*	•		
Redhead	*Aythya americana*			•
Red-headed woodpecker	*Melanerpes erythrocephalus*	•	•	
Red-shouldered hawk	*Buteo lineatus*	•		•
Red-tailed hawk	*Buteo jamaicensis*		•	
Red-winged blackbird	*Agelaius phoeniceus*		•	•
Ring-billed gull	*Larus delawarensis*			•
Ring-necked duck	*Aythia collaris*			•
Rock dove	*Columba livia*		•	
Ruby-crowned kinglet	*Regulus calendula*	•		
Song sparrow	*Melospiza melodia*		•	
Spotted sandpiper	*Actitis macularia*			•
Swainson's warbler	*Limnothlypis swainsonii*			•
Swamp sparrow	*Melospiza georgiana*			•
Tufted titmouse	*Parus bicolor*	•		•
Turkey vulture	*Cathartes aura*		•	
White-breasted nuthatch	*Sitta carolinensis*	•		
White-eyed vireo	*Vireo griseus*		•	•
White-throated sparrow	*Zonotrichi albicollis*	•	•	
Winter wren	*Troglodytes troglodytes*	•		
Wood duck	*Aix sponsa*	•		•
Yellow-bellied sapsucker	*Sphyrapicus varius*	•		
Yellow-billed cuckoo	*Coccyzus americanus*	•		•
Yellow-rumped warbler	*Dendroica coronata*	•		
Mammals				
Beaver	*Castor canadensis*			•
Big brown bat	*Eptesicus fuscus*	•	•	•
Coyote	*Canis latrans*	•	•	•
Eastern chipmunk	*Tamias striatus*	•		
Eastern cottontail	*Sylvilagus floridanus*		•	•
Eastern gray squirrel	*Sciurus carolinensis*	•		
Eastern mole	*Scalopus aquaticus*	•	•	•
Eastern pipistrelle	*Pipistrelllus subflavus*	•	•	•

Common Name	Scientific Name	Forest Lands	Managed Open Lands (Old and Ag. Fields)	Wetlands and Riparian Communities
Eastern red bat	*Lasiurus borealis*	•	•	•
Eastern wood rat	*Neotoma magister*	•		•
Gray bat	*Myotis grisescens*	•		•
Gray fox	*Urocyon cinereoargenteus*	•		
Hispid cotton rat	*Sigmodon hispidus*		•	•
Least shrew	*Cryptotis parva*	•	•	•
Long-tailed weasel	*Mustela frenata*	•	•	•
Mink	*Mustella vison*			•
Muskrat	*Ondatra zibethicus*			•
Nine-banded armadillo	*Dasypus novemcinctus*	•	•	•
Opossum	*Didelphis marsupialis*	•	•	•
Raccoon	*Procyon lotor*	•		•
Southeastern shrew	*Sorex longirostris*	•	•	•
Southern flying squirrel	*Glaucomys volans*	•		
Southern short-tailed shrew	*Blarina carolinensis*	•		•
Striped skunk	*Mephitis mephitis*		•	
Swamp rabbit	*Sylvilagus aquaticus*			•
White-footed mouse	*Peromyscus leucopus*	•	•	•
White-tailed deer	*Odocoileus virginianus*	•	•	•
Woodchuck	*Marmota monax*		•	

Appendix E - Soils, Listed by County, Which Occupy the Tennessee Valley Authority Land Surrounding the Pickwick Reservoir and Forms AD-1006 for Lauderdale and Colbert Counties, Alabama

Soils, listed by county, which occupy the Tennessee Valley Authority land surrounding the Pickwick Reservoir.

Symbol	Name	Slope	Prime Farmland
Colbert, AL [1]			
BaE	Barfield-Rock outcrop complex	2 to 35 percent slopes	
BeB	Bewleyville silt loam	2 to 6 percent slopes	yes
BeC	Bewleyville silt loam	6 to 10 percent slopes	
CaB	Capshaw silt loam	2 to 6 percent slopes	yes
CbA	Chenneby silt loam	0 to 2 percent slopes	yes
CeA	Chenneby silt loam	0 to 2 percent slopes	yes
ChD	Chisca loam	6 to 15 percent slopes	
CnF	Chisca-Nella-Nectar complex	10 to 45 percent slopes	
DaB	Decatur silt loam	2 to 6 percent slopes	yes
DaC2	Decatur silty clay loam	6 to 10 percent slopes	
DeB	Decatur-Urban land complex	2 to 8 percent slopes	
DeD	Decatur-Urban land complex	8 to 15 percent slopes	
DkA	Dickson silt loam	0 to 3 percent slopes	yes
EmA	Emory silt loam	0 to 2 percent slopes	yes
EnA	Emory-Urban land complex	0 to 1 percent slopes	
EtB	Etowah silt loam	2 to 6 percent slopes	yes
FaB	Fullerton cherty silt loam	2 to 6 percent slopes	yes
FaD	Fullerton cherty silt loam	6 to 15 percent slopes	
FbF	Fullerton-Bodine complex	15 to 45 percent slopes	
GuA	Futhrie silt loam	0 to 2 percent slopes	
NNC	Nectar and Nauvoo fine sandy loams	6 to 10 percent slopes	
NuA	Nugent fine sandy loam	0 to 2 percent slopes	
PUA	Pruitton and Dullivan silt loams	0 to 2 percent slopes	yes
SaF	Sffell-Pikeville complex	15 to 45 percent slopes	
ShB	Savannah loam	1 to 5 percent slopes	yes
SpD	Smithdale-Pikeville complex	6 to 15 percent slopes	
TnD	Typic Udorthents-Nectar complex	6 to 15 percent slopes	
TuB	Tupelo-Colbert complex	0 to 4 percent slopes	yes
Ub	Urban land	0 to 5 percent slopes	
WnB	Wynnuille silt loam	2 to 6 percent slopes	yes

Symbol	Name	Slope	Prime Farmland
Lauderdale, AL [2]			
Ar	Armour silt loam	level	yes
BoE	Bodine cherty silt loam	10 to 35 percent slopes	
Ch	Chenneby silt loam	level	yes
Co	Choccolocca silt loam	level	yes
DaB	Decatur silt loam	2 to 6 percent slopes	yes
DcC2	Decatur silty clay loam	6 to 10 percent slopes	
DeB	Dewey silt loam	2 to 6 percent slopes	yes
DeC	Dewey silt loam	6 to 10 percent slopes	
DfC2	Dewey silty clay loam	6 to 10 percent slopes	
DoA	Dickson silt loam	0 to 2 percent slopes	yes
DoB	Dickson silt loam	2 to 6 percent slopes	yes
DoC	Dickson silt loam	6 to 10 percent slopes	
EtB	Etowah silt loam	2 to 8 percent slopes	yes
FaB	Fullerton cherty silt loam	2 to 6 percent slopes	yes
FaC	Fullerton cherty silt loam	6 to 15 percent slopes	
Gr	Grasmere silty clay loam	level	yes
Gu	Guthrie silt loam	level	
Hu	Humphreys cherty silt loam	level	yes
Le	Lee cherty silt loam	level	
Lo	Lobelville cherty silt loam	level	yes
PaD3	Paleudults	6 to 15 percent slopes	
Pr	Pruitton silt loam	level	yes
SaC	Saffell gravelly fine sandy loam	6 to 10 percent slopes	
SBF	Saffell and Bodine soils	steep	
SmC	Smithdale fine sandy loam	5 to 10 percent slopes	
St	Staser silt loam	level	yes
Tishomingo, MS [3]			
Kr	Kirkville loam	level	yes
Ma	Mantachie loam	level	yes
RuC2	Ruston sandy loam, eroded	2 to 5 percent slopes	
SA	Saffell-Smithdale association	hilly	
ShC	Savannah silt loam, eroded	2 to 5 percent slopes	yes
SmE	Smithdale sandy loam	15 to 20 percent slopes	

Symbol	Name	Slope	Prime Farmland
SR	Smithdale-Ruston association	hilly	
Hardin, TN [4]			
Am	Almo silt loam	level	
Ba	Beason silt loam	level	yes
BdD	Bodine cherty silt loam	5 to 12 percent slopes	
BdF	Bodine cherty silt loam	12 to 35 percent slopes	
BeF	Bodine-Guin complex	25 to 35 percent slopes	
CaA	Ca in a silt loam	0 to 2 percent slopes	yes
CaC	Ca in a silt loam	2 to 5 percent slopes	yes
CbB3	Ca in a silty clay loam	2 to 8 percent slopes	
Cf	Collins fine sandy loam	level	yes
Cg	Collins loam, local alluvium	level	yes
Ch	Collins silt loam	level	yes
CkF	Culleoka silt loam	5 to 12 percent slopes	
DaD	Dandridge-Needmore complex	8 to 12 percent slopes	
DaF	Dandridge-Needmore complex	12 to 35 percent slopes	
DcB3	Dexter clay loam	2 to 5 percent slopes	
Ea	Egam silty clay loam	level	yes
Ec	Ennis cherty silt loam	level	yes
Ee	Ennis cherty silt loam, local alluvium	level	yes
Em	Ennis silt loam	level	yes
EtC3	Etowah gravelly silty clay loam	5 to 8 percent slopes	
EtD3	Etowah gravelly silty clay loam	8 to 12 percent slopes	
Fa	Falaya loam, local alluvium	level	yes
FrC	Freeland loam, eroded	2 to 5 percent slopes	yes
FrB3	Freeland loam, severely eroded	5 to 8 percent slopes	
FrC3	Freeland loam, severely eroded	5 to 8 percent slopes	
Ga	Gravelly alluvial land	level	
Gc	Gullied land, clayey materials	level	
Gm	Gullied land, loamy materials	level	
Ha	Hatchie loam	level	yes
HcC	Humphreys cherty silt loam	2 to 5 percent slopes	yes
Hn	Huntington fine sandy loam	level	yes
Hu	Huntington silt loam	level	yes

Symbol	Name	Slope	Prime Farmland
LaD2	Landisburg cherty silt loam	5 to 12 percent slopes	
LaE	Landisburg cherty silt loam	12 to 20 percent slopes	
Le	Lee cherty silt loam	level	
Lm	Lee silt loam	level	
Ln	Lindside silt loam	level	yes
Lv	Lobelville silt loam	level	yes
Mc	Manachie fine sandy loam	level	yes
Me	Melvin and Newark silt loams	level	
MhD	Minvale cherty silt loam	5 to 12 percent slopes	
MhE	Minvale cherty silt loam	12 to 25 percent slopes	
MoC	Mountview silt loam	5 to 8 percent slopes	
PaB	Paden silt loam	2 to 5 percent slopes	yes
PaC	Paden silt loam, eroded	2 to 5 percent slopes	yes
PaB3	Paden silt loam	2 to 5 percent slopes	
PaC3	Paden silt loam	5 to 8 percent slopes	
PkB	Pickwick silt loam	2 to 5 percent slopes	yes
PkC	Pickwick silt loam, eroded	2 to 5 percent slopes	yes
PkC	Pickwick silt loam	5 to 8 percent slopes	
PkC2	Pickwick silt loam, eroded	5 to 8 percent slopes	
PkD	Pickwick silt loam	8 to 12 percent slopes	
PwB3	Pickwick silty clay loam	2 to 5 percent slopes	yes
PwC3	Pickwick silty clay loam, severely eroded	5 to 8 percent slopes	
Px	Pickwick - gullied land complex	level	
Rb	Robertsville silt loam	level	
Rc	Rock land	level	
RfC	Ruston fine sandy loam	5 to 8 percent slopes	
RfD	Ruston fine sandy loam	8 to 12 percent slopes	
RfE	Ruston fine sandy loam	12 to 25 percent slopes	
RfF	Ruston fine sandy loam	25 to 45 percent slopes	
SaE	Saffell gravelly sandy loam	12 to 20 percent slopes	
ScC	Sequatchie fine sandy loam	2 to 5 percent slopes	yes
SeC3	Sequatchie loam	2 to 8 percent slopes	
SmC	Shubuta fine sandy loam	5 to 8 percent slopes	
SmE	Shubuta fine sandy loam	12 to 25 percent slopes	

Symbol	Name	Slope	Prime Farmland
SmF	Shubuta fine sandy loam	25 to 45 percent slopes	
Ta	Taft silt loam	level	
Vb	Vicksburg loam	level	yes
Wa	Waverly fine sandy loam	level	
Wb	Waverly silt loam	level	
WcB3	Waynesboro clay loam, severely eroded	2 to 5 percent slopes	yes
WcC3	Waynesboro clay loam, severely eroded	5 to 8 percent slopes	
WcF3	Waynesboro clay loam	12 to 35 percent slopes	
WfB	Waynesboro fine sandy loam	2 to 5 percent slopes	yes
WfC	Waynesboro fine sandy loam	5 to 8 percent slopes	
WfF	Waynesboro fine sandy loam	12 to 35 percent slopes	
WgD3	Waynesboro gravelly clay loam	5 to 12 percent slopes	
WmC	Waynesboro gravelly sandy loam	5 to 8 percent slopes	
WmD	Waynesboro gravelly sandy loam	8 to 12 percent slopes	
WmE	Waynesboro gravelly sandy loam	12 to 25 percent slopes	
WnD	Waynesboro very gravelly sandy loam	5 to 12 percent slopes	
WnE	Waynesboro very gravelly sandy loam	12 to 25 percent slopes	
WnF	Waynesboro very gravelly sandy loam	25 to 45 percent slopes	
WoA	Wolftever silt loam	0 to 2 percent slopes	yes
WoC	Wolftever silt loam	2 to 5 percent slopes	yes
WvC3	Wolftever silty clay loam	5 to 10 percent slopes	

[1]USDA – SCS, Soil Survey of Colbert County, Alabama, 1994
[2]USDA – SCS, Soil Survey of Lauderdale County, Alabama, 1977
[3]USDA – SCS, Soil Survey of Tishomingo County, Mississippi, 1983
[4]USDA – SCS, Soil Survey of Hardin County, Tennessee, 1963

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 6/26/01
Name Of Project Pickwick Reservoir Land Management Plan	Federal Agency Involved Tennessee Valley Authority
Proposed Land Use Residential/Commercial/Industrial	County And State Colbert, AL
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated	Average Farm Size 230
Major Crop(s) [Cotton] Soybeans, Corn	Farmable Land In Govt. Jurisdiction Acres: 191,984 % 51		Amount Of Farmland As Defined in FPPA Acres: 108,156 % 57
Name Of Land Evaluation System Used LESA	Name Of Local Site Assessment System N/A		Date Land Evaluation Returned By NRCS 7/3/01

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	204.6			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	204.6	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	84.4			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0%			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	17.7			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	90	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Site Being Farmed	20	2			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	10			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	5			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	1			
TOTAL SITE ASSESSMENT POINTS	160	58	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	90	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	58	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	148	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side) Form AD-1006 (10-83)

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 6/26/01
Name Of Project Pickwick Reservoir Land Management Plan	Federal Agency Involved Tennessee Valley Authority
Proposed Land Use Residential	County And State Lauderdale, AL
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form)*	Yes ☑	No ☐	Acres Irrigated	Average Farm Size 144
Major Crop(s) [Cotton] Soybeans, Corn	Farmable Land In Govt. Jurisdiction Acres: 317,040 % 72		Amount Of Farmland As Defined In FPPA Acres: 198,254 % 45
Name Of Land Evaluation System Used LESA	Name Of Local Site Assessment System N/A		Date Land Evaluation Returned By NRCS 7/3/01

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	10.4			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	10.4	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.4			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.005%			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	13.4			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	83	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	12			
2. Perimeter In Nonurban Use	10	5			
3. Percent Of Site Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	15			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	0			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	47	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	83	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	47	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	130	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side) Form AD-1006 (10-83)

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Appendix F - Visual Resource Narrative

Visual Resources

Beginning at Wilson Dam (TRM 259.4) and traveling downstream, the first noticeable visual features are Patton Island and Jackson Island. Jackson Island, the smaller of the two, is undisturbed, while Patton Island is bisected by an arterial highway. The port of Florence, an industrial port, is located to the north where visual disturbance is evident. The cities of Florence and Sheffield, Alabama, are located on either side of the reservoir and also contribute to the visual discord, with O'Neal Bridge crossing the reservoir at TRM 256.4. Residential developments above the bluff walls to the south and commercial recreation that includes Florence Harbor and McFarland Park on the north shore of the reservoir, just below the bridge crossing, further establish the landscape character of the first section of Pickwick Reservoir, where scenic value is fair and scenic integrity is low.

Seven Mile Island begins near TRM 253. The island grouping comprises the Seven Mile Island WMA and is sanctuary for many diverse wildlife species. The island itself is relatively free of human disturbance and the natural setting of the islands and their juxtaposition with the northern shoreline give observers exceptional views while framing the reservoir for viewers in the middleground. The terrain is moderate to the north, and steeply sloping to the south, with Pride Bluff framing reservoir views for background observers. The expanse of islands in this section of river help to define the sense of place and human scale. The scenic value of the area is excellent, and the scenic integrity is high.

Little Bear Creek meets with the reservoir just across from Buck Island, a smaller island in the Seven Mile Island WMA, and winds southward over three miles to its headwaters. Residential development occurs at the mouth of the embayment where visual quality is moderate to low, but as observers travel further into the embayment, the winding riverine setting adds visual character, and viewscapes become more natural and serene. Approaching the headwaters of Little Bear Creek, residential development is intermixed with natural scenes of undisturbed shoreline. The overall scenic value is moderate to high, with the scenic integrity being moderate to high.

Traveling downstream to TRM 247.8, the confluence of Dry Creek and Pickwick Reservoir is located to the south shore. Views into Dry Creek from the reservoir are natural, and vegetation is well established along the shoreline. Aside from a railroad crossing near the headwater, the cove is pleasing visually and the scenic value is moderate to high, with scenic integrity being moderate to high.

The Cane Creek embayment converges with the river just west of the Seven Mile Island WMA and is in direct proximity to TVA's Colbert Fossil Plant, located near TRM 245. Views of the fossil plant are predominant, both upstream and down; however, views to the north shore are wooded with good tree cover. Understory vegetation is established and foreground views are excellent. Residential development, including water use facilities, occur just downstream on the north shore and contrast visually with the pristine shoreline just upstream. Malone Creek, just across the reservoir, is a small cove with good tree cover and moderately sloping terrain. The tree canopy is good, and plant diversity is excellent. The variety of views in this area are somewhat contrasting. The scenic value is moderate to high and the scenic integrity is moderate.

Kogers Island splits the reservoir at TRM 239.7 and serves as an excellent focal point for observers viewing the island from the northwest and southeast. The island is pristine and vegetation and tree cover are superb. Kogers Island helps to frame views and provides human scale, while directing views upstream and down. Vegetation remains lush and tree cover is excellent, forming a horizontal plane above the reservoir to give balance and sequence to the reservoir. The only contrasting view is the Natchez Trace Parkway Bridge that spans the reservoir at TRM 236.6. Two embayments on either side of the shoreline, just downstream from the Natchez Trace Bridge serve to balance views by observers in the foreground and middleground distances. Tree cover remains good, and a small park is visible just upstream from the Natchez Trace Bridge. Passive recreation is visible in the heavily wooded park, allowing only a minor visual detraction. Undisturbed shoreline is visible from all viewing distances, and this section of the reservoir has a scenic value that is excellent and a scenic integrity that is high.

Residential development, with water use facilities, is visible through the next section of Pickwick Reservoir. The back-lying land use is fairly consistent along the south shore, with a variety of land uses and available views to the north shore. Small bluff walls serve as a focal point just across the reservoir from Bluff Creek, where residential development occurs and water use facilities are visible. Further downstream, the north shore is a mix of gently sloping terrain, excellent tree cover, and good visual buffers from back-lying land uses. A large embayment known as Second Creek, intersects the reservoir just upstream of the town of Waterloo, Alabama, near TRM 227.5. The Second Creek embayment is the largest embayment along the north shore of Pickwick Reservoir, and contains visual images of residential development and wooded shoreline. water use facilities are conspicuous along the west shoreline of the embayment. The terrain is gently sloping upon reaching the headwaters of the embayment, where the land has the visual character of a wetland. Mixed species of plant materials abound, and vegetation and tree cover are excellent. Observers have superb views from foreground and middleground distances. The scenic value is moderate to high, with scenic integrity being moderate to high.

Just downstream from the Second Creek embayment, the town of Waterloo, Alabama, is visible to reservoir users. Residential development occurs on both the north and south shores. Views from foreground and middleground users are mixed, with development being predominant, being broken by only a few small hollows containing visually pleasing canopy and vegetation. Residential development continues along the south shore into the Bear Creek embayment. The largest embayment to the south shore of Pickwick Reservoir, Bear Creek, swells with lakeside homes and water use facilities. Development is visible on both the east and west shoreline to viewers in the foreground and middleground, and tends to contrast with the natural character of the reservoir. The historic towns of Eastport, Mississippi, and Riverton, Alabama, flank the confluence of Bear Creek and Pickwick Reservoir. These towns serve, in present times, as recreation ports and residential developments for reservoir users. The scenic value near the mouth of the Bear Creek embayment is moderate to low, and the scenic integrity is low.

Traveling further into the Bear Creek embayment, available views change from moderate to high density residential development to a more undisturbed, natural shoreline. A Norfolk Railroad causeway contrasts with otherwise naturalistic views.

Adding to the visual congestion, a derelict bridge that was once U.S. Highway 72, and two existing highway bridges that serve U.S. Highway 72 at present. Beyond the causeways and bridges, to the south of the embayment, the majority of the shoreline is undisturbed, with only minimal views of residential development. The terrain is gently sloping, with mixed plant species and good tree canopy, which provides sequence and gives balance to viewers from all viewing distances. The Bear Creek embayment begins to narrow considerably just downstream from the U.S. Highway 72 bridges. The area begins to have the visual character of a small creek, that is in some areas, only 30 to 40 feet wide. Views available to observers from the south and north are serene and pleasing. To the extreme south of the embayment, a smaller two-lane bridge crosses the creek. Tree cover in this section is good, and the terrain is moderately sloping. The overall scenic value for this section is high, with scenic integrity being moderate to high.

Proceeding downstream, from the mouth of Bear Creek, residential development is evident along the south shore of the reservoir. Small bluff walls, usually not higher than 10 feet, are apparent along the shoreline also. Near TRM 222.5, a small cove, known as Fred Hollow, converges with the Pickwick Reservoir. Residential development exists near the back of the small cove, where a large community water use facility is visible. The remainder of the cove, however, is natural in character with often steeply sloping terrain. The vegetation and tree cover that form a horizontal plane above the reservoir are pleasing visually. Leaving the cove, the downstream views to the south shore are similar, with small bluff walls and moderately sloping terrain, reaching the Indian Creek embayment. The entrance to the embayment is framed nicely with gently sloping and well forested land. A large commercial recreation development with water use facilities is visible when entering Indian Creek. J. P. Coleman State Park occupies land just beyond the mouth of Indian Creek and is visible to foreground and middleground observers. The remainder of the embayment is forested, with gentle to moderate slopes. The headwaters of the cove show characteristics of a wetland, with small streams and creeks feeding the embayment. Aside from the visual congestion caused by the commercial recreation development near the confluence, the scenic integrity remains moderate to high. To the north shore, the Lauderdale WMA covers a massive expanse of the shoreline and back-lying property, reaching downstream to TRM 211. Views are excellent into the Lauderdale WMA from all viewing distances. The tree canopy is unbroken and the vegetation is lush. The topography throughout the Lauderdale WMA is gently sloping to moderate. Since this land is, for the most part, pristine, the scenic value and integrity are high, and the area provides for a pleasing visual contrast to the south shore.

Leaving the Indian Creek embayment, views to the north and south shores are naturalistic, with bluff walls along the south shoreline. Several small coves are visible along both shorelines and visual character remains consistent until reaching the mouth of Yellow Creek at TRM 215.2. Upon entering the Yellow Creek embayment, observers have views of wooded shoreline that frame the entrance to Yellow Creek. The topography is moderately sloping and the vegetation is lush. Plant species consists of mixed hardwoods and pines scattered throughout. Understory vegetation is evident at the mouth of the embayment and views by foreground and middleground observers are considered good. The visual character changes upon entering Yellow Creek, and mixed land uses and water uses contribute to visual congestion. Residential development and water use facilities are visible on the north shore, along with a commercial marina development. J. P. Coleman State Park is visible to the south shore by observers in the

foreground. An unnamed island is visible beyond the entrance that helps to frame views and define human scale of the embayment. Visual congestion is high in this area, with views of a two-lane causeway (State Route 25) in the distance to the west that is visible to foreground and middleground observers. Industrial ports and monolithic structures are visible in the foreground and middleground distances and contribute to the visual discord in the area near TRM 447.5. As the creek widens beyond the area of heavy development, Goat Island is visible as it bisects the embayment. The small island has moderate topography and good vegetation, which help to define the scale and character of the area. Beyond Goat Island, residential development is seen on the east and west shores of the inlet. Water use facilities are evident and visual congestion is high. Only upon reaching the end of the embayment does the visual character return to a naturalistic state. The topography is gentle to flat and the waters are somewhat shallow, with stumps and trees rising from the lake. As observers near the Tennessee Tombigbee Waterway, the views are of wooded flatlands with good tree cover that at times, resemble wetlands. In this area, the scenic value is moderate, and the scenic integrity is moderate to high.

Exiting the Yellow Creek embayment, views are directed to a relatively large island that splits the reservoir near TRM 214.7. State Line Island, located directly across from the north end of the Lauderdale WMA, is free of human disturbance, visually, and has an excellent scenic value and scenic integrity. Views to the west shore contrast with somewhat high density residential development and water use facilities. This densely populated shoreline contrasts adversely with the east shore which includes the WMA. Scenic value is low in this section and scenic integrity is low. This view remains consistent upon reaching TRM 212 where the visual character changes near Dry Creek, as the Lauderdale WMA ends and heavy residential development begins. The Dry Creek inlet is fronted by residential development as observers enter the embayment traveling into the Lauderdale WMA. The visual disarray at the entrance gives way to pristine forest land toward the rear of the cove, and the scenic value and integrity are high for the majority of the inlet that is included in the WMA. Leaving the cove and continuing around the north shore, views are congested with residential development and water use facilities. There are several small coves that reach off of the main reservoir that also show evidence of residential development. The south shore of the reservoir is predominantly wooded with moderate to gently sloping terrain. Residential development and water use facilities are sparsely located along the shoreline until reaching the commercial recreational development that comprises Pickwick Landing State Park. The scenic value is moderate to low in this area, and the scenic integrity is low.

Near TRM 208, views change as foreground and middleground observers have prevalent views of the Pickwick Landing Dam and a recently constructed recreation facility to the immediate south. The sizable structure of the dam, and the two-lane road (known as Pickwick Road) that crosses the reservoir there, give a sense of terminus to the reservoir. When viewed with the north and south shores, a sense of visual congestion is evident, with residential development along the sometimes sparsely forested, steeply sloping north shore and heavy commercial recreation development along the gently sloping south shore, which contains several densely forested areas. Overall, the scenic value of the area is low, and the scenic integrity is low.

Appendix G - Flood Profile Table for Pickwick Reservoir

Tennessee River - Pickwick Reservoir Flood Profiles

River Mile	100-Year Flood	Flood Risk Profile*	Landmark	River Mile	100-Year Flood	Flood Risk Profile*	Landmark
206.70	419.0	419.0	Pickwick Landing Dam	221.00	419.8	420.0	
207.00	419.0	419.0		222.00	419.9	420.1	
208.00	419.0	419.0		222.44	419.9	420.1	
208.16	419.0	419.0		223.00	419.9	420.2	
209.00	419.1	419.1		224.00	420.0	420.3	
209.15	419.1	419.1		224.44	420.0	420.3	
210.00	419.2	419.2		224.68	420.0	420.3	Bear Creek
210.20	419.2	419.3		225.00	420.0	420.3	
211.00	419.3	419.4		225.70	420.1	420.4	
211.22	419.3	419.4		226.00	420.1	420.4	
212.00	419.3	419.4		227.00	420.2	420.5	
213.00	419.4	419.5		227.36	420.2	420.6	Second Creek
213.23	419.4	419.5		227.80	420.2	420.6	
214.00	419.4	419.5		228.00	420.3	420.6	
214.23	419.4	419.5		229.00	420.3	420.7	
215.00	419.5	419.6		229.77	420.4	420.8	
215.09	419.5	419.6		230.00	420.4	420.8	
215.17	419.5	419.6		230.85	420.5	420.9	
215.18	419.5	419.6	Tennessee-Tombigbee	231.00	420.5	420.9	
215.48	419.5	419.6		231.90	420.6	421.1	
216.00	419.5	419.6		232.00	420.6	421.1	
217.00	419.5	419.7		233.00	420.7	421.2	
217.24	419.5	419.7		233.75	420.7	421.3	
217.68	419.5	419.7		234.00	420.8	421.3	
218.00	419.6	419.7		235.00	420.9	421.4	
218.30	419.6	419.7		235.88	420.9	421.5	
219.00	419.6	419.8		236.00	420.9	421.5	
220.00	419.7	419.9		236.58D	421.0	421.6	Natchez Trace Parkway
220.27	419.7	420.0	Indian Creek	236.58U	421.0	421.6	Natchez Trace Parkway
220.44	419.8	420.0		237.00	421.1	421.7	

River Mile	100-Year Flood	Flood Risk Profile*	Landmark	River Mile	100-Year Flood	Flood Risk Profile*	Landmark
237.84	421.3	421.9		251.00	425.2	426.6	
238.00	421.3	422.0		251.72	425.5	426.9	
239.00	421.5	422.2		252.00	425.6	427.0	
239.40	421.5	422.3		252.16	425.6	427.1	Spring Creek
240.00	421.7	422.4		252.81	425.8	427.3	
240.43	421.8	422.5	Malone Creek	253.00	426.0	427.5	
241.00	421.9	422.7		253.80	426.5	428.0	
241.88	422.1	422.9		254.00	426.7	428.2	
242.00	422.1	423.0		255.00	427.5	429.2	
243.00	422.4	423.3		255.01	427.6	429.2	
243.85	422.6	423.6		255.03	427.6	429.2	Cypress Creek
244.00	422.6	423.6		255.77	428.6	430.4	
244.05	422.6	423.6	Cane Creek	256.00	428.9	430.7	
244.16	422.7	423.6		256.35D	429.4	431.2	U.S. Highways 43 & 72
245.00	423.0	424.1		256.35U	429.5	431.4	U.S. Highways 43 & 72
245.92	423.4	424.6		256.47D	429.5	431.4	Southern Railway
246.00	423.5	424.6		256.47U	429.6	431.5	Southern Railway
247.00	423.8	425.0		257.00	430.0	432.0	
247.87	424.1	425.4		257.20	430.1	432.1	
248.00	424.2	425.5		257.23	430.2	432.2	Sweetwater Creek
249.00	424.5	425.9		258.00	432.4	434.6	
249.57	424.7	426.1	Little Bear Creek	258.06	432.6	434.8	Pond Creek
249.60	424.7	426.1		258.80	433.7	436.0	
250.00	424.8	426.2		259.00	434.1	436.4	
250.62	425.0	426.4		259.40	434.9	437.2	Wilson Dam

D - Downstream at Bridge
U - Upstream at Bridge

*The Flood Risk Profile is Equal to the 500-Year Flood

Appendix H – Responses to Comments Received on the Draft EIS

Appendix H - Response to Comments Received on the DEIS

Introduction

This appendix contains TVA's responses to public comments received on the Pickwick Reservoir Land Management Plan Draft Environmental Impact Statement (DEIS). Comments were received from May 3, 2002 to June 17, 2002. In response to some comments, the text of the FEIS has been changed. Even when a comment did not require modifying the FEIS text, TVA has provided a response to the issue raised.

Public Comments

Prefer Alternative C

- I would recommend to the board of directors that TVA take the most conservative plan of action and adopt alternative plan "C". Plan C seems to be the best plan. ***Comment by****: Peck, John; Crawford, William; Brown, Leland; Harden, Brett; Palmer, Marvin; Thakkar, Pravin; Sachenbacher, Frank and Patti; Brown, Lee; Matthews, J. Mark*

- I like the Alternative C better than any of them, because there is less land that is going to be used for this 2.3% is a lot better than 13% [Alternative A]. ***Comment by****: Cannon, Brian*

- Pickwick is a valuable resource for all of us. TVA was wise many years ago to restrict both industrial and residential development on the lake. I would recommend management plan C because it allows for least amount of development and change for the river. Other impoundments around the country have suffered water quality problems as well as a host of other calamities because of overbuilding. We should take a very conservative approach to the management of the lake and surrounding land. Plan C is our best choice. ***Comment by****: Brown, Charlie*

- I still don't think those with boats that love to anchor out overnight are getting a fair shake. If alternative C is the best you can offer for good stewardship of our planet, then it is the only plan to consider. ***Comment by****: Kennedy, J.C.*

Response: The comments have been noted.

In favor of Alternative B

- I am in favor of maintaining the existing plan, updated to reflect changes that have been made since 1981, and/or inaccuracies that were a part of the 1981 plan. I am also in favor of the City of Florence's pending request for Parcel 37 as Zone 6. Whatever plan is adopted will be the guiding document for TVA land use in the

Pickwick Reservoir for the foreseeable future. While balance between competing demands is important, it appears that Alternatives B and C are far more heavily weighted in favor of conservation, minimizing future opportunities for commercial activity. ***Comment by**: Loew, James with Florence-Lauderdale County Port Authority*

Response: Your comment has been noted. Alternative B is the result of updating the existing 1981 plan to reflect changes since the 1981 Plan. Additionally, under Alternative B, Parcel 37 would be allocated to Zone 6, Developed Recreation in order to accommodate the City of Florence's request. In the FEIS, Alternative B is the preferred alternative.

Alternatives

- Alternatives A, B, & C do not appear clearly different courses of action. I understand A better other the others. But, if B & C are more long range and more committed to resource conservation they are preferred. ***Comment by**: Henderson, H.A.*

- The relationship between the acreage numbers reflected in the DEIS Abstract and the acreage numbers reflected on Page 1 of the Summary is unclear. If 63,625 acres comprised the original Pickwick acquisition; if 42,708 acres of that total are under water at normal summer pool; and, if 12,849.42 acres of the total are already committed to a specific use through previous transfers, leases, and contracts, then how much acreage will actually be subject to "future allocation" under the Land Management Plan - 19,238 acres, 6,388.58 acres, or some other amount? How do the "specific uses" of the currently allocated acreage (the 12,849.42 figure) compare to the uses projected for that acreage in the 1981 plan? Perhaps a pair of pie charts reflect this and thereby give some insight into the likely outcome of the proposed new plan. ***Comment by**: Acoff, A. with Alabama Department of Transportation*

Response: In the DEIS, 19,238 acres were allocated using the updated land planning zone definitions. The 1981 Plan used 10 allocation categories, defined in Table 2-1 of the EIS. Land currently committed to a specific use was allocated to a zone designated for that use. Commitments include leases, licenses, easements, outstanding land rights, or existing designated natural areas. Approximately 2,861.5 acres (14.9 percent) of the TVA public land surrounding Pickwick Reservoir were considered committed due to existing TVA projects. Approximately 9,987.92 acres (52.1 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing land use agreements. Each parcel of land was reviewed to determine its existing committed use, physical capability for supporting certain uses, other potential suitable uses of such land, and the needs of the public expressed during the scoping process. Based on this information, the planning team allocated the 19,238 acres to one of seven allocation zones described in Table 2-2 of the EIS. A comparison of how each parcel is allocated under each alternative is located in Appendix B.

Multiple Uses

- Multiple Designations and Multiple Uses are made for many of the most critical Parcels like 32 to 39. Decisions can be made to grant changes to specific uses listed in the present plans. However, before allocation is made, all the other listed uses should be considered again. TVA should be very careful and reluctant to grant specific uses that will interfere with other desired uses, especially if the changes or impacts are permanent. For example changing from passive recreation to industrial or other construction may destroy future use for visual protection and buffer zones. Whereas, use for passive recreation like bank fishing or dirt walking trails may continue without destroying future use for barge landings. Multiple uses is a highly desirable quality if planning and managing resources. ***Comment by****: Henderson, H.A.*

  Response: Under Alternative A, site-specific impacts of a given project would be considered before an actual project was approved, and the impacts of eliminating other uses would be considered. The multiple allocations in Alternative A provide inherent problems as to what TVA meant by an allocation, and TVA prefers the zone approach under Alternatives B and C to provide a faster response to the applicant, improving TVA stakeholder relations.

Natural Resources

- Hope to keep Pickwick landuse as natural as it could be. ***Comment by****: Pride, Bud*
- Protect shoreline ***Comment by****: McWilliams, Mike*
- Enjoy the natural beauty of the landscape and enjoy seeing the wildlife of the area. I feel that there will be less of both if conservation of the area is not taken into consideration. ***Comment by****: McInnis, Duncan*

  Response: These comments have been noted.

Cultural Resources

- We applaud TVA's commitment to protection, preservation, and management of fragile cultural resources (Page 57). In that regard, what actions are being taken to protect and preserve known archaeological sites from erosion caused by wave action from passing boats? Delaying preservation or mitigation activities until a site-specific activity is proposed at some future date (Page xi) could result in the irrevocable loss of significant cultural artifacts to include human remains. ***Comment by****: Acoff, A with Alabama Department of Transportation*

  Response: **Indeed, TVA attempts to be proactive in the preservation of the shoreline, including archaeological resources, that is being affected by deep-hulled boat traffic and other recreational activities. These stabilization efforts occur along all of the TVA reservoir system, but more specifically on Pickwick Reservoir, TVA has stabilized approximately 6270**

linear feet of shoreline for the protection of archaeological resources within the last three years.

- Thank you for forwarding the Draft Environmental Impact Statement for the above referenced project. We understand that under any alternative, TVA will abide by the Programmatic Agreement (when finalized) regarding Land Plans in Alabama. TVA will utilize a phased process to conduct identification and evaluation treatment plans for avoidance, protection, and maintenance of historic properties which are National Register eligible. We look forward to receiving the Final Environmental Impact Statement as soon as it becomes available. ***Comment by****: Brown, Elizabeth with Alabama Historical Commission*
- At your request, our office has reviewed the above-referenced draft environmental impact statement in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). We concur with the document, that all proposed action alternatives must comply with Section 106 of the National Historic Preservation Act. In particular, any proposed undertakings that include ground-disturbing activities have the potential to impact archaeological resources. Undertakings implemented in accordance with the chosen management option should be submitted to this office for our review and comment. ***Comment by****: Harper, H. with Tennessee Historical Commission*

Response: Comments noted.

Prime Farmland

- Prime Farmland Page ii indicates "Land Use and Prime Farmland Conversion. Although not identified by participants, this issue was identified by TVA staff." TVA staff is to be commended for recognizing this vital issue. However, there was considerable, and strategic, public recognition of Prime Farmland during consideration of Alternative A. For example, Parcels 53 and 32 and the backlying land were of specific concern at a hearing of the TVA Board in Florence at the time. Changes described on pages 85-88 and Appendix E seem appropriate for TVA owned reservoir land. Laws protecting farmland continue to change but the need does not decline. Also use of prime farmland by TVA is minor compared with potential mischief done to backlying lands by decisions for use of owned lands. For example Parcel 53 may contain less than 100 acres, but it provides access to, and facilitates conversion of, several hundred acres of prime farmland. Parcel 32 may contain less than 2,000 total acres. But if it is used for Natural Resources Conservation (including Prime Farmland Protection) as planned it may protect the largest block of Prime Farmland in the region from useless conversion to other uses. "Prime Farmland" is a specific resource that appropriately requires consideration. Other farmland is also of concern. While limited in acres "Unique Farmland" should be recognized if it is present. Each state also designated "Additional Farmland of Statewide Importance". All of these combined represent only a small part of all agricultural production and its related Farm-dependent businesses in the region. ***Comment by****: Henderson, H.A.*

Response: Comment noted.

Southeast Tissue Corporation Proposed Project

- We are concerned about water being discharged into Mulberry Creek by industry that will be built on the Gilbert Property at Barton. We don't need more air or water pollution in that area especially in the creek. ***Comment by**: King, Pearcy*
- Hope TVA would consider moving discharge as far upstream as possible, aware of heat problems, homeowners are there, want some consideration, run line straight out into the river instead of the mouth of Mulberry Creek. ***Comment by**: Pride, Bud*
- My opposition to any further development upstream from my location which requires any effluent into the river, particularly the Southeast Tissue Company at Mile 242 and Site 53. Because our family has been at this site since its original sale, we have watched the quality of the water deteriorate over these 45 years - 45 years -- and had mercury scares in which we could not fish. It is frightening sometimes to put my children in the water and to wonder what physical ailment we might develop from having been in there 45 years. ***Comment by**: Minervini, Virginia*

Response: Two environmental assessments have been previously prepared for the purchase and development of the 'Gilbert Farm property' near Barton. Site specific impacts for the Southeast Tissue project are being assessed in a separate environmental assessment and a draft is currently out for public review. Under Alternative B, the preferred alternative in the FEIS, the TVA public land fronting this property is proposed to be allocated to Zone 5, Industrial/Commercial Development to be consistent with the backlying property use. These comments will also be considered in the FEA for this project.

Pickwick Power Project

- I am totally against this project unless we can be assured that our air quality will not be harmed. If approved with the understanding that air quality must be maintained at current levels. If these levels are exceeded due to their pollution, then plant must be shut down, period and end of discussion. I doubt any company would proceed with this provision. ***Comment by**: McKinnie, Bill*
- I'm afraid that it's not going to have any smell, according to those I've spoken with, but that it will be a silent killer. There will be no smell but will also be upwind from the Pickwick Recreation Area. ***Comment by**: Minervini, Virginia*
- Even though this is not proper for this discussion because it's in the Kentucky reservoir, we feel because of the increased barge traffic and the possible air-quality issues that the people in our region should be allowed to comment on that as well and be included in any discussions about that. ***Comment by**: Tigrett, Barbara*
- I feel it is not in the best interest of our area to have a coal burning power plant on the Tennessee River in Hardin County. We need to keep the environment as pristine as possible. There is too much development as it is. It is a shame to destroy a beautiful river and lake so a few developers can make a huge sum of money at the expense of the people who enjoy nature as it should be (undisturbed). Why do we need to be dealing with China. This could put our country at risk. ***Comment by**: Walkup, Joe and Linda*

- We also urge you to give great consideration to the effects a coal plant will have on our environment and Shiloh Park. ***Comment by**: Brandon, Guy and Bettie*
- We are very concerned about the environmental aspects of a coal plant site at mile 203. ***Comment by**: Walden, Wilbert and Gilda*
- A no to the coal fired power plant. ***Comment by**: Jibeault, Mr. and Mrs. William*

Response: This project is not located on Pickwick Reservoir Properties nor is it within its watershed. Even though it is named Pickwick Power Project, it is located downstream of Pickwick Dam Reservation and is part of the Kentucky Reservoir and watershed. TVA is conducting an environmental review for this project, and these comments will be considered in that review.

Lake Levels/Reservoir Operations Study

- Keep reservoir levels higher. ***Comment by**: McWilliams, Mike*
- Attached is a copy of a letter I sent to TVA re. the Reservoir Study. Since it impacts Pickwick directly I am forwarding a copy to you as well. I attended the Muscle Shoals public meeting as a representative of the Florence-Lauderdale County Port Authority. Current winter pool levels in Pickwick are a problem for commercial navigation, including the Port of Florence. I do not know the historical backgrounds re. the setting of winter/summer pool levels, but I cannot help but think with today's technology (computer modeling & simulation) and hydrological expertise that the system cannot be managed safely at increased winter pool levels… Winter Pool – Strongly recommend the desired range be increased from 408-410 to 411-413 on Pickwick Lake. This winter has been one of extremes in water elevation. Significant periods of low water in the 408-409 range over the past several years have adversely impacted business operations in the Port of Florence. During low water barges cannot be laid alongside several docks. This results in idle machinery and people, delays in product delivery, and so forth. Low water has been the result of increased barge damage. This increases the costs of doing business (including increased insurance costs) and delays other work. Increasing winter pool elevations improves safety and efficiency/productivity, lowers business costs, increases port waterfront available for business, and has the potential to reduce maintenance costs (including costly dredging throughout the system). Dam Discharge – Strongly recommend against periods of zero discharge. Periods of zero discharge drastically alter water elevations in the lake and make it dangerous to transit already tight navigational areas. This is particularly hazardous given some of the cargo contained in barges transiting the system. I am also concerned about the ROS process and validity of gathered data. As I understand it TVA will make decisions based (at least in part) on public comment. I do not believe that the public, in general, understands commercial navigation; this skews input. If the Muscle Shoals public meeting attendees were representative of all public meetings then again input will be biased in favor of the interest of the majority (i.e. environment) and will not provide balanced representational input. Collecting data on public meeting attendee primary interest area may help researchers determine any bias in the study, or at least point out areas where additional data must be gathered. Thank you for the opportunity to provide comment and participate in this process. If you plan on having focus groups to assist with the study and data analysis, result interpretation, etc. and need

members please keep me in mind (or if there's any other way I can be of assistance). ***Comment by**: Loew, James with Florence -Lauderdale County Port Authority*

Response: TVA is conducting a reservoir operations study for all of TVA Reservoirs. Public scoping has been completed and an EIS is being prepared. These comments will be used to determine the issues to be addressed in the EIS.

Right amount

- Thanks to TVA: Public responses choosing overwhelming approval of "Right Amount" to details of "Recreational Facilities", "Natural Resources", and Public Works" is an endorsement of TVA management of these resources. ***Comment by**: Henderson, H.A.*

  Response: Comment noted.

Industrial/Commercial Development

- As a resident of northeast Mississippi, I am deeply concerned about revising the existing pickwick lake land management policy. I am opposed to reducing the industrial and commercial development percentages as option B or C proposes. The Tennessee river provides a tremendous opportunity for industrial and commercial growth to our community. Why take it away? How will people by boats or fishing gear to enjoy the river, if there are no jobs to support hobbies? I think it will be a mistake to limit industrial and commercial development. A mistake that we and our children will regret the rest of our lives. Please do not reduce industrial and commercial development on the Pickwick lake land management policy. ***Comment by**: Wright, Monroe*

  Response: **Even with the potential loss of industrial development sites under certain alternatives, there are numerous industrial sites available in the counties surrounding Pickwick Reservoir. Industrial development organizations currently list at least 60 such sites in Colbert, Lauderdale, Tishomingo, and Hardin counties, with at least 16 of these on the water. TVA currently has only one request under review from an industrial prospect to locate in the area (SE Tissue); hence, it would not appear that demand for industrial sites will outstrip the supply anytime in the foreseeable future.**

- I don't really care for alot of industry to be close to the rivers and lakes. That is the reason why we have industrial parks for these plants to be built there instead of close to the water. There is always the threat of being some kind of chemical getting in the water and messing everything up. I got a fishing booklet from TWRA and it was showing alot of places in Tennessee that it says don't eat the fish because of

some sort of chemical in them that it makes them unfit to be eaten, this is sad. ***Comment by**: Cannon, Brian*

- No industrial sites on Pickwick Lake ***Comment by**: McWilliams, Mike*
- [Page 151-155] Also 58 [70%] of respondents indicating "need less" emphasis on "industrial/economic development" should give TVA caution in committing other critical resources to this use. ***Comment by**: Henderson, H.A.*
- TVA scoping hearings on the "RSA Proposal" and "Reservoir Operations Study" seemed to give similar results. This confirms that citizens applaud TVA commitment to Natural Resource Protection for use by all citizens and TVA might have already over committed to Industrial/Economic Development for use by a few. I share these documented feelings and urge you to resist the expected tremendous irrational pressures that can be generated by certain "leaders" for specific projects. ***Comment by**: Henderson, H.A.*
- I'd like to register my opposition to any further development upstream from my location which requires any effluent into the river, particularly the Southeast Tissue Company at Mile 242 and Site 53. ***Comment by**: Minervini, Virginia*

Response: Comments noted.

Residential Development

- I feel that TVA should make every effort to restrict the development of residential areas. The banks of the river are turning into more of a subdivision than an area to house wildlife. I realize it is more profitable to sell land to developers, but they have no appreciation of the land. ***Comment by**: McInnis, Duncan*
- After careful studying the DEIS, it is very clear to me that TVA is taking the right approach and trying to do all it can save and protect a most valuable resource. Ask Alabama Power Co. What mistakes they made years ago on all their lakes . If you don't know they sold off most all of the surrounding lake property and now all of their lakes are over built with residential and commercial developments. Their lakes are overcrowded with boat and marina traffic. ***Comment by**: Brown, Leland*

Response: In 1998, TVA completed the Shoreline Management Initiative Final Impact Statement. Impacts to TVA shoreline as a result of residential development were assessed in that EIS and the maximum amount of residential shoreline for Pickwick Reservoir was determined. The proposed alternatives do not allocate any additional shoreline to residential development.

Recreation

- Upgrade parks and recreation areas ***Comment by**: McWilliams, Mike*
- I like the idea of there being more boat ramps built. It seems you can never have enough of these. ***Comment by**: Cannon, Brian*
- I would like to see a place laid out just for wave runners and jet skis. There is nothing more annoying than trying to fish in a creek and a jet ski zoom by your boat. ***Comment by**: Cannon, Brian*

- I'd like to request that a boat density or whatever kind of study that TVA has done in other recreation areas be done at the Pickwick Dam Area, especially over the Fourth of July, to see if they think that the area has maxed out with regard to the number of boats. And perhaps they can have a maximum number of boats licensed for the area or find some way to control the number of boats. ***Comment by****: Minervini, Virginia*

  Response: **TVA is challenged to maintain quality recreation experiences for all users while acknowledging increasing use and development potential. TVA partners with the state agency who has regulatory authority to address boat density issues. It would not be feasible for any regulating agency to monitor the reservoir on a holiday weekend due to the number of officers required to monitor the situation. Setting a limit on the number of boats allowed on the water at a given time would be the responsibility of the regulatory agency. Given the number and wide range of geographical locations of marinas and boat launching ramps, recreation watercraft crowding does not appear to be a problem on Pickwick Reservoir. In general, TVA reservoirs are used heavily throughout the recreation season, with weekends and holidays typically being the most congested times of the year. In contract, the majority of our reservoirs are less crowded during the week. However, the allocations of the Pickwick Land Plan will not contribute to an increase in boating, as no new water-oriented recreation facilities are proposed. The existing parks are owned and operated by several state, local and federal agencies. Upgrades and new facilities are driven by annual budget actions of each respective entity. Licensing of water vessels and waterway regulations are functions of the states.**

Water Quality/Supply

- Protect water supply/quality ***Comment by****: McWilliams, Mike*
- And above all, would they please preserve the water quality or improve the water quality, perhaps make some arrangement with surrounding counties to protect the land from development and from clear-cutting lands which are to be developed. ***Comment by****: Minervini, Virginia*

  Response: TVA is currently involved in numerous projects to protect/improve water quality in Pickwick reservoir. Current projects include; stabilization of critically eroding shoreline, riparian buffer establishment and animal exclusion fencing on Bear and Cypress Creeks, voluntary establishment of Shoreline Management Zones and riparian buffers in residential areas, educational activities such as Kids-in-the-Creek and Clean Boating Campaigns to increase public awareness concerning water quality issues, and the Clean Marina Initiative to provide guidelines and incentives for valley marinas to help protect water quality.

Dumping

- Watch for dumping areas around the lake. ***Comment by**: McWilliams, Mike*

  Response: **The unauthorized deposit of waste material or dumping/littering is prohibited on TVA fee-owned land and on privately-owned land with TVA-retained rights. In the past, TVA has become aware of such areas through routine monitoring and maintenance of the shoreline and property and reports from citizens or other agencies. TVA Police investigates these areas to identify the responsible person(s) to require them to clean the area or seek reimbursement for TVA costs to clean the area. TVA also works with local coalitions, agencies, businesses, schools, conservation groups, etc., to conduct cleanups of the shoreline and informal recreation areas.**

Insect Spraying

- Increase insect spraying around the lake. ***Comment by**: McWilliams, Mike*

  Response: TVA fluctuates Pickwick Reservoir on a weekly basis beginning in late May and continuing through the last week in July. The one foot drop is supposed to last about 24 hours in order to strand mosquito eggs, larvae and pupae; the water is then raised to the original level. TVA also provides technical information on mosquito control and checks mosquitoes for disease organisms on Pickwick Reservoir.

Navigation

- RE. Table 3.11-2 in the DEIS: Methyvin Crane & Barge Service does not operate in the port. Please delete. All other Florence Harbor businesses (except the Florence-Lauderdale County Port - public/public) are listed private owned/private use. But the port authority owns all the land so shouldn't all those businesses be reflected as public owned/private use? ***Comment by**: Loew, Jim with Florence-Lauderdale County Port Authority*

  Response: Table 3.11-2 in the FEIS has been revised. Methyvin Crane & Barge Service has been deleted and all businesses listed within the Florence Harbor (except the Florence-Lauderdale County Port) have been revised to read as public owned/private use.

- Since the Tennessee River is a navigable stream, we suggest coordination with the United States Coast Guard. We did not find that agency listed on Page 100 (Agencies Consulted) or Page 102 (Regional Stakeholders). ***Comment by**: Acoff, A. with Alabama Department of Transportation*

  Response: The DEIS was sent to the United States Coast Guard for their review and comment.

- We want to object to the fact that these coves have been undesignated as safe harbors and that recreational boaters have now been allocated to safe harbor in an area along with barges. We think that's a tremendously unsafe situation and something that just hasn't been thought through. And we don't think the navigation industry endorses that as well. I've talked the Corps of Engineers and to several other folks in the navigation industry, and they're kind of surprised that TVA would put forth that policy as a safe situation. Obviously, if a recreational boater gets caught in the storm, he doesn't want to seek safety in an area where barges may be seeking shelter. It's just an unsafe situation. For that reason, we're hoping that TVA will reallocate these coves in the area that are not lined with docks. So we would hope TVA would certainly take another look at that. ***Comment by****: Tigrett, Barbara*

  Response: TVA has deleted the phrase "and recreational vessels" from section 3.11. TVA did not intend to recommend that recreational vessels should necessarily seek safety in designated commercial safety harbors or safety landings. Recreational vessels have the flexibility to seek safety in any embayment or cove along the waterway. TVA does not believe that it would be feasible to mark all these areas.

Parcels 3, 4, and 5 - Montana Land Maintain and Gain Proposal

- Do not swap. Many boaters want the 3,4, and 5 parcels left as is. There is too little underdeveloped water access land left in this part of the lake. I feel the land swap is lopsided. If the land has to be out of TVA hands, then it should at least be put up for a fair sale that would bring an appropriate exchange of land and or funds to TVA. ***Comment by****: Swafford, Marcia*
- Land swap with Montana Land Company. I am totally against this as we have enough development at this end of the lake and we do not need more. There are plenty of lots for sale and we do not need more. On a second notes on this, your land appraisal is way too low. I almost purchased 1/3 of an acre within a mile of the proposed swap and I would have paid $200,000 for this. If this swap is approved the resale value will be in the millions. You keep asking for input from us and we give it, but you must not be listening. I have been to numerous meetings, and I have never heard anyone that is for this proposed swap. If TVA does this swap, the public is being sold out for too little and we are giving millions to Montana Land Company. If you were giving up say a hundred acres of lake front land and getting several thousand acres of lake front land in return, maybe it would make sense. Why not conduct a formal survey of the residents of this area as well as boaters and listen to what they say. I have never been able to get any indication of what the people really want. It seems that TVA has made up their mind and is just having meetings so they can say they asked for our input. I would like to see what people are really telling you. I look forward to hearing what public input officially is on the proposed land swap. As far as the proposed land swap with Montana Land Company. Why not mail a survey to all property owners within the local area asking do they favor the swap yes or no. This should be heavily weighed before going any further with this plan. ***Comment by****: McKinnie, Bill*
- I prefer these parcels should be used for natural resources. ***Comment by****: Wylie, Paul*

- I would like to request that any land exchange with the Montana Land Development Company incorporate details about percentage of trees that they must keep so that they don't rape the land of its natural beauty while we put up beautiful homes. While it is important to the development of the area, they have to protect the beauty, the water and the beauty. ***Comment by**: Minervini, Virginia*
- I've been involved in trying to encourage TVA to preserve the two coves, Lower Anderson Cove and Haw Branch, for conservation reasons and for recreational purposes and because so many boaters and recreational folks on the river and residents, as well, have enjoyed the coves for years as recreational, for fishing or whatever, also primarily as well, significantly as a safe harbor for recreational boaters in the events of a storm or malfunction. Boat that are going up river, sometimes they anchor in these coves. They're the same coves in the area that because of the massive amount of development, there's hardly anything left. So we're urging TVA to reject this new proposal by the developer to acquire these two coves of high-value shoreline. We think this is in the best interest of the public and best interest safety…Also we would love to have proposed the idea that these two coves be released to the public to create a conservation area, like perhaps a Pickwick conservancy, where public money wouldn't be - - we could do fund-raising to raise the money to protect this area and perhaps establish a permanent conservation area for these two last remaining coves in this highly developed area. ***Comment by**: Tigrett, Barbara*
- As residents and/or recreational friends of Pickwick, we urge TVA to permanently protect these last two remaining undeveloped coves in the area from any more harmful development. While we agree with the "Natural Resource Conservation" allocations for parcels 3,4,5 (draft EIS/ALT "B"), we're concerned about renewed TVA talks with developers, seeking to acquire this "high-value shoreline" thru a questionable TVA land swap. These vanishing natural shorelines and habitat should be preserved for future generations of wildlife, families, fishermen - and also as the only truly "safe harbors" in the area, for recreational boaters in distress. ***Comment by**: Delk, Debra; Tigrett, Charles and Barbara; Burrow, Dr. and Mrs. W.B.; Delk, William; Bearden, Walter; Gray, J.L.; Ison, A.A.; Burrow, Paula; Brandon, Guy and Bettie; Shelby, Carrie; Johnson, James; Wylie, Judith; Grone, Kay; Payne Jr, Melvin; Coleman, Martha; Walden, Wilbert and Gilda; Small, Doris; Jibeault, William; Caples, Emmett; Franks, Jimmy; Alexander, Huey; Everson, David; McLemore, Bill*
- I have been a boater at Pickwick for 25 years. You have sold out most of the coves by the dam and surely you will not take the remainder in such a crooked way. There is much opposition to your swap proposal and if you continue your swap proposal, I know that the opposition will be beyond your comprehension. ***Comment by**: Burrow, Dr. and Mrs. W.B.*
- I have been boating for over 20 years. I spend many nights in lower Anderson for safe harbor. In the past two years all the new development has made me have second thoughts. During the day condo/homeowners think they own the water and resent you staying overnight. I've had jet skies and boaters fly by while swimming causing high waves and give you the "high sign" if you reject. Any additional development will make matters worst. All boaters will soon have to go to Alabama to find a place to anchor out overnight. Lower Anderson and Haw Branch has already been over developed ignoring wildlife and boaters needs. Swapping that land would end both wildlife and boaters use. All we would have is more scalping of trees and natural areas. It's hard to believe TVA would even consider destroying more land. TVA appears to be more interest in Big Money than tax payers. As far the "Safe

Landing" area is ridiculous. I would not park there in good weather and I'm certainly not hooking up with barges. ***Comment by**: Ison, A.A*

- Protect our coves and the natural beauty of this precious land. Montana Land Company needs to go back to Montana and develop their own land. No more developments of coves. No land swap! No Deals!! ***Comment by**: Burrow, Paula*
- Please leave land as it is! No land swap on Parcel 3 and 4 and 5. As residents and long time boaters at Pickwick Landing State Park, paying rent to use facilities, we urge you not to take away the last of our anchorages. ***Comment by**: Brandon, Guy and Bettie*
- I don't think the "Natural Shoreline Property" should be swapped off by TVA. These natural habitats should be preserved. They are getting to be too few. ***Comment by**: Shelby, Carrie Nell*
- Also it is very important to preserve the harbors from any harmful development. These coves are the last two undeveloped coves used by small boaters. As boaters for over 30 years in the Pickwick area. ***Comment by**: Walden, Wilbert and Gilda*
- This is a Buff Crosby - "Maintain & Gain Program": where TVA gives away high value shoreline worth over 30 million - waterfront lots are selling from 400 to 500,000 each. Friends of Pickwick have been trying to save the last two safe harbors left on the northeast side of the lake. Mr. Clausel's land is not worth 100,000 it's a swamp. The people in this county and this area of boaters are really upset over this policy and that has been going on for the last 8 years. This land belong to "We the People." It is time for a change. ***Comment by**: Jibeault, Mr. and Mrs. William*
- As bass fishermen, don't recommend we use barges as safe harbors. As friends of Pickwick - keep the 2 undeveloped coves. Never make the TVA/MLC Swap. ***Comment by**: Caples, Emmett*

Response: Under Alternatives B and C, these parcels would be allocated to Zone 4, Natural Resource Conservation. No sensitive resources have been identified on these parcels that would meet the criteria of Zone 3, Sensitive Resource Management. TVA would assess the potential impacts of the proposed action in a site specific Environmental Impact Statement for the project. At this time, a DEIS has not been completed. Should TVA continue to consider this project, there will be a 45-day public review period of the draft EIS. Comments addressing these issues were received during the scoping process for that project and would be considered in the DEIS.

Parcel 14

- Do not agree with allocation of Parcel 14 [for Zone 4, Natural Conservation Management]. [Instead prefer allocation for] develop recreation, camping, marina development. If bridge is raised have nature trail in area already. ***Comment by**: Farneman, Joan with the, Town of Waterloo*

Response: **Parcels 12, 13 and 17 located within the Second Creek embayment are suitable for developed recreation facilities and are allocated to Developed Recreation under Alternatives B and C. Parcel 12 was transferred to City of Waterloo (for recreation); Parcel 13 was sold under Section 4(k)(a) of the TVA**

Act for recreation and is currently owned by Jerry Hart and operated as Hart Marina; Parcel 17 is currently licensed to city of Waterloo for public recreation. Due to the secondary road crossing and inadequate water levels, Parcel 14 would not be suitable for marina development. Parcel 14 is suitable for trail and less intensive recreation use. These two uses are compatible with the proposed allocation, Zone 4, Natural Resource Conservation. Parcel 17 has a primitive campground facility that could be enhanced. The TVA planning team believes the resources currently allocated to developed recreation could be enhanced to meet the recreation needs/uses of this general area. For these reasons, Parcel 14 would remain allocated to Zone 4, Natural Resource Conservation under Alternative B.

Parcel 32 (Includes Key Cave)

- Consider giving north bank of 7 mile management area as part of Key Cave management area. Start giving consideration to moving Key Cave and management area to a natural park, in case TVA is privatized or if funding should be a problem. ***Comment by****: Pride, Bud*

  Response: **The north bank of Seven Mile Island Wildlife Management Area (Parcel 32), along with Parcel 31, are currently under a 15-year license to the Alabama Department of Conservation and Natural Resources (ADCNR) for management as a Wildlife Management Area. Part of the proposed action is to allocate these parcels to Zone 4, Natural Resource Conservation and allocate Parcel 31 to Zone 3, Sensitive Resource Management. The U.S. Fish and Wildlife Service has requested this acreage (Parcel 31) to be considered for transfer as part of Key Cave National Wildlife Refuge. This transfer could occur once the Pickwick Reservoir Land Management plan has been approved. Additionally, TVA proposes to grant a 30-year term easement over Seven Mile Island Wildlife Management Area as well as Lauderdale Wildlife Management Area (Pickwick Reservoir), and other North Alabama WMAs on Wheeler and Guntersville Reservoirs. ADCNR would continue with its current operation and use of these areas consistent with existing management area plans. Activities envisioned in the existing WMA Management Plans (attached to the EA) are expected to continue. During the term of the easement, ADCNR and TVA would jointly conduct periodic evaluations and updates of the management plan, and take public comments on continuing management activities.**

Parcel 37

- I am in favor of the City of Florence's pending request for Parcel 37 as a Zone 6, developed recreation area. ***Comment by****: Loew, James with Florence-Lauderdale County Port Authority*

Response: Comment noted. Under Alternative B, TVA's preferred alternative in the FEIS, Parcel 37 would be allocated to Zone 6, Developed Recreation.

Parcel 72

- Please note the parcel #72 I complained about in your previous meeting at the Adams Mark, initiating this process, now has had a sunken barge on the site since February 2002. ***Comment by****: Crawford, William*
- We are asking you to put a halt to a industrial/commercial operation in Area 72 as defined by the recent DEIS, Land Management Plan. We are asking that you reassign Area 72 to Zone 4, Natural Resource Conservation. As is, this industrial/commercial operation does not fit in with any of the surrounding zonings. This operation is dead in the middle of one of the most expensive residential areas of the Lake. The operation is a junkyard of equipment, scrap iron, concrete slabs, old docks, barges and various other debris. Also, there is a sunken barge there and has been for about five months. This creates a navigation hazard not to mention all the water pollution from oil and chemicals. This area, which is on the south point of what is locally called Tea Room Hollow, was once a great camping and fishing area enjoyed by many. It is also directly across the hollow from a camping area. Many campers, adjoining residential property owners, passerby's from both water and Rose Trail, see this ugly view. This area does not fit in with the surrounding property. It also lowers the value of our residential property. Therefore, we are asking you to re-zone Area 72 with the new Land Management plan. ***Comment by****: Brown, Leland*

Response: **Parcel 72 is currently under license for a minor commercial landing and is subject to best management practices for the protection of water quality. TVA is working with the licensee have the visual and other problems corrected on this parcel and in the reservoir fronting this parcel.**

Parcels 139 and 140

- No [Do not agree with draft allocation for these parcels]. [Prefer allocation] for Recreation. For high pleasure boat use including water skiing. ***Comment by****:* no name provided.

Response: In the DEIS, both parcels are considered committed as they are under existing land use agreements. Parcel 140 was allocated to Zone 5, Industrial/Commercial Development because it is currently under license to the Yellow Creek Port Authority for use as an industrial port. Parcel 139 was allocated for Zone 4, Natural Resource Management because it is currently under license to the State of Mississippi for wildlife management and public recreation.

Parcel 141

- We feel this proposed new development is much to close too an already overdeveloped area (Aqua Yacht Marina) and would add more water safety and environmental problems to an already stressed area. It seems that the development of #141 would threaten parcel #143 which should be protected as a wildlife area. With the great amount of activity around Aqua Yacht Marina and the Yellow Creek Port, it would ease the stress on the area to have more land left for natural resource conservation. Is there data available as to how much water distance should be allowed between marinas in order to protect natural resources and maintain recreational safety standards? ***Comment by****: Davis, Hull*

  Response: **In 2000, TVA prepared an environmental assessment for this project and concluded that the proposed recreation easement would not significantly affect the environment. Specifically, the recreation issues were addressed in the EA as follows: The proposed marina site is over 0.75 miles from the main navigation channel. The area within an approximately one-half mile radius from the site is sparsely traveled compared to the main channel and routes from other nearby marinas. The main channel is congested during peak summer weekends and holidays. Many boaters are transiting the area to more dispersed parts of the main reservoir and on the Tenn-Tom Waterway.**

Parcel 142 (Sandy Creek)

- There has been a tremendous influx of silt into Sandy Creek cove since the building of Highway 350. Proper silt barriers were not built and maintained and efforts by landowners in the area to get Folk Construction Company to clean up their mess were unsuccessful. We estimate a loss of 5 to 6 feet of water in front of our property. At minimum winter pool level we once had 6 feet of water. We now have less than 1 foot. Most of the cove is now dry in the winter. There was dredging done on the east side of the cove several years ago which resulted in an island in the center. Silt from the island continues to wash back into our side (west side). We have tried unsuccessfully to find a feasible, affordable solution to our problem. The water in the cove used to be very clear. Now it is a murky mess. Raising the minimum pool level by at least 2 feet in the winter would help us and others in dry winter coves considerably. Another area of concern in the Sandy Creek Subdivision is the hollow to the left of C.R. 378 as you turn onto 378 from Highway 25. This is the turn to the left just past Aqua Marina and just before the bridge over Sandy Creek. Some work on the property on the hill above the area was done without proper silt barriers and a great amount of silt has washed into the hollow. That along with many downed trees from beaver damage has made the area an eyesore. ***Comment by****: Davis, Hull*

  Response: **TVA can be more responsive in resolving water quality problems if the problem is reported when it occurring allowing TVA to work with state and/or federal agencies with the proper jurisdiction over such actions. TVA is currently conducting a reservoir operations study**

(ROS) in which lake levels is an issue. Your comment will be forwarded to that team for review.

Parcel 144

- We are very concerned that the marina has overbuilt for the area. New slips continue to be built, stretching the marina farther and farther out into the lake leaving almost no room to navigate safely on Sandy Creek into Yellow Creek or from the public loading ramp into the water. There must be some formula for determining how many boats can safely be used in a given area of water. With the tremendous number of boat slips combined with the large number of dry storage units at the marina, boats using public access ramps and homeowners in the area with boats concentrated in the area than is physically or environmentally safe. There are more boating accidents each year and the water quality has suffered greatly from oil and gas spills and the trash of careless boaters. It seems that it would be wise to control the size of a marina by limiting the number of boat slips and by refusing to allow a marina to extend so far out into the lake that it becomes a navigation hazard.
  ***Comment by**: Davis, Hull*

  Response: **The marina on Parcel 144 has reached the limits of its designated harbor, which are within TVA's permitting guidelines. No new slips have been proposed. The landward limits of commercial marina harbor areas were determined by the extent of land rights held by the dock operator. The lakeward limits of harbors at commercial marinas are designated by TVA on the basis of the size and extent of facilities at the dock, navigation and flood control requirements, optimum use of lands and land rights owned by the United States, and on the basis of the environmental effects associated with the use of the harbor. Mooring buoys or slips and permanent anchoring are prohibited beyond the lakeward extent of harbor limits.**

Parcel 152

- Myself and my family own approximately 35 acres of the back portion of Winn Springs Embayment with approximately 1,000 feet of frontage at the rear of said Embayment on the north side and approximately 600-700 feet on the south side and running westward to Winn Springs Road on the south side of Winn Springs Creek most of the land (all on the north shore) being in Pine Cove Subdivision of record in the Registers Office of Hardin County, Tennessee. Your proposed land use designation on our north shore shows a road. This is in error and we ask that this road be removed from the final map for the following reasons: 1. Prior to my family's purchase of the land now designated as Pine Cove Subdivision, which was purchased from TVA approximately in 1958, there was no road on the north shore of Winn Springs. 2. When we recorded the subdivision (Pine Cove) we showed a private road on the north shore, and we bulldozed a dirt path for a road on this shorefront which has long since grown over with trees and plants. It was never used or maintained by any governmental authority. Thus no public road has ever existed

on the north shore at the back end of Winn Springs Embayment. All of these lots on the north shore are still owned by the Hodges Family. Please remove the proposed designated road from your final map. Incidentally, the road as shown has no beginning or end. There are no plans to become a reality. When we develop the north side, the private road will be located off the waterfront. Please forward me a corrected map. ***Comment by**: Hodges, Warner*

Response: **Information on the map was clarified with the commentor regarding the existence of a road on the draft Pickwick land plan maps. A road is not shown on the map.**

Parcel 155

- We also urge TVA to seriously reconsider a written recommendation (page 61/draft EIS) that recreational boaters in our area should now seek "safe harbor" in a storm or malfunction by anchoring or tieing off in the same area with commercial tows, (along the open south bluff and mooring cells near parcel 155 at miles 209-210.8L). In view of recent tragedies on area waterways, involving small craft and large barges, TVA should advise area boaters to seek shelter in the only sensible "safe harbors" in state park/north bluff area, lower Anderson Cove & Haw Branch (former official safe harbor). Furthermore, if these last 2 coves are given up by TVA to developers, docks that would inevitably line these narrow coves would interfere with the open water most boats need to safely anchor (& swing) during severe weather. FYI: language from TVA current draft EIS/Land Use Management/Pickwick: "3.11 Navigation: Navigation safety landings and harbors, have been established at various locations along the reservoir to provide safe locations for commercial tows and recreational vessels to tie off and wait during periods of severe weather, fog, or equipment malfunction." Table 3.11-1 shows barges and small boats sharing same 'safe landing' area along south bluff, by mooring cells. Smart boaters know to keep a safe and respectful distance from big barges, at all times. To advise otherwise, especially in a storm, becomes a serious public safety issue. We urge TVA to reconsider this potentially dangerous policy. ***Comment by**: Delk, Debra; Tigrett, Charles and Barbara; Burrow, Dr. and Mrs. W.B.; Delk, William; Bearden, Walter; Gray, J.L.; Ison, A.A.; Burrow, Paula; Brandon, Guy and Bettie; Shelby, Carrie; Johnson, James; Wylie, Judith; Grone, Kay; Payne Jr, Melvin; Coleman, Martha; Walden, Wilbert and Gilda; Small, Doris; Jibeault, William; Caples, Emmett; Franks, Jimmy*
- Small boats would be in danger from barges in Parcel 155. ***Comment by**: Wylie, Paul*
- Is TVA willing to accepts the liability and adverse publicity when a barge runs down a recreational boater anchored in the TVA "safe harbor" area? This area is used as the main navigational channel when barges are passing each other. How can tieing off to a vertical rock wall on the open lake be a safe harbor? Has anyone at TVA actually been out on the lake in the area in question, on a summer weekend with barges and recreational boaters all over this area? ***Comment by**: Delk, Debra; Delk, William*

Response: TVA has deleted the phrase "and recreational vessels" from section 3.11. TVA did not intend to recommend that recreational vessels

should necessarily seek safety in designated commercial safety harbors or safety landings. Recreational vessels have the flexibility to seek safety in any embayment or cove along the waterway. TVA does not believe that it would be feasible to mark areas that recreational vessels can use.

Parcel 156 (White Sulphur Springs Cabin sites)

- Sale at 1952 market value with covenants that are presented in proposed plan. ***Comment by****:* no name provided.
- It appears that TVA wants to keep gaining more land so they can control, so why would you sell this land? If you decide to keep leasing, TVA will still have control over this. If the leases are continued, they should be at market levels and adjusted yearly. I sure hope TVA is not leasing well below market value. If the land is sold, it should be at market prices, not give away prices. I must assume this land would be worth several million dollars given its location. If sold there should be covenants in the sale limiting the lots to one home, preventing subdividing the lots and other considerations that would maintain the land. ***Comment by****: McKinnie, Bill*
- With regard to the leasing of the land at the sites which have been leased forever at the bend of the river at Site No. 156, I wish that the TVA would proceed to sell those sites to the owners and the people that have been leasing them for years, that they would go ahead and conclude a price and offer them. And if the people leasing the land don't take advantage of the prices, they would make them available to others as a residential site. ***Comment by****: Minervini, Virginia*

Response: Under Alternative B, the Preferred Alternative for the FEIS, Parcel 156 would be allocated to Zone 7, Residential Access. With this allocation, TVA would have the option to continue the leases, cancel the leases, or sell the lots within Parcel 156. TVA currently is considering all three options.

Environmental Protection Agency Comments

EPA Comment Number 1:
The U. S. Environmental Protection Agency (EPA) has reviewed the referenced Tennessee Valley Authority (TVA) Draft Environmental Impact Statement (DEIS) in accordance with EPA's responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The proposed project is to update the current 1981 TVA land management plan for TVA-managed lands associated with Pickwick Reservoir, a 52.7-mile long TVA reservoir with 490.6 miles of shoreline in Alabama, Mississippi and Tennessee.

The land management plan is being updated since some lands (1,200 ac) have been transferred to other agencies since 1981, other lands (2,000 ac) are now submerged, while other lands were not considered in the original plan (1,330 acres, primarily the narrow shoreline "marginal strip" retained by TVA between the reservoir and private

property sold by TVA). The 1981 plan also included multiple use categories and requests for development were determined on a more subjective case-by-case basis. In contrast, alternatives for the updated plan offer a more systematic approach that allocates land into more distinct resource categories (land use zones). Overall, the presented alternatives for the updated plan would manage 19,238 acres of land (pg. i) of which 6,304 acres (pg. 16) are uncommitted with the balance already being committed to an existing TVA project or agricultural use. Existing land use commitments would be retained for all alternatives of the updated plans being considered.

Land Use Zones

The alternatives for the updated plan allocate TVA-managed lands into seven land use zones. Of which TVA is responsible for land in Zones 2-7:

Zone 1 -*Non-TVA Shoreland* -Non-TVA lands above summer pool elevation such as flowage easements or privately-owned shorelands.
Zone 2 -*Project Operations* -TVA lands used for project operations and public works.
Zone 3 -*Sensitive Resource Management* -TVA lands managed for the protection and enhancement of sensitive resources such as cultural resources, TVA-designated Natural Areas, ecological study areas, river corridor with sensitive species, wetlands as defined by TVA, significant scenic areas, lands leased for protection purposes and lands fronting areas protected by other agencies.
Zone 4 -*Natural Resource Conservation* -TVA lands managed for natural resource enhancement or human use appreciation. Categories include forest management areas, recreational areas for hunting and birdwatching, riparian shoreline areas, river corridors not included in Zone 3, small islands (10 acres or less), and lands fronting wildlife and forest management lands owned by other agencies.
Zone 5 - *Industrial/Commercial Development* -TVA lands managed for economic development such as lands for business parks, industrial access, barge terminals, towing areas, and minor commercial landings.
Zone 6 –*Developed Recreation* -TVA lands managed for active recreational areas requiring capital improvements/maintenance such as campgrounds, marinas, parks, greenways, water access areas and lands fronting such areas managed by other agencies.
Zone 7 -*Residential Access* ~ TV A lands requested for waterfront residential access such as docks, piers, corridors retaining walls, easements and other activities such as fill/excavation.

Response: Comment Noted.

EPA Comment Number 2:
In regard to activities associated with Zone 4, we note that timber harvesting is currently not included in the *forest management* component of Zone 4 since page 75 states that: “At this time, no timber harvests are proposed on TVA public land surrounding Pickwick Reservoir. On the other hand, we note: that timbering is also not precluded since page 75 further states that: "However, when the need arises, timber harvesting may be considered to address stakeholder requests, issues of safety. etc. from impacts of insect infestation and storm and incorporates the appropriate level of environmental review." In general, we agree that such timber harvesting in response to weather or

insect infestations would constitute forest management. If commercial harvesting is requested and should it be granted by TVA in Zone 4 or elsewhere we request that the FEIS address the timber harvesting -particularly any potential clearcutting and thinning activities -relative to EPA mandates such as minimizing water quality degradation.

> **Response: Once lands are allocated to Zone 4, TVA may choose to produce a natural resources management plan and forest management could be a part of the natural resource management activities allowed. The site specific impacts including water quality protection, would be evaluated in the natural resource "unit" plan. The impacts of timber harvesting are discussed in section 4.2.**

EPA Comment Number 3:
Also, although Zone 7 addresses TVA-owned or managed lands for residential access to the reservoir, it is unclear if any of the Zones 2-7 are specifically established for potential new residential development on TVA-owned or managed shore-lands along the Pickwick Reservoir. The FEIS should clarify.

> **Response: No new residential development of TVA public land is proposed. Parcel 156 has existing residential development and water-use facilities (White Sulphur Springs Cabin sites), and TVA is proposing to clarigy these rights. In addition, because the planning process clarified residential access rights, the extent of residential shoreline on Pickwick Reservoir is slightly less than earlier thought.**

EPA Comment Number 4:
Public Concerns

Issues that were raised by the public during public meetings were listed in the DEIS (pg. iii) as: terrestrial ecology, sensitive plant and animal species, water quality, aquatic ecology, wetlands, recreation, and visual resources. In addition, the TVA staff identified significant natural areas, floodplains, land use and prime farmland conversion, navigation and socioeconomics and environmental justice as important issues. It should be noted (pg. 74) that "TVA received several comments during scoping that expressed concern for the preservation of natural resources (e.g., natural areas, wildlife habitat, wetlands) and the ways in which these resources may be compromised by increased development (e.g. loss of sensitive habitat, clear cutting of land along the shoreline)." Therefore, it appears that the public has an interest in the preservation of the natural areas of the Pickwick Reservoir shorelands.

> **Response: Comment noted.**

EPA Comment Number 5:

TVA Preferred Alternative

Three alternatives were considered in the DEIS. These were the continuance of the current 1981 plan (Alternative A: No Action) and two updated plan options (Alternative

B: a "balanced" (pg. v) alternative, and Alternative C: a "conservation" (pg. v) alternative). Although TVA did not identify a preferred alternative in the DEIS, page 27 indicates that "TVA prefers the action alternatives (B and C) over the No Action Alternative:" EPA agrees with the TVA preference for B and C over A.

Response: Comment noted.

EPA Comment Number 6:

Alternative B vs. C

In general, B and C would allocate more lands to environmentally protective zones - Zone 3 (Sensitive Resources) and Zone 4 (Natural Resources) -compared to current practices under A with C being more protective than B. Specifically based on Table 1, B and C would allocate 7.0% and 7.8%, respectively of the TVA managed-lands into Zone 3 (compared to 6.3-6.9% for A), and 62.8% and 63.6%, respectively, into Zone 4 (compared to 25.2-48.1% for A). Allocations into Zone 5 (Industrial/Commercial) would be more restrictive than for A (2.3- 13.0%), .with B allocating more (2.8%) than C (2.3%). Allocations into Zone 7 (Recreation) would essentia11y be unchanged from A (5.5%), with B allocating slightly more (5.6%) than C (5.5%). Those lands previously unplanned in the 1981 plan (1.3%) would be allocated to Zone 4 for both B and C. Those lands previously committed under A, would remain committed to their land use.

Response: Comment noted. This is an accurate summary of the alternatives.

EPA Comment Number 7:

Land Parcels 37, 53 & 156

Specific to these differences between B and C, TVA is soliciting public comments regarding the development (B) Versus conservation (C) of some 145 acres in Parcels 37, 53 and 156. Three proposals have been made to TVA for commercial; or industrial development of these parcels and are considered in the DEIS, while additional unfinalized proposals appear to be pending. Alternative B would consider these three requests by allocating lands into Zones 5, 6 and 7 while C would not consider the requests by allocating all of these lands into Zone 4. Environmental characterizations (Chapter 3) of these parcels and descriptions of the specific proposal for their development are as follows:

* Parcel 37 (City of Florence Proposal) -This 35,97 -acre tract was allocated for industrial development under the 1981 plan (barge terminal). The City *of* Florence in Alabama has requested that it be used for "...public recreation facilities including overlooks, and future commercial recreation," Ecologically, Parcel 37 has been altered by earthmoving activities but small areas of forested wetlands exist, herons have been observed nearby, and neotropical birds use the site as a travel corridor during migrations (presumably, enough of such areas still exists since recreational development is being proposed). Alternative B would allocate this parcel into Zone 6, while C would allocate it into Zone 4.

* Parcel 53 (Southeast Tissue Proposal) -This 88.59-acre tract was allocated as Upland Wildlife and General Forest Management under the 1981 plan. The parcel includes a gas line easement and fronts an industrial site. Southeast Tissue has requested access 10 allow construction of an industrial discharge for their proposed tissue plant. Ecologically, Parcel 53 is entirely forested including a large stand of hardwoods that “provides excellent habitat for wildlife" and small areas of forested wetlands. It also provides a visual buffer from adjacent industrial development. Alternative B would allocate this parcel into Zone 5, while C would allocate it into Zone 4.

* Parcel 156 (Cabin Lessees’ Proposal) -This 21-acre tract is located just upstream of the Pickwick Landing State Park. It includes nine cabins leased from TVA which are intermingled along the Parcel 155 shoreline. These 1.5- to 5.5-acre plots contain homesite and utility corridor clearings. The cabin lessees have requested to purchase the cabins. Ecologically, Parcel 156 contains exotic plants and no wetlands, but contains good habitat for wildlife." It is utilized by neotropical birds during migrations and bald eagles and ospreys use nearby mature forests for foraging lookouts. Alternative B would allocate this parcel into Zone 7, while C would allocate it into Zone 4.

Response: Comment Noted. There are no other development requests for Pickwick Reservoir at this time.

EPA Comment Number 8:

Modified C Alternative

Alternatives B and C offer more environmental benefits than A, and C offers more than B based on their percentages of land to be allocated in Zones 3 and 4. As suggested in the DEIS, C is the environmentally preferred alternative that provides the greatest environmental protection. However, C would also not consider any of the three requests for development of Parcels 37, 53 and 156, since all 145 acres of these parcels would be allocated into Zone 4. Although controlling shoreline development IS a referenced public concern and has water quality benefits strongly supported by EPA and is consistent with the Clean Water Act, there is also a practical component to consider for certain types of development. As such, TVA might consider modifying C in the FEIS to allow some reasonable exceptions for development of natural areas. This could either be in the form of a more flexible C or through development of new alternatives such as a “Modified C" or a "B/C Hybrid' (all C options hereafter called "Modified C”). Such a modification would allow case-by case determinations of requests for development outside of designated development zones (5, 6 & 7), similar to current procedures used for A. However, different from A, tradeoffs compensating for granted additional development would be required by allowing proportionately less development in Zones 5, 6 and 7. In general, a Modified C alternative would consider requests outside development zones from a perspective that is less developmental than B but slightly more development than C. If a Modified C is implemented, TVA should also generate guidelines for making decisions for such exceptions for consistency in decision-making and to perhaps minimize the potential for unrealistic requests contrary to these guidelines. Once decisions have been made for Parcels 37, 53 and 156 and an updated

land management plan has been adopted by TVA, prospective developers should also be encouraged to only request development within zones designated for development by the adopted plan (Zones 5, 6 & 7), such that exceptions under a Modified C approach are infrequently requested or granted. However, a mechanism to consider such requests would be in place.

> **Response: TVA's allocations to zones 5, 6, and 7 largely recognize existing uses, and only minor development expansions beyond these existing uses are proposed on three parcels. As a result, there are few opportunities for further tradeoffs, and a "modified C" would not be feasible. However, TVA does recognize the need for public works and utility corridors, as referenced in section 1.5. Site specific reviews for Zones 5, 6, and 7 consider natural resources impacts and in practice, less than 100 percent of the parcel would be actually developed. The intent of allocation into zones 3 and 4 is to minimize or eliminate development requests for these parcels during the life of the plan. In the event TVA considers a re-allocation of Zone 4 lands, TVA would consider appropriate measures to minimize impacts including the acquisition of replacement lands elsewhere.**

EPA Comment Number 9:
In response to TVA's request for comments on Parcels 37, 53 and 156, we offer the following specific comments. For Parcel 37, development of the requested, recreational facilities seems reasonable given the fact that the parcel is classified as a barge terminal industrial site under the current 1981 plan, parts of the site have been disturbed, and that recreational facilities are less disruptive than most commercial or industrial developments. Such construction for recreational benefit would be consistent with a Modified C approach. Similarly, in the case of Parcel 156 where cabins already exist as leased homesites, acquisition of these cabins by the lessees with water access would not need to produce significant additional water quality degradation and would be consistent with a Modified C approach. Allowance of additional construction of additional cabins on this site, however should not be considered consistent with a Modified C approach. Parcel 53 proposing water access for a point source industrial discharge should also not be considered consistent with a Modified C approach since the facility is only proposed (as opposed to existing) and the waste discharge -even if permitted - would be received by reservoir lentic waters (as opposed to riverine lotic waters). In essence, development requests for these and other potential requests under a Modified C approach might be based on whether proposals are compatible with reservoir resources, exhibit an existing as opposed to proposed need, result in limited water quality and wetland effects, and will be monitored for performance standards if implemented. In any case, such construction would also need to be consistent with state and federal statutes and a TVA or TVA-consulted watershed management plan for Pickwick Reservoir".

> **Response: As indicated in the response to comment number 9, TVA believes the public work/utility corridor approach (see section 1.5) provides the flexibility sought by EPA in its modified C approach. With regard to parcel 156, TVA would prefer to recognize its residential character with a Zone 7 allocation under Alternative B. General water**

quality impacts of a Zone 5 allocation are discussed in section 4.5. Site specific water quality impacts of Southeast Tissue's proposal will be addressed in more detail in TVA's Southeast Tissue environmental review. Construction would be consistent with state and federal regulations and would support TVA watershed management goals.

EPA Comment Number 10:
Previously Committed Lands

As indicated above, those lands previously committed under A, would remain committed to that land use. While this "grandfathered" approach seems reasonable it is clear that these land uses would still need to comply with state and federal statutes relative to wetland losses, water quality standards, endangered species, required permitting, and any other applicable laws and regulations.

Response: TVA agrees.

EPA Comment Number 11:
Reservoir Health

The general health of Pickwick Reservoir appears reasonable based on the results of TVA's water quality, benthic and fishery sampling in its Vital Signs Monitoring program (Table 3.5-1: pg. 49). However, we note that chlorophyll levels have increased since 1991 causing TVA to score this water quality indicator as only *fair* or *poor* more often than *good.* This suggests that nutrient-ladened runoff from reservoir and/or upstream development is entering the reservoir and influencing water quality. Although TVA ratings for dissolved oxygen, fish and benthos were generally rated as *good,* some years were also only rated as *fair.* The DEIS may therefore have somewhat overstated the health of the reservoir by characterizing the fish as a "'diverse and healthy community" and the benthos as rich in benthic fauna with a mussel sanctuary"(pg. viii). It is also unclear what perturbation or synergism is affecting these resources in parts of the reservoir to cause a *fair* or *poor* rating (e.g., pollution, water quality, disease, overfishing, year class, etc.). The FEIS may wish to discuss in greater detail. Ultimately, the TVA decision-making process regarding selection of an updated land management plan and proposals for development should consider these Vital Signs Monitoring results and the potential effects of additional development.

As suggested above, the rise in chlorophyll (Chlorophyll *a)* in the reservoir is a concern to EPA since it is a good indicator of trophic level and reservoir health. The FEIS should discuss if the State of Tennessee has a Chlorophyll *a* standard for this lake and, if not, what the prospects might be for setting one.

Response: Rising chlorophyll is being seen in all TVA mainstream reservoirs indicating the source of nutrient loading is not from TVA managed lands covered by this plan. Currently the State of Tennessee does not have a chlorophyll standard. The State of Alabama with assistance from TVA has recently established a chlorophyll standard. If

Tennessee wishes to establish similar criteria, TVA would be willing to work with them.

Results of fisheries data indicated a fair to good community index which justifies stating that there exists a diverse and healthy fisheries community. Sampling is restricted in the mussel sanctuary in the upper reaches of the reservoir due to the presence of federally listed sensitive mussel species; therefore, although benthic rating is fair, overall benthic community is very healthy and diverse. Overall reservoir benthic diversity cannot be accurately depicted by TVA's reservoir health rating due to the lack of sampling in the mussel sanctuary.

EPA Comment Number 12:
Reservoir Management Goal

It is unclear if a "management goal" for the Pickwick Reservoir has been established for the lake. Such a goal should be the foundation of the land management plan. One such goal, for example, would be to at least maintain the present level of water quality, habitat diversity, species, etc. Some lakes have good fisheries information that help set goals. The several land use zones presented in the DEIS might shape the management goal, as well as selection of Alternative A, B, or C since they vary in the level of development allowed.

Response: TVA has revised section 1.5 of the FEIS to reflect reservoir-specific goals for the Pickwick Reservoir.

EPA Comment Number 13:
Reservoir Shoreline Development

The TVA Shoreline Management Initiative (SMI) based on a 1999 TVA EIS and ROD has been applied to Pickwick Reservoir in terms of residential shoreline construction and water access. SMI categorized the shoreline into three categories: *Shoreline Protection* (areas where sensitive resources exist), *Residential Mitigation* (areas where sensitive resources may exist or can be mitigated) and *Managed Residential* (areas where sensitive resources do not exist). For the Pickwick Reservoir, 20% (95.8 mi) of its 490.6-mile shoreline was considered residential shoreline. Page 7 indicates that for that shoreline, 2% (1.9 mi) is in Shoreline Protection, 81% (77.6 mi) is in Residential Mitigation, and 17% (16.3 mi) is in Managed Residential. EPA concurs with TVA's proposed separation of land use categories involving industrial/commercial development (Zones 5 &. 6) from sensitive and natural resource areas (Zone 3 & 4) in the updated land management plan.

Response: Comments noted.

EPA Comment Number 14:
Watershed Protection Plan

Before any additional development is allowed on TVA-managed lands or back-lying areas near Pickwick Reservoir, EPA strongly recommends that a watershed protection plan be developed by TVA for TVA-owned and managed lands. While SMI offers good overall guidance for shorelines, implementation of a watershed protection plan specific to Pickwick Reservoir is critical. The FEIS should indicate if such a plan has been developed is perhaps already required by SMI, and how it will be funded, implemented, monitored and enforced. We recommend that a summary of any developed or draft plan be included in the FEIS. Any alternative selected by TVA in the FEIS (A, B, C; Modified C, other) must be consistent with this plan.

> **Response: TVA has not prepared a watershed plan for Pickwick Reservoir, nor is one required by SMI. However, TVA monitors watershed water quality and the Pickwick Watershed Team undertakes activities to improve water quality. Since the allocation process takes into account water quality of the reservoir, it is not necessary to develop a watershed protection plan. In fact, as described in Section 1.5 of the FEIS, protection of water quality is a goal during the development of the plan. Further, TVA participates in any watershed planning activities in the various states.**

EPA Comment Number 15:
It is clear that TVA can only directly control those activities on TVA-owned or managed lands. However, for backlying watershed areas, we further recommend that TVA also be an important stakeholder in the community regarding overall watershed issues. In general, the water quality in a reservoir is much more impacted by the conditions in the larger watershed than just the immediate shoreline area. For example, at Lake Lanier in Georgia, the U.S. Army Corps of Engineers (COE) seem to have made a considerable effort to be engaged in a wide variety of issues in the lake's watershed that effect lake water quality. They have hosted seminars on BMPs for forestry, erosion control and storm water management. They also report violations to state and local officials. They comment on wastewater discharges in the lake's watershed and at least keep abreast of land management plans by local governments in the watershed. We suggest that the FEIS explore such opportunities outside of the immediate shoreline for TVA to have a role that ultimately protects or improves the water quality in the lake. A discussion of community outreach (present and proposed) would also be pertinent. In essence, while the scope of the EIS focuses on the TVA-owned and managed lands, EPA recommends that the EIS also consider the bigger watershed picture and overall cumulative impacts. Ideally, the watershed protection plan would address issues of the larger-watershed as opposed to only TVA-owned and managed shorelands.

> **Response: The purpose of TVA's land planning process is to evaluate TVA-owned and –managed lands. TVA recognizes that the water quality in a reservoir is much more impacted by the conditions in the larger watershed than just the immediate shoreline area. The affected environment section does provide general information on the regional setting of the watershed.**

TVA conducts the following activities in watershed management: conduct educational activities such as Kids-in-the-Creek and Clean Boating Campaigns to increase public awareness concerning water quality issues, provide partial funding of a watershed coordinator for the Bear Creek Watershed, provide cost share and in-kind services for matching-funds grants for BMP implementation and water quality analysis for Bear and Cypress Creeks, work with Colbert County, Alabama NRCS to provide education and cost share funds to increase use of no-till farming practices in Pond Creek watershed to minimize sedimentation, assist Alabama Department of Environmental Management and local industry leaders to address point-source pollution loading on Pond Creek, and partner with Tishomingo County, Mississippi NRCS to increase riparian buffer and animal exclusion for streams in northeast Mississippi. Current projects include; stabilization of critically eroding shoreline, voluntary establishment of Shoreline Management Zones and riparian buffers in residential areas, and the Clean Marina Initiative to provide guidelines and incentives for valley marinas to help protect water quality. TVA also works with local coalitions, agencies, businesses, schools, conservation groups, etc., to conduct cleanups of the shoreline and informal recreation areas.

TVA recognizes that the quality of water of the Tennessee River system contributes to continued prosperity and quality of life in the Valley. Therefore, as part of its corporate winning performance program, a Watershed Water Quality performance measure has been established and it measures the overall water quality of the Tennessee River watershed. Overall water quality condition is measured by stream and reservoir health, shoreline condition, and state assessments of water quality for 611 smaller watershed units of the Tennessee River system. This measure indicates the effectiveness of TVA to maintain or bring about long-term positive changes in water quality conditions in the Valley.

EPA Comment Number 16:
Cumulative Impacts

Regardless if B or a more protective C or Modified C alternative is selected, outside (non-TVA) development in back-lying or TVA-managed lands could nevertheless impact the reservoir. For example, TVA should coordinate with the Federal Highway Administration (FHWA) on the Memphis-Atlanta Corridor (Pg. 8) as appropriate if it crosses the lake. Such projects should be consistent with the land management plan and the selected updated land management plan. The prospects/effects of development outside of TVA managed land should also be considered in the selection process of a B versus C level of development for the updated land management plan.

Response: A summary of regional conditions was provided in Section 3.1 and subsequent affected environment chapter. TVA has coordinated with the Federal Highway Administration (FHWA) on the Memphis-Atlanta Corridor. TVA provided comments on the DEIS for the project. TVA staff

has considered the prospects/effects of development in its selection of the preferred alternative in the FEIS.

EPA Comment Number 17:
Additional Comments

Acreage Figures (pg. i and DEIS) -For the updated land management plan, 19,238 acres would be allocated into seven land use categories (zones) which includes previously committed and agricultural lands as well as 6,304 acres of lands that remain uncommitted. Although this summarizes the general approach, some apparent inconsistencies regarding specific acreage figures exist within the document. While these apparent inconsistencies are not significant to the overall updated plan, they should be corrected or clarified in the FEIS. A tabular summary would also be helpful.

Response: The FEIS has been revised to correct these inconsistencies.

EPA Comment Number 18:
Table 2-5 (pg. 24), indicates that 19,238 acres of TVA land would be allocated under the updated plans or B and C. The DEIS abstract indicates that 12,849.42 acres are already committed (via land transfers, leases and contracts) to given land uses, and page 16 indicates that these existing land uses would be retained under the new plan. Page 16 also states that 6,304 acres remain uncommitted. As such, the Statement on page i indicating that 19,238 acres are "available for allocation to future uses" seems inappropriate since well over half of these acres are already committed. Furthermore, if 19,238 acres are allocated, and 6,304 are uncommitted, then 12,934, acres (19,238 minus 6,304) would seem to be committed instead of the 12,849 acres reported in the abstract. Also, page 15 and Table 2-5 state that 2,861 acres are committed for TVA project lands, while page 16 states that "approximately 9,987.92 acres (52.1 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing land uses." We assume that the 9,988-acre figure includes both TVA project lands (2,861 ac) and other lands (conceivably agricultural lands although page 16 indicates that agricultural lands were not considered committed because they are interim use) since the 19,238 total acres minus the 6,304 uncommitted acres (pg. 16) would equal 2,934 committed acres, which is much less than the 12,849 committed acres reported in the abstract.

Response: It is correct that these are not available. TVA has clarified these points in the Final EIS. In the DEIS, 19,238 acres were allocated using the updated land planning zone definitions. The 1981 Plan used 10 allocation categories, defined in Table 2-1 of the EIS. Land currently committed to a specific use was allocated to a zone designated for that use. Commitments include leases, licenses, easements, outstanding land rights, or existing designated natural areas. Approximately 2,861.5 acres (14.9 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing TVA projects. Approximately 9,987.92 acres (52.1 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing land use agreements. Each parcel of land was

reviewed to determine its existing committed use, physical capability for supporting certain uses, other potential suitable uses of such land, and the needs of the public expressed during the scoping process. During this process, the current use was reaffirmed. Based on this information, the planning team allocated the 19,238 acres to one of seven allocation zones described in Table 2-2 of the EIS.

EPA Comment Number 19:
Parcel 37, 53, & 156 Acreage (pg. v) -Page v references the sum of these three parcels as 245 acres, which is inconsistent with the EPA-calculated total of 145.56 acres from Table 2-4 and the stated total of 145 on page 74. We assume therefore that 145 acres is correct. The FEIS should discuss this.

Response: 145 acres is the correct figure and the FEIS has been revised accordingly.

EPA Comment Number 20:
Air Quality (pg. ix) -The summary discussion on air quality should be updated in the FEIS. It is stated that "these new Standards [ozone and particulate matter], including an 8-hour standard for ozone that would supersede the old 1-hour standard, have been challenged in the courts and it may be a year or more before these matters are ultimately resolved." However, it should be noted instead that, on February 27.2001, the Supreme Court upheld the health basis for revising the ozone and the particulate matter standards, but remanded some issues regarding. the level of the standards back to the Washington D.C. Circuit Court of Appeals. On March 26, 2002, the Circuit Court upheld both the 8-hour ozone standard and the fine particulate manner standard, thereby resolving all outstanding legal issues. The EPA is moving forward to develop implementation guidance for both of these standards, and expects to promulgate designations for the 8-hour ozone standard by 2004.

Response: Comment noted. The FEIS has been revised accordingly.

EPA Comment Number 21:

Wetlands (pg 17)- Wetlands are referenced as a resource protected under Zone 3. However, it is unclear what is meant by wetlands "as defined by TVA" (pg. 17). Does/How does this differ from wetland definitions in guidance from the U.S. Army Corps of Engineers (COE 1987 manual) or the U.S. Fish and Wildlife Service (Cowardin)? In addition to jurisdictional wetlands, we suggest that the TVA definition for the purposes of the updated land management plan also include transitional and isolated wetlands that may not satisfy all three COE criteria (vegetation, soils and hydrology) for jurisdictional wetlands and are no longer considered jurisdictional by the COE, since such wetlands still have functional value and should be considered sensitive areas.

Response: TVA uses the definition of wetlands in the Executive Order 11990, as indicated in Section 3.7 of the DEIS.

EPA Comment Number 22:
Zones 3 & 4 (pg. 21 vs, App B) -Page 21 indicates that C would allocate Parcels 37, 53 and 156 into Zones 3 or 4 while Appendix B lists only Zone 4 for these three parcels for C. The FEIS should clarify. EPA has assumed Zone 4 in this letter.

> **Response: The FEIS has been revised to read: "Under Alternative C, a conservation alternative, TVA would not consider these requests and would allocate these parcels to Zone 4 (Natural Resource Conservation)".**

EPA Comment Number 23:
Maps of Parcels (pg 21) Although Appendix B provides good information on all the parcels associated with Pickwick Reservoir a location map of the Parcels 37, 53 and 156 and other parcels discussed in DEIS would have been a helpful reference.

> **Response: Maps were provided in a packet at the back of the DEIS.**

EPA Comment Number 24:
EPA Conclusions and Recommendations.

We offer these conclusions and recommendations on the following DEIS issues:

Watershed Protection Plan- Before any additional development is allowed near Pickwick Reservoir, EPA strongly recommends that a watershed protection plan be developed by TVA for TVA-owned and managed lands to supplement SMI guidance. The FEIS should indicate if such a plan has been developed, is perhaps already required by SMI. and how it will be funded, implemented, monitored and enforced. A summary of any developed or draft plan should be included in the FEIS. Any alternative selected by TVA in the FEIS (A, B, C, Modified C, other) must be consistent with this plan.

> **Response: See response to comment number 14.**

EPA Comment Number 25:
In addition to managing TV A shorelands, we further recommend that TVA also be an important stakeholder in the community regarding larger watershed issues and consider the bigger watershed picture and the overall cumulative impacts on the lake. Ideally, the watershed protection plan would address issues of the larger watershed as opposed to only TVA-owned and managed shorelands.

> **Response: TVA is an influential member of the larger community as indicated in our response to comment number 15.**

EPA Comment Number 26:
*Management Goal- If not already established, EPA strongly recommends that TVA select a management goal for Pickwick Reservoir that should be the foundation of the land management plan. The seven land use zones presented in the DEIS might shape

the management goal as well as selection of Alternatives A, B or C since they vary in the level of development allowed.

Response: See response to comment number 12.

EPA Comment Number 27:
Alternatives-TVA should identify a preferred alternative in the FEIS for its updated land management plan. This decision should fully consider that the public has indicated an interest in the preservation of natural areas of reservoir shorelands; the management goal of the: reservoir; that 20% of the existing shoreline (including sensitive areas) is already developed; that reservoir chlorophyll levels have been increasing; that the reservoir shorelands contain wetland, riparian zones, federally protected endangered species and numerous (750+) archeological sites; the cumulative effects from projects in back-lying areas and on TVA-managed areas; and that C would be the most environmentally protective alternative. From a practical perspective, TV A should also consider a Modified C alternative that would allow consideration of development requests from a perspective that is less developmental than B but slightly more developmental than C. These requests would be considered on a case-by-case basis for reasonable development on TVA parcels outside of designated development Zones 5, 6 and 7. Such exceptions should require tradeoffs that will compensate for the additional development by allowing proportionately less development in Zones 5, 6 and 7. If a Modified C is implemented, TVA should also generate guidelines for making decisions for such exceptions for consistency in decision-making and to perhaps minimize the potential for unrealistic requests contrary to these guidelines. These guidelines might include that proposals are compatible with reservoir resources, exhibit an existing as opposed to proposed need, result in limited water quality and wetland effects and will be monitored for performance standards if implemented. In any case, all development must be consistent with state and federal statutes and a TVA or TVA-concurred watershed protection plan for Pickwick Reservoir. Prospective developers should also be encouraged to only request development within zones designated for development by the adopted plan (Zones 5, 6 &. 7), such that exceptions under a Modified C approach are infrequently requested or granted. However, a mechanism to consider such requests would be in place.

Response: TVA has provided a preferred alternative in the FEIS. For discussion of modified C, see our response to comment number 8.

EPA Comment Number 28:
Parcels 37, 53 and 156 -Employing the concept of a Modified C alternative, the request for recreational development of Parcel 37 would be reasonable and consistent with a Modified C approach since the parcel is an industrial (barge terminal) site under the current 1981 plan, parts of the site have been disturbed and because recreational development is less disruptive than most industrial/commercial development. In the case of Parcel 156 where cabins already exist as leased homesites, acquisition of these cabins by the lessees with water access would not need to produce significant additional water quality degradation. The request would be consistent with a Modified C approach and could be granted if no additional cabins were constructed. However, the request for Parcel 53 proposing water access for a point source industrial discharge should not be

considered consistent with a Modified C approach since the facility is only proposed (as opposed to existing) and the waste discharge would be received by impounded waters (as opposed to riverine waters). Any construction consistent with a Modified C approach would still need to comply with all state and federal statutes and a TVA or TVA-concurred watershed protection plan for Pickwick Reservoir.

Response: See our response to comment number 9.

EPA Comment Number 29:
EPA DEIS Rating -Since a preferred alternative was not identified in the DEIS, EPA has rated all three alternatives presented. Bated on the above comments and concerns, we rate C as 'LO" (Lack of objections) and B and A as "EC-1" (Environmental Concerns, with some additional information requested), with B being favored over A. We also rate a Modified C as LO. Overall, we rate the DEIS an EC-1 since B was rated EC-1 and it remains unclear which alternative TVA will select in the FEIS. We request that our DEIS comments be addressed in the FEIS.

Response: Comments noted. TVA has addressed EPA's comments in the FEIS.

EPA Comment Number 30:
Summary

EPA recommends that TVA select an updated land management plan for Pickwick Reservoir based on the management goals for the reservoir taking into consideration existing reservoir water quality, shoreline development, natural resources, public comments, and the potential impacts of further development of reservoir shorelands and back-lying areas. EPA strongly supports water quality protection but acknowledges the need for some development from a practical perspective. EPA also recommends that TVA develop a specific watershed protection plan for Pickwick Reservoir for TVA-owned and managed lands. In addition to managing TVA shorelands, we further recommend that TVA also be an important stakeholder in the community regarding larger watershed issues in order to better address the bigger watershed and the overall cumulative impacts issues of the lake.

Response: For reasons stated in the response to comment 14 and because TVA public land are such a small part of the total watershed the development of a watershed plan would not be useful. However, the land plan does emphasize watershed protection, and TVA plays an important role in watershed management for surrounding private lands.

Appendix I –Letters Received from EPA, U.S. FWS, States of Tennessee and Alabama Historical Commission on the Draft EIS

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June 17, 2002

Ms. Chellye Campbell
Project Leader
Tennessee Valley Authority
TVA - Pickwick Watershed Team
Resource Stewardship, West Region
P.O. Box 1010, SB 1H
Muscle Shoals, Alabama 35662

SUBJ: EPA NEPA Comments on the TVA DEIS for the "Pickwick Reservoir Land Management Plan;" Colbert and Lauderdale Counties, AL; Tishomingo County, MS; and Hardin County, TN; CEQ No. 020160

Dear Ms. Campbell:

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced Tennessee Valley Authority (TVA) Draft Environmental Impact Statement (DEIS) in accordance with EPA's responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The proposed project is to update the current 1981 TVA land management plan for TVA-managed lands associated with Pickwick Reservoir, a 52.7-mile long TVA reservoir with 490.6 miles of shoreline in Alabama, Mississippi and Tennessee.

The land management plan is being updated since some lands (1,200 ac) have been transferred to other agencies since 1981, other lands (2,000 ac) are now submerged, while other lands were not considered in the original plan (1,330 acres, primarily the narrow shoreline "marginal strip" retained by TVA between the reservoir and private property sold by TVA). The 1981 plan also included multiple use categories and requests for development were determined on a more subjective case-by-case basis. In contrast, alternatives for the updated plan offer a more systematic approach that allocates land into more distinct resource categories (land use zones). Overall, the presented alternatives for the updated plan would manage 19,238 acres of land (pg. i) of which 6,304 acres (pg. 16) are uncommitted with the balance already being committed to an existing TVA project or agricultural use. Existing land use commitments would be retained for all alternatives of the updated plans being considered.

Land Use Zones

The alternatives for the updated plan allocate TVA-managed lands into seven land use zones, of which TVA is responsible for lands in Zones 2-7:

Zone 1 - *Non-TVA Shoreland* - Non-TVA lands above summer pool elevation such as flowage easements or privately-owned shorelands.

Zone 2 - *Project Operations* - TVA lands used for project operations and public works.

Zone 3 - *Sensitive Resource Management* - TVA lands managed for the protection and enhancement of sensitive resources such as cultural resources, TVA-designated Natural Areas, ecological study areas, river corridors with sensitive species, wetlands as defined by TVA, significant scenic areas, lands leased for protection purposes and lands fronting areas protected by other agencies.

Zone 4 - *Natural Resource Conservation* - TVA lands managed for natural resource enhancement or human use appreciation. Categories include forest management areas, recreational areas for hunting and birdwatching, riparian shoreline areas, river corridors not included in Zone 3, small islands (10 acres or less), and lands fronting wildlife and forest management lands owned by other agencies.

Zone 5 - *Industrial/Commercial Development* - TVA lands managed for economic development such as lands for business parks, industrial access, barge terminals, towing areas and minor commercial landings.

Zone 6 - *Developed Recreation* - TVA lands managed for active recreational areas requiring capital improvements/maintenance such as campgrounds, marinas, parks, greenways, water access areas and lands fronting such areas managed by other agencies.

Zone 7 - *Residential Access* - TVA lands requested for waterfront residential access such as docks, piers, corridors, retaining walls, easements and other activities such as fill/excavation.

In regard to activities associated with Zone 4, we note that timber harvesting is currently not included in the *forest management* component of Zone 4 since page 75 states that: "At this time, no timber harvests are proposed on TVA public land surrounding Pickwick Reservoir." On the other hand, we note that timbering is also not precluded since page 75 further states that: "However, when the need arises, timber harvesting may be considered to address stakeholder requests, issues of safety, etc. from impacts of insect infestation and storms and incorporates the appropriate level of environmental review." In general, we agree that such timber harvesting in response to weather or insect infestations would constitute forest management. If commercial harvesting is requested and should it be granted by TVA in Zone 4 or elsewhere, we request that the FEIS address the timber harvesting – particularly any potential clearcutting and thinning activities – relative to EPA mandates such as minimizing water quality degradation.

Also, although Zone 7 addresses TVA-owned or managed lands for residential access to the reservoir, it is unclear if any of the Zones 2-7 are specifically established for potential new residential development on TVA-owned or managed shore-lands along the Pickwick Reservoir. The FEIS should clarify.

Public Concerns

Issues that were raised by the public during public meetings were listed in the DEIS (pg. iii) as: terrestrial ecology, sensitive plant and animal species, water quality, aquatic ecology, wetlands, recreation, and visual resources. In addition, the TVA staff identified significant natural areas, floodplains, land use and prime farmland conversion, navigation and socioeconomics and environmental justice as important issues. It should be noted (pg. 74) that "TVA received several comments during scoping that expressed concern for the preservation of natural resources (e.g., natural areas, wildlife habitat, wetlands) and the ways in which these resources may be compromised by increased development (e.g., loss of sensitive habitat, clear cutting of land along the shoreline)." Therefore, it appears that the public has an interest in the preservation of the natural areas of the Pickwick Reservoir shorelands.

TVA Preferred Alternative

Three alternatives were considered in the DEIS. These were the continuance of the current 1981 plan (Alternative A: No Action) and two updated plan options (Alternative B: a "balanced" (pg. v) alternative, and Alternative C: a "conservation" (pg. v) alternative). Although TVA did not identify a preferred alternative in the DEIS, page 27 indicates that "TVA prefers the action alternatives (B and C) over the No Action Alternative." EPA agrees with the TVA preference for B and C over A.

Alternative B vs. C

In general, B and C would allocate more lands to environmentally protective zones – Zone 3 (Sensitive Resources) and Zone 4 (Natural Resources) – compared to current practices under A, with C being more protective than B. Specifically based on Table 1, B and C would allocate 7.0% and 7.8%, respectively, of the TVA managed lands into Zone 3 (compared to 6.3-6.9% for A), and 62.8% and 63.6%, respectively, into Zone 4 (compared to 25.2-48.1% for A). Allocations into Zone 5 (Industrial/Commercial) would be more restrictive than for A (2.3-13.0%), with B allocating more (2.8%) than C (2.3%). Allocations into Zone 7 (Recreation) would essentially be unchanged from A (5.5%), with B allocating slightly more (5.6%) than C (5.5%). Those lands previously unplanned in the 1981 plan (1.3%) would be allocated to Zone 4 for both B and C. Those lands previously committed under A, would remain committed to their land use.

Land Parcels 37, 53 & 156

Specific to these differences between B and C, TVA is soliciting public comments regarding the development (B) versus conservation (C) of some 145 acres in Parcels 37, 53 and 156. Three proposals have been made to TVA for commercial or industrial development of these parcels and are considered in the DEIS, while additional unfinalized proposals appear to be pending. Alternative B would consider these three requests by allocating lands into Zones 5, 6

and 7, while C would not consider the requests by allocating all of these lands into Zone 4. Environmental characterizations (Chapter 3) of these parcels and descriptions of the specific proposal for their development are as follows:

* Parcel 37 (City of Florence Proposal) - This 35.97-acre tract was allocated for industrial development under the 1981 plan (barge terminal). The City of Florence in Alabama has requested that it be used for "...public recreation facilities including trails, overlooks, and future commercial recreation." Ecologically, Parcel 37 has been altered by earthmoving activities but small areas of forested wetlands exist, herons have been observed nearby, and neotropical birds use the site as a travel corridor during migrations (presumably, enough of such areas still exist since recreational development is being proposed). Alternative B would allocate this parcel into Zone 6, while C would allocate it into Zone 4.

* Parcel 53 (Southeast Tissue Proposal) - This 88.59-acre tract was allocated as Upland Wildlife and General Forest Management under the 1981 plan. The parcel includes a gas line easement and fronts an industrial site. Southeast Tissue has requested access to allow construction of an industrial discharge for their proposed tissue plant. Ecologically, Parcel 53 is entirely forested including a large stand of hardwoods that "provides excellent habitat for wildlife" and small areas of forested wetlands. It also provides a visual buffer from adjacent industrial development. Alternative B would allocate this parcel into Zone 5, while C would allocate it into Zone 4.

* Parcel 156 (Cabin Lessees' Proposal) - This 21-acre tract is located just upstream of the Pickwick Landing State Park. It includes nine cabins leased from TVA, which are intermingled along the Parcel 155 shoreline. These 1.5- to 5.5-acre plots contain homesite and utility corridor clearings. The cabin lessees have requested to purchase the cabins. Ecologically, Parcel 156 contains exotic plants and no wetlands, but "contains good habitat for wildlife." It is utilized by neotropical birds during migrations and bald eagles and ospreys use nearby mature trees for foraging lookouts. Alternative B would allocate this parcel into Zone 7, while C would allocate it into Zone 4.

Modified C Alternative

Alternatives B and C offer more environmental benefits than A, and C offers more than B based on their percentages of land to be allocated in Zones 3 and 4. As suggested in the DEIS, C is the environmentally preferred alternative that provides the greatest environmental protection. However, C would also not consider any of the three requests for development of Parcels 37, 53 and 156, since all 145 acres of these parcels would be allocated into Zone 4. Although controlling shoreline development is a referenced public concern and has water quality benefits strongly supported by EPA and is consistent with the Clean Water Act, there is also a practical component to consider for certain types of development. As such, TVA might consider modifying C in the FEIS to allow some reasonable exceptions for development of natural areas. This could either be in the form of a more flexible C, or through development of new alternatives such as a "Modified

C" or a "B/C Hybrid" (all C options hereafter called "Modified C"). Such a modification would allow case-by-case determinations of requests for development outside of designated development zones (5, 6 & 7), similar to current procedures used for A. However, different from A, tradeoffs compensating for granted additional development would be required by allowing proportionately less development in Zones 5, 6 and 7. In general, a Modified C alternative would consider requests outside development zones from a perspective that is less developmental than B but slightly more development than C. If a Modified C is implemented, TVA should also generate guidelines for making decisions for such exceptions for consistency in decision-making and to perhaps minimize the potential for unrealistic requests contrary to these guidelines. Once decisions have been made for Parcels 37, 53 and 156 and an updated land management plan has been adopted by TVA, prospective developers should also be encouraged to only request development within zones designated for development by the adopted plan (Zones 5, 6 & 7), such that exceptions under a Modified C approach are infrequently requested or granted. However, a mechanism to consider such requests would be in place.

In response to TVA's request for comments on Parcels 37, 53 and 156, we offer the following specific comments. For Parcel 37, development of the requested recreational facilities seems reasonable given the fact that the parcel is classified as a barge terminal industrial site under the current 1981 plan, parts of the site have been disturbed, and that recreational facilities are less disruptive than most commercial or industrial developments. Such construction for recreational benefit would be consistent with a Modified C approach. Similarly, in the case of Parcel 156 where cabins already exist as leased homesites, acquisition of these cabins by the lessees with water access would not need to produce significant additional water quality degradation and would be consistent with a Modified C approach. Allowance of additional construction of additional cabins on this site, however, should not be considered consistent with a Modified C approach. Parcel 53 proposing water access for a point source industrial discharge should also not be considered consistent with a Modified C approach since the facility is only proposed (as opposed to existing) and the waste discharge – even if permitted – would be received by reservoir lentic waters (as opposed to riverine lotic waters). In essence, development requests for these and other potential requests under a Modified C approach might be based on whether proposals are compatible with reservoir resources, exhibit an existing as opposed to proposed need, result in limited water quality and wetland effects, and will be monitored for performance standards if implemented. In any case, such construction would also need to be consistent with state and federal statutes and a TVA or TVA-concurred watershed management plan for Pickwick Reservoir.

Previously Committed Lands

As indicated above, those lands previously committed under A, would remain committed to their land use. While this "grandfathered" approach seems reasonable, it is clear that these land uses would still need to comply with state and federal statutes relative to wetland losses, water quality standards, endangered species, required permitting, and any other applicable laws and regulations.

Reservoir Health

The general health of Pickwick Reservoir appears reasonable based on the results of TVA's water quality, benthic and fishery sampling in its Vital Signs Monitoring program (Table 3.5-1: pg. 49). However, we note that chlorophyll levels have increased since 1991 causing TVA to score this water quality indicator as only *fair* or *poor* more often than *good*. This suggests that nutrient-ladened runoff from reservoir and/or upstream development is entering the reservoir and influencing water quality. Although TVA ratings for dissolved oxygen, fish and benthos were generally rated as *good,* some years were also only rated as *fair*. The DEIS may therefore have somewhat overstated the health of the reservoir by characterizing the fish as a "diverse and healthy community" and the benthos as "rich in benthic fauna with a mussel sanctuary"(pg. viii). It is also unclear what perturbation or synergism is affecting these resources in parts of the reservoir to cause a *fair* or *poor* rating (e.g., pollution, water quality, disease, overfishing, year class, etc.). The FEIS may wish to discuss in greater detail. Ultimately, the TVA decision-making process regarding selection of an updated land management plan and proposals for development should consider these Vital Signs Monitoring results and the potential effects of additional development.

As suggested above, the rise in chlorophyll (Chlorophyll *a*) in the reservoir is a concern to EPA since it is a good indicator of trophic level and reservoir health. The FEIS should discuss if the State of Tennessee has a Chlorophyll *a* standard for this lake and, if not, what the prospects might be for setting one.

Reservoir Management Goal

It is unclear if a "management goal" for the Pickwick Reservoir has been established for the lake. Such a goal should be the foundation of the land management plan. One such goal, for example, would be to at least maintain the present level of water quality, habitat diversity, species, etc. Some lakes have good fisheries information that help set goals. The seven land use zones presented in the DEIS might shape the management goal, as well as selection of Alternative A, B or C since they vary in the level of development allowed.

Reservoir Shoreline Development

The TVA Shoreline Management Initiative (SMI) based on a 1999 TVA EIS and ROD has been applied to Pickwick Reservoir in terms of residential shoreline construction and water access. SMI categorized the shoreline into three categories: *Shoreline Protection* (areas where sensitive resources exist), *Residential Mitigation* (areas where sensitive resources may exist or can be mitigated) and *Managed Residential* (areas where sensitive resources do not exist). For the Pickwick Reservoir, 20% (95.8 mi) of its 490.6-mile shoreline was considered residential shoreline. Page 7 indicates that for that shoreline, 2% (1.9 mi) is in Shoreline Protection, 81% (77.6 mi) is in Residential Mitigation, and 17% (16.3 mi) is in Managed Residential. EPA concurs with TVA's proposed separation of land use categories involving industrial/commercia

development (Zones 5 & 6) from sensitive and natural resource areas (Zone 3 & 4) in the updated land management plan.

Watershed Protection Plan

Before any additional development is allowed on TVA-managed lands or back-lying areas near Pickwick Reservoir, EPA strongly recommends that a watershed protection plan be developed by TVA for TVA-owned and managed lands. While SMI offers good overall guidance for shorelines, implementation of a watershed protection plan specific to Pickwick Reservoir is critical. The FEIS should indicate if such a plan has been developed, is perhaps already required by SMI, and how it will be funded, implemented, monitored and enforced. We recommend that a summary of any developed or draft plan be included in the FEIS. Any alternative selected by TVA in the FEIS (A, B, C, Modified C, other) must be consistent with this plan.

It is clear that TVA can only directly control those activities on TVA-owned or managed lands. However, for back-lying watershed areas, we further recommend that TVA also be an important stakeholder in the community regarding overall watershed issues. In general, the water quality in a reservoir is much more impacted by the conditions in the larger watershed than just the immediate shoreline area. For example, at Lake Lanier in Georgia, the U.S. Army Corps of Engineers (COE) seem to have made a considerable effort to be engaged in a wide variety of issues in the lake's watershed that effect lake water quality. They have hosted seminars on BMPs for forestry, erosion control and storm water management. They also report violations to state and local officials. They comment on wastewater discharges in the lake's watershed and at least keep abreast of land management plans by local governments in the watershed. We suggest that the FEIS explore such opportunities outside of the immediate shoreline for TVA to have a role that ultimately protects or improves the water quality in the lake. A discussion of community outreach (present and proposed) would also be pertinent. In essence, while the scope of the EIS focuses on the TVA-owned and managed lands, EPA recommends that the EIS also consider the bigger watershed picture and overall cumulative impacts. Ideally, the watershed protection plan would address issues of the larger watershed as opposed to only TVA-owned and managed shorelands.

Cumulative Impacts

Regardless if B or a more protective C or Modified C alternative is selected, outside (non-TVA) development in back-lying or TVA-managed lands could nevertheless impact the reservoir. For example, TVA should coordinate with the Federal Highway Administration (FHWA) on the Memphis-Atlanta Corridor (pg. 8) as appropriate if it crosses the lake. Such projects should be consistent with the watershed management plan and the selected updated land management plan. The prospects/effects of development outside of TVA managed lands should also be considered in the selection process of a B versus C level of development for the updated land management plan.

Additional Comments

* Acreage Figures (pg. i and DEIS) - For the updated land management plan, 19,238 acres would be allocated into seven land use categories (zones) which includes previously committed and agricultural lands as well as 6,304 acres of lands that remain uncommitted. Although this summarizes the general approach, some apparent inconsistencies regarding specific acreage figures exist within the document. While these apparent inconsistencies are not significant to the overall updated plan, they should be corrected or clarified in the FEIS. A tabular summary would also be helpful.

Table 2-5 (pg. 24), indicates that 19,238 acres of TVA land would be allocated under the updated plans of B and C. The DEIS abstract indicates that 12,849.42 acres are already committed (via land transfers, leases and contracts) to given land uses, and page 16 indicates that these existing land uses would be retained under the new plan. Page 16 also states that 6,304 acres remain uncommitted. As such, the statement on page i indicating that 19,238 acres are "available for allocation to future uses" seems inappropriate since well over half of these acres are already committed. Furthermore, if 19,238 acres are allocated, and 6,304 are uncommitted, then 12,934 acres (19,238 minus 6,304) would seem to be committed instead of the 12,849 acres reported in the abstract. Also, page 15 and Table 2-5 state that 2,861 acres are committed for TVA project lands, while page 16 states that "[a]pproximately 9,987.92 acres (52.1 percent) of the TVA public land surrounding Pickwick Reservoir are committed due to existing land uses." We assume that the 9,988-acre figure includes both TVA project lands (2,861 ac) and other lands (conceivably agricultural lands although page 16 indicates that agricultural lands were not considered committed because they are interim use) since the 19,238 total acres minus the 6,304 uncommitted acres (pg. 16) would equal 2,934 committed acres, which is much less than the 12,849 committed acres reported in the abstract.

* Parcel 37, 53, & 156 Acreage (pg. v) - Page v references the sum of these three parcels as 245 acres, which is inconsistent with the EPA-calculated total of 145.56 acres from Table 2-4 and the stated total of 145 on page 74. We assume therefore that 145 acres is correct. The FEIS should discuss this.

* Air Quality (pg. ix) - The summary discussion on air quality should be updated in the FEIS. It is stated that "[t]hese new standards [ozone and particulate matter], including an 8-hour standard for ozone that would supersede the old 1-hour standard, have been challenged in the courts and it may be a year or more before these matters are ultimately resolved." However, it should be noted instead that, on February 27, 2001, the Supreme Court upheld the health basis for revising the ozone and the particulate matter standards, but remanded some issues regarding the level of the standards back to the Washington D.C. Circuit Court of Appeals. On March 26, 2002, the Circuit Court upheld both the 8-hour ozone standard and the fine particulate matter standard, thereby resolving all outstanding legal issues. The EPA is moving forward to develop implementation guidance for both of these standards, and expects to promulgate designations for the 8-hour ozone standard by 2004.

* Wetlands (pg. 17) - Wetlands are referenced as a resource protected under Zone 3. However, it is unclear what is meant by wetlands "as defined by TVA" (pg. 17). Does/How does this differ from wetland definitions in guidance from the U.S. Army Corps of Engineers (COE 1987 manual) or the U.S. Fish and Wildlife Service (Cowardin)? In addition to jurisdictional wetlands, we suggest that the TVA definition for the purposes of the updated land management plan also include transitional and isolated wetlands that may not satisfy all three COE criteria (vegetation, soils and hydrology) for jurisdictional wetlands and are no longer considered jurisdictional by the COE, since such wetlands still have functional value and should be considered sensitive areas.

* Zones 3 & 4 (pg. 21 vs. App. B) - Page 21 indicates that C would allocate Parcels 37, 53 and 156 into Zones 3 or 4 while Appendix B lists only Zone 4 for these three parcels for C. The FEIS should clarify. EPA has assumed Zone 4 in this letter.

* Map of Parcels (pg. 21) - Although Appendix B provides good information on all the parcels associated with Pickwick Reservoir, a location map of the Parcels 37, 53 and 156 and other parcels discussed in DEIS would have been a helpful reference.

EPA Conclusions and Recommendations

We offer these conclusions and recommendations on the following DEIS issues:

* Watershed Protection Plan - Before any additional development is allowed near Pickwick Reservoir, EPA strongly recommends that a watershed protection plan be developed by TVA for TVA-owned and managed lands to supplement SMI guidance. The FEIS should indicate if such a plan has been developed, is perhaps already required by SMI, and how it will be funded, implemented, monitored and enforced. A summary of any developed or draft plan should be included in the FEIS. Any alternative selected by TVA in the FEIS (A, B, C, Modified C, other) must be consistent with this plan.

In addition to managing TVA shorelands, we further recommend that TVA also be an important stakeholder in the community regarding larger watershed issues and consider the bigger watershed picture and the overall cumulative impacts on the lake. Ideally, the watershed protection plan would address issues of the larger watershed as opposed to only TVA-owned and managed shorelands.

* Management Goal - If not already established, EPA strongly recommends that TVA select a management goal for Pickwick Reservoir that should be the foundation of the land management plan. The seven land use zones presented in the DEIS might shape the management goal, as well as selection of Alternatives A, B or C since they vary in the level of development allowed.

* Alternatives - TVA should identify a preferred alternative in the FEIS for its updated land management plan. This decision should fully consider that the public has indicated an interest in the preservation of natural areas of reservoir shorelands; the management goal of the reservoir;

that 20% of the existing shoreline (including sensitive areas) is already developed; that reservoir chlorophyll levels have been increasing; that the reservoir shorelands contain wetlands, riparian zones, federally protected endangered species and numerous (750+) archeological sites; the cumulative effects from projects in back-lying areas and on TVA-managed areas; and that C would be the most environmentally protective alternative. From a practical perspective, TVA should also consider a Modified C alternative that would allow consideration of development requests from a perspective that is less developmental than B but slightly more developmental than C. These requests would be considered on a case-by-case basis for reasonable development on TVA parcels outside of designated development Zones 5, 6 and 7. Such exceptions should require tradeoffs that will compensate for the additional development by allowing proportionately less development in Zones 5, 6 and 7. If a Modified C is implemented, TVA should also generate guidelines for making decisions for such exceptions for consistency in decision-making and to perhaps minimize the potential for unrealistic requests contrary to these guidelines. These guidelines might include that proposals are compatible with reservoir resources, exhibit an existing as opposed to proposed need, result in limited water quality and wetland effects, and will be monitored for performance standards if implemented. In any case, all development must be consistent with state and federal statutes and a TVA or TVA-concurred watershed protection plan for Pickwick Reservoir. Prospective developers should also be encouraged to only request development within zones designated for development by the adopted plan (Zones 5, 6 & 7), such that exceptions under a Modified C approach are infrequently requested or granted. However, a mechanism to consider such requests would be in place.

* Parcels 37, 53 and 156 - Employing the concept of a Modified C alternative, the request for recreational development of Parcel 37 would be reasonable and consistent with a Modified C approach since the parcel is an industrial (barge terminal) site under the current 1981 plan, parts of the site have been disturbed, and because recreational development is less disruptive than most industrial/commercial development. In the case of Parcel 156 where cabins already exist as leased homesites, acquisition of these cabins by the lessees with water access would not need to produce significant additional water quality degradation. The request would be consistent with a Modified C approach and could be granted if no additional cabins were constructed. However, the request for Parcel 53 proposing water access for a point source industrial discharge should not be considered consistent with a Modified C approach since the facility is only proposed (as opposed to existing) and the waste discharge would be received by impounded waters (as opposed to riverine waters). Any construction consistent with a Modified C approach would still need to comply with all state and federal statutes and a TVA or TVA-concurred watershed protection plan for Pickwick Reservoir.

* EPA DEIS Rating - Since a preferred alternative was not identified in the DEIS, EPA has rated all three alternatives presented. Based on the above comments and concerns, we rate C as "LO" (Lack of objections) and B and A as "EC-1" (Environmental Concerns, with some additional information requested), with B being favored over A. We also rate a Modified C as LO. Overall, we rate the DEIS an EC-1 since B was rated EC-1 and it remains unclear which alternative TVA will select in the FEIS. We request that our DEIS comments be addressed in the FEIS.

Summary

EPA recommends that TVA select an updated land management plan for Pickwick Reservoir based on the management goals for the reservoir taking into consideration existing reservoir water quality, shoreline development, natural resources, public comments, and the potential impacts of further development of reservoir shorelands and back-lying areas. EPA strongly supports water quality protection but acknowledges the need for some development from a practical perspective. EPA also recommends that TVA develop a specific watershed protection plan for Pickwick Reservoir for TVA-owned and managed lands. In addition to managing TVA shorelands, we further recommend that TVA also be an important stakeholder in the community regarding larger watershed issues in order to better address the bigger watershed and the overall cumulative impacts issues of the lake.

Thank you for the opportunity to provide comments on the DEIS. The staff contact for this project is Chris Hoberg, who can be reached at 404/562-9619.

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment
Environmental Accountability Division

cc: Harold Draper - TVA: Knoxville, TN

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

ER 02/373

June 7, 2002

Mr. Jon M. Loney
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

RE: Review of Draft Environmental Impact Statement for the Land Management Plan for Pickwick Reservoir, Colbert and Lauderdale Counties, AL; Tishomingo County, MS; and Hardin County, TN

Dear Mr. Loney:

The Department of the Interior has reviewed the referenced document and have the following comments:

The Tennessee Valley Authority's (TVA) Draft Environmental Impact Statement for the Pickwick Reservoir Land Management Plan, adequately describes the resources within the project area and the proposed actions' impact on our trust resources. We support Alternative C for TVA's involvement in the land management plan, and believe it would benefit fish and wildlife resources of the area and provide adequate recreational opportunities.

If you have any questions concerning these comments, I can be reached at 404-331-4524.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
OEPC, WASO
BBell, FWS-R4

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

May 13, 2002

Mr. Jon Loney
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: TVA, DRAFT ENVIRONMENTAL IMPACT STATEMENT, PICKWICK RES. LAND MANAGEMENT PLAN, UNINCORPORATED, HARDIN COUNTY

Dear Mr. Loney:

At your request, our office has reviewed the above-referenced draft environmental impact statement in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). We concur with the document, that all proposed action alternatives must comply with Section 106 of the National Historic Preservation Act. In particular, any proposed undertakings that include ground-disturbing activities have the potential to impact archaeological resources. Undertakings implemented in accordance with the chosen management option should be submitted to this office for our review and comment.

Your cooperation is appreciated.

Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jmb

cc: Mr. J. Bennett Graham, TVA

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

LEE H. WARNER
EXECUTIVE DIRECTOR

TEL: 334-242-3184
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May 24, 2002

Jon M. Loney
Manager, NEPA Administration
Environmental Policy and Planning
TVA
400 West
Summit Hill Drive
Knoxville, Tennessee 37902-1499

Re: AHC 01-2269; DEIS for Pickwick Reservoir Land Management Plan, Colbert and Lauderdale Counties, Alabama

Dear Mr. Loney

Thank you for forwarding the Draft Environmental Impact Statement for the above referenced project. We understand that under any alternative, TVA will abide by the Programmatic Agreement (when finalized) regarding Land Plans in Alabama. TVA will also utilize a phased process to conduct identification and evaluation treatment plans for avoidance, protection, and maintenance of historic properties which are National Register eligible. We look forward to receiving the Final Environmental Impact Statement as soon as it becomes available.

We appreciate your commitment to helping us preserve Alabama's non-renewable resources. Should you have any questions, please contact Amanda McBride of this office and **include the AHC tracking number referenced above**.

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/ALM/alm

Cc: J. Bennett Graham
TVA
P.O. Box 1589
Norris, Tennessee 37828-1589

Appendix J – Suitability and Capability Criteria for Rating and Ranking Parcels

VISUAL RESOURCES

SCENIC VALUE CRITERIA
FOR SCENERY INVENTORY AND MANAGEMENT

The criteria for classifying the quality and value of scenery has been adapted from a scenic management system developed by the U.S. Forest Service and integrated with current planning methods used by the Tennessee Valley Authority. The classification process is based on methodology and descriptions taken from Landscape Aesthetics, A Handbook for Scenery Management, Agriculture Handbook Number 701, U.S. Forest Service, U.S.D.A. 1995.

Scenic Attractiveness - 3 levels

Attractiveness is a measure of scenic quality based on human perceptions of intrinsic beauty as expressed in the forms, colors, textures, and visual composition of each landscape. The combination of rock outcrops, water bodies, landforms, vegetation patterns, and other natural features that shape landscape character also help define scenic importance. The presence or absence of these features, along with valued attributes such as variety, uniqueness, mystery, pattern, order, vividness, harmony, and balance are used to classify the scenic attractiveness of a landscape.

Category 1: Distinctive - Areas where the variety of land forms, rock, vegetation patterns, water, and other features have outstanding or unique visual quality. These areas have strong, positive attributes that are relatively uncommon in the characteristic landscape. This category also includes areas in visually strategic locations that have somewhat more common attributes.

Category 2: Common - Areas where the land forms, rock, vegetation patterns, water, and other features have ordinary or common visual quality. These areas have generally positive but typical attributes, with a basic variety of forms, colors, and textures that are normally seen throughout the characteristic landscape.

Category 3: Minimal - Areas where the natural features have little change in form, line, color or texture resulting in low visual quality. Rock forms and vegetation patterns of any consequence are often not present, and these areas generally have weak or missing attributes. All areas not classified as 1 or 2 are included in this category.

Scenic Integrity - 4 levels

Integrity is a measure of scenic importance based on the degree of visual unity and wholeness of the natural landscape character. Human alteration can sometimes raise integrity, such as an impounded water body that unifies the landscape while adding variety, mystery, harmony, and balance. Most often scenic integrity is lowered by

human alteration and the addition of visually disruptive elements. The presence and degree of discordant alteration is used to classify the scenic integrity of a landscape.

High: Areas where the valued landscape character appears to be intact and unaltered, with very minor deviation. Any deviation present must repeat the form, line, color, texture and pattern of the landscape so closely and at such a scale that they are not evident.

Moderate: Areas where the valued landscape character appears to be slightly altered. Noticeable deviations must be visually subordinate to the landscape being viewed, and borrow much of it's form, line, color, texture and pattern.

Low: Areas where the valued landscape character appears to be modestly altered. Deviations begin to dominate the landscape being viewed, but the alterations should share natural color, shape, edge pattern, and vegetation characteristics in order to remain compatible or complimentary.

Very Low: Areas where the valued landscape character appears to be heavily altered. Deviations may strongly dominate the landscape and may not share any of the visual attributes. The alterations may be visually disruptive and provide significant negative contrast to the natural landscape characteristics.

Scenic Visibility - 2 parts, 3 levels each

Landscape visibility is a measure of scenic importance based on several essential interrelated considerations: viewer context and sensitivity, number of viewers, frequency and duration of view, level of detail seen, and seasonal variation. A large number of highly concerned viewers who view the landscape for a long time period may raise the scenic importance significantly. The importance may be much lower when only a few viewers with low concern see the landscape for a brief period. These considerations are combined in two parts which are used to classify the scenic visibility of a landscape.

Sensitivity : The level of scenic importance based on expressed human concern for the scenic quality of land areas viewed. Sensitivity may be derived/confirmed by resident and visitor surveys.

Level 1: Areas seen from the reservoir, lake shore residents, and lake view residents, where the number of viewers and concern for scenic quality is normally high.

Level 2: Areas seen from principle roadways, use areas, and other public viewing areas. Concern for scenic quality is generally high while number of viewers, view frequency and duration is moderate.

Level 3: Areas seen from secondary travel routes, use areas, and any not included in the other levels. Concern may be high in some areas, but number of viewers is generally low.

View Distance: A principal indicator of scenic importance based on the distance an area can be seen by observers, and the degree of visible detail within that zone.

Foreground: From 0 feet to ½ mile. A distance zone where the individual details of specific objects are important and easily distinguished. Details are most significant within the immediate foreground, 0 - 300 feet.

Middleground: From ½ mile to 4 miles. The zone where most object characteristics are distinguishable, but their details are weak and they tend to merge into larger patterns. When landscapes are viewed in this zone they are seen in broader context. Human alteration may contrast strongly with the larger patterns and make some middleground landscapes more sensitive than the foreground.

Background: From 4 miles to the horizon. The distant landscape, where objects are not normally discernible unless they are especially large and standing alone. Details are generally not visible and colors are lighter. Few lands in the study area are viewed in this zone.

Scenic Value Class - 4 levels

The value class of a landscape is determined by combining the levels of scenic attractiveness, scenic integrity and visibility. The table below shows the various combinations and the resulting scenic class. It is a general guide, and is intended to complement a thorough field analysis. These classes are used to compare the value of scenery to other resource values during inventory and planning processes. They may also be useful to guide management objectives for improving or maintaining the scenic quality of managed lands.

Excellent: Areas with outstanding natural features that appear unaltered. Very minor deviations may be present but are generally unnoticeable even in the foreground. These areas are highly visible in the foreground and middleground from both land and water. Unaltered areas that may be less outstanding but are in a visually strategic location also have excellent scenic value.

Good: Areas with attractive but common scenic quality and no distinctive natural features. Minor human alteration may be seen in the foreground but is barely noticeable in the middleground. These areas have relatively high visibility from both land and water.

Fair: Areas of common or minimal scenic quality with little or no interesting features. Moderate human alteration is seen in the foreground but is less distinct in the middleground due to compatible form and color. These areas have relatively high visibility from both land and water.

Poor: Areas that have very little scenic importance and/or visually significant disturbances resulting from human activity. The alterations provide discordant contrast in the natural landscape due to incompatible size, shape, color, and material. The areas are clearly visible in the foreground and middleground, and have relatively high visibility from both land and water.

Scenic Value Class Selection Table													
Visibility Levels:	**Sensitivity View Distance**	**1 foreground**			**1 midground**			**2 foreground**			**2 midground**		
Scenic Attractiveness Categories		**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
Scenic Integrity Levels	**High**	E	G	F	E	E	G	E	G	F	E	E	G
	Moderate	G	G	F	E	G	F	G	G	F	E	G	F
	Low	F	F	P	F	F	P	F	F	P	F	F	P
	Very low	P	P	P	F	P	P	P	P	P	F	P	P
		Scenic Value Class: **E** = Excellent; **G** = Good; **F** = Fair; **P** = Poor											

Visual Absorption Capacity

Absorption capacity indicates the relative ability of a landscape to accept human alteration with the least loss of landscape character and scenic value. These indicators are useful to help predict potential difficulty or success with proposed development and scenic management. They are based on characteristics of the physical factors found in a landscape. Each characteristic has a capacity range from less to more, and the primary ones are shown in the list below. Visual absorption is also affected by the variety of landscape patterns, and the amount of screening provided by landforms, rock, water bodies, and vegetation.

Factor Change	**Least Capacity to Absorb Change**	**Greatest Capacity to Absorb**
Slope	Steep Unstable geology	Level Stable geology
Vegetation	Sparse cover Low cover, grasses and shrubs Few species, little or no pattern	Dense cover Tall cover, trees Multiple species, diverse pattern
Landforms dissected	Simple shape	Diverse shapes, heavily
Soils	Easily eroded Poor, slow revegetation	Erosion resistant Rich, fast revegetation
Shoreline features	Simple line, little or no interruption	multiple interruptions, diverse
Color colors	Narrow range of indigenous colors	Broad range of indigenous

Desired Landscape Character

Scenic attractiveness and the existing level of scenic integrity serve as the foundation for selecting the preferred landscape character. Lake adjacency and ecosystem trends should be considered along with the historic visual character to help any changes be more complete, attractive, and sustainable. Several types of landscape character with long range objectives for scenic integrity are described below.

Natural Evolving landscape character expressing the natural change in ecological features and processes with very limited human intervention.

Natural Appearing landscape character that expresses predominantly natural qualities but includes minor human interaction along with cultural features and processes that are relatively unobtrusive.

Pastoral landscape character expressing dominant human developed pasture, range, and meadow, along with associated structures, reflecting historic land uses, values, and lifestyles.

Rural landscape character that expresses sparse but dominant human residential and recreational development, along with associated structures and roadways that reflect current lifestyles.

Urban landscape character expressing concentrations of human activity in the form of commercial, residential, cultural, and transportation, facilities, along with supporting infrastructure.

Visual Management Objectives

Based on the scenic value class, management objectives may be developed to accomplish or maintain the visual character desired for each area.

Preservation:
Areas classified Excellent, and managed for a natural evolving landscape character. Only very low impact recreational and scientific activities are allowed, and no facilities are permitted.

Retention:
Areas classified Good, and managed for a natural appearing landscape character. Permitted activity or minor development should repeat the natural form, line, color, and texture of the area and remain visually subordinate to the surrounding landscape. Changes in the size, intensity, direction and pattern of activity should be unobtrusive and not readily evident.

Modification:
Areas classified Good or Fair, and managed for pastoral or rural landscape character. Permitted activity and development may dominate the original character but should remain visually compatible with the remaining natural landscape. Vegetation and landform alterations should repeat the natural edges, forms, color, and texture of the surrounding area. The scale and character of structures, roads, and other features should borrow naturally established forms, lines, lines, colors and patterns to provide the greatest possible visual harmony.

Maximum Modification:
Areas classified Fair or Poor, and managed for urban landscape character. Permitted activity and development generally dominates the original visual character. Vegetation and landform alterations should remain visually harmonious with the adjacent landscape. When seen In the foreground and middleground, they may not fully borrow the surrounding natural forms, lines, colors and textures. Likewise, development features seen from the same distances may be out of scale and have significant details that are discordant with the natural landscape character. Overall development should be directed toward achieving the greatest possible visual harmony.

Enhancement:
Any area classified less than Excellent, with a relatively short term management objective intended to restore and/or improve the desired scenic quality. Rehabilitation activities may include alteration, concealment, or removal of obtrusive and discordant elements. Enhancement activities may include addition or modification of natural elements and man-made features to increase the variety and attractiveness of spaces, edges, forms, colors, textures, and patterns.

Navigation Capability/Suitability Criteria for Reservoir Land Management Planning

Barge Terminals (Mainstem). For barge terminals which transfer commodities between barges and trucks, trains, warehouses at public ports or industrial plants along the river. **Criteria:** deep water, obstruction to navigation, acreage, slope, elevation above the normal pool level, and flood.

Barge Terminals (Tributaries). For barge terminals along the banks of tributary rivers use a slightly different, less stringent set of criteria. **Criteria:** deep water, obstruction to navigation, acreage, slope, elevation above the normal pool level, and flood.

Minor Commercial Landings. For sites that can be used for transferring pulpwood, sand, gravel, and other natural resource commodities between barges and trucks on an intermittent basis. **Criteria:** deep water, acreage, slope, and elevation above the normal pool level.

Fleeting Areas. For designated places where barges are switched between commercial tows and/or barge terminals. **Criteria:** deep water, length of straight shoreline, distance to terminals or waterway junction, and obstruction to navigation

Criteria are given a percentage value based on the attributes of that criteria.

Navigation Rating Scale		
Rating	**numeric value**	**percent value**
excellent	1	>85%
good	2	70 - 84%
fair	3	55 - 69%
poor	4	<55%

Criteria for Industrial/Commercial Development Capability/Suitability

Zone 5 - Industrial Commercial Development										
Type Development	**Land Base**	**Land Slope**	**Shape**	**Height Above Water**	**Flooding**	**Barge Accessibility**	**Miles To Major State or Federal Highway**	**Miles To Railroad**	**Availability Of Utilities**	**Industrial Road Access**
Heavy Indust. /Manufacture ≥250,000 s.f building footprint	H > 100 acres M 25 to 100 acres L < 25 acres	H 1 to 5 % M 5 to 10 % L > 10 %	H fairly rectangular M square L irregular	H < 20 feet M 20 to 40 feet L > 40 feet	H majority above structure profile M 50 percent above structure profile L majority below structure profile	H minor or no dredging required M some dredging required L major dredging required or no barge available	H < 2 M 2 to 5 L > 5	H < 1 M 1 to 2 L > 2	H all utilities available M some utilities available L no utilities available	H road to the site M road within ½ mile of site L road greater than ½ mile of site
Light Indust./ Manufacture or Assembly 50,000 to 250,000 s.f building footprint	H > 25 acres M 10 - 25 acres L <10 acres	H 1 to 5 % M 5 to 15 % L > 15 %	H fairly rectangular M square L irregular	NI	H majority above structure profile M 50 percent above structure profile L majority below structure profile	NI	H < 2 M 2 to 5 L > 5	NI	H all utilities available M some utilities available L no utilities available	H road to the site M road within ½ mile of site L road greater than ½ mile of site
Commercial or Office Park	H > 25 acres M 10 to 25 acres L < 10 acres	H 5 to 10% M 10 to 20% L > 20 %	H fairly rectangular M square L irregular	NI	H majority above structure profile M 50 percent above structure profile L majority below structure profile	NI	H < 2 M 2 to 5 L > 5	NI	H all utilities available M some utilities available L no utilities available	H road to the site M road within ½ mile of site L road greater than ½ mile of site
Industrial Access for commodity shipment	H > 10 acres M 5 to 10 acres L minimum of 5 acres	H 1 to 5 % M 5 to 10 % L > 10 %	H fairly rectangular M square L irregular	H < 20 feet M 20 to 40 feet L > 40 feet	H majority above structure profile M 50 percent above structure profile L majority below structure profile	H minor or no dredging required M some dredging required L major dredging required or no barge available	H < 2 M 2 to 5 L > 5	H < 1 M 1 to 2 L > 2	H all utilities available M some utilities available L no utilities available	H road to the site M road within ½ mile of site L road greater than ½ mile of site

Rating Categories: H= high; M= medium; L= low.

NI - Not Important

s.f. - square feet

Criteria for Natural Resource Capability/Suitability

Zone 4 - Natural Resource Conservation

Zone 4	Rank	Size of Land Base	Overland Access	Ecological Diversity	Habitat Management	Cost Recovery	Compatibility of Adjacent Land Use	Multiple Use Potential	Intensity of Current Use	Natural Resources Partnership
Diversity of ecological communities, and/or a variety of successful stages	H	> 100 Acres. Not in Linear Strips	Existing Road Network	> 5 Ecological Communities Or Successional Stages	Easily Managed	High	Adjacent Land Use Would Have No Effect On Management Decisions	3 To 5 Potential Uses	N/A	N/A
	M	50 to 100 Acres. Not Linear in Strips	Overland Access Possible	3 To 5 Ecological Communities Or Successional Stages	Could Be Managed	Medium	Adjacent Land Use Could Preclude Some Management Options	1 To 3 Potential Uses	N/A	N/A
	L	< 50 Acres	Overland Access Unavailable	1 To 3 Ecological Communities Or Successional Stages	Difficult To Manage	Low	Adjacent Land Use Could Prevent Resource Management/Utilization	Single Use Potential	N/A	N/A
Customer uses are compatible with TVA's mission and goals	H	> 100 Acres. Not in Linear Strips	Existing Road Network	N/A	N/A	High	Adjacent Land Use Would Have No Effect On Management Decisions	3 To 5 Potential Uses	Year Round Use	N/A
	M	50 to 100 Acres. Not Linear in Strips	Overland Access Possible	N/A	N/A	Medium	Adjacent Land Use Could Preclude Some Management Options	1 To 3 Potential Uses	2 Or 3 Season Use	N/A
	L	< 50 Acres	Overland Access Unavailable	N/A	N/A	Low	Adjacent Land Use Could Prevent Resource Management/Utilization	Single Use Potential	< 2 Season Use	N/A
Potential for partnerships, cooperative management, agreements, licenses, leases or easements with others agencies or NGO's for natural resource management purposes	H	High Potential	Existing Road Network	N/A	Easily Managed	High	Adjacent Land Use Would Have No Effect On Management Decisions	3 To 5 Potential Uses	N/A	2 or More Potential Partners; Or 2 or More Partnerships In Place
	M	Moderate Potential	Overland Access Possible	N/A	Could Be Managed	Medium	Adjacent Land Use Could Preclude Some Management Decisions	1 To 3 Potential Uses	N/A	1 or 2 Potential Partners Or 1 or 2 Potential Partnerships In Place
	L	Low Potential	Overland Access Unavailable	N/A	Difficult To Manage	Low	Adjacent Land Use Could Prevent Resource Management/Utilization	Single Use Potential	N/A	No Potential for Partnerships; and No Partnerships in Place
Prior investments for natural resources management/enhancements	H	N/A	> $5000	N/A	> 2 Prior Investors	High	N/A	N/A	N/A	2 Or More Partners have Invested
	M	N/A	$0 to $5000	N/A	1 To 2 Prior Investors	Medium	N/A	N/A	N/A	1 to 2 Partners have Invested
	L	N/A	No Prior Investment	N/A	No Prior Investors	Low	N/A	N/A	N/A	No Prior Investments

Definitions For Natural Resources Capability/Suitability Criteria

- **List of Primary Land Use/Ecological Community Types Used For Determining Level Of Diversity**

  Managed Open Lands
  - Cropland
  - Pasture or Hay
  - Orchards/Groves/Vineyards
  - Maintained Early Successional (Includes Old Field, Scrub/Shrub)

  Forest Lands*
  - Deciduous Forest
  - Evergreen (Coniferous) Forest
  - Mixed (i.e., Deciduous/Evergreen) Forest

  * Age/size class modifiers (i.e., seedling/sapling, pole, saw timber, and late successional) may be applied to better define stand development/condition

  Wetland & Riparian Communities
  - Forested Wetlands
  - Scrub/Shrub Wetlands
  - Emergent Wetlands
  - Forested Riparian Zones

- **Multiple-Use Categories**
  - Small Game Lands
  - Big Game Lands
  - Waterfowl Areas
  - Song Bird Observation Areas
  - Waterfowl Observation Areas
  - Raptor Observation Areas
  - Large Mammal Observation Areas
  - Small Mammal Observation Areas
  - Amphibian/Reptile Breeding/Observation Areas
  - Forest Production Areas

- **Investment Types**
  - Forestry Research Activities
  - Wildlife Habitat Improvements
  - Wildlife Research Activities
  - Forest Management Investments/Activities
  - Present/Future Resource Value (i.e., Net Worth)

- **Potential Partnership Groups**
  - Educational Institutions
  - Nongovernmental Organizations
  - State Agencies
  - Other Federal Agencies