

# **Final Environmental Impact Statement**

## **Tims Ford Reservoir Land Management and Disposition Plan**

*Prepared by:*

**Tennessee Valley Authority  
in partnership with the  
Tennessee Department  
of Environment and Conservation**

**June 2000**

**Final Environmental Impact Statement  
Tims Ford Reservoir  
Land Management and Disposition Plan**

**Franklin and Moore Counties, Tennessee**

**Responsible Federal Agency: Tennessee Valley Authority (TVA)  
Cooperating State Agency: Tennessee Department of Environment and Conservation (TDEC)**

Abstract: TVA and TDEC have jointly prepared a comprehensive Land Management and Disposition Plan (Plan) which allocates 6,453 acres of lands to specific uses. Of this, approximately, 1,854 acres of land are currently owned and managed by TVA, and 4,599 acres of land are currently owned and managed by TDEC. TDEC proposes to use the Plan to implement Tennessee Public Chapter 816 of the 1996 Acts of the Tennessee General Assembly. TVA proposes to use the Plan to guide land-use approvals, private water use facility permitting, and resource management decisions on Tims Ford Reservoir. The Plan allocates land into broad categories, including project operations, sensitive resource management, natural resource conservation, industrial/commercial development, recreation, residential development/access and conservation partnership. In addition, approximately 2,215 acres of land currently committed to a specific use through previous land transfers, leases, and contracts would be allocated to that current use. The Plan would result in about 37 percent of Tims Ford Reservoir lands being allocated to Natural Resource Conservation, 25 percent to Recreation, 24 percent to Residential, and 9 percent to Sensitive Resource Protection. The Plan also provides opportunities for enhanced reservoir access through establishment of a new zone, Conservation Partnership. The primary objective within this zone is to establish a wider shoreline buffer zone by fostering shoreline protection partnerships with the adjacent property owners. In return, for conservation partnership easements granted by adjacent private property owners, TVA would consider requests for limited community water use facilities. Alternatives to the Plan, also analyzed in this document, would allocate either more land to conservation (48 percent) or more land to development (41 percent).

Accompanying Volume I of this Final EIS is The Tims Ford Land Management and Disposition Plan, Volume II.

Comments should be mailed to the address shown below.

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## Abbreviations

ADA	American Disabilities Act
ADT	average daily traffic
AEDC	Arnold Engineering Development Center
APE	Area of Potential Effect
ARAP	Aquatic Resource Alteration Permit
ARPA	Archaeological Resources Protection Act of 1979

BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
DO	dissolved oxygen
EA	Environmental Assessment
EIS	Environmental Impact Statement
EM	emergent (wetland)
EPA	Environmental Protection Agency
ERDA	Elk River Development Association
FO	forested (wetland)
FEIS	Final Environmental Impact Statement
FFPPA	Federal Farmland Protection Policy Act
GWP	Division of Groundwater Protection, TDEC
HGM	Hydrogeomorphic (wetland)
ILP	Interior Low Plateau
kW	Kilowatts
LPP	low pressure pipe
m	meters
mg/L	milligrams per liter
msl	mean sea level
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
P	Palustrine (wetland)
PCB	polychlorinated biphenyl
Plan	Land Management and Disposition Plan
PSD	Prevention of Significant Deterioration
PUD	Planned Unit Development
ROD	Record of Decision
RV	recreational vehicle
SS	scrub-shrub (wetland)
SIC	Standard Industrial Classification
SMI	Shoreline Management Initiative EIS, TVA
SMP	Shoreline Management Policy
SMZ	Shoreline Management Zone
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TERDA	Tennessee Elk River Development Agency
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
U. S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDA-NRCS	U. S. Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
WPC	Division of Water Pollution Control, TDEC

## Chapter 1

### 1.0 PURPOSE OF AND NEED FOR ACTION

Tims Ford Reservoir is a 10,680-acre impoundment on the Elk River at Mile 133.3 in Franklin and Moore Counties, Tennessee. Tims Ford Reservoir was completed in 1970 by the Tennessee Valley Authority (TVA) and was congressionally authorized for the purposes of flood control, hydroelectric generation, water supply, recreation, and economic development.

The reservoir is 34 miles long at full pool and has a surface area of 10,680 acres. Depth at the dam is 143 feet, and the average depth is about 50 feet. Average annual discharges from Tims Ford Dam are about 940 cubic feet per second (cfs), resulting in a hydraulic residence time of about 280 days. Tims Ford Reservoir is designed for a useful controlled drawdown of 30 feet from 895 feet to 865 feet mean sea level (msl) for flood protection. Annual drawdowns average about 18 feet. Normal winter reservoir levels range from 865 to 873 feet, and normal summer levels are 883 to 888 feet. Maximum level is 895 feet. The hydroelectric plant has two units. The first is a generating unit rated at 45,000 kilowatts (kW), 3,890 cfs. The second is a minimum flow unit rated at 39 kW, 74 cfs.

### 1.1 BACKGROUND

In 1959, citizens of the Elk River valley in Alabama and Tennessee created the Elk River Development Association (ERDA) to organize their efforts to secure federal support of a resource development program in the Elk River valley. The association enlisted the support of TVA in this endeavor as part of the TVA Tributary Area Development Program. The Tennessee Elk River Development Agency (TERDA) was created by the Tennessee General Assembly in 1963 to work with TVA on an Elk River development program. The enabling legislation (TCA 64-1-301) that created TERDA states:

“The agency is created for the purpose of developing and effectuating plans and programs for comprehensive development including the control and development of the water resources of those portions of the Elk River watershed and integrating plans, programs, and development activities with the overall economic development of the area described.”

On May 17, 1966, TVA and TERDA entered into a contract (TV-27333A) to “engage in a cooperative program of comprehensive, unified resource development for the purpose of fostering the orderly physical, economic, and social development of the Elk River area,” which included the construction of the Tims Ford Dam and Reservoir.

Under contract TV-27333A, those properties above the 895-foot contour voluntarily sold to the Federal Government were purchased in the name of TERDA (and were owned by TERDA) with TVA holding first lien. Those tracts acquired under the power of eminent domain were purchased in the name of the United States Government and remain under the custody of TVA. TERDA transferred to TVA all land acquired in the name of the TERDA below the 895-foot contour to be used for flood control, power generation, and other uses deemed by TVA to be essential for the proper operation of the Tims Ford project. In September 1980, Contract No. TV-27333A was replaced by Contract No. TV-50000A, which further defined the roles and responsibilities of each party in managing the overall Tims Ford project. In April 1996, TERDA was dissolved by the Tennessee General Assembly, and its assets, obligations, and responsibilities were transferred to the Tennessee Department of Environment and Conservation (TDEC). In February 1998, Contract No. TV-50000A was replaced by Contract No. 98RE2-229151, which redefined the obligations and responsibilities of TVA and TDEC to cooperatively develop a comprehensive Land Management and Disposition Plan (Plan). Summaries of each contract can be found in Appendix A.

TVA and TERDA purchased approximately 21,863 acres of land for the Tims Ford Project. To date, portions of this land have either been sold to other parties or committed to long-term easements. The

remaining unsold and uncommitted lands, totaling 6,453 acres, are considered plannable lands and are the focus of this land plan. The current status of the original 21,863 acres of project land is summarized Table in 1.1.

**Table 1.1 Current Land-Use Status**

<b>Current Status</b>	<b>Acres</b>
Sold to other parties	1,519
Committed to Public Parks	1,794
Plannable	6,453
TVA Lands Between Contours 888 and 895 (shoreline buffer)	1,397
Lands Below the 888 Contour (summer pool stage)	10,680
<b>Total</b>	<b>21,863</b>

## **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

Public Chapter 816 of the 1996 Acts of the Tennessee General Assembly (hereafter referred to as Public Chapter 816) terminated and ceased all activities of TERDA. The legislation transferred all powers, duties, contractual obligations, functions, and remaining land interests of the agency to TDEC. TDEC was charged with the responsibility for disposition of the remaining land interests. A copy of Public Chapter 816 is included in Appendix A.

TDEC and TVA propose to develop a land management and disposition plan in accordance with the current contract between the agencies. Through this Land Management and Disposition Plan (Plan), TDEC proposes to implement Public Chapter 816. TVA intends to use this Plan to systematically manage its reservoir properties. The development of the Plan is intended to foster the orderly economic and social development of the Elk River area and to determine future land uses.

According to the existing contract (98RE2-229151):

“The Plan shall allocate all portions of such project lands to specific uses, including TVA project operations, resource protection, resource management, industrial/commercial, recreation, residential, and any other uses deemed desirable by the parties. The Plan shall also determine which portions of such lands should be transferred to or retained by the State; transferred to or retained by TVA or other governmental entities for public purposes; or sold, leased, or otherwise disposed of. In developing the Plan, the parties shall attempt to allocate the lands so as to attain the maximum amount of area economic and social development consistent with effective environmental protection. The Plan shall specify the terms and conditions that would apply to the disposal, transfer, or retention of specific portions of land.”

## **1.3 OTHER PERTINENT ENVIRONMENTAL REVIEWS AND DOCUMENTS**

This Environmental Impact Statement (EIS) relies on and tiers from information contained in three other documents prepared by TVA, along with the 1991 Long Range Plan of the Tims Ford Project developed by the former TERDA.

### **1.3.1 SHORELINE MANAGEMENT INITIATIVE (SMI): AN ASSESSMENT OF RESIDENTIAL SHORELINE DEVELOPMENT IMPACTS IN THE TENNESSEE VALLEY (TVA, 1999)**

In 1999, TVA completed an EIS on residential shoreline development impacts throughout the Tennessee Valley. The Record of Decision (ROD) for SMI was signed on May 24, 1999. Under the Blended Alternative adopted in the ROD, sensitive natural and cultural resource values of reservoir shorelines would be conserved and retained in three ways. First, by preparing a shoreline categorization for



individual reservoirs. Second, through encouraging voluntary donations of conservation easements to properties over which TVA holds a flowage easement (property over which TVA has the right to flood) or other shoreland to protect scenic landscapes. Finally, by establishing a premise that no additional residential access rights will be granted across public shorelines unless a “maintain and gain” policy to prevent losses of public shoreline is implemented. SMI acknowledged TVA’s long-standing contractual agreements with other agencies providing economic development of project lands on Tims Ford, Bear Creek, Tellico, and Beech Reservoirs. Individual land management plans for these reservoirs will determine the level of additional development that may be pursued by these agencies. These plans will be subjected to appropriate environmental reviews and will take into account decisions made as a result of SMI Final EIS as allowed by existing terms and contracts.

### **1.3.2 TIMS FORD STATE PARK ENVIRONMENTAL ASSESSMENT, TRANSFER OF PROPERTY RIGHTS TO ALLOW EXPANSION OF TIMS FORD STATE PARK, FRANKLIN AND MOORE COUNTIES, TENNESSEE, (TVA, 1997)**

In 1997, TVA completed an Environmental Assessment (EA) for transfer of property rights to allow expansion of the Tims Ford State Park by TDEC. Under the proposed action, TDEC desired to expand the park by incorporating additional TDEC and TVA properties. TVA approval of the incorporation of the TDEC property was required under the conditions of Contract No. TV-50000A. Subsequently, a permanent easement for recreational purposes was issued to TDEC for approximately 221 acres of TVA property on Tims Ford Reservoir. Also incorporated into Tims Ford State Park were approximately 1,193 acres of project land which is now administered by TDEC. The transfer did not include lands below the 895-foot contour which are retained by TVA.

### **1.3.3 TENNESSEE RIVER AND RESERVOIR SYSTEM OPERATION AND PLANNING REVIEW ENVIRONMENTAL IMPACT STATEMENT (TVA, 1990)**

In December 1990, TVA completed an EIS addressing changes to TVA reservoir operations for maintaining minimum flows below dams, for increasing dissolved oxygen (DO), and for delaying normal maximum lake level drawdowns. In this EIS, TVA also addressed the environmental and socioeconomic consequences of changes in reservoir operations on land and shoreline development.

### **1.3.4 TENNESSEE ELK RIVER DEVELOPMENT AGENCY LONG RANGE PLAN (TERDA, 1991)**

In 1991, the Tennessee Elk River Development Agency issued a long range plan for its programs in the Elk River Watershed. Two goals were identified to direct TERDA’s program and policies for the Tims Ford Project. The first was to maximize economic and community benefits in the Elk River watershed. The second goal was to minimize negative impacts on the physical environment or aesthetics of the reservoir area. The TERDA Board recognized these as conflicting goals and established policies and priorities for Tims Ford development. The plan took into consideration land already developed, developable land, marginally developable land, undevelopable land, and special project land tracts. Proposed land uses were directly established to maintain water quality, the aesthetics of the lake environment, and the preservation of property values. Land uses were designated as residential, recreational, agricultural, and open space. Revenues from the Tims Ford project went into an Area Development Program which was intended to benefit eight Tennessee counties (Coffee, Franklin, Giles, Grundy, Lawrence, Lincoln, Marshall, and Moore) and two Alabama counties (Limestone and Lauderdale). Although the Tims Ford Project has been the most visible of TERDA programs, it was the Area Development Program that allowed TERDA to meet its economic and community development obligations in the Elk River watershed. The Tims Ford Project provided the revenue for the Area Development Program. TERDA established three priorities intended to achieve the agency’s purpose of physical, economic, and social development of the Elk River area—job creation, human resource development, and enhancement of natural resources.

## **1.4 THE SCOPING PROCESS**

TVA and TDEC formally began the National Environmental Policy Act (NEPA) process with a press release on October 2, 1998, announcing a public comment period extending through December 1, 1998,

to solicit input and to conduct public scoping meetings. Opportunities for the public to make comments included:

1. Completing a written survey
2. Attending one of the planned public meetings
3. Visiting TDEC's website at <http://www.state.tn.us/environment/elk/> and completing an on-line survey
4. Sending written comments to "The Land-Use Plan," 20th Floor L&C Tower, 401 Church Street, Nashville, TN 37243-0454
5. Calling either the toll free number (1-800-604-9346) or (615) 253-2106 (within the Nashville area) to request information

Another joint press release was issued on November 3, 1998, announcing that public scoping meetings would be held at the Franklin County High School, Winchester, Tennessee, on November 9, 1998, and at the Lincoln County High School, Fayetteville, Tennessee, on November 10, 1998. A list of newspapers that published articles announcing the meetings is in Table B-1, Appendix B. At the public scoping meeting, members of the public were invited to provide oral comments and/or to submit written comments by the close of the scoping period, December 1, 1998. The meetings were attended by 181 individuals (36 in Fayetteville and 145 in Winchester), nearly all of whom participated in informal breakout sessions. These sessions were designed to solicit input for the preparation of the environmental document. A total of 350 surveys were completed, 316 of which were received by mail and 34 by Internet. A Public Scoping Document was prepared and is attached in Appendix B.

TVA and TDEC also solicited input from a representative cross section of groups who use or are concerned with the natural resources of Tims Ford Reservoir. Various state and federal agencies and resource conservation groups such as the U. S. Fish and Wildlife Service (USFWS), U. S. Army Corps of Engineers (USACE), Tennessee Wildlife Resources Agency (TWRA), and others were asked to provide information and input, including information concerning proposed or ongoing activities and land-use issues around Tims Ford Reservoir. Letters were received from TWRA and USFWS.

Subsequent to the scoping meetings, the agencies determined that an EIS would allow a better understanding of the impacts of the alternatives. A Notice of Intent (NOI) was published in the Federal Register on July 22, 1999 (Volume 64, Number 140). The comment period on the scope of the EIS closed on August 31, 1999.

#### **1.4.2 PUBLIC REVIEW OF THE DRAFT EIS AND LAND MANAGEMENT AND DISPOSITION PLAN**

In November 1999, TVA and TDEC released the Draft EIS and Land Management and Disposition Plan (Plan) for public review. Copies of the DEIS and Plan were mailed to individuals, agencies, and organizations. The draft EIS and Plan were also available on TDEC's website, <http://www.state.tn.us/environment/elk/>. The Notice of Availability (NOA) was published in the Federal Register on November 12, 1999. A press release announcing the Open Houses was released on November 8, 1999, and paid advertisements appeared in the following papers:

1. Times Daily (Florence, AL) - Sunday, November 28, 1999
2. Herald Chronicle - Thursday, November 25, 1999
3. Huntsville Times - Sunday, November 28, 1999
4. Tullahoma News - Sunday, November 28, 1999
5. Tennessean - Sunday, November 28, 1999
6. The Elk Valley Times, Wednesday, November 24, 1999

Several avenues were available for people to provide their input on the draft EIS and Plan. Each draft EIS and Plan included a comment card. The TDEC website allowed for email responses to be received. A series of meetings were held to solicit input and answer questions about the draft EIS and Plan.

Two open houses were held to answer questions and discuss issues regarding the Tims Ford Draft EIS and Land Management & Disposition Plan. The Winchester (Franklin County) Open House, held on November 30, 1999, had 175 participants, and the Motlow College (Moore County) held on December 2,

1999, had 54 participants. The meeting format included a short 10-minute video overview of the project, a room for one-on-one questions and answers, and opportunities for participants to record or submit their comments.

TDEC and TVA received comments from 268 people, agencies, and organizations during this comment period. Comments were received via letters, electronic mail (e-mail), petitions, and oral comments recorded at the public meetings.

### **1.4.3 RESPONSE TO PUBLIC COMMENTS**

The agencies received a large volume of comments on the DEIS. These comments have been summarized and combined, along with responses, in Appendix B. In response to public comments, some allocations were changed, a new alternative and a new allocation zone was created, and some analyses in the EIS were improved. Details of these changes are provided in Chapter 2.

## **1.5 TVA DECISION**

TVA must decide whether to adopt one of the TVA-TDEC jointly-prepared land plan action alternatives or to continue with the status quo of managing and disposing the properties on a case-by-case basis. The Plan will require approval by the TVA Board of Directors if it is to be adopted as policy to provide for long-term land stewardship and accomplishment of TVA responsibilities under the 1933 TVA Act.

## **1.6 TDEC DECISION**

TDEC will decide whether to approve a jointly-prepared land plan, or to select another process to implement Public Chapter 816. Land transfers contemplated by this Plan would require approval by the Tennessee State Building Commission, created by the Tennessee Code Annotated, 4-15-101, prior to implementation.

## **1.7 NECESSARY FEDERAL AND STATE PERMITS OR LICENSES**

No federal permits are required to develop a reservoir land-use plan. To the extent possible, site-specific information on reservoir resources has been characterized in this EIS, and potential impacts on these resources were considered in making the future land-use allocations. Appropriate agencies regulating wetlands, endangered species, and historic resources have been consulted during this planning process. When specific actions such as a subdivision, dock, building, road, or walking trail are proposed additional review and appropriate permits or consultations may be required in order to approve specific actions. These laws include the Clean Air Act, Clean Water Act, Endangered Species Act, Farmland Protection Policy Act, National Historic Preservation Act, and Resource Conservation and Recovery Act. Some of the water-related permits that may be needed for residential development are described below:

The Water Quality Control Act, as amended in 1977, allowed the State of Tennessee to receive delegated authority of the National Pollutant Discharge Elimination System (NPDES) permit program. This law provides the permitting and enforcement powers of the Tennessee Department of Environment and Conservation (TDEC) in regulating wastewater treatment systems, construction and industrial storm water, and in controlling other pollution sources. There are two divisions within TDEC which permit various wastewater treatment systems. The Division of Ground Water Protection permits septic systems serving single family homes and other small flow facilities. The Division of Water Pollution Control (WPC) permits wastewater treatment systems which discharge to waters of the State, which utilize spray irrigation or shallow drip irrigation for effluent disposal or which transport wastewater to another facility for treatment and disposal. WPC regulates storm water from construction and industrial sites as well as other water quality issues.

In 1992, the WPC issued the General NPDES Permit for Storm Water Discharges from Construction Activity to cover water quality problems, such as erosion, during the construction phase of a project. This would apply to industrial, residential, recreational, or any other construction project. Coverage under this general permit is required for all projects which will disturb a total of five or more acres of land. Projects

less than five acres do not require this permit, but are still required to comply with the Water Quality Control Act.

The General NPDES Permit for Storm Water Discharges from Construction Activity expired September 26, 1997. It is to be replaced with the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities, TNR 10000. Coverage under this new permit will be the same with the exception that sites disturbing less than five acres will also be required to file a Notice of Intent (NOI) when the division determines that coverage for such construction activities is necessary to protect water quality.

The WPC also regulates storm water runoff from industrial facilities. This is covered by the Water Quality Control Act and the General NPDES Multi-Sector Storm Water Permit. Facilities with certain standard industrial classification (SIC) codes and of certain types are required to obtain coverage under this general permit. The permit sets terms and conditions for monitoring, sampling, and reporting storm water runoff from these facilities. Facilities not covered by this general permit are still required to comply with the Water Quality Control Act.

TDEC also issues Aquatic Resource Alteration Permits (ARAP) for any activity which involves the alteration of waters of the State. These may be issued as a general permit or individual permit. General ARAP permits cover the following activities:

1. Construction of launching ramps
2. Alteration of wet weather conveyances
3. Minor road crossings
4. Utility line crossings
5. Bank stabilization
6. Sand and gravel dredging
7. Debris removal

Under certain situations, some of the above activities may be required to be permitted under an individual permit.

Systems permitted by the GWP are described in the rules promulgated by that division. These systems include conventional septic systems and alternative systems, such as low pressure pipe (LPP) and mound systems. They also have provisions to issue variances to their rules when circumstances warrant. The division also approves plats for subdivisions with lots smaller than five acres.

Systems permitted by the WPC must be designed according to rules promulgated by that division and, where applicable, follow published design criteria. All domestic wastewater systems permitted by WPC must be operated by an appropriately certified operator. Division policy dictates that certain wastewater treatment systems must be considered and found to be unsuitable before other systems will be considered. The alternatives to be considered and the order of consideration are as follows:

1. Connection to a municipal/public sewer system or subsurface onsite disposal as regulated by the Division of Groundwater Protection.
2. Onsite disposal by spray or drip irrigation as regulated by WPC.
3. Direct discharge to waters of the State.

## Chapter 2

### 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This chapter describes the alternatives considered for implementing the proposed action and a summary of the environmental consequences associated with each alternative.

#### 2.1 THE PROPOSED ACTION

The proposed action is to formulate a new and comprehensive reservoir Land Management and Disposition Plan (Plan) for 6,453 acres of plannable land associated with the Tims Ford Project. The remaining land will be managed according to its existing uses (e.g., parks, dam reservation, lands below the 888 foot contour, etc.). The Plan is intended to provide a clear statement of how project land would be disposed of or managed in the future based on scientific, cultural, and economic principles and consistent with the language of Public Chapter 816 and with the original congressional intent of the project. This Plan will address sensitive resources and issues and concerns raised by the public and major stakeholders during the scoping period. In the Plan, TVA and TDEC will also seek to integrate management of land and water resources to provide increased public benefits and to balance competing and sometimes conflicting resource uses.

##### 2.1.1 PLANNING PROCESS

The TVA Land Planning Process was used to develop this Plan, guided by Public Chapter 816 and the original congressional intent of the Tims Ford Project. The land was divided into parcels based upon existing use and physical characteristics. Each parcel of land was reviewed to determine its physical capability and suitability for supporting certain uses while considering public needs. This process involved allocating each parcel of land into one of eight land-use zones. As a result of public comment on the draft EIS, Zone 8 (Conservation Partnership) was added to the previous list of zones into which the land is being allocated. These zones are listed below. A more detailed description is included in Appendix C, Land-Use Zone Definitions.

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

Acreage identified between the 895-foot and 888-foot contour elevations (1,397 acres) is identified on the Land-Use Allocation Map (Volume II, Exhibit 1) to reflect TVA fee-owned land. These 1,397 acres would be managed as shoreline buffer, considering the land-use allocation of the backlying property. These acres are not included in the lands currently planned, but are used in determining shoreline miles and acres of TVA land on Tims Ford Reservoir. This land will remain in TVA ownership and will be managed using practices consistent with the allocation of the backlying tracts. Those areas fronting residential subdivisions where there are water access rights will be managed according to TVA's Shoreline Management Policy (SMP) and the policies established in this EIS for Conservation Partnership (TVA, 1998a).

Section 26a of the TVA Act requires that TVA approval be obtained prior to construction, operation, or maintenance of any dam, appurtenant works, or other obstruction affecting navigation, flood control, public lands, or reservations along or in the Tennessee River and its tributaries. TVA will consider Section 26a

applications for residential shoreline alterations and other land-use approvals only on lands allocated for residential development. These areas and future parcels identified for development by the Plan are presently designated by deeded or implied rights of ingress and egress for residential development/access. Under the Blended Alternative of the SMI Final EIS, TVA will categorize these residential shoreline areas into one of three categories. The categories are based on the present and potential impacts to sensitive ecological resources such as threatened or endangered species, wetlands, and archaeological and historic sites. These categories are:

1. **Shoreline Protection** for shoreline segments that support sensitive ecological resources, such as federally-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 restrictions zones. Within this category, all significant resources will be protected.
2. **Residential Mitigation** for shoreline segments where resource conditions or certain navigation restrictions would require special analysis of individual development proposals, additional data, or specific mitigation measures.
3. **Managed Residential** for shoreline segments where no sensitive resources are known to exist. Routine environmental review would be completed for any proposed action.

Docks and other residential shoreline development would not be permitted on lands within the Shoreline Protection Category because of the significant and sensitive nature of the resources contained in this area or because of navigation restrictions. By contrast, 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; however, restrictions on development 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, and cultural resources, TVA expects that adjustments to category boundaries may be necessary. Over time, some Shoreline Protection areas or Residential Mitigation Areas could be moved into Managed Residential Areas if new resource information warrants such a change. Similarly, some Managed Residential areas could be moved into the Shoreline Protection or Residential Mitigation category if new information supports such a change. Property owners should check with the TVA Wheeler Watershed Team office for the current status of an area.

The existing residential shoreline on Tims Ford Reservoir comprises 52.4 miles (19 percent) of the total 275 miles of shoreline. There are 1,493 acres and 35.3 miles of shoreline of TERDA-developed subdivisions. Additionally, there are 122 acres and 17.1 miles of shoreline of project lands impacted by private residential development. This land has private water-use facilities and it is being maintained to some degree by the backlying property owners. A resource inventory for threatened and endangered species, wetlands, and cultural resources was conducted and the results were used to categorize the residential shoreline as shown in Table 2.2-1. Depending on the sensitivity of the resource, the shoreline reaches were placed in either the Residential Protection or Shoreline Mitigation categories. The survey resulted placing approximately 11.9 percent of the total shoreline in the Managed Residential category, approximately 7.2 percent in the Residential Mitigation category, and none in the Shoreline Protection category.

**Table 2.1-1 Existing Residential Shoreline Categorization**

Category	Miles	Percent of Total Shoreline
Shoreline Protection	0	0
Residential Mitigation	19.9	7.2
Managed Residential	32.8	11.9

A basic premise of the reservoir land planning process is that land currently committed to a specific use would be allocated to that current use unless there is an overriding need to change that use. Commitments include: transfers, leases, licenses, contracts, areas with sensitive resources, outstanding land rights, or TDEC-developed recreation areas. Agricultural licenses, because they are temporary, are not considered a committed use. For planning purposes, a total of 1,794 acres of project land is considered committed. Existing committed project lands and the corresponding land-use zones are listed in Table 2.1-2.

**Table 2.1-2 Committed Project Lands**

<b>Committed Lands</b>	<b>Acres</b>	<b>Land-Use Zone</b>
Tims Ford State Park	1,680	6 - Recreation
Winchester City Park	55	6 - Recreation
Devils Step Camp	39	6 - Recreation
Estill Springs City Park	20	6 - Recreation
<b>Total</b>	<b>1,794</b>	

Of the original project lands, 1,493 acres were sold for subdivisions and 26 acres were sold for a privately-owned commercial marina. These lands are not TVA or TDEC managed and are not being planned. Lands that are being included in the plan include TVA projects, TERDA-developed public-use areas, and a marina on TDEC property. These parcels are listed in Table 2.1-3. Distribution of current land use by acres and shoreline are shown in Figure 2.1-1.

**Table 2.1-3 Existing Uses of Plannable Lands**

<b>Parcel</b>	<b>Description</b>	<b>Acres</b>	<b>Land-Use Zone</b>
1	Tims Ford Dam Reservation	386.4	2 - Project Operations
3	Anderton Branch Public-Use Area	110.4	6 - Recreation
Various*	Non TERDA-developed subdivisions with water-use facilities	122.0	7 - Residential Access
27	Turkey Creek Public-Use Area	61.0	6 - Recreation
30	Holiday Marina and Resort	32.4	6 - Recreation
35	Pleasant Grove Public-Use Area	1.7	6 - Recreation
55	Rock Creek Public-Use Area	7.7	6 - Recreation
73A	Riva Lake Camp	2.3	6 - Recreation
79	Dry Creek Public-Use Area	27.5	6 - Recreation
	<b>Total</b>	<b>751.4</b>	

\*Parcels 5, 7, 9, 17, 21, 25, 29, 38, 48, 49, 54, 56, 58, 60, 68, 74, 82, 84, 84A, 84B, 87, 89.

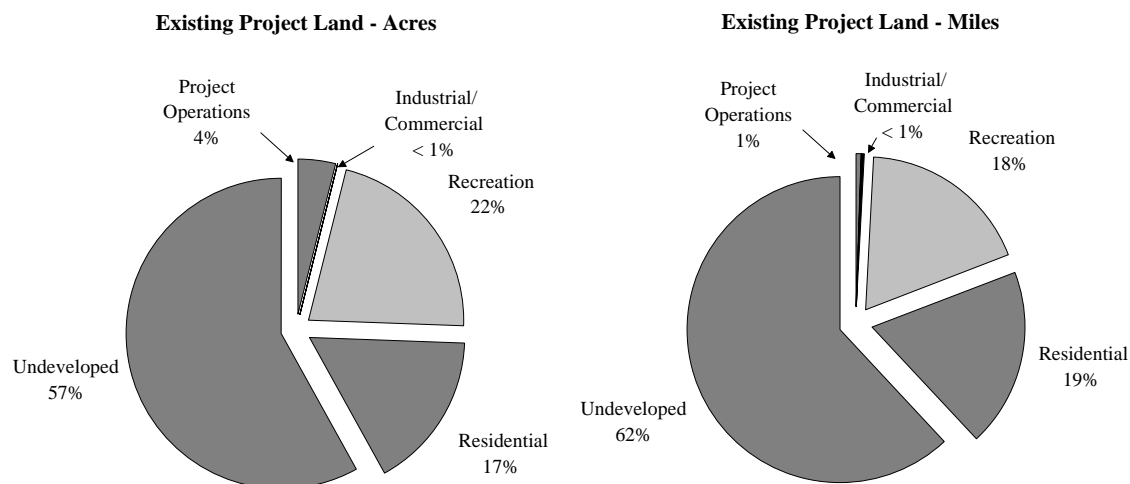


Figure 2.1-1 Distribution of Current Land Use

### 2.1.2 ORIGINAL TIMS FORD DEVELOPMENT CONCEPT

As part of the planning process, the original concept of the Tims Ford Project was reviewed. TVA's interest in tributary area development can be traced back to a report to Congress. In this report, the TVA Board of Directors discussed the unified development of the Tennessee River system and recognized the water problems of the major tributaries, which included the Elk River, as future development (Wells, 1964).

The early 1960s marked a new era in prosperity and planning for the future. TVA's commitment to total regional growth was enhanced largely by the shift toward smaller, more localized development within the tributary watersheds draining into the Tennessee River. By working closely with community leaders and volunteers in these tributary areas, TVA was able to stimulate economic development tailored to meet local needs. Technical studies helped communities become aware of local resources and how to use them more effectively (Wells, 1964).

The construction of the Tims Ford Reservoir was one piece of the overall watershed development initiative for the Elk River watershed. It provided a tool for economic development in addition to providing flood control, water supply, and power for the area. In working toward fulfilling its agreement with TVA for maintenance, operation, management and development of the shoreline properties, TERDA's objectives were to develop public facilities to encourage maximum use and provide opportunities for private investors along with sites for second homes and cabins. When Tims Ford Reservoir was completed, a development concept was created by TVA in cooperation with TERDA to comply with the original contract. Early development maps from the late 1960s and early 1970s indicate land was considered for project operations, natural resource conservation, industrial/commercial, recreation, and residential use. For the purposes of comparison and analysis, current land-use allocation zones assigned for the original concept of project lands are summarized in Table 2.1-4.



**Table 2.1-4 Allocation of Project Lands Under Original Concept**

Allocation	Acres*
Zone 1 - Non-TVA Shoreland	0
Zone 2 - Project Operations	386
Zone 3 - Sensitive Resource Management	0
Zone 4 - Natural Resource Conservation	800
Zone 5 - Industrial/Commercial	30
Zone 6 - Recreation	5,050
Zone 7 - Residential Access	3,500
Other	
TVA Lands Between Contours 888 and 895 (shoreline buffer)	1,397
Lands Below the 888 Contour (summer pool stage)	10,680

\* Approximate area in acres

In the original concept, approximately 386 acres were dedicated to the Tims Ford Dam Reservation (i.e., project operations), and approximately 800 acres remained for natural resource conservation. Industrial and commercial development (i.e., municipal/industrial water intakes, treatment facilities, etc.) involved approximately 30 acres.

Most development on Tims Ford was envisioned to have an overall rustic appearance. Residential development areas were called homesites; these were conceived as weekend cabins. Early subdivision planning assumed cabin-type developments featuring small square-footage for each unit.

Today, the largest portion of public recreation areas are state park lands, city parks, launching ramps, and day use areas. By contrast, under the original development concept, recreation land uses were divided into 4 categories:

1. Group camps—mostly informal areas for campers with no bathroom facilities
2. Club sites—“industrial” recreation sites or retreat areas much like the Jack Daniels facility
3. Public recreation—launching ramps, picnic areas, day use areas, etc.
4. Large recreation complex study areas

## 2.2 ALTERNATIVES

Five alternatives were developed for evaluation in this EIS. The first alternative is a No Action Alternative as required by the NEPA regulations of the Council on Environmental Quality (CEQ). Three action alternatives were presented in the draft EIS for public review and comment. These were formulated and evaluated in order to develop the draft Tims Ford Land Management and Disposition Plan. Alternative B was modified in response to public comments received on the draft EIS. This modified alternative is presented as Alternative B1. The alternatives are described in the following subsections with brief summaries for each alternative in italics.

The inherent ability of land to support development is based upon the actual cost of development (e.g., construction and infrastructure costs) and the potential for environmental impacts caused by development. Development costs vary depending on the slope of the terrain, availability of utilities, accessibility, and other factors. Many environmental impacts can be mitigated effectively, provided adequate financial resources are available.

Project land on Tims Ford Reservoir varies from site to site depending upon slope, accessibility, availability of utilities, and other factors. Because of this variability, certain lands are more suitable for development. This suitability for development, determined by a model incorporating these and other criteria, was used to identify suitable and capable parcels. During the development and evaluation of the alternatives, each parcel of land was reviewed to determine its physical capability for supporting development. The same criteria were used to identify capable and suitable lands under each of the alternatives. Field data were collected on all suitable and capable parcels by technical specialists such as archaeologists, wetland and visual specialists, and biologists to identify areas containing sensitive resources. The criteria used in this evaluation are shown in Appendix D.

After the environmental impacts of the original four alternatives had been evaluated, TVA and TDEC initially preferred Alternative B because it provided a balance between conservational and developmental needs. During the comment period of the draft EIS, TVA and TDEC held two public meetings and invited comments to obtain feedback about the alternatives and other issues examined in the draft EIS. The comments received and the agencies' responses are in Appendix B of the final EIS.

Throughout the draft EIS comment period, it became evident that there were a number of opportunities to improve on the alternatives under consideration and more closely reflect the concerns expressed by the public. Even though both agencies initially preferred Alternative B, public reaction to the level of development proposed and requests for lake access on narrow strips of shoreline properties caused the agencies to reconsider the proposed recommendation. Therefore Alternative B1 incorporates a new resource conservation incentive program which allows limited lake access for adjacent landowners. This alternative is presented subsection 2.2.3.

Additionally, the following proposed actions would be taken under all alternatives:

1. All existing private water-use facilities with TERDA and/or TVA permits would be grandfathered. In cases where water-use facilities were previously approved in zones other than 7, Residential Development/Access, they will be allowed to be maintained at their approved size. However, requests to expand these facilities or to construct additional facilities will not be considered.
2. New residential development in parcels allocated for Zone 7 (Residential Development) would be buffered by a 50-foot shoreline management zone retained by TVA. New subdivisions would not be allowed to have private water-use facilities; however, community water-use facilities would be allowed in designated areas.
3. Existing subdivisions within parcels allocated for Residential Development/Access (Zone 7) would be allowed to apply for Section 26a approvals to construct new private water-use facilities.
4. Existing permitted docks located in parcels that are not zoned for Residential Access would be allowed to remain (Parcels 3, 8, 13, 16, 18, 20, 34, 40, and 52). Requests for additional water-use facilities will not be considered on these parcels.
5. TVA will prepare natural resources management "unit" plans for TVA-owned lands allocated to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation).
6. Future uses of parcels that would be included in the Tims Ford State Park will be delineated through the TDEC's Strategic Management Plan for Tims Ford State Park.

### **2.2.1 ALTERNATIVE A—THE NO ACTION ALTERNATIVE**

*Summary: The No Action alternative involves either one or both agencies deciding not to adopt a jointly-prepared land management and disposition plan. In the absence of a plan, TVA and TDEC would proceed with disposition and/or management of properties on a case-by-case basis, using the scope of the Tims Ford Project as originally set forth, guided by Public Chapter 816, and subject to existing laws and policies.*

Under the No Action alternative, TVA and TDEC would not adopt a jointly prepared plan. In the absence of a plan, TVA and TDEC would proceed with disposition and/or management of properties on a case-by-case basis. TDEC would manage the allocation of former TERDA properties, guided by Public Chapter 816 and existing state law and policy. TVA would continue management of its properties pursuant to TVA policies, including the recently adopted SMI. In accordance with its recent Shoreline Management Record

of Decision, TVA would independently complete a shoreline inventory along residential access lands to identify sensitive resources that would be protected in the residential permitting program. Depending on the sensitivity of the resource, each residential shoreline reach would be placed into one of the following three categories: managed residential, shoreline mitigation, or shoreline protection.

Because no joint plan would exist, the plannable project lands could be considered for a variety of uses. More than likely, the shoreline property with existing residential use and no land rights for residential access would be considered for residential access, affecting 122 acres and 17.1 miles of shoreline. The 881 acres identified for sensitive resource protection would more than likely be maintained in a protective category by TVA and TDEC to comply with federal, state, and local laws. Approximately 1,958 acres would likely be managed for Natural Resource Conservation because it was deemed not suitable or capable for development. Six acres are in existing light commercial use and 279 acres have existing recreational uses. The balance of lands, 2,821 acres, could be considered for development through land-use requests or disposition of properties for residential development, recreation (commercial or parks), and/or industrial or commercial uses. Development could range from all 2,821 acres being developed to no more development (0 acres). Requests for or proposed disposition of project lands would then be either approved or denied, based on a review of potential environmental effects and other considerations. Existing short-term (interim) land uses would remain in place until expiration or termination. Because no lands would be exchanged between TVA and TDEC, agency land ownership would remain unchanged.

Although land decisions would be made on a case-by-case basis, for the purpose of analysis, parcels under Alternative A are categorized into a likely land use consistent with current management trends. The project land uses for Alternative A are summarized in Table 2.2-1.

**Table 2.2-1 Summary of Parcel Land-Use Allocations under Alternative A**

Number of Parcels	Parcel Numbers	Proposed Land Allocations	Acres	Shoreline Miles
0	0	Zone 1 - Non TVA Shoreland	0	0
1	1	Zone 2 - Project Operations	386	1.6
9	15, 41, 43, 53, 63, 65, 67, 70, 72	Zone 3 - Sensitive Resource Management	881	31.0
35*	2, 4, 6, (8), 13, 16, 18, 20, 22, (26), 28, (33), (34), (37), (39), (40), 45, 47, 50, 52, 57, 59, 62, 64, 66, 69, 71, 73, (75), 77, 79A, (81), 85, 86, 88	Zone 4 - Natural Resource Conservation	1,958	82.6
2	7A, 83	Zone 5 - Industrial/Commercial	6	0.6
10	3, 10, 11, 23, 27, 30, 35, 55, 73A, 79	Zone 6 - Recreation	279	7.7
21	5, 9, 17, 21, 25, 29, 38, 48, 49, 54, 56, 58, 60, 68, 74, 82, 84, 84A, 84B, 87, 89	Zone 7 - Residential	122	17.1
28	7, (8), 12, 14, 19, 24, (26), 31, 32, (33), (34), 36, (37), (39), (40), 42, 44, 46, 49, 51, 61, (75), 76, 78, 79A, 79B, 80, (81)	Potential for Development	2,821	55.1
		<b>Total</b>	<b>6,453</b>	<b>195.7</b>

\* The number in parentheses includes only portions of the parcel.

Distribution of land use, shown by acres and shoreline length, should Alternative A be implemented are shown in Figure 2.2-1. This includes existing development and therefore represents cumulative totals.

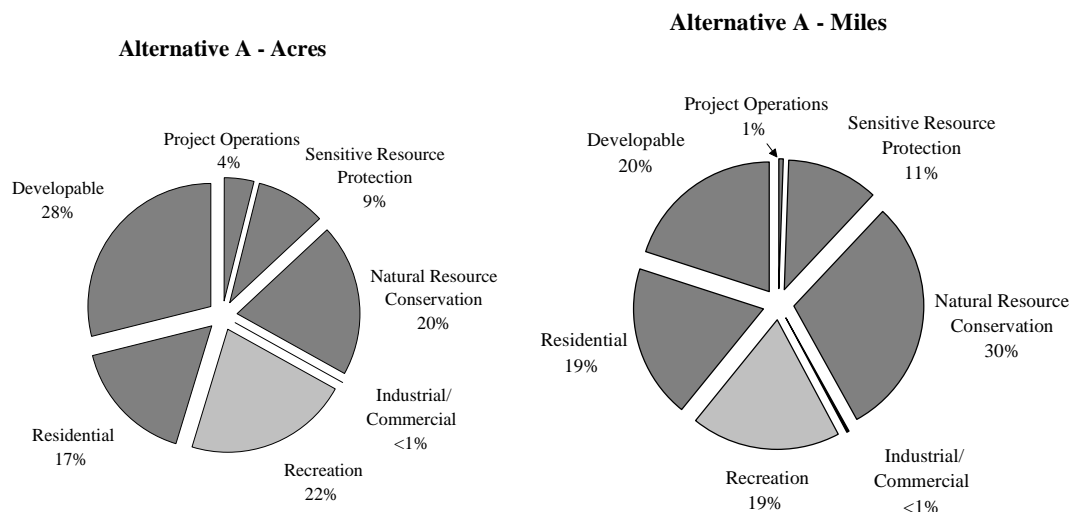


Figure 2.2-1 Distribution of Land Use Under Alternative A

### 2.2.2 ALTERNATIVE B—BALANCED LAND DEVELOPMENT AND CONSERVATION

*Summary: Alternative B consists of a combination of development and conservation. It was developed based on regulatory requirements, public input, and the goals and interests of both TVA and TDEC.*

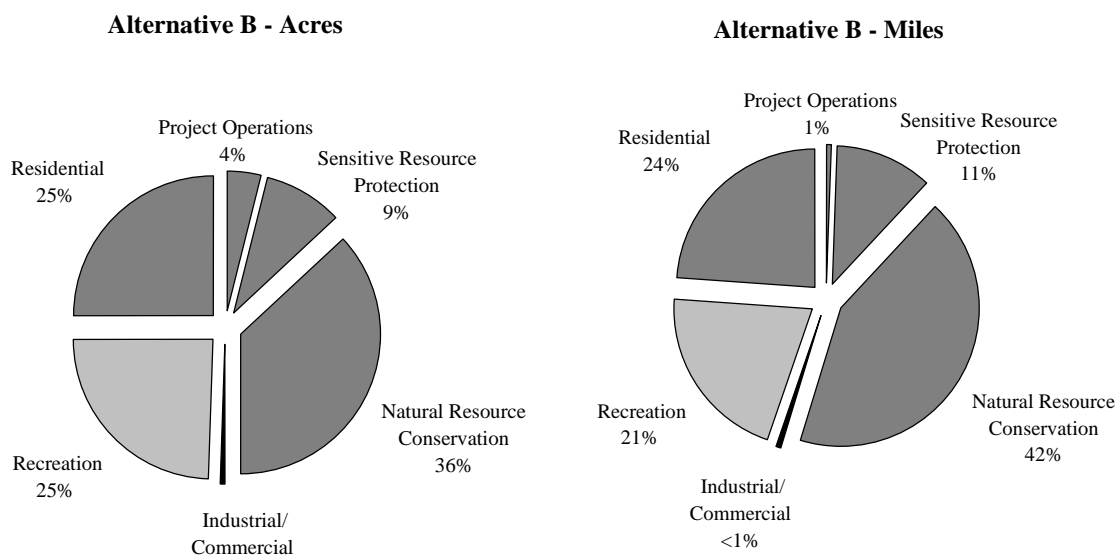
Under Alternative B, the land surrounding the Tims Ford Reservoir would be allocated for both development and conservation. These allocations would be made in an attempt to reflect public input (see Appendix B), regulatory requirements, and the programmatic interests of both TVA and TDEC. Alternative B was developed using information obtained from the public, existing and newly-collected field data both on land conditions and resources, and technical knowledge from TVA and TDEC staff.

To define the most suitable and compatible uses for the land, a land planning team comprised of experts from TVA and TDEC staff was asked to examine the plannable lands. They were asked to rate and rank each parcel by a set of criteria (see Appendix E) depending on their discipline. Resource needs were identified during the scoping process to help determine the most suitable use for the land (see questionnaire results in Appendix B). After the ranking process, the planning team and technical specialists allocated the uncommitted parcels to one of the seven land-use zones listed in Table 2.2-2. Using resource maps and all of the information collected during the planning process (including public input), the capability and suitability of each parcel was discussed. Allocation decisions were made based on these discussions.

**Table 2.2-2 Summary of Parcel Land-Use Allocations under Alternative B**

Number of Parcels	Parcel Numbers	Proposed Land Allocations	Acres	Shoreline Miles
0	N/A	Zone 1 - Non TVA Shoreland	0	0
1	1	Zone 2 - Project Operations	386	1.6
9	15, 41, 43, 53, 63, 65, 67, 70, 72	Zone 3 - Sensitive Resource Management	881	31.0
39	2, 4, 6, 8, 12, 13, 16, 18, 20, 22, 24, 26, 28, 33, 34, 37, 39, 40, 42, 44, 45, 47, 50, 52, 57, 59, 62, 64, 66, 69, 71, 73, 75, 77, 79A, 81, 85, 86, 88	Zone 4 - Natural Resource Conservation	3,605	117.3
4	7A, 78, 79B, 83	Zone 5 - Industrial/Commercial	67	1.8
15	3, 10, 11, 19, 23, 27, 30, 32, 35, 55, 61, 73A, 76, 79, 80	Zone 6 - Recreation	576	13.8
27	5, 7, 9, 14, 17, 21, 25, 29, 31, 36, 38, 46, 48, 49, 51, 54, 56, 58, 60, 68, 74, 82, 84, 84A, 84B, 87, 89	Zone 7 - Residential	938	30.2
<b>Total</b>			<b>6,453</b>	<b>195.7</b>

Projected distribution of land use shown by acres and shoreline length under Alternative B is shown in Figure 2.2-2. This includes existing development and therefore represents cumulative totals.



**Figure 2.2-2 Distribution of Land Use Under Alternative B**

### **2.2.3 ALTERNATIVE B1—BALANCED LAND DEVELOPMENT WITH CONSERVATION PARTNERSHIP**

*Summary: Alternative B1 consists of a combination of development and conservation. This alternative was developed by modifying Alternative B in response to public comment on the draft EIS. It includes an incentive program that seeks to widen the riparian zone that could be dedicated for environmental protection especially in those sections of the shoreline where currently only a narrow strip is in public ownership. Additionally, one parcel was reallocated and several minor corrections were made in boundaries of existing parcels. Like Alternative B, Alternative B1 is based on regulatory requirements and the goals and interests of both TVA and TDEC.*

Alternative B1, Balanced Land Development with Conservation Partnership, is a modification of Alternative B which resulted from comments received on the Draft EIS and Plan. The primary change consists of including a new zone, Zone 8 (Conservation Partnership). Alternative B1 modifies the management strategy on certain lands (33 acres) allocated to Zone 4 in the Draft EIS. These Zone 8 areas were defined using the criteria specified in Appendix E. Specifically, within these 33 acres previously allocated to Zone 4, there are numerous locations where the public land above the 895-foot contour is very narrow and as such, does not provide a sufficient conservation buffer to protect water quality, conserve shoreline habitat, protect shorelines from long-term erosion, or retain shoreline aesthetics. It has also been TVA's experience that due to the close proximity of private property to the lake, these narrow public land areas present unique management problems, both from a property administration and resource conservation perspective. In addition, many of those who commented stated that because of the close proximity of their property to the water's edge, they had an expectation of gaining water access under the previous management policies of TERDA. Accordingly, the agencies identified these specific areas and allocated them to a new Zone 8 (Conservation Partnership); see Appendix C for the definition of Zone 8. The primary objective within this zone is to establish a wider shoreline buffer zone by fostering conservation partnerships with the adjacent private property owners. In return for conservation partnership easements granted by adjacent private property owners, TVA would consider requests for limited community water-use facilities. Applications for community water-use facilities in Zone 8 areas would be evaluated consistent with the criteria specified in Appendix E.

Additionally, several changes have been made. The allocation for the parcel previously designated as Parcel 14 was changed from Zone 7 (Residential Development/Access), to Zone 4 (Natural Resource Conservation). This change was made due to comments received from the public and several agencies and organizations. The agencies agree with supporting input that this change would reduce the density of residential development on the lower portion of the lake, enhance the viewshed of Tims Ford State Park, provide benefits for Natural Resource Conservation, and provide more natural areas on the reservoir. Portions of the parcel previously designated as Parcel 59 have been reallocated to Residential Development/Access due to existing water-use facilities and an existing subdivision. The eastern portion of previously designated Parcel 80 has been included in previously designated parcel 86. This area had been designated to Zone 6 in the past, but it was determined not to be compatible with adjacent land use of private dwellings; Zone 4 (Natural Resource Conservation), is a more compatible use. Also, the boundaries of Taylor Creek West subdivision were corrected on Exhibit 1. The parcels allocated to each of the eight zones for Alternative B1 are summarized in Table 2.2-3. Parcels fronting existing residential development were also allocated for Residential Access.

**Table 2.2-3 Summary of Parcel Land-Use Allocations Under Alternative B1**

<b>Number of Parcels</b>	<b>Parcel Numbers</b>	<b>Proposed Land Allocations</b>	<b>Acres</b>	<b>Shoreline Miles</b>
0	N/A	Zone 1 - Non TVA Shoreland	0	0
1	1	Zone 2 - Project Operations	386	1.6
9	15, 41, 43, 53, 63, 65, 67, 70, 72	Zone 3 - Sensitive Resource Management	881	31.0
41	2, 4, 6, 8, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 33, 34, 37, 39, 40, 42, 44, 45, 47, 49A, 50, 52, 57, 59, 62, 64, 66, 69, 71, 73, 75, 77, 79A, 81, 85, 86, 88	Zone 4 - Natural Resource Conservation	3,692	110.4
4	7A, 78, 79B, 83	Zone 5 - Industrial/Commercial	67	1.8
15	3, 10, 11, 19, 23, 27, 30, 32, 35, 55, 61, 73A, 76, 79, 80	Zone 6 - Recreation	573	13.7
27	7, 31, 36, 46, 51, 5, 9, 17, 21, 25, 29, 38, 48, 49, 54, 56, 58, 59A, 60, 68, 74, 82, 84, 84A, 84B, 87, 89	Zone 7 - Residential	821	28.2
51	6-1, 8-1, 8-2, 18-1, 18-2, 20-1, 20-2, 20-3, 22-1, 22- 2, 22-3, 22-4, 22-5, 26-1, 28-1, 28-2, 33-1, 34-1, 34- 2, 39-1, 39-2, 40-1, 40-2, 40-3, 40-4, 40-5, 50-1, 50- 2, 52-1, 52-2, 52-3, 52-4, 57-1, 57-2, 66-1, 69-1, 71- 1, 71-2, 71-3, 71-4, 71-5, 73-1, 73-2, 77-1, 77-2, 77- 3, 81-1, 86-1, 86-2, 88-1, 88-2	Zone 8 - Conservation Partnership	33	9.0
		<b>Total</b>	<b>6,453</b>	<b>195.7</b>

Project distribution of land use by acres and shoreline length under Alternative B1 is shown in Figure 2.2-3. This includes existing development and therefore represents cumulative totals.

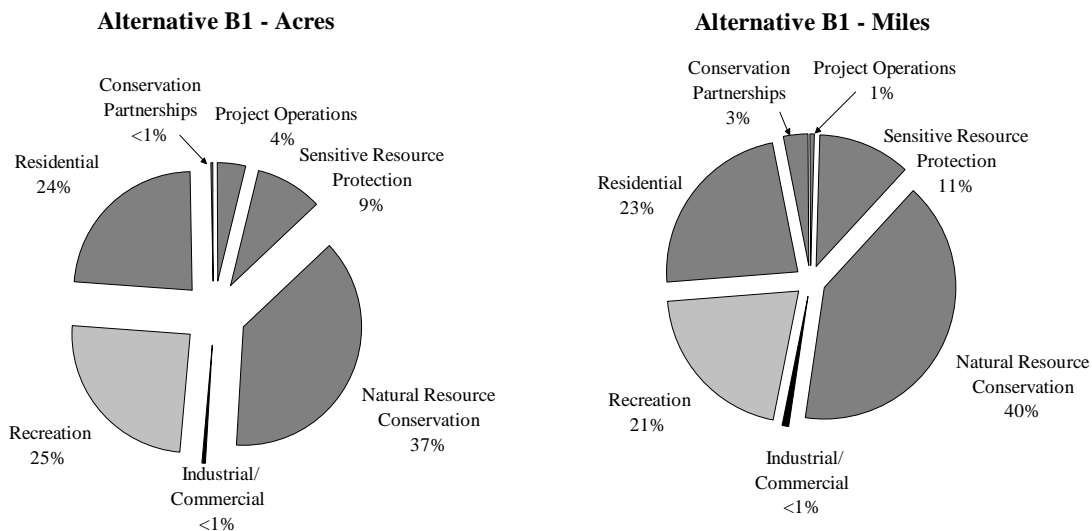


Figure 2.2-3 Distribution of Land Use Under Alternative B1

#### 2.2.4 ALTERNATIVE C—MAXIMUM LAND DEVELOPMENT

*Summary: Alternative C involves maximum residential and industrial/commercial development of all suitable lands while complying with federal, state, and local regulations. It was developed based on input received during the public comment period and existing and newly collected field data on land conditions and resources.*

Alternative C, Maximum Land Development, involves the disposition of all uncommitted suitable and capable parcels for development (residential, commercial/industrial, and recreation). This allocation of parcels under this alternative would generate the most tax base and money for individual county economic development programs and state environmental and recreation programs. The public scoping report (Appendix B) summarizes comments on preferences for land allocation in Table 7 of the report. This alternative reflects substantial political interests and the interests of the 17 percent of the respondents that indicated a desire to develop more land. All plannable parcels would be allocated for development except those that do not meet suitability and capability criteria (see Appendix D), contain sensitive resources, such as threatened and endangered species or archeological sites (to comply with state and federal laws and regulations), or are less than 20 acres.

These parcels (i.e., those not allocated for development) would be allocated for sensitive resource protection, natural resource conservation, and any other uses deemed compatible. Under Alternative C, areas identified as having sensitive resources would be allocated to Zone 3 (Sensitive Resource Management). Additionally, no parcels suitable or capable for development would be set aside for natural resource conservation (Zone 4) in addition to those currently in that category under the original concept.

The parcels allocated to each of the seven zones under Alternative C are summarized in Table 2.2-4. Parcels fronting existing residential development were also allocated for Residential Development.

Projected distribution of land use shown by acres and miles of shoreline under Alternative C is shown in Figure 2.2-4. This includes existing development and therefore represents cumulative totals.

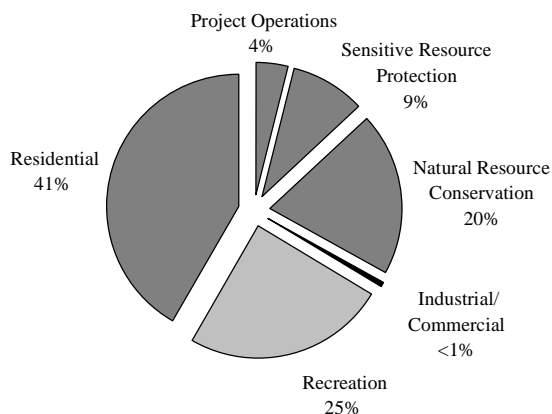


**Table 2.2-4 Summary of Parcel Land-Use Allocations Under Alternative C**

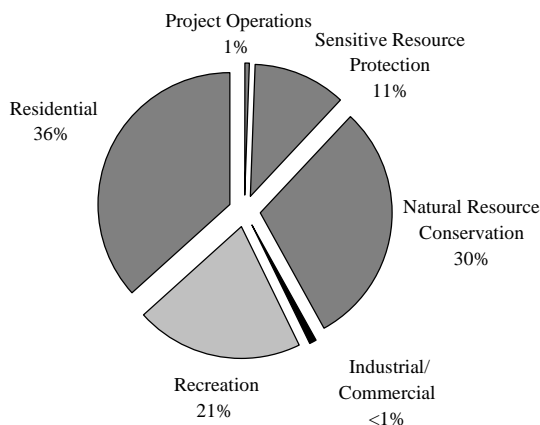
Number of Parcels	Parcel Numbers	Proposed Land Allocations	Acres	Shoreline Miles
0	N/A	Zone 1 - Non TVA Shoreland	0	0
1	1	Zone 2 - Project Operations	386	1.6
9	15, 41, 43, 53, 63, 65, 67, 70, 72	Zone 3 - Sensitive Resource Management	881	31.0
29	2, 4, 6, (8), 13, 16, 18, (20), 22, (28), (33), (34), (37), (40), 49, 52, 57, 59, 62, 64, 66, 69, 71, 73, (75), 77, 79A, 85, 86, 88	Zone 4 - Natural Resource Conservation	1,958	82.6
4	7A, 78, 79B, 83	Zone 5 - Industrial/Commercial	67	1.8
15	3, 10, 11, 19, 23, 27, 30, 32, 35, 55, 61, 73A, 76, 79, 80	Zone 6 - Recreation	576	13.8
45	5, 7, (8), 9, 12, 14, 17, (20), 21, 24, 25, 26, (28), 29, 31, (33), (34), 36, (37), 38, 39, (40), 42, 44, 45, 46, 47, 48, 50, 51, 54, 56, 58, 60, 68, 74, (75), 81, 82, 84, 84A, 84B, 87, 89	Zone 7 - Residential	2,585	64.9
<b>Total</b>			<b>6,453</b>	<b>195.7</b>

\* The number in parentheses includes only portions of the parcel.

**Alternative C - Acres**



**Alternative C - Miles**



**Figure 2.2-4 Distribution of Land Use Under Alternative C**

### 2.2.5 ALTERNATIVE D—MAXIMUM LAND CONSERVATION

*Summary: This alternative is a non-development approach that allows no new land development outside of existing uses. Under this alternative, all uncommitted lands would be considered unavailable for development and would be allocated for natural resource conservation.*

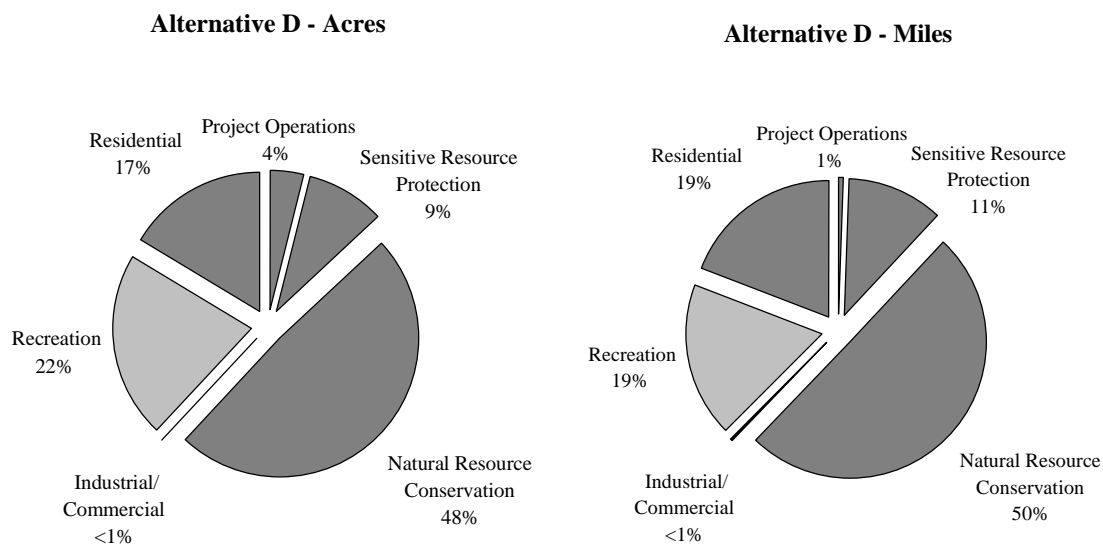
This alternative constitutes a non-developmental approach. It would allow no new development outside of existing areas. All lands would be considered unsuitable for development and would be allocated for natural resource conservation. This alternative primarily reflects the input from existing lake-front residents favoring no additional shoreline development and comments from one federal and one state agency strongly recommending the consideration of no additional development on the Tims Ford Reservoir. The public scoping report (Appendix B) summarized comments on preferences for land allocation in Table 7 of the report.

Under this alternative, areas identified as having sensitive resources would be allocated to Zone 3 (Sensitive Resource Management). All parcels allocated for new development (industrial/commercial, residential, and/or recreation) under Alternatives B and C would be allocated for natural resource protection, Zone 4. Parcel allocations under Alternative D are shown in Table 2.2-5.

**Table 2.2-5 Summary of Parcel Land-Use Allocations Under Alternative D**

Number of Parcels	Parcel Numbers	Proposed Land Allocations	Acres	Shoreline Miles
0	N/A	Zone 1 - Non TVA Shoreland	0	0
1	1	Zone 2 - Project Operations	386	1.6
9	15, 41, 43, 53, 63, 65, 67, 70, 72	Zone 3 - Sensitive Resource Management	881	31.0
52	2, 4, 6, 7, 8, 12, 13, 14, 16, 18, 19, 20, 22, 24, 26, 28, 31, 32, 33, 34, 36, 37, 39, 40, 42, 44, 45, 46, 47, 50, 51, 52, 57, 59, 61, 62, 64, 66, 69, 71, 73, 75, 76, 77, 78, 79A, 79B, 80, 81, 85, 86, 88	Zone 4 - Natural Resource Conservation	4,779	137.7
2	7A, 83	Zone 5 - Industrial/Commercial Development	6	0.6
10	3, 10, 11, 23, 27, 30, 35, 55, 73A, 79	Zone 6 - Recreation	279	7.7
21	5, 9, 17, 21, 25, 29, 38, 48, 49, 54, 56, 58, 60, 68, 74, 82, 84, 84A, 84B, 87, 89	Zone 7 - Residential	122	17.1
		<b>Total</b>	<b>6,453</b>	<b>195.7</b>

Projected distribution of land use shown by acres and shoreline length under Alternative D is shown in Figure 2.2-5. This includes existing development and therefore represents cumulative totals.



**Figure 2.2-5 Distribution of Land Use Under Alternative D**

### **2.2.6 ALTERNATIVES NOT CONSIDERED IN DETAIL**

Two other alternatives were initially considered for the evaluation and/or assessment for this EIS: the continuation of the former TERDA management policies and the reduction of existing development. However, they were not considered to be viable.

#### **Continuation of TERDA Management Policies**

One alternative that was no longer considered in detail was the implementation of the 1991 TERDA Long Range Plan. The 1991 Long Range Plan was developed by the TERDA Board of Directors and had three primary purposes:

1. To establish a direction for TERDA through the year 2000.
2. To provide a set of principles to guide the day-to-day decisions affecting developments on the reservoir and area development within the watershed.
3. To inform the general public about what the agency was doing and why.

This plan was not developed with public input or with an environmental review, but deferred environmental reviews to a case-by-case basis when proposals involved TVA actions. The 1991 TERDA Long Range Plan classified land in five classes: developed, developable, marginally developable, undevelopable, and special opportunities. Land uses were limited to residential, recreational, agricultural, and open space. Although these limitations made the alternative unsuitable for the purpose of allocating Tims Ford Project Land, the 1991 Plan and the Lands Classification Map were used as a starting point to develop Alternatives B, C, and D. Further, the 1991 TERDA Plan could not be used in its entirety because it was not comprehensive, it had a duration of only 10 years, and it did not take into account sensitive resources. Developable properties identified by the 1991 Plan were included in data collection for the environmental review for this process.

#### **Reduction of Existing Development**

Some public comments indicated the need to reduce existing facilities, including commercial recreation opportunities. This was considered not to be viable as it fails to comply with Public Chapter 816. In addition, this may require revoking existing property rights. Any attempt to acquire the necessary rights to

reduce existing Tims Ford development would be strongly opposed by many property owners, politically unacceptable, and economically prohibitive.

## 2.3 COMPARISON OF ALTERNATIVES

This section compares the environmental impacts of the five alternatives based on the information and analyses provided in Chapter 3, The Affected Environment and The Environmental Consequences.

Section 101 of 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. The agencies believe 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 included in each alternative, a wide range of beneficial uses of the environment could be obtained without degradation or unintended consequences under each alternative. Alternatives B and B1, in attempting to strike a balance of conservation and development, are consistent with NEPA goals of achieving a balance between population and resource use that permits high standards of living and a wide sharing of life's amenities. Alternative A, No Action, and Alternative C, both of which could lead to increased land development, would contain environmental safeguards to protect important historic, cultural, and natural aspects of our national heritage while allowing a wide range of economically beneficial uses of the environment. Alternative D, which emphasizes land conservation, is also consistent with the NEPA goal to preserve important historic, cultural and natural aspects of our national heritage.

In implementing Alternative A, site suitability and regulatory requirements would be given due consideration in land management and disposition decisions (i.e., parcels not suitable for or capable of development would be placed in the Natural Resource Conservation zone, thereby protecting the sensitive resource on such land). This culling is expected to result in approximately 1,958 acres becoming unavailable for future development after accounting for the 407 acres that are already developed or committed to private development. The balance of lands, 2,821 acres, could be considered for future development on a case-by-case basis. The actual disposition and use for these lands would be decided on a case-by-case basis making the assessment of impacts speculative. Therefore, for the purposes of impact assessment, these 2,821 acres of land were allocated to industrial/commercial (up to 61 acres), recreation (up to 297 acres), and residential (up to 2,585 acres). In general, the potential environmental impacts of adopting Alternative A would likely fall between those of Alternative C and D. Because of the uncertainty in case-by-case dispositions, the net public benefit of these lands would not be maximized nor would a clear path for land management or disposition for either agency be established under Alternative A.

Alternatives B and B1 balance the following considerations:

1. Competing land-use interests
2. The original intent for development of the Tims Ford Project
3. Current policies of both agencies
4. The desires of the public and other agencies expressed during public scoping
5. Public Chapter 816 of the 1996 Tennessee General Assembly

The three major competing land-use interests identified for this project are residential development, recreation, and natural resource conservation. In addition to balancing these three interests, Alternative B also provides for protection of sensitive resources, such as wetlands, threatened and endangered species, and archaeological resources. Alternative B1 further protects these resources, while responding to public comments seeking more natural areas and more flexibility in water access for certain narrow shoreline strips.

Alternative C, Maximum Land Development, would involve the disposition of all uncommitted parcels that are suitable for and capable of development (residential, commercial/industrial, and developed

recreational). Among the three competing land-use interests, Alternative C would place primary emphasis on residential development, followed by recreational development and natural resources conservation, respectively.

Alternative D, Maximum Land Conservation, allows for no new residential, recreation, or industrial/commercial development. In this alternative, the primary emphasis in land allocation was placed on natural resources conservation, followed by existing recreation and existing residential development requiring land rights for water-use facilities.

**Table 2.3-1 Comparison of Alternatives - Acreage**

Zone	Acres					
	Existing	A No Action	B Balanced Land Development	B1 Balanced Land Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
1 - Non TVA Shoreland	0	0	0	0	0	0
2 - Project Operations	386 <sup>a</sup>	386 <sup>a</sup>	386 <sup>a</sup>	386 <sup>a</sup>	386 <sup>a</sup>	386 <sup>a</sup>
3 - Sensitive Resource Management	-	881	881	881	881	881
4 - Natural Resource Conservation	-	1,958	3,605	3,692	1,958	4,779
5 - Industrial/Commercial	6	6 to 67	67	67	67	6
6 - Recreation	2,141 <sup>b</sup> 25.6 <sup>c</sup>	279 to 576	576	573 <sup>d</sup>	576	279
7 - Residential	122 <sup>d</sup> 1,493 <sup>e</sup>	122 to 2,585	938	821	2,585	122
8 - Conservation Partnership	-	0	0	33	0	0
Undeveloped	4,779	-	-	-	-	-
Developable	-	2,821 <sup>f</sup>	-	-	-	-
Total	-	6,453	6,453	6,453	6,453	6,453

a - Dam Reservation

b - Includes State Park, Devil's Step, City parks, and Public-use areas

c - Sold project land for Tims Ford Marina

d - Land between 895-foot contour and backlying property owners with water-use facilities

e - Sold project lands for TERDA-developed subdivisions

f - Areas could be considered for development on a case by case basis

g - The amount of acreage for Zone 6 - Recreation was reduced due to a correction for Parcel 80.

**Table 2.3-2 Comparison of Alternatives - Shoreline Miles**

Zone	Shoreline Miles					
	Existing	A No Action	B Balanced Land Development	B1 Balanced Land Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
1 - Non TVA Shoreland	0	0	0	0	0	0
2 - Project Operations	1.6 <sup>a</sup>	1.6	1.6	1.6	1.6	1.6
3 - Sensitive Resource Management	-	31.0	31.0	31.0	31.0	31.0
4 - Natural Resource Conservation	-	82.6	117.3	110.4	82.6	137.7
5 - Industrial/Commercial	0.6	0.6 to 1.8	1.8	1.8	1.8	0.6
6 - Recreation	42 <sup>b</sup>	7.7 to 13.8	13.8	13.7 <sup>e</sup>	13.8	7.7
7 - Residential	52.4 <sup>c</sup>	17.1 to 64.9	30.2	28.2	64.9	17.1
8 - Conservation Partnership	0	0	0	9.0	0	0
Undeveloped	178.4	-	-	-	-	-
Developable	-	55.1 <sup>d</sup>	-	-	-	-
Total	-	195.7	195.7	195.7	195.7	195.7

a - Dam Reservation

b - Includes State Park, Devil's Step, City parks, and Public-use areas and shoreline fronting Tims Ford Marina

c - Includes all land fronting existing subdivisions (TERDA-developed subdivisions and backlying property owners with water-use facilities)

d - Areas could be considered for development on a case-by -case basis

e - The amount of miles for Zone 6, Recreation was reduced due to a correction for Parcel 80.

### 2.3.1 IMPACTS SUMMARY

The range of impacts that could result from implementation of the alternatives is bracketed by the impacts of Alternatives C and D. Alternative C, with an emphasis on residential development, would cause the greatest impact. At the other extreme, Alternative D, with an emphasis on conservation, would have the least impact. Alternative B, in balancing the competing interests of development and conservation, would cause greater impacts than Alternative D, but through its dedication of 3,605 acres to Natural Resource Conservation would cause fewer impacts than Alternative C. Alternative B1 would allow more community docks than Alternative B, but would also result in a gain of shoreline management zones where there are narrow shoreline strips and an increase in natural areas compared to Alternative B. However, adoption of Alternative B1 could facilitate the conversion of some farm and forest lands to residential uses with unknown environmental impacts. Certain mitigative measures are identified and discussed in Section 3.19. The impact of Alternative A, the no-action alternative, would depend on future actions taken by TDEC and TVA in allocating or disposing the land on a case-by-case basis. An overriding concern for conservation in making case-by-case decisions would make the impact of Alternative A similar to Alternative D. Conversely, an emphasis on development would cause the impact of Alternative A to more closely resemble the impacts of Alternative C. A qualitative rating of the impacts for the alternatives on the different resources is provided in Table 2.3-3.

**Table 2.3-3 Summary of Impacts**

Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Groundwater	<ul style="list-style-type: none"> <li>• Potential contamination from failure of septic tank systems. Potential releases to groundwater from construction activities.</li> </ul>	Depending on the outcome of case-by-case reviews conducted by TVA and TDEC, impacts could be as high as Alternative C or as minimal as Alternative D.	Affords protection to groundwater resources as a result of the allocation of a sizable acreage to the natural resource conservation zone.	Affords protection to groundwater resources as a result of the allocation of a sizable acreage to the natural resource conservation zone.	Greatest potential for impact to groundwater resources due to extensive residential development.	Minimal groundwater impact since present hydrogeological conditions would be relatively unchanged.
Site Soils	Potential for loss of prime farmland; however, the impacts are insignificant for all alternatives.	Potential Loss as high as Alternative C.	Potential loss –240 acres (62 percent in current agricultural use).	Potential loss –226 acres (64 percent in current agricultural use).	Potential loss—392 acres (54 percent in current agricultural use).	Potential loss—23 acres (20 percent in current agricultural use).
Surface Water	<ul style="list-style-type: none"> <li>• Erosion during construction.</li> <li>• Improper operation or failure of wastewater treatment systems. Nutrient-loading to the reservoir from run-off of fertilizers and chemicals.</li> </ul>	Absence of planning and the resulting case-by-case decision-making could result in surface water quality impacts as high as the impacts for Alternative C.	The limited extent of development and the protection provided by allocating parcels to the Natural Resource Conservation Zone would lessen impacts to surface water quality.	The limited extent of development and the protection provided by allocating parcels to the Natural Resource Conservation Zone would lessen impacts to surface water quality. Additional buffers in Zone 8 could provide localized benefits.	Extensive residential development on lands surrounding the reservoir would result in the highest potential for impacts due to erosion, chemical and nutrient run-off, and wastewater discharges from failed septic systems.	Least impact to reservoir water quality since no new development would be allowed.

Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Aquatic Biology	Shoreline development could result in the adverse modification of adjacent aquatic habitat.	<ul style="list-style-type: none"> <li>• 31 miles of shoreline reserved for Sensitive Resource Management.</li> <li>• 82.6 miles of shoreline reserved for Natural Resources Conservation.</li> <li>• Impact could be as high as that of Alternative C.</li> </ul>	<ul style="list-style-type: none"> <li>• 31 miles of shoreline reserved for Sensitive Resource Management.</li> <li>• 117.3 miles of shoreline reserved for Natural Resources Conservation.</li> <li>• Impacts would be less than Alternative A or C, greater than D, and comparable to B1.</li> </ul>	<ul style="list-style-type: none"> <li>• 31 miles of shoreline reserved for Sensitive Resource Management.</li> <li>• 110.4 miles of shoreline reserved for Natural Resources Conservation.</li> <li>• 9 miles of shoreline for Conservation Partnerships. Could encourage additional development due to the opening of additional community water-use facilities.</li> <li>• Impacts would be less than Alternative A or C, greater than D, and comparable to B.</li> </ul>	<ul style="list-style-type: none"> <li>• 31 miles of shoreline reserved for Sensitive Resource Management.</li> <li>• 82.6 miles of shoreline reserved for Natural Resources Conservation.</li> <li>• Greatest impact due to the length of shoreline that would be lost to development and the intensity of residential activity.</li> </ul>	<ul style="list-style-type: none"> <li>• 31 miles of shoreline reserved for Sensitive Resource Management.</li> <li>• 137.7 miles of shoreline reserved for Natural Resources Conservation.</li> <li>• Least impact due to restriction on new development and the length of shoreline preserved.</li> </ul>
Terrestrial Ecology	Clearing and alteration of vegetation would impact the composition and abundance of plant and animal species.	Terrestrial resources on 2,839 acres under natural resources conservation and sensitive resource management would be protected. However, terrestrial resources on approximately 2,821 acres could be affected by case-by-case approvals for development.	4,486 acres protected and limited extent of residential development would cause lesser impacts on terrestrial resources than Alternative A.	4,573 acres protected with additional shoreline acreage protected (33 acres + conservation partnership easement area). Impacts on project lands are similar to Alternative B; however, the creation of Zone 8 would impact terrestrial ecology and likely encourage residential development on some adjoining private lands. Could result in locally significant impacts similar to Alternative C due to loss of habitat but regional impacts would be insignificant.	2,839 acres protected and extent of development comparable to Alternative A.  This alternative would have the greatest impact to terrestrial resources.	Protection of large amount of acreage (5,660) protected and restriction on new development would result in the least impact of all alternatives.



Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Threatened and Endangered Species	Adverse effects on Federal-and State-listed species (animals and plants) and their habitat, primarily through habitat alteration associated with development.	The absence of long-term planning could result in a fragmented habitat that would not benefit listed species. Further, four parcels containing sensitive habitat would be subject to future development depending on the outcome of case-by-case reviews.	Protective of listed species since all parcels containing such species and their habitat were placed in the Sensitive Resources Management zone. Many other parcels with unique or unusual habitats were assigned to the Natural Resource Conservation zone. Recreational development of parcel 76 could harm important and unusual habitats.	Impacts are similar to those described for alternative B. Those areas where Threatened and Endangered species were documented are set aside as sensitive resource management zones under all alternatives. If large scale conversion of forested private lands adjacent to Zone 8 occurs, potential secondary impacts to unidentified Threatened and Endangered species may result on those lands. During each applications for community facilities, site specific reviews could avoid potential impacts to Threatened and Endangered Species.	This alternative has the greatest impact on listed species. Several parcels containing unusual habitats, or important shoreline forest habitat would be allocated for development. Greater development would lead to a more fragmented habitat.	This alternative would provide the greatest benefit to listed species and their habitats and aid their regional recovery.
Wetlands	Adverse effects to or destruction of wetlands.	Lack of long-term planning would affect wetlands conservation. This alternative places category 1 wetlands in protective zones but omits several category 2 wetlands. Important wetlands in Parcels 10, 29, 30, and 35 could be affected by development.	Increases preservation of wetlands by placing a majority of wetlands in the protective zones. Further, mitigation commitments would apply to parcels containing wetlands that are in zones 5, 6, and 7 when actions trigger Section 404 jurisdiction.	Overall similar to alternative B. However, a few of the conservation areas of the Zone 8 parcels are adjacent to documented wetlands. If a community water-use facility is considered for Parcel 8-2, degradation of the wetland may occur due to cumulative impacts of pollution and disturbance. Similarly, Parcels 71-1, 71-2, 71-3, 71-4 surround a relatively large wetland.	This alternative would have the greatest impact on wetlands of the project area. A total of 10 wetlands located in Parcels 10, 29, 30, 35 and 19 could be affected by development.	This alternative would provide the greatest benefit to wetlands.

Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Land Use	<ul style="list-style-type: none"> <li>Change in land use</li> <li>Increase in availability of water access lots. There are approx. 1,330 water access lots in Franklin County and approx. 250 in Moore County.</li> </ul>	881 acres allocated for Sensitive Resource Protection. Up to 2,821 acres of undeveloped land could be considered for development. 1,673 new water front lots could be built.	881 acres allocated for Sensitive Resource Protection. 1,174 acres of undeveloped land could be considered for development. 459 new water front lots could be built.	881 acres allocated for Sensitive Resource Protection. 1,494 acres of undeveloped land could be considered for development. 552 new water view lots could be built. Development of Zone 8 would increase impacts over those of Alternative B by opening additional shoreline to development of boat ramps and community water-use facilities. Additional water-use facilities in Zone 8 may facilitate further development on adjoining private lands.	881 acres allocated for Sensitive Resource Protection. 2,821 acres of undeveloped land could be considered for development. 1,673 new water front lots could be built.	881 acres allocated for Sensitive Resource Protection. No new development of water front lots.
Cultural Resources	Potential for activities to affect historic sites and structures.	TVA's obligation to Section 106 compliance of the National Historical Preservation Act (NHPA) will ensure preservation of historic properties eligible or potentially eligible for inclusion in the National Register of Historic Places (NRHP) located on these parcels. Cultural Resource surveys will be conducted on a case-by-case basis.	TVA's obligation to Section 106 compliance of the National Historical Preservation Act (NHPA) will ensure preservation of historic properties eligible or potentially eligible for inclusion in the NRHP located on these parcels. Future disposal or ground disturbance proposed at any parcels not examined during this survey will require an archaeological survey prior to any land transfer or ground disturbance.			No new development or ground disturbance is proposed, cultural resources on all parcels (surveyed or unsurveyed) would not be affected. A management and protection plan for these resources will be prepared by TVA pursuant to the requirements of NHPA and ARPA.

Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Recreation	Availability of recreational facilities	<ul style="list-style-type: none"> <li>Up to 297 acres available for new recreation.</li> <li>Lack of planning could result in haphazard development of recreational opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>297 acres available for new recreation.</li> <li>Parcels 11, 32, 76, 79, and 80 would provide substantial recreational opportunities in future.</li> </ul>	<ul style="list-style-type: none"> <li>297 acres available for new recreation.</li> <li>Parcels 11, 32, 76, 79, and 80 would provide substantial recreational opportunities in future.</li> <li>Increased number of personal watercraft. Statistics show that it could be 33% more than present conditions. It would also decrease the surface acreage per watercraft to 5.6.</li> </ul>	Although 297 acres are available for new recreation, the concentration of residential development would reduce Tims Ford Lake's value as a tourism resource.	The amount of acreage available for recreation purposes is approximately half of that available for recreation under Alternatives B and C. However, there are other tracts (3, 12, 19, 23, and 32) that are currently zoned for Natural Resource Conservation that could be used for passive recreational use.
Visual	Visual/Aesthetic/Scenic Quality	Unplanned development under this alternative may compromise the scenic quality of the Tims Ford Reservoir.	Because of increased residential and recreational development, the visual character of the reservoir would experience additional impacts. The potential exists to lose 20.4 miles of undeveloped shoreline.	Because of increased residential and recreational development, the visual character of the reservoir would experience additional impacts since the presence of lake users and associated infrastructure would be more noticeable.	55.1 miles of natural shoreline could potentially be changed by development. The general visual character of the reservoir would be impacted since the presence of lake users and associated infrastructure would be visually dominant.	Since large tracts of land would be protected under this alternative, this alternative will best preserve the scenic resource of the reservoir.

Resource	Potential Impacts	Alternatives				
		A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Air Quality	<ul style="list-style-type: none"> <li>• Fugitive dust from construction.</li> <li>• Emissions from industrial facilities.</li> </ul>	Residential and commercial development will have a slight impact on air quality. The Industrial/Commercial development proposed would not be major emission sources. Also, new and expending industrial sources are regulated under State permitting requirements. Impact on air quality will be below thresholds prescribed in the State ambient air quality and emission standards.			No new residential or commercial development.	
Floodplains	No impact on the 100-year floodplain.	None of the tracts in the project area are located in the 100-year floodplain. Any material placed between elevations 873 feet msl and 895 feet msl would be subject to the requirements of the TVA Flood Control Storage Loss Guideline. All development subject to flood damage will be located above the 500-year floodplain elevation.			No new development.	
Navigation	Potential for impacting navigational aids.	Construction of water-use facilities has the potential to impact navigational aids. Requests for such facilities within 50 feet of navigational aids would be reviewed by TVA in the Section 26a permitting process to ensure that the structures do not reduce the visibility of the signs.			No impact on navigation.	
Auto Traffic	Increase in traffic volume	Increases in traffic would be relatively small in the near term. However, as developments are evaluated on a case-by-case basis, the impacts could become as noticeable as the impacts of Alternatives B or C.	Although increases in traffic volume and flow would be noticeable, these changes would not be as pronounced as the changes for Alternative C.	Although increases in traffic volume and flow would be noticeable, these changes would not be as pronounced as the changes for Alternative C. Small increases in traffic could occur as compared to Alternative B due to the possibility of community facilities, but the traffic would be totally self-contained within the project area.	Greatest overall growth in traffic due to maximum development approach of this alternative. Increases on multilane State highways would be less noticeable than the increase on local roads, feeders, and connector routes. Some of the secondary roads will experience a large increase in volume with traffic flow subject to considerable variation and reduced freedom to maneuver.	Relatively small increase in traffic due to no additional development.

Resource	Potential Impacts	A No Action	B Balanced Land Development with Conservation	B1 Balanced Development with Conservation Partnership	C Maximum Land Development	D Maximum Land Conservation
Socioeconomics	Impact on local economy.	<p>This alternative could have a substantial impact on the local economy as parcels are approved for development on a case-by-case basis.</p> <p>Indirect impacts from increased economic activity due to recreational development.</p>	<p>This alternative could result in an increase in population in waterview lots of about 1,200 persons. Developments that are well-designed and marketed nationally would attract residents from other areas with substantial impacts to the local economy.</p> <p>Indirect impacts from increased economic activity due to recreational development.</p>	<p>This alternative could result in an increase in population in waterview lots of slightly less than the 1,200 persons likely under Alternative B. Developments that are well-designed and marketed nationally would attract residents from other areas with substantial impacts to the local economy.</p> <p>Indirect impacts from increased economic activity due to recreational development.</p>	<p>This alternative would have the greatest impact on the local economy. An increase in population of about 3,200 persons is expected from the development of waterview lots. Developments that are well designed and marketed nationally would attract residents from other areas. Indirect impacts from increased economic activity due to recreational development.</p>	<p>Indirect impacts from increased economic activity due to recreational development.</p>

## 2.4 THE PREFERRED ALTERNATIVE

Alternative B1, which strikes a balance between development and conservation, is the agencies' preferred Alternative in the Final EIS. It provides for a new zone involving partnerships for conservation that would result in the creation of wider shoreline buffers and more protection for water quality and riparian habitats. It also makes an allocation change that would result in additional lands at the lower area of the lake being dedicated to natural resource conservation.

Being mindful of the potential for development to impact sensitive resources, Alternative B1 sets aside parcels containing sensitive resources and habitats in the Sensitive Resource Protection and Natural Resource Conservation categories, thereby placing these lands beyond the reach of future developmental activity. Even for lands that were considered suitable for and capable of development, Alternative B1 adopts commitments that would further minimize the potential for adverse impacts to the environment. Moreover, the allocation of certain lands for development is consistent with sections 6 and 9 of Public Chapter 816. These sections urge TDEC to maintain lands that are not deemed suitable for development as natural habitats and to dispose of the remaining properties as expeditiously as practicable and lawful.

The allocations for Alternative B1, shown in Table 2.2-3, were used to prepare the proposed Final Tims Ford Land Management and Disposition Plan. The final Plan contains an explanation of the planning process, an overview of the reservoir's history and development, a description of each parcel, and maps of the land plan (Exhibit 1). The Land-Use Allocation Map can be found in the back of this document and shows the location of each parcel (see Appendix G for individual parcel zones). SMI categorization of the existing and proposed residential shoreline is listed in Table 2.4-1.

**Table 2.4-1 Residential Shoreline Categorization for the Preferred Alternative**

Category	Miles	Percent of total Tims Ford Shoreline.
Shoreline Protection	0	0
Residential Mitigation	33.0	12.0
Managed Residential	32.8	11.9

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This chapter describes the existing environment and environmental consequences on the lands of Tims Ford Reservoir potentially affected by the proposed action and the varying alternatives. These lands are separated into parcels according to their existing land use and/or the presence of sensitive resources. Parcel descriptions are found in the Tims Ford Land Management and Disposition Plan.

#### **3.1 GROUNDWATER AND GEOLOGY**

The potential for land allocations to alter groundwater levels, flow rates, and directions and therefore affect water supply was raised as an issue during the scoping period. In this section, the geologic setting influencing groundwater will be reviewed. This will be followed by an assessment of the potential effects of each alternative on groundwater.

##### **3.1.1 AFFECTED ENVIRONMENT**

The Tims Ford Project area is located on the boundary between the Highland Rim and Central (Nashville) Basin sections of the Interior Low Plateaus Physiographic Province. Each section is characterized by landform and geology. The Highland Rim is a nearly flat to gently rolling area at higher elevations than the Central Basin that is underlain by Mississippian age rocks. Much of Tims Ford Reservoir is in the Highland Rim. However, the lower ends of the reservoir are on the distinctive escarpment separating the Highland Rim and Central Basin. This area is notched and dissected by streams. Hence, the Central Basin is characterized by many knobs and hills. The Central Basin is primarily underlain by Ordovician limestones and occurs where the Elk River and its tributaries have eroded the overlying Mississippian rocks of the Highland Rim.

The northwestern part of the project area is occupied by a spur of the Highland Rim. This and other areas of the Highland Rim are capped by the St. Louis limestone or Warsaw formation at higher elevations. However, these rocks are generally only observed in weathered phases (Theis, 1936). The predominant cap-rock of the Highland Rim in this area is the cherty Fort Payne formation. In fact, the uppermost bedrock unit underlying all parcels within the project area is primarily the Fort Payne formation. Only a few scattered remnants of St. Louis limestone or the Warsaw formation occur within any of the parcels. The Fort Payne formation is underlain by the Chattanooga Shale which can be observed as thin layers in outcrops. Beneath the Chattanooga Shale several types of upper Ordovician rocks can be found (youngest to oldest): the Brassfield limestone, Sequatchie formation, Fernvale limestone, Leipers limestone, Catheys formation, Inman formation, and Bigby-Cannon limestone (Hardeman, 1966). The Bigby limestone is often located near the drainage level of the Elk River.

Deposits of gravel, sand, and silt are found in the floodplains and channels of Elk River and its tributaries. These deposits can range in thickness of a fraction of a foot to 33 feet. In some locations, terrace deposits, remnants of floodplain deposits from past erosional cycles, are draped over bedrock up to 190 feet above modern floodplains (Hart, 1985).

The principal aquifers of this region are limestone aquifers in rocks of Mississippian age. Precipitation is the primary source of recharge in the project area. Most of the precipitation becomes overland runoff to streams, but some percolates downward through soil to the underlying bedrock. Some water is stored in and also moves through the soil. In the consolidated rocks, however, most of the water moves through and is discharged from secondary openings such as joints, fractures, bedding planes, and solution openings. As a result, groundwater discharge from springs and seeps is common. The communities of Winchester, Cowan, and Estill Springs have historically relied on springs for their municipal supplies (Smith, 1962).

Within the Highland Rim districts of the study area, chert and limestone beds of the Fort Payne Formation are the principal aquifers. However, other aquifers also occur in the area and are composed mostly of chert left from the weathering of the Fort Payne Formation. Where thick and saturated, this chert rubble constitutes a productive local aquifer and can store large quantities of water that subsequently percolates slowly downward to recharge aquifers in the underlying consolidated rock.

Carbonate rocks of Devonian, Silurian, and Ordovician age, which are primarily limestone with some dolomite, are good aquifers in the Central Basin. The Ordovician rocks lie beneath Silurian, Devonian, and younger rocks on the perimeter of the areas. The carbonate-rock aquifers consist of almost pure limestone and minor dolomite and are interlaced with confining units of shale and shaley limestone. Where these aquifers occur at depth, they are usually separated from the Mississippian aquifers by a confining unit of Upper Devonian shale (e.g., Chattanooga Shale).

The occurrence and movement of groundwater in the limestone and dolomite aquifers in Devonian, Silurian, and Ordovician rocks are much like those in the Mississippian aquifers. However, dissolution is less advanced in these aquifers, and solution features such as caves, springs, and sinkholes are fewer than in the Mississippian aquifers. Groundwater in the limestone and dolomite aquifers is almost exclusively stored in and moves through solution openings. The distribution of solution openings is complex and difficult to map, but most openings are in the zone of dynamic freshwater circulation between land surface and depths approaching 197 to 394 feet below land surface.

At certain locations, especially in areas possessing a combination of high rock solubility and well-developed secondary porosity, bedrock fractures have been enlarged by dissolution, and karst features (e.g., caves, sinkholes, seeps, and springs) exist. At a local scale, accurate prediction of groundwater flow rates and directions for individual parcels is impossible due to the complexity of fracture drainage networks and the present lack of data. However, due to the topographic positions of parcels considered in the project lands, it is evident that the vast majority of groundwater underlying parcel sites ultimately discharges directly into the Tims Ford Reservoir or indirectly via tributaries.

Given the karst geology of the area, there are likely groundwater contamination problems within the Tims Ford area due to underground storage tanks, faulty septic systems, and industrial releases. Upstream of the reservoir, there has been past contamination of groundwater by the Arnold Engineering Development Center on Woods Reservoir. Neither TVA nor TDEC is aware of any groundwater problems from existing development in the area.

### **3.1.2 ENVIRONMENTAL CONSEQUENCES**

Potential impacts to groundwater in the vicinity of parcel sites may be generally divided into the following categories: (1) groundwater and surface water quality, and (2) groundwater levels, flow rates, and subsidence. Alteration of groundwater levels, flow rates, and directions can potentially impact domestic wells, streams, and springs used for water supplies. Although rare, changes of this type can produce subsidence or sinkhole collapse in areas underlain by carbonate rocks. In a broad sense, intensive development of project lands may increase the likelihood of contaminant releases to groundwater and surface water from ground-disturbing activities such as construction. While contaminant releases to groundwater are most likely to stem from industrial operations and wastewater treatment facilities, residential septic tank systems can result in groundwater quality impacts. Problems with groundwater quality could impact surface water if the septic tank systems are improperly designed, operated, or maintained. For instance, interpretation of color infrared photography by TVA (Springston, 1994) suggested that 13 percent of 371 septic systems visible from photographs of the Tims Ford Reservoir shoreline area exhibited distinctive moisture patterns while 17 percent of the 371 septic tanks visible indicated suspicious moisture patterns. Distinctive moisture patterns indicate a high probability of system failures or systems operating at capacity. Suspicious moisture patterns do not specifically indicate system failures; however the condition places the systems in a suspect category. Based on this photo interpretation, 13 percent of the interpreted sites were ranked as having a high probability of failure, and the results indicate that the impact to water quality of Tims Ford Reservoir from septic tank failure is marginal at best. The results do not warrant monitoring water quality along the shoreline. It is possible



that groundwater quality has been impacted by faulty septic tank systems in the area. Additional development would have to be carefully undertaken to avoid further groundwater impacts.

At upland parcel locations, soils may be sufficiently thick to afford some amount of groundwater protection from contaminants that might result from human activities (e.g., industrial releases, fuel spills, faulty septic tank systems). Where bedrock aquifers are overlain by thin soils and receive relatively direct recharge, these natural systems may not be able to handle such a contamination. This is especially true along the steep slopes bounding portions of Tims Ford Reservoir. However, the screening model used to select potential lands for future development eliminated lands with slopes greater than 15 percent from consideration, and current Division of Groundwater Protection, TDEC (GWP) rules for septic tank systems require at least 31 inches of soil.

Some quantity of a hypothetical contaminant entering the bedrock groundwater system adjacent to the reservoir might eventually be discharged to the reservoir. Potential contaminants of a transient nature might include fuels, oils, solvents used for operation and maintenance of construction vehicles and equipment, and spills of herbicides or pesticides. Potential contaminants that are generally found in the area include bacterial and household contaminants from improperly designed or operated wastewater treatment systems or septic tanks and undefined industrial releases.

The likelihood of occurrence of groundwater impacts can be minimized by careful monitoring, handling, and disposal of potential contaminants. Increased development and associated construction in the project area might also impact groundwater quality through changes in nutrient budgets, increased organic loadings, changes in mineral solute loads, pH changes, and dissolved oxygen (DO) changes. Because these types of impacts are usually associated with erosion from construction activities, their likelihood of occurrence increases with the intensity of development undertaken in the project area. Adherence to standards in the Shoreline Management Initiative (SMI) Record of Decision would help to protect the reservoir from erosion and contamination. Under SMI, no septic tanks would be allowed on TVA land fronting residential subdivisions, which for Tims Ford would be below the 895 foot contour. Further, TDEC and TVA have a letter of agreement (1974) that no septic tanks or lines will be allowed below the 890-foot contour for Tims Ford Reservoir.

Subsidence sometimes occurs due to changes in subsurface drainage patterns, groundwater elevations, and alteration of geologic formations. These changes may appear during or after construction as a result of excavation, filling, groundwater pumping, and foundation loading. A slight potential might also exist for altering groundwater flow rates to domestic wells, streams, and springs used for water supplies. Areas that are the most susceptible to these potential problems are generally underlain by soluble carbonate rocks and exhibit karst features. Because of the presence of karst features, development under any of the alternatives would require appropriate planning and design based upon a sound geotechnical investigation in order to avoid significant impacts to groundwater and surface water quality in the area.

Neither TDEC nor TVA is aware of any groundwater problems from existing development in the area. Due to TDEC's provisions for permitting wastewater systems, underground storage tanks, and Class V injection wells, it is unlikely there would be cumulative adverse groundwater impacts in the area as a result of the proposed action.

#### **Alternative A**

Under Alternative A, additional development of either a recreational or residential nature could occur on as much as 2,821 acres. This means that ultimately 44 percent of plannable project land or 20 percent of the shoreline miles could be developed for residential or recreational uses. The presence of karst features increases the potential for groundwater contamination from development under any of the alternatives. However, the likelihood of such contamination would be reduced through case-by-case reviews conducted by TDEC in reviewing applications for wastewater disposal.

#### **Alternative B**

A balance of development and conservation would afford enhanced groundwater protection in the project area due to the commitment of a sizeable area to conservation and protection. Approximately 69 percent

of project lands would be allocated to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation), all of which would tend to protect groundwater resources. The presence of karst features increases the potential for groundwater contamination from development under any of the alternatives. However, the likelihood of such contamination would be reduced by TDEC in case-by-case reviews of applications for wastewater disposal.

#### **Alternative B1**

As with Alternative B, the balance of development and conservation would afford enhanced groundwater protection in the project area due to the sizeable commitment of acreage to Sensitive Resource Protection and Natural Resource Conservation. Approximately 71 percent of project lands would be allocated to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation), all of which would tend to protect groundwater resources. The addition of Zone 8 is anticipated to assist in protection of the reservoir by increasing shoreline buffers. The reallocation of Parcel 14 to Zone 4 would reduce the potential for groundwater impacts from residential development.

#### **Alternative C**

Alternative C is likely to produce the greatest impact to groundwater resources of the project area, primarily due to extensive residential development of up to 40 percent of project lands. The likelihood of groundwater effects from development of project lands surrounding the reservoir, as well as cumulative effects from development of project lands added to other ongoing development, would increase with time under this alternative.

#### **Alternative D**

Under this alternative, current hydrogeologic conditions would remain relatively unchanged. The allocation of the majority of lands for conservation and protection would minimize groundwater impacts within the project area, causing the least impact of any of the alternatives.

## **3.2 SITE SOILS**

### **3.2.1 AFFECTED ENVIRONMENT**

The soils in the Tims Ford Project area occur within the physiographic division of the Highland Rim and Nashville Basin sections of the Interior Low Plateau Province. These soils of the area reflect their geologic origin. The area is underlain by sedimentary rocks that range from the basal Pennsylvanian age to the Upper Ordovician. On the Highland Rim, soils are formed from limestone, dolomite, sandstone, shale, and alluvium/colluvium. The soils are dominantly loamy but some, such as those derived from limestone and dolomite, are cherty and clayey. Soil thickness is highly variable but averages 39.4 feet on the Highland Rim (Moore, 1976). Permeability is expected to be less than 0.00012 feet per second (May, et al., 1983) for all soils other than alluvium/colluvium. Central Basin soils are derived from phosphatic limestone, cherty limestone, shale, and sediment. The soils are loamy, silty, clayey, and cherty. Although permeability is expected to fall within similar ranges as those of Highland Rim soils, the thickness of Central Basin soils averages 3.9 feet (Moore, 1976).

Of the total 28 mapped soil series which occur within the project area, the most prevalent classification of soil is in the Baxter series (Table 3.2-1). Baxter soils occur on about 45 percent of the total area located in Franklin County. This soil series is described as a well-drained soil which occupies the escarpment and the steeper slopes along drainage ways of the Highland Rim. It has formed under a deciduous forest cover and is underlain by cherty limestone. Chert fragments on the surface and in the plow layer interfere with tillage. The soil is strongly acidic and moderately well supplied with plant nutrients. Except in the thin surface layer, the content of organic matter is low. Run-off is rapid, but internal drainage is medium. The soil is permeable by plant roots, air, and moisture. The moisture-supplying capacity is fair. The undulating phases of this series are well suited to crops commonly grown in the area. It is moderately productive, but with proper management practices productivity can be increased.

The Bodine soil series occurs in about 25 percent of the total Franklin County project area. This excessively drained soil was derived from cherty limestone material. This soil is not suited to crops that

require tillage because it is cherty, steep, and of low water-supplying capacity and fertility. It is also poorly suited for pasture.

About 10 percent of the total Franklin County area has a Cumberland and Etowah mixed alluvium which is composed of chiefly limestone materials. These well-drained soils are on the old high stream terraces and on old terrace-like colluvial or local alluvial deposits that were left by the receding Cumberland Escarpment. They occur in small areas widely distributed over the Highland Rim section of the county. They were formed from materials that washed mainly from uplands underlain by limestone. Some sandy material from the Cumberland Plateau was intermixed. When these soils occur on the gently sloping areas, they are well suited to all of the common field crops. They are easily tilled and can be worked within a wide range of moisture conditions. Soil and plant nutrients are easily conserved.

**Table 3.2-1 Soil Series Occurring in the Franklin County Project Lands**

Soil Series	Parent material or parent rock <sup>1</sup>	Occurrence in Area <sup>2</sup>	
		Acres	Percent
Baxter	Residuum, cherty limestone	1,684	44.8
Bodine	Residuum, cherty limestone	936	24.9
Bruno	Alluvium, mainly sandstone material, some limestone	7	0.2
Cumberland and Etowah	Old mixed alluvium, chiefly limestone material	405	10.8
Cumberland	Old mixed alluvium, chiefly limestone material	82	2.2
Decatur	Residuum, high-grade limestone	1	<0.1
Dellrose	Creep material from cherty limestone, moderately phosphatic limestone influence	197	5.2
Dewey	Residuum from high-grade limestone	56	1.5
Dickson	Residuum, loess over cherty limestone	103	2.7
Emory	Colluvium or local alluvium, chiefly high grade limestone material	31	0.8
Ennis	Alluvium, chiefly cherty limestone material	2	<0.1
Greendale	Colluvium, chiefly cherty limestone material	5	0.1
Gullied land	A land type on which erosion has formed an intricate pattern of gullies on limestone material	15	0.4
Hermitage	Old colluvium, chiefly high-grade limestone material	3	0.1
Holston	Old mixed alluvium, chiefly sandstone and shale material	15	0.4
Humphreys	Alluvium, cherty limestone material	2	0.1
Huntington	Mixed alluvium, chiefly limestone and sandstone material	1	<0.1
Lindside	Alluvium, chiefly limestone and sandstones	4	0.1
Melvin	Alluvium, chiefly limestone material	4	0.1
Mimosa	Residuum, phosphatic clayey limestone material	8	0.2
Mimosa	Mines, pits, and dumps	37	1.0
Mountview	Residuum, loess over cherty limestone material	79	2.1
Riverwash	A land type consisting of stony gravelly and sandy alluvium	2	<0.1
Rockland	A land type that has numerous ledges and outcroppings of limestone	76	2.0
Sequatchie	Old mixed alluvium, chiefly sandstone, but some limestone	4	0.1
Waynesboro	Old mixed alluvium, chiefly sandstone, but some limestone	4	0.1

<sup>1</sup> - Source: USDA-SCS, 1958. Soil Survey of Franklin County, Tennessee

<sup>2</sup> - ArcInfo Soils Coverage. Jimmie J. Kelsoe. 1999.

The remaining 23 soil series occur in less than 20 percent of the total Franklin County area (Table 3.2-1). The complete description and acreage of the soil mapping units are listed in Appendix H, Table H-1. The soils in Parcel 24 and certain areas of Parcel 7 and 8 are not mapped on Moore County's soil survey. All other areas of the county have been mapped in this survey. The soil series which occur in the mapped areas are Dellrose, Bodine, Fullerton, Mimosa, and Barfield-Ashwood-Rock outcrop complex. Descriptions of these soils are listed in Appendix H, Table H-2.

The temperate and humid climate in Franklin and Moore Counties provides a long growing season and sufficient moisture to nearly all the common field crops. There is no distinct dry season, and crops such as fall-sown small grains and crimson clover seldom suffer from winter kill. The principal crops grown are corn, wheat, soybeans, crimson clover, lespedeza, and alfalfa.

Prime farmland soils, as defined by the USDA, are those that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. They have properties needed for the economic production of sustained high yields of crops. Prime farmland soils may presently be in use as crop land, pasture land, range land, forest land, or other uses, but cannot be urban or built-up land. The conversion of farmland and prime farmland soils to industrial and other non-agricultural uses essentially precludes farming the land in the foreseeable future. Recognizing the serious impacts on food and fiber production from such long-term land use trends, the Federal Farmland Protection Policy Act (FFPPA) was signed into law in 1981 (U.S.C.4201 at seq.). Regulations implementing the FFPPA were first promulgated in 1984 and then amended in 1994. (7 CFR Part 658).

There are a total of 21 soil mapping units in the project area classified as prime farmland soils. These soils occur on the gently rolling and undulating slopes of the area. The prime farmland soils occur on 540 acres. These prime farmland soils are of the Baxter, Cumberland / Etowah mixtures, Decatur, Dewey, Dickson, Emory, Fullerton, Greendale, Hermitage, Holston, Humphreys, Huntington, and Lindsie soil series. The most frequently occurring classification is the undulating phase of the Baxter series. The parcels 51, 53, 67, 70, 72, 76, 78, and 79 contain greater than 50 percent of the total acreage in prime farmland and 50 percent or more of that prime farmland is currently used for agriculture (see Table 3.2-2). TVA has completed a Farmland Conversion Impact Rating (Form AD 1006), with assistance from USDA-NRCS staff in Nashville, Tennessee, for those parcels where prime farmland is to be converted to non-agricultural land use.

Table 3.2-2 Parcels with Prime Farmland and Portions Currently Used for Agriculture

Parcel	Total Acres	Prime Farmland <sup>1</sup> (acres)	% Prime Farmland	Agriculture Land Use <sup>2</sup> (acres)	Existing Agriculture Licenses (acres)	Prime Farmland Used for Agriculture (acres)
7	157	4	3	48	60	3
12	80	16	20	17	10	10
13	24	1	4	9	--	--
14	119	14	12	27	32	4
15	199	13	7	15	--	1
19	46	9	20	7	10	4
26	140	9	6	4	8	2
27	61	9	15	31	--	4
31	176	2	1	87	88	1
36	204	21	10	64	--	10
37	377	21	6	89	8	1
39	46	14	30	14	3	8
41	462	34	7	52	39	17
42	366	70	19	93	141	28
43	83	10	12	15	--	5
44	58	20	34	39	30	17
46	111	8	7	41	36	6
47	8	1	13	1	--	1
51	49	29	59	37	25	24
53	30	22	73	0	--	--
63	81	16	20	11	23	11
67	15	11	71	26	30	19
70	4	3	62	8	8	5
72	5	4	86	13	5	11
75	112	9	8	31	37	4
76	132	76	58	62	63	47
78	13	13	100	13	10	13
79, 79A, 79B	85	48	56	58	4	34
80	26	4	15	6	6	2
81	19	7	37	12	10	3

<sup>1</sup> - ArcInfo Soils Coverage. TVA. Jimmie J. Kelsoe. 1999

<sup>2</sup> - ArcInfo Land-Use Coverage of the Tims Ford Project Area, TVA, RW Major. 1998.

### 3.2.2 ENVIRONMENTAL CONSEQUENCES

For evaluating the environmental consequences to prime farmland, those parcels with potential to be converted to non-agricultural land use were included for analysis. These parcels were allocated to either Zone 6 (Recreation) or Zone 7 (Residential Development/Access). Parcels 78 and 83 have a pre-existing land-use classification as Industrial/Commercial Development and were not included.

The criteria in Form AD 1006 ("Farmland Conversion Impact Rating"), were used in rating the value of the parcels for farmlands. This rating was done with the assistance of the USDA-NRCS staff. The rating is based on soil characteristics as well as site assessment criteria such as agricultural and urban infrastructure, support services, farm size, compatibility factors, on-farm investments, and potential farm production loss to the local community and county. Under the regulations implementing the FFPA, sites

receiving a score of 160 total or more must be given a higher level of consideration for protection. The scores and ratings for each alternative are listed in Table 3.2-3.

**Table 3.2-3 Comparison of Alternatives For Conversion Of Prime Farmland To Non-Agriculture Land Use**

Soil Classification	Alternative			
	A	B <sup>c</sup>	C	D
Prime Farmland Converted (acres)	--	248 <sup>a</sup> (240 <sup>b</sup> )	402 <sup>a</sup> (392 <sup>b</sup> )	139 <sup>a</sup> (23 <sup>b</sup> )
Land Evaluation Score	--	20	54	35
Site Assessment Score	--	56	56	49
Farmland Conversion Impact Rating (Form AD 1006)	--	76	110	84

<sup>a</sup> - Acreage in original parcel allocations which were used for the rating, AD 1006 (see Appendix H).

<sup>b</sup> - Acreage of prime farmland since modification of parcel allocations.

<sup>c</sup> - The farmland conversion impact rating for Alternative B1 would be approximately the same as Alternative B.

#### Alternative A

The amount of farmland converted to non-agricultural use would depend on the outcome of case-by-case reviews conducted by TVA and TDEC. For land to be allocated by TVA for non-agricultural use, the applications of the rating criteria using Form AD 1006 would be part of the NEPA review at that time.

#### Alternatives B, B1, C, and D

Under Alternative B, there are 14 parcels with potential to be converted to non-agricultural land-use areas which contain prime farmland soils (Table 3.2-4). Of the 240 acres of prime farmland in these parcels, about 62 percent is used currently for agriculture.

Under Alternative B1, the total acreage of prime farmland is 226 acres in 13 parcels that are allocated for Zone 6 or 7 (Table 3.2-5). Approximately 64 percent of this prime farmland is currently in agricultural use. Also, Alternative B1 includes 33 acres in parcels allocated for Zone 8. Probably about 20 percent of this acreage is prime farmland. This is the average percentage rate in the other parcels of the project which have the soils delineated and identified as prime farmland. Thus, Alternative B1 contains about 233 acres of prime farmland with potential to be directly impacted.

Under Alternative C, the total acreage of prime farmland is 392 acres allocated for Zone 6 or 7 (Table 3.2-6). Approximately 54 percent of this prime farmland is currently in agricultural use. Under Alternative D, the preservation alternative, there are 23 acres of prime farmland with the potential to be converted to non-agricultural land. About 20 percent of this land is currently being used for farmland (Table 3.2-7).

Changes were made in the allocation of parcels since Form AD 1006 (Table 3.2-3) was completed. All the alternatives have less prime farmland than was reported, and Alternative B1 has been added. Because the prime farmland for Alternative B1 is essentially the same as for Alternative B, and the total score for each alternative is much lower than the 160 threshold, these changes would not significantly change the rating of the prime farmland for either alternative.

**Table 3.2-4 Potential Conversion of Prime Farmland Soils for Alternative B**

Parcel	Zone	Total Acres	Prime Farmland <sup>1</sup> (acres)	% Prime Farmland	Agriculture Land Use <sup>2</sup> (acres)	Prime Farmland Used for Agriculture (acres)
7	7	157	4	3	48	3
12	6	80	16	20	17	10
14	7	119	14	12	27	4
19	6	46	9	20	7	4
27	6	61	9	15	31	4
31	7	176	2	1	87	1
36	7	204	21	10	64	10
46	7	111	8	7	41	6
51	7	49	29	59	37	24
76	6	132	76	57	62	47
79, 79A, 79B	6	85	48	56	58	34
80	6	26	4	15	6	2

<sup>1</sup> ArclInfo Soils Coverage. TVA. Jimmie J. Kelsoe. 1999

<sup>2</sup> ArclInfo Land-Use Coverage of the Tims Ford Project Area, TVA, RW Major. 1998.

**Table 3.2-5 Potential Conversion of Prime Farmland Soils for Alternative B1**

Parcel	Zone	Total Acres	Prime Farmland <sup>1</sup> (acres)	% Prime Farmland	Agriculture Land Use <sup>2</sup> (acres)	Prime Farmland Used for Agriculture (acres)
7	7	157	4	3	48	3
12	6	80	16	20	17	10
19	6	46	9	20	7	4
27	6	61	9	15	31	4
31	7	176	2	1	87	1
36	7	204	21	10	64	10
46	7	111	8	7	41	6
51	7	49	29	59	37	24
76	6	132	76	57	62	47
79, 79A, 79B	6	85	48	56	58	34
80	6	26	4	15	6	2

<sup>1</sup> ArclInfo Soils Coverage. TVA. Jimmie J. Kelsoe. 1999

<sup>2</sup> ArclInfo Land-Use Coverage of the Tims Ford Project Area, TVA, RW Major. 1998.

Implementation of Alternative C, which includes more prime farmland in Zone 7 than the other alternatives, would have the greatest potential to adversely impact prime farmland while the adoption of Alternative D would have the least. However, in direct impacts, the rating for each alternative is below the 160 score that is suggested as a level where further consideration for agricultural land protection be given. Based on this appraisal, the direct impact on farmlands is determined to be insignificant for any of the proposed action alternatives.

**Table 3.2-6 Potential Conversion of Prime Farmland Soils for Alternative C**

Parcel	Zone	Total Acres	Prime Farmland <sup>2</sup> (acres)	% Prime Farmland	Agriculture Land Use <sup>2</sup> (acres)	Prime Farmland Used for Agriculture (acres)
7	7	157	4	3	48	3
12	6	80	16	20	17	10
13	7	24	1	4	9	0
14	7	119	14	12	27	4
19	6	46	9	20	7	4
26	7	140	9	6	4	2
27	6	61	9	15	31	4
31	7	176	2	1	87	1
36	7	204	21	10	64	10
37	7	377	21	6	89	1
39	7	46	14	30	14	8
42	7	366	70	19	93	28
44	7	58	20	34	39	17
46	7	111	8	7	41	6
47	7	8	1	13	1	1
51	7	49	29	59	37	24
75	7	112	9	8	31	4
76	6	132	76	58	62	47
79, 79A, 79B	6	85	48	56	58	34
80	6	26	4	16	2	2
81	7	19	7	37	12	3

<sup>1</sup> - Arclnfo Soils Coverage. TVA. Jimmie J. Kelsoe. 1999

<sup>2</sup> - Arclnfo Land-Use Coverage of the Tims Ford Project Area, TVA, RW Major. 1998.

**Table 3.2-7 Potential Conversion of Prime Farmland Soils for Alternative D**

Parcel	Zone	Total Acres	Prime Farmland <sup>1</sup> (acres)	% Prime Farmland	Agriculture Land Use <sup>2</sup> (acres)	Prime Farmland Used for Agriculture (acres)
27	6	61	9	15	31	4
79	6	28	14	51	28	14

<sup>1</sup> - Arclnfo Soils Coverage. TVA. Jimmie J. Kelsoe. 1999

<sup>2</sup> - Arclnfo Land-Use Coverage of the Tims Ford Project Area, TVA, RW Major. 1998.

### Indirect Impacts

Development of the land around the reservoir, either residential or recreational, could potentially promote development in the surrounding area. Additional housing and commercial buildings could ultimately change the rural agricultural land use to more built-up land-use areas. This change has the potential of permanently converting prime farmland to non-agricultural land use because typically prime farmland has the best characteristics for building sites.

Based on population projection statistics (Section 3.12.4.1), growth for Moore and Franklin Counties is expected to increase about 10 percent for the next decade. Much of the potential growth that might occur in the area adjoining the project area would probably otherwise occur elsewhere in the counties; thus, on a regional scale the impacts to farmland would be insignificant.



Under Alternative B1, 51 parcels would be allocated to Zone 8. Thus, this would allow the development of community facilities and potentially the development of backlying properties into subdivisions. In order to assess indirect impacts on these backlying lands, a one-mile band surrounding the reservoir was identified which consists of 185,000 acres. Land-use data indicates that about 47 percent of this area is used for agriculture and about 39 percent is forest land which could be prime farmland (159,100 acres). 20 percent is the average percentage rate of prime farmland in the other parcels which have had the soils delineated and identified as prime farmland. Based on this 20 percent average, about 3,700 acres of land within this one-mile band could be prime farmland.

Two scales were used to assess impacts. One scale consisted of using the average size of all existing subdivisions around the reservoir; the average size was determined to be 50 acres. If each of the 51 parcels allocated to Zone 8 prompted development of a subdivision of at least 50 acres, then conceivably 2,550 acres could be converted to non-agricultural use. 510 of the 2,550 acres (20 percent) could be prime farmland. The second scale consisted of using the average of 50 acres of existing subdivisions per shoreline mile. Zone 8 could affect 9 miles of shoreline. Using this scale, we find that 450 acres could be impacted, and 20 percent (90 acres) of this land could be prime farmland. The results indicate a potential range of 90 to 510 acres of prime farmland that could be affected. This is an insignificant amount of acreage (less than one percent) within this one mile band; therefore, indirect impacts on prime farmland would be insignificant.

### **3.3 SURFACE WATER QUALITY**

#### **3.3.1 AFFECTED ENVIRONMENT**

The proposed project area lies within the Central Basin physiographic section of Tennessee. Tims Ford Reservoir is considered by the State to fully support designated uses. According to the EPA index of watershed health, the Upper Elk Watershed is generally in good condition, although the watershed is vulnerable to agricultural pollution and urban growth in the area. However, nutrient loads are currently affecting the reservoir. In addition, several tributaries have been adversely impacted. Woods Reservoir, upstream from Tims Ford, has been posted against catfish consumption due to high levels of PCBs in catfish flesh. The discharges from the dam at Woods Reservoir (Elk River Dam) are cold and low in DO (TDEC, 1996). Rock Creek, a tributary of Tims Ford, is impacted by a municipal sewage plant in Tullahoma and ongoing land development in the area. Dry Creek, another tributary, is impacted by siltation resulting from agriculture. One Tims Ford tributary, Boiling Fork Creek, is considered by TDEC to have regional significance for natural and scenic qualities, recreational boating, and recreational fishing. The Elk River has statewide significance for these categories and is considered as excellent to good fishery (TDEC, 1998).

Water quality parameters in the reservoir have been sampled since 1991 as part of TVA's Reservoir Vital Signs monitoring program. DO levels at the forebay (the area immediately behind the dam) in 1996 rated "poor." These levels, as in past years, were less than 2 milligrams per liter (mg/L) throughout most of the lower water column during the late summer (August-October), and at or near zero on the bottom from July through October. Chlorophyll levels (i.e., the amount of algae present), which are an indicator of primary productivity in the aquatic food chain, rated "good" at the forebay in 1996 and were higher than in any previous year. Sediment rating in 1996 was "fair" at the forebay where, as in previous years, elevated levels of nickel were found (TVA, 1997a).

Four sites were sampled ten times each for fecal coliform bacteria in 1996. Three of the sites (including the site at the Park), met bacteriological water quality criteria for water contact recreation. The swimming beach at Dry Creek had very high fecal coliform bacterial concentrations, likely due to the presence of high numbers of Canada geese (TVA, 1997a).

### 3.3.2 ENVIRONMENTAL CONSEQUENCES

Certain environmental and water quality problems are inherent due to the design of the reservoir. The impoundment slows the Elk River, causing it to drop its sediment load. At the same time, the broad expanse of water, compared to the original channel, causes temperature increases and promotes algae growth. The increased sediment load and temperature of the water drives oxygen levels down. These factors would affect water quality even if there were no development.

Faced with the water quality problems associated with reservoir design, environmental issues associated with development must be very carefully considered. The types of environmental consequences would be much the same for all listed alternatives, but the severity of these consequences can vary. The more development recommended by an alternative, the higher the potential for environmental problems. The main areas of concern are erosion and other environmental problems occurring during construction, pollution from improper operation or failure of wastewater treatment systems, and Nonpoint Source Pollution (NSP). TDEC has permitting and inspection rules in place that require wastewater treatment systems to be constructed and operated in such a manner that water quality should not be adversely affected. TDEC also has permitting rules in place that require control of storm water discharges from construction sites (see Appendix H for details on Tennessee's water pollution control regulations).

TDEC also issues Aquatic Resource Alteration Permits (ARAP) for any activity which involves the alteration of waters of the State. These may be issued as a general permit or individual permit. General ARAPs cover the following activities:

1. Construction of launching ramps
2. Alteration of wet weather conveyances
3. Minor road crossings
4. Utility line crossings
5. Bank stabilization
6. Sand and gravel dredging
7. Debris removal

Wastewater treatment systems can cause pollution either in the form of excessive nutrient loading, or fecal coliform bacteria if they are not properly designed, constructed, and maintained. Because wastewater treatment systems, including any future upgrades, must comply with all state requirements as defined in its NPDES permit, adverse water quality impacts would be minimized.

After development, improperly operated wastewater treatment systems and runoff from lawn fertilizer applications could increase nutrient loading on the reservoir. Higher nutrient levels would lead to increased primary production (algae growth). As algae populations die, their decomposition in deep waters of the reservoir would further eliminate an already exhausted oxygen supply during summer months. Continuous increases of nutrient loads in the reservoir would continue to impair the reservoir, which based on TVA's monitoring activities, is already considered to be in poor condition (TVA, 1988, 1994, 1995, 1996, 1997, 1998). Tracts designated as zones 2, 3, and 4 provide the best buffer between the reservoir and backlying areas where increased soil erosion runoff and nutrient loading would likely originate. Erosion and nutrient runoff would be expected to be higher from tracts designated as Zones 5, 6, and 7, where soil disturbance, runoff from paved surfaces, and nutrient sources would be located adjacent to the reservoir. Zone 8 provides landowners the incentive of gaining water access. In turn, such a zone creates a wider strip of shoreline to serve as a buffer, thereby promoting environmental protection.

Much of the data relating NPS to water quality is collected as part of the Clean Water Act (CWA). The CWA requires EPA to report to Congress every 2 years in the *National Water Quality Inventory: Report to Congress*. It was reported in 1996 that nutrients and metals are the most widespread pollutants impacting surveyed reservoirs, followed by siltation, oxygen-depleting substances, and noxious aquatic plants. Reservoirs are especially susceptible to nutrient over-enrichment and the accumulation of other pollutants (such as metals), because they retain their contents for long periods of time. Nutrient over-enrichment

can initiate a chain of impacts that includes algal blooms, low dissolved oxygen conditions, fish kills, foul odors, and excessive aquatic weed growth that can interfere with recreational activities. Agriculture is the most widespread source of pollutants impairing surveyed reservoirs, followed by unspecified nonpoint sources, atmospheric deposition, urban runoff and storm sewers, and municipal sewage treatment plants. Agricultural fertilizers and manure from animal operations can be a major source of nutrients.

### **Conclusion**

Alternative B and B1 designate a substantial acreage of the land on the Tims Ford Reservoir to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation) categories. Designated types of development would be allowed in Zones 5, 6, and 7 which could increase the potential for adverse water quality impacts. Given the rules and regulations governing site disturbance and wastewater treatment, the additional protective measures for residential development in SMI, and the limited extent of development allowed, water quality in Tims Ford Reservoir is unlikely to be significantly degraded. Alternative B1 also adds parcels for Zone 8 (Conservation Partnership). The goal of the conservation partnership zone is to create a minimum 100-foot buffer in these areas in return for gaining water access for community water-use facilities. During the site specific review of each Section 26a application for a water-use facility, the slope, vegetation, soils and adjacent land use would be evaluated to determine the appropriateness of locating a facility at the proposed location and the specific conditions of the conservation partnership easement. This alternative could encourage more development on the adjoining private property which could have negative impacts on water quality in the area due to runoff from nearby parking lots and gas and oil from the bilge of boats using the ramp and community water-use facilities. Widening of the buffer zones would provide more protection from potential soil erosion and reduce the runoff of fertilizers and other pollutants from residential lawns. Because parking lots are not allowed within the buffer area, impacts associated with parking lot runoff have been reduced. In comparison with Alternative B, Alternative B1 is expected to provide greater protection to water quality in light of the expected conservation partnerships.

In general terms, Alternative C has the most potential for water quality impacts because it would allow the most development of lands surrounding the reservoir, with the primary emphasis on residential development. Alternative C would result in the highest level of impacts related to erosion, chemical and nutrient runoff, and wastewater; it could degrade reservoir water quality conditions. Implementation of Alternative A would likely result in the next higher level of impacts because it does not establish a clear path for land management or disposition and does not designate parcels primarily for natural resource conservation. Adoption of Alternative D would likely result in minimal impacts to reservoir water quality because no new development would be allowed. Maintenance of a relatively undisturbed shoreline would provide the least potential for impacts resulting from erosion, chemical and nutrient runoff, and wastewater treatment systems.

## **3.4 AQUATIC ECOLOGY**

### **3.4.1 AFFECTED ENVIRONMENT**

Tims Ford Reservoir has nine major tributaries in addition to the Elk River and several smaller tributaries. The tributaries are shown in Table 3.4-1.

The reservoir is located in the Highland Rim Providence of central Tennessee. The Highland Rim is a giant crater-like geologic structure in central Tennessee, extending north into Kentucky and south into Alabama. The Highland Rim is composed primarily of limestone, chert, and some shales. Streams in this region are characterized by coarse 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. The Highland Rim, because of its geologic complexity and numerous semi-independent drainage systems, harbors the most diverse fish fauna of any region of comparable size in North America (Etnier and Starnes, 1993). Observation of aquatic habitat and substrate types was greatly enhanced by an extreme drawdown in 1998 which was necessary because of a leak in the reservoir rim near the dam. Most of the reservoir's embayments exhibit steep banks with gravel and cobble substrate. Some have steep banks on one shore, while the other is relatively flat with sand and silt substrate. Rock

Creek exhibited gradual slopes with sand and silt substrate and with scattered patches of gravel and cobble. Shoreline areas that have not been impacted by commercial and residential development have wide (more than 18 meters) buffer zones with mostly thick mixed hardwood and shrub canopy. A very small percentage (5 percent or less) of Tims Ford shoreline has been impacted by dredging. Shoreline erosion is severe in some areas where there is heavy wave action resulting from winds and boat traffic. Erosion ranging from minor to severe probably affects more than 30 percent of the reservoir.

**Table 3.4-1 Major and Minor Tributaries of Tims Ford Reservoir**

Major Tributaries	Minor Tributaries
Lost Creek	Anderson Branch
Hurricane Creek	Anderton Branch
Little Hurricane Creek	Winchester Springs Branch
Rock Creek	Wiseman Branch
Taylor Creek	Matthew Branch
Boiling Creek	
Town Creek	
Kitchens Creek	

Benthic (lake bottom) biological samples were taken in the reservoir forebay (the area of the reservoir nearest the dam) from 1994 through 1996 as part of TVA's Reservoir Vital Signs monitoring program. Sampling and data analysis based on seven parameters (eight parameters prior to 1995) identified a bottom community in the forebay that rated "poor" in all years due mainly to the presence of chironomids (midge larvae) and tubificid worms, a type of animal very tolerant of low DO levels. The likely cause of the consistently poor bottom community at the forebay is the very long water retention time (246 days in 1996), which allows water to stagnate and become devoid of DO near the reservoir bottom (TVA, 1995, 1996, 1997a).

The Reservoir Vital Signs monitoring program has also included annual fish sampling at Tims Ford since 1992. Compared to similar tributary reservoirs, the forebay fish assemblage has rated "fair" or "good" each year through 1998 based primarily on fish species diversity and composition. Compared to similar tributary reservoirs, the forebay fish assemblage has rated "fair" or "good" each year through 1998. The fish assemblage at the mid-reservoir station has rated "good" in all years except 1993 when it rated "excellent." These generally good ratings are based primarily on fish species diversity and composition. Also considered in the rating is the percentage of sample represented by omnivores and insectivores, overall number of fish collected, and the occurrence of fish with anomalies such as diseases, lesions, parasites, deformities, etc. (TVA, 1996, 1997, 1999). A total of 30 fish species, including the hybrid saugeye, were collected in the fall 1996 electrofishing and gill netting sample at the forebay and transition zone. More abundant species were bluegill, carp, yellow bass, gizzard shad, spotfin shiner, and walleye (TVA, 1999).

TWRA studies have found that since 1990, both largemouth and smallmouth bass at Tims Ford have shown increases in numbers caught, probably due to the implementation of a minimum size limit in 1990. Crappie populations remain low and often are composed of only one dominant year class; walleye populations are at moderately low levels (TWRA, 1995a). Analysis of creel data indicates that the species most sought by sport anglers are largemouth bass and smallmouth bass. Higher percentages of fishing efforts were also seen for striped bass and crappie (TWRA, 1995a).

The overall ecological health rating for Tims Ford Reservoir in 1998 sampling was "poor." The overall rating was comprised of measurements of chlorophyll (i.e., primary productivity), dissolved oxygen, fish, benthic animals, and sediment quality. Sediment quality rated fair at the forebay and the mid-reservoir sites. Elevated levels of nickel were again found at the forebay, while low levels of chlordane were detected in sediments at the mid-reservoir station. The overall ecological condition of Tims Ford Reservoir continues to progressively decline. Consistent problem areas are poor DO and benthic community conditions. The main reason for the lower overall reservoir rating in 1998 compared with 1996 was increased chlorophyll levels, which were the highest recorded at both sampling stations.

### **3.4.2 ENVIRONMENTAL CONSEQUENCES**

The potential for impacts to aquatic resources depends largely upon the amount of alteration to a natural shoreline condition that would occur under the various alternatives. These alterations include impacts to shoreline (riparian) vegetation, vegetation on backlying lots, and changes in land uses. Shoreline vegetation (particularly trees) provides shade, organic matter which is a food source for benthic macroinvertebrates, shoreline stabilization. Trees provide aquatic habitat (cover) as they fall into the reservoir. Shoreline vegetation and vegetation on backlying land provide a buffer zone which functions to filter pollutants from surface runoff while stabilizing erodible soils.

Preservation of a natural shoreline condition, to the extent possible, is particularly important on reservoirs such as Tims Ford. Shoreline development can greatly modify the physical characteristics of adjacent fish and aquatic invertebrate habitats, which can result in dramatic changes in the quality of the fish community. One of the most detrimental effects of shoreline development is the removal of riparian zone vegetation. Removal of this vegetation can result in loss of fish cover and shade (which elevates surface water temperatures). Fish spawning habitat, such as gravel and woody cover, can be rendered unsuitable by excessive siltation and erosion which can occur when riparian vegetation is cleared (TVA, 1999a).

#### **Alternative A**

Under Alternative A, 31 miles of shoreline would be allocated to Zone 3 (Sensitive Resource Management) and 82.6 miles of shoreline would be allocated to Zone 4 (Natural Resource Conservation). This alternative allocates less shoreline miles to these zones than Alternatives B or D. Sensitive resource management and natural resource conservation activities may be undertaken as a secondary consideration on some tracts forecasted for various uses (such as public recreation), but may not be a primary consideration when land-use decisions affecting those tracts are made. This alternative would allow residential developments (with associated impacts) on project lands to potentially continue at higher levels than Alternative B. Based on the length of shoreline available for development, overall aquatic impacts under Alternative A would likely be similar to Alternative C and higher than Alternative B (depending on the extent of future residential development under the various alternatives).

#### **Alternative B**

Under Alternative B, natural resource protection and conservation activities would be an important factor in deciding the type and degree of shoreline development. There would be 31 miles of shoreline in the sensitive resource protection category and 117.3 miles of shoreline in the natural resource conservation category. This would afford protection of sizable stretches of littoral (near shore) aquatic habitat which is the most productive region of a reservoir. Important fish species utilize such shorelines because of their spawning requirements, submerged cover (i.e., rocks, logs, brush, etc.), and the availability of aquatic invertebrates and small fish as a food source. Only Alternative D would allow less residential use of shoreline. Although any development of the shoreline could potentially impact aquatic ecology, selection of Alternative B would likely result in insignificant impacts to aquatic resources.

#### **Alternative B1**

Under Alternative B1, Balanced Land Development with Conservation Partnership, the buffers in Zone 8 would be wider due to partnerships with adjacent landowners. This alternative could encourage more development on the backlying lands and it could open the shoreline for development of community water-use facilities, boat ramps, and similar facilities which could have negative impacts on water quality in the area due to runoff from nearby parking lots and gas and oil from the bilge of boats using the ramp and water-use facilities. The increase in turbidity and sedimentation resulting from erosion from these activities could negatively impact aquatic resources. Widening of the buffer zones would provide more protection from potential soil erosion and reduce the runoff of fertilizers and other pollutants from residential lawns. Because parking lots are not allowed within the buffer area, impacts associated with parking lot runoff have been reduced.

#### **Alternative C**

Adoption of Alternative C would result in the most potential for aquatic impacts. Alternative C affords protection of fewer miles of shoreline in the natural resource conservation zone (82.6 miles) than either

Alternative B or D and would allow the highest level of residential access. Construction of new homes with required sewage treatment facilities could create potential impacts to the aquatic community. Aquatic habitat in the littoral zone is influenced by backlying land use that causes the removal of trees and other vegetation and turbidity and sedimentation resulting from erosion from construction activities.

#### **Alternative D**

Under Alternative D, the shoreline would remain essentially unchanged with respect to aquatic community. Under this alternative, there would be little, if any, potential for additional impacts from soil disturbance resulting from residential construction, no potential water pollution from septic tanks, and no new industry with waste water discharges or associated alterations of littoral aquatic habitats.

#### **Summary**

Selection of Alternative D would best protect the aquatic community from future impact by restricting shoreline development to existing conditions. Alternative A and C would pose the greatest threat for aquatic impacts in that it would protect fewer miles of shoreline and would allow more residential development with the accompanying terrestrial disturbances. Alternatives B and B1 would allow more shoreline disturbances than Alternative D but would offer fewer miles of shoreline for residential development than A or C. Alternative B1 would allow the development of boat ramps and community facilities and could result in more residential development near Zone 8. This could have a negative impact on water quality and aquatic resources.

Although adoption of Alternative D would provide the most protection for the aquatic community, the health of the bottom (benthic) community of the reservoir will continue to be "poor" due to low Dissolved Oxygen (DO) levels resulting from the very long water retention time of the reservoir. Selection of any other alternative would add to the aquatic community problems by adding nutrients from fertilizers on lawns, failed sewage systems, and siltation from construction activities.

### **3.5 TERRESTRIAL ECOLOGY**

#### **3.5.1 AFFECTED ENVIRONMENT**

The Tims Ford Reservoir area typically contains forests comprised of oaks, hickories, maples, and elms. Species composition varies greatly because of differences in relief, soil fertility, moisture, and history of human disturbance. Tims Ford lies within Franklin and Moore Counties, with the largest portion occurring in Franklin County. Arnold Engineering Development Center (AEDC) and Woods Reservoir, under AEDC's control, are located upstream and northeast of the reservoir. Most of the lands located to the east and south of Tims Ford, extending to the Cumberland Plateau, are open and in agricultural production.

In general, Tims Ford Reservoir lands are characterized by steep forested slopes near the water (riparian zone) with managed open lands and residential development occurring on the flatter ridgetops. Rock outcrops are common on the steepest shoreline areas. Approximately 90 percent of the shoreline on Tims Ford Reservoir is forested. This forested zone varies in width, from a few feet to hundreds of feet, but is relatively contiguous except for areas that have been cleared fronting existing residential lots and scattered agricultural tracts. A variety of land-use patterns occur around the shoreline including public and private residential developments, developed recreational sites, one state park, unmanaged forest land, and managed agricultural land. Fifty-one public and private subdivisions and private licenses currently affect 52.4 miles of shoreline on Tims Ford Reservoir. Backlying private lands with low relief and tillable soils have been cleared of forest and are currently managed for pasture, hay, or row crop uses. Approximately 65-70 percent of the adjoining private lands within 0.25 miles of the reservoir are managed as open lands. Narrow bands of hardwoods occur within drainages, in small woodlots, and along fence rows, but no large contiguous forested tracts occur in close proximity to the reservoir.

The 6,453 plannable acres are represented by a mixture of forest types interspersed with managed open lands. Forested lands are dominated by hardwood types including upland hardwoods, upland hardwoods mixed with eastern red cedar, and bottomland hardwoods. Remaining forested lands are dominated by pure stands of eastern red cedar. Bottomland hardwoods and wetlands are both extremely rare on Tims

Ford Reservoir, occurring primarily within parcel 63. This parcel has been identified as one of the most ecologically significant areas on the reservoir. Upland hardwoods are dominated by oaks (white, black, scarlet, and chestnut), blackgum, sourwood, and hickory. Beech, sugar maple, basswood, and yellow poplar are common on more mesic sites. Bottomland hardwoods are dominated by box elder, sycamore, river birch, and hop hornbeam. Large mature deciduous forests are rare on Tims Ford and occur primarily in areas that were too steep to easily log or develop. In general, forested lands occur along the shoreline and represent what is known as the riparian zone. Recent botanical surveys revealed that an exotic (i.e., non-native) plant, Nepal grass (*Microstegium viminum*), had invaded the herbaceous layer within many upland forest stands. Another exotic plant, sericea lespedeza (*Lespedeza cuneata*) grows commonly along much of the shoreline near the water. Many of the scenic, steep shoreline areas (many with rock outcrops) are dominated by shrubs including mountain laurel (*Kalmia latifolia*), hydrangea (*Hydrangea arborescens*), ninebark (*Physocarpus opulifolius*), Virginia willow (*Itea virginica*), and alder (*Alnus serrulata*).

Managed open lands and areas reverting to forests occur mainly on flatter ridgetops and on areas with more gentle relief. Open lands are dominated by fescue pasture and a small amount of corn and soybean row-crop land. The remainder is in maintained lawns fronting residential developments and abandoned reverting fields, dominated by broom sedge and eastern red cedars. TERDA administered 71 active agricultural licenses (1,141 acres) principally for hay and pasture usage. Domestic livestock grazing in adjoining forest lands is common and has impacted the quality of upland forests in some areas.

Natural resource inventories have identified a diversity of plant and animal life on Tims Ford Reservoir lands. This can be attributed to the diversity of ecological communities and topography. Mammals commonly found in these habitats include the gray squirrel, white-tailed deer, woodchuck, eastern cottontail rabbit, white-footed mouse, raccoon, opossum, and gray fox. Bird species using these habitats throughout the year include the eastern wild turkey, giant Canada goose, northern bobwhite quail, various woodpeckers, the eastern bluebird, song sparrow, brown thrasher, northern mockingbird, and the northern cardinal. Neotropical migrant birds include yellow-billed cuckoos, red-eyed vireos, yellow-throated warblers, and indigo buntings. Eastern box turtles, black rat snakes, and five-lined skinks are common reptile species utilizing these habitats. Many additional species known to utilize Project lands are listed by community type in Table H-3 in Appendix H. Plant and animal species listed as endangered, threatened, of special concern or in need of management occurring in the area are discussed in section 3.6.

According to the Tennessee Wildlife Resources Agency, lands around the Tims Ford Reservoir receive heavy hunting pressure for deer, turkey, and quail. Current habitat conditions provide excellent foraging and brood habitat for wild turkey populations but only fair populations and habitat for quail and rabbit. TWRA ranks Tims Ford land as excellent whitetailed deer habitat and reports good deer densities. Tims Ford Reservoir is not located within a major waterfowl flyway and does not receive significant migratory waterfowl use. A local population of resident Giant Canada Geese are present on the reservoir and have created past water quality and recreation concerns, especially around public-use areas.

### 3.5.1.1 UNCOMMON HABITATS/COMMUNITIES

The Tims Ford Lands Planning Parcels contain nine special habitat types, all of which contribute to the reservoir's biological and landscape diversity. These habitats are locally uncommon and each has attributes which add significantly to the reservoir's landscape diversity. The special habitat areas are marked on accompanying resource maps.

**Shale Barren (Parcel 37)** — The single occurrence of this habitat is located at the end of a very narrow peninsula on the east side of the Little Hurricane Creek embayment. Edges of the end of the peninsula consist of 5-foot high limestone outcrops topped with shale. The shale in the center of the barren is loose with no vegetation. The open barren occupies approximately 150 feet of the peninsula. Plant species of the open barren include St. John's Wort (*Hypericum gentianoides*), whitlow-wort (*Paronychia fastigiata*), three-awn grass (*Aristida longespica*), and blue curls (*Trichostema dichotomum*). Although no state-listed plant species occur here, this area represents a habitat unique to the general area.

**Extensive Wetlands (Parcel 63)** — This habitat, approximately 100 acres, is located downstream of the junction of Paynes Church Road and the Elk River. A large wetland complex encompasses temporarily and seasonally flooded areas in the Elk River floodplain north of Bethpage Road and seasonally and semi-permanently flooded areas in the reservoir south of Bethpage Road to River Mile 165. In the area south of Bethpage Road the wetland consists of an emergent marsh-open water complex dominated by soft rush (*Juncus effusus*), wool-grass (*Scirpus cyperinus*), black willow (*Salix nigra*), buttonbush (*Cephalanthus occidentalis*), boltonia (*Boltonia asteroides*), and mallow (*Hibiscus moscheutos*). A portion of the area was formerly mined for sand and gravel, but is now inundated and has converted to wetland. Although no state-listed plant species have been found here, this habitat provides foraging areas and potential nesting habitat for osprey (*Pandion haliaetus*), great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), double-crested cormorant (*Phalacrocorax auritus*), least bittern (*Ixobrychus exilis*), and king rail (*Rallus elegans*).

**Bottomland Hardwood Forest (Parcel 63)** — One large bottomland hardwood forest was found in the project area. The forest is located north of the Elk River, east of Paynes Church Road. This forest has a high diversity of plants and animals and contains many wetland areas. Species of trees found at this site include box elder (*Acer negundo*), sycamore (*Platanus occidentalis*), river birch (*Betula nigra*), and hop hornbeam (*Ostrya virginiana*). Stands of river cane (*Arundinaria gigantea*) occur in some areas, and sphagnum moss occurs infrequently. Herbaceous species include false nettle (*Boehmeria cylindrica*), trumpet creeper (*Campsis radicans*), triadenum (*Triadenum walteri*), river oats (*Chasmanthium latifolium*), and loosestrife (*Lysimachia nummularia*). Two state-listed plant species, spreading false-foxglove (*Aureolaria patula*) and southern rein-orchid (*Platanthera flava* var. *flava*), are found here. Spreading false-foxglove is found within 40 feet of the river, and the southern rein-orchid occurs in forested wetlands in several places. State-listed southeastern shrews (*Sorex longirostris*) and mole salamanders (*Ambystoma talpoideum*) were observed at two different sites at this tract. These forests contain many woodland depressions that are seasonally flooded (vernal ponds). Large breeding aggregations of woodland salamanders occur in these depressions during winter months. This habitat is rare on Tims Ford Reservoir, making these breeding sites regionally significant.

**Limestone Rock Outcrops (Parcels 20 and 63)** — Three limestone outcrops were found on Tims Ford Project lands. This community type, which provides habitat for a variety of plants and animals, is rare on Tims Ford Reservoir.

A large limestone outcrop is located adjacent to Hurricane Creek on Parcel 20 in a mid-aged, deciduous woodland. This rock outcrop represents suitable habitat for the Allegheny woodrat (*Neotoma magister*), eastern small-footed bats (*Myotis leibii*), and southeastern shrew.

A limestone ledge is located along the flowing section of the Elk River on Parcel 63. This ledge is quite extensive, ranging up to 10 feet in height. Shrubs growing on the ledge include hydrangea and Virginia sweet-spire (*Itea virginica*). Climbing hydrangea (*Decumara barbara*), a climbing vine, occurs here and was not observed elsewhere on Tims Ford Reservoir. The slope above this ledge is acidic and dominated by mountain laurel and yellow root (*Xanthorhiza simplicissima*). The state-listed species, spreading false-foxglove, was found on this ledge.

An area of flat, exposed limestone approximately 50 feet by 20 feet is also located on Parcel 63. This small site, located adjacent to the Elk River, is subject to occasional flooding. When the reservoir level is down, the area of exposed flat rock is much larger. It appears that this limestone habitat was larger prior to impoundment. The introduced species, sericea lespedeza, is common here. The coastal plain species mitreola (*Mitreola petiolata*) grows here and was not seen elsewhere on Tims Ford Reservoir. Mecardonia (*Mecardonia acuminata*) is common here. No state-listed plant species have been observed on this site.

**Little Blue Stem Opening (Parcel 76)** — This small, open area of less than an acre is located along the Matthew's Branch embayment. Little blue stem (*Schizachyrium scoparium*) dominates, with red cedars primarily restricted to the edges of the opening.



**Rocky Seepages (Parcels 15, 24, 26, 34, and 37)** — Extensive, rocky seepages were found at five locations on Tims Ford Reservoir Planning Parcels. These sites support unique and diverse plant and animal communities. These seepages are found within mid-age and mature woodlands, vary in slope, and continuously discharge water from fractured rock formations. The outcrops usually include both limestone and shale layers. One rocky seepage extends for about 100 feet along the reservoir shore. The other seepages are somewhat smaller. Jewel-weed (*Impatiens* sp.) is the characteristic plant of these areas with spice-bush (*Lindera benzoin*) often being present. A variety of bryophytes (mosses, liverworts), herbaceous plants, and woody plants occur at these sites. The exposed rock faces vary in wetness, generating a range of habitats for a diverse community of amphibians, small mammals, and invertebrates. These areas provide suitable habitat for four-toed salamanders (*Hemidactylium scutatum*), southeastern shrews and Allegheny woodrats. These sites are rare on Tims Ford Reservoir; however, similar habitats occur at nearby Short Springs State Natural Area.

**Shrub Communities (Parcels 41, 43, 47, and 75)** — The steepest shorelines, especially those with rock outcrops, are dominated by low-growing trees and shrubs including mountain laurel, hydrangea, ninebark, Virginia willow, and alder. These areas are quite scenic, particularly when the mountain laurel and hydrangea are blooming.

**Forested Riparian Corridors (Parcels 26, 34, 41, and 76)** — Riparian corridors are the interface between aquatic and terrestrial habitats. These areas are important habitats for a variety of animals. One corridor, found on Parcel 26 is located on an unnamed tributary of Turkey Creek. This corridor flows through a young- to mid-age deciduous woodland. The stream channel consists of exposed shale with a gravel/cobble substrate and includes a 15-foot high waterfall. Many moss-covered rotting logs line the banks. Both the vertical walls of the stream channel downstream of the falls and the sloped ridge immediately above the stream channel are similar in habitat description and diversity to the seepages described previously. A diverse community of amphibians, small mammals and invertebrates occupies these habitats. In addition, this wooded stream corridor is excellent foraging habitat for Indiana bats (*Myotis sodalis*), eastern big-eared bats (*Corynorhinus rafinesquii*), and eastern small-footed bats. A mid-age deciduous forest is located at the mouth of the unnamed tributary. This site holds moisture in the rich organic soil which creates cool, saturated conditions that provide habitat for species such as the four-toed salamander and southeastern shrew.

**Mature Deciduous Forest (Parcels 8, 14, 15, 24, 26, 33, 34, 37, 41, 42, 47, and 76)** — Much of the mid-age and mature deciduous forests remaining on Tims Ford Reservoir Lands Planning parcels are present only on sites that are too steep to easily log or develop. This type of habitat is extremely important to a variety of wildlife species. Large, uniform tracts of deciduous woodlands on Project land provide wintering habitat for bald eagles (*Haliaeetus leucocephalus*) and potential nesting habitat for bald eagles. Mature deciduous forests also provide important nesting sites for birds such as Cooper's hawks (*Accipiter cooperii*) and important travel corridors and nest sites for neotropical migratory birds. Older woodland sites often contain hollow trees such as American beech (*Fagus grandifolia*), as well as trees with sloughing bark including hickory (*Carya* sp.) and white oak (*Quercus alba*). These trees provide potential roosting habitat for many species of woodland bats, including the eastern big-eared bat, the eastern small-footed bat, and the endangered Indiana bat. Large stands of mature deciduous forests are rare on Tims Ford Reservoir, and the length of time necessary to regenerate these habitats makes protection of these forests critical. Most upland forested areas have been cleared or have been impacted by cattle. Historically this habitat type was wide-spread, but is now rarely encountered.

The state-listed plants and animals and uncommon habitats for the Tims Ford Lands Planning parcels are listed in Table H-4 (Appendix H).

### 3.5.1.2 SIGNIFICANT MANAGED AREAS

Mingo Swamp Wetland is approximately one mile south of parcel 41. It consists of two disjunct sections of land. Mingo Swamp is a large karst fen or swamp. It is managed by TWRA, Region II.

Tims Ford State Park is part of the original project land and is located within one mile of parcels 12, 14, 15, and 19. This park, owned and managed by the State of Tennessee, is geared toward fishing and water recreation. There are also biking and hiking trails.

Arnold Engineering Development Center (AEDC) Military Reservation is approximately one mile north of parcel 63. This large area is owned by the Department of Defense. Approximately 88 percent of the base is undeveloped and provides habitat for at least 68 species of plants or animals considered by the state or USFWS as endangered, threatened, or vulnerable.

### **3.5.2 ENVIRONMENTAL CONSEQUENCES**

Land-use practices, especially residential development, have already significantly altered the terrestrial ecological character of lands surrounding Tims Ford Reservoir. To date 1,493 acres of public lands have been sold for residential development (i.e., TERDA subdivisions). Large homes have been constructed and associated clearing activities for lawns, landscaping, views, road construction, and water-use facilities have affected approximately 35.3 miles of Tims Ford shoreline. An additional 17.1 miles of shoreline have been affected by the licensing of water-use facilities and associated vegetation clearing fronting private residential subdivisions. As a result, 52.4 miles of shoreline have been affected by residential development (19 percent of total shoreline). Clearing and alteration of shoreline vegetation can have direct impacts on both plant and animal species composition and abundance. Any alternative that includes additional residential development can negatively affect terrestrial ecology through:

1. Changes in species composition and structure of shoreline vegetation.
2. Increases in forest fragmentation and edge effects.
3. Increased human activity along shorelines.
4. Increased populations of predatory mammals and cowbird parasitism of nesting birds.
5. Reductions in lands available for natural resource conservation.
6. Reductions in the amount of public lands available for outdoor recreation opportunities.

#### **Alternative A**

Under this alternative, TVA and TDEC would manage their respective properties on a case-by-case basis. TVA would develop a land-use/land management plan for TVA-owned lands but it is unknown if TDEC would develop such a plan for lands under its control. Under Alternative A, rare terrestrial resources would be protected on 881 acres of project lands where sensitive resources have currently been identified to comply with state and federal laws. Also under this alternative, terrestrial resources would be protected on lands fronting existing residential development where sensitive resources have been identified to comply with TVA SMI commitments. Uncommon habitats and communities that do not contain sensitive species would not be protected under Alternative A. The 1,958 acres that did not meet "development criteria" would likely be managed similar to Zone 4 (Natural Resource Conservation). However, under this alternative, TVA and TDEC could consider requests for the use and disposition of 2,821 acres of land. The potential effects of this alternative would depend on the nature of land uses following the land disposition. Regardless, any development which results in significant changes in vegetative communities could negatively impact terrestrial resources.

#### **Alternative B**

This alternative calls for the disposition of 576 acres (13.8 shoreline miles) to Zone 6 (Recreation) and 938 acres (30.2 shoreline miles) to Zone 7 (Residential Development/Access). Potential impacts associated with recreational development resulting from Zone 6 allocations would depend on the nature and extent of that development. Recreation, including marinas, parking areas, cabins, campgrounds, and recreational vehicle (RV) parks, would have much greater potential impacts on terrestrial plant and animal communities than low-impact trail development and informal recreational use. By contrast, residential development (in Zone 7) would likely result in localized impacts to plant communities from clearing, construction, utility and infrastructure installation, and shoreline vegetation manipulation associated with water-use facilities. Additionally, most of the land meeting development criteria and allocated to Zone 7 has the highest natural resource management capability. These lands are currently in a combination of pasture/open lands, reverting fields, with scattered fence rows and woodlots. These uses create excellent

habitat for a variety of wildlife common to the area, including rabbits, quail, deer and turkey. These areas also have the greatest potential for active management because of the gentle relief and tillable soils.

TVA's SMI Vegetation Management Guidelines will be applied to all new residential development on Tims Ford reservoir. Implementation of these guidelines would reduce the impacts to wildlife and plant communities along the shoreline. Development and implementation of wildlife management plans on Zone 4 lands could reduce regional wildlife impacts associated with developmental activities, especially for game species. Under this alternative, all of the uncommon habitats/communities have been allocated to Zone 4 and would be protected. Terrestrial impacts associated with Alternative B would fall somewhere between alternatives C and D. Because most of the plant and animal communities affected are common in the area, the impacts of Alternative B are likely to be insignificant on a regional scale. However, when considered on a local scale, they may be significant.

### **Alternative B1**

This alternative allows for minor land reallocations within Zones 4, 6, and 7 and the creation of a new Zone 8 (Conservation Partnership), in response to public comments. In comparison to Alternative B, Zone 4 shoreline has been reduced from 117.3 miles to 110.4 miles, but the acreage has increased from 3,605 acres to 3,692 acres. Zone 7 shoreline miles and acreage was also reduced slightly from 30.2 miles and 938 acres under Alternative B to 28.2 miles and 821 acres under this alternative. Most of this change is a result of reallocating Parcel 14 from Zone 7 to Zone 4 as a result of further analysis prompted by public comments. This reallocation results in the conservation of 118.6 more acres and 2.5 more miles of shoreline. However, the creation of the new Zone 8 could encourage residential development on some adjoining private lands. This could result in locally significant terrestrial impacts due to loss of habitat; however, regional impacts on common species would likely be insignificant.

Alternative B1 allocates 9 miles of shoreline and 33 acres of land to Zone 8 (Conservation Partnership), based on established criteria (see Appendix E). In general, these lands are narrow shoreline properties less than 50 feet in width and greater than 100 feet in length between the 895-foot contour and the adjoining private land. TVA would consider community based facilities within this zone if adjoining landowners would partner with TVA in the creation and protection of a wider shoreline buffer zone. This alternative could encourage more development on the backlying lands which could have negative impacts on the terrestrial resources. Residential development on these private lands could also result in impacts to uncommon habitats/communities and species that could reside in these areas.

It is difficult to determine the amount of residential development and associated impacts that could occur as a result of Zone 8. Based on available information, the average acreage of backlying subdivisions is 34 acres. Additionally, the average acreage of all existing subdivisions per shoreline mile is 50 acres. The largest privately-developed subdivision covers 82.2 acres and the smallest 4.2 acres. As currently proposed, 51 parcels, consisting of nine shoreline miles have been allocated to Zone 8 which could support 58 community facilities under the proposed guidelines. Assuming a 34-acre private subdivision per Zone 8 parcel, conversion of approximately 1,734 acres of mixed open land and forest land to residential development could occur. A more conservative estimate, assumes a 50-acre per shoreline mile, and projects a conversion of approximately 450 acres that could occur. Although the creation of Zone 8 could facilitate some of this development, much of it could occur whether or not this land was allocated to Zone 8. Likewise some development has already occurred behind Zone 8 lands and is included in these estimated acreages.

Adjoining undeveloped lands are predominantly a mixture of open lands (hay, pasture, reverting fields) and hardwood forest (see Affected Environment description under section 3.5.1). Generally open land occurs along ridgetops and along gentle to moderate slopes. Forested lands typically occur on steeper slopes within drainage areas, along shoreline areas, and in scattered woodlots. These areas currently provide suitable habitat for a diverse assemblage of plant and animal species and are capable of supporting more wildlife than project lands because of habitat quality (better soils, more tillable land, gentle topography, etc.), quantity, and juxtaposition of the various habitat components. Species utilization of this habitat is described under Section 3.5.1.

There would be some minor loss of terrestrial habitat as a result of the construction of launching ramps and the establishment of 20-foot access corridors in Zone 8 parcels. These impacts would be minimized during the 26a review process by determining the appropriate size of community facilities not to exceed to 2,000 square feet, carefully selecting the location of the access corridor and facilities, and implementation of SMP measures.

### **Alternative C**

Under this alternative, essentially all lands suitable for development would be developed. The exception would be those areas having sensitive resources that are protected by state or federal laws. As discussed previously, potential impacts associated with disposition of lands under Zone 6 would depend on the type and level of recreation development that would occur. The impacts of residential development (in Zone 7) would be significantly greater than those occurring under Alternative B because an additional 1,647 acres of public land would be made available for residential development. Under Alternative C, a total of 2,585 acres of public land (64.9 shoreline miles) would be made available for residential use. Alteration of vegetation on 64.9 miles of shoreline, even under SMI guidelines, could result in significant changes to the abundance and richness of plant and animal species. None of the uncommon habitats/communities would be protected under this alternative.

### **Alternative D**

This alternative provides the greatest degree of protection and potential management for terrestrial species because no additional public land would be made available for residential development. The amount of land made available under Zone 6 (Recreation), would also be reduced. Adoption of this alternative would protect terrestrial species under Zone 3 lands where state- or federally-protected species occur and on all remaining lands allocated to Zone 4. Under this alternative, 881 acres would be allocated to Zone 3 (Sensitive Resource Protection) and 4,779 acres allocated to Zone 4 (Natural Resource Conservation). This alternative would benefit wildlife and plant communities by eliminating future residential and recreational development options on Tims Ford Lands. As a result, forested shoreline riparian zones would remain intact, and large upland tracts having a diversity of habitat types could be actively managed for wildlife and other natural resources to meet the growing demand for outdoor recreational experiences.

### **Summary**

Adoption of Alternative D would provide the greatest protection for terrestrial resources followed by Alternatives B, B1, A, and C. Alternative B is a compromise but has the potential to impact the terrestrial resources on 1,174 acres of public land and 20.4 miles of riparian shoreline. Impacts associated with Alternative B could be reduced by restricting home size and having stricter standards for vegetation management than are currently required under TVA SMI vegetation management guidelines. Impacts associated with development under any of the alternatives would likely be significant on a local and subregional scale, but at the regional landscape level would likely be insignificant, at least for commonly occurring species and habitats.

Potential impacts on planned lands under Alternative B1 are similar to those under Alternative B. The creation of the new Zone 8 would impact terrestrial resources and likely encourage residential development on some adjoining private lands. This could result in locally significant terrestrial impacts due to loss of habitat; however, regional impacts on common species would likely be insignificant. In order to reduce and/or minimize the impacts of Zone 8, several mitigative measures could be implemented. These would include increasing the width of the conservation partnership easement, implementing stronger vegetation management guidelines, and allowing fewer and smaller community facilities. Adoption of these mitigative measures would not prevent impacts on terrestrial resources, but may protect some unique or uncommon communities in a wider buffer zone. The key to protecting the integrity of the shoreline and obtaining support for a Zone 8 approach will be adequate enforcement of the conservation partnership easement provisions.

### 3.6 THREATENED AND ENDANGERED SPECIES (T&E)

#### 3.6.1 AFFECTED ENVIRONMENT

##### 3.6.1.1 TERRESTRIAL ANIMALS

The various types of plant communities found on Tims Ford Land Planning Parcels provide suitable habitat for a variety of federal- and state-listed terrestrial animals listed by the USFWS or State of Tennessee as endangered, threatened, or in need of management. These communities are quite diverse including habitats such as upland hardwoods, bottomland hardwoods, wetlands, open-field, and agricultural habitats. In addition, many parcels contain features such as seepages, woodland ponds, and rock outcrops that often provide unique habitats for many rare animals and plants. While not all of these rare species are officially listed, they and the unique habitats they occupy are important in maintaining the biodiversity of the Tims Ford area.

Prior to initiating surveys on Tims Ford Project lands, TVA Regional Natural Heritage Project databases and Tennessee Natural Heritage databases were reviewed to obtain records for federal- or state-listed terrestrial animals in the vicinity of Project lands adjacent to Tims Ford Reservoir. No records of listed terrestrial animals were reported from Tims Ford Reservoir Lands Planning Parcels. However, records of 18 listed terrestrial animal species were identified from Franklin and Moore Counties; these species, and their state and federal status, are listed in Table 3.6-1. Of these species, only the gray bat and the bald eagle were reported in the reservoir area.

**Table 3.6-1 Listed Terrestrial Animal Species Known from Franklin and Moore Counties**

Common Name	Scientific Name	State Status	Federal Status
Gray bat	<i>Myotis grisescens</i>	Endangered	Endangered
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered
Eastern big-eared bat	<i>Corynorhinus rafinesquii</i>	NMGT <sup>1</sup>	-
Allegheny woodrat	<i>Neotoma magister</i>	NMGT	-
Southeastern shrew	<i>Sorex longirostris</i>	NMGT	-
Smoky shrew	<i>Sorex fumeus</i>	NMGT	-
Bachman's sparrow	<i>Aimophila aestivalis</i>	Endangered	-
Sharp-shinned hawk	<i>Accipiter striatus</i>	NMGT	-
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NMGT	-
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Threatened <sup>2</sup>
Osprey	<i>Pandion Haliaeetus</i>	Threatened	Fairly Common
Least bittern	<i>Ixobrychus exilis</i>	NMGT	-
Northern pine snake	<i>Pituophis m. melanoleucus</i>	Threatened	-
Green anole	<i>Anolis carolinensis</i>	NMGT	-
Eastern slender glass lizard	<i>Ophisaurus attenuatus longicaudus</i>	NMGT	-
Tennessee cave salamander	<i>Gyrinophilus palleucus</i>	Threatened	-
Mole salamander	<i>Ambystoma talpoideum</i>	NMGT	-
Four-toed salamander	<i>Hemidactylium scutatum</i>	NMGT	-
Barking treefrog	<i>Hyla gratiosa</i>	NMGT	-

1: NMGT: Deemed in need of management by TWRA.

2: Proposed on July 6, 1999 for removal from List of Endangered and Threatened Wildlife.

Field investigations were initiated on parcels during the summer of 1998. Special emphasis was placed upon finding populations of federal- and state-listed animals on each parcel. Suitable habitat for two of the 18 species, the smoky shrew and the Tennessee cave salamander, does not occur on Tims Ford Reservoir Lands. Of the remaining 16 potentially occurring listed species, six were found during field surveys.

The southeastern shrew appears to occur in a variety of habitats at Tims Ford Reservoir. Specimens were captured at two sites at Parcel 63 (bottomland hardwood forest) and one site at parcel 44 (dry, open field). Southeastern shrew populations are not well understood and these occurrences are important. Suitable habitat for this species exists on several other parcels of Project lands.

Mole salamanders were found at two sites in Parcel 63. The many seasonally flooded woodland depressions in this bottomland hardwood forest provide critical breeding areas for this and many other woodland salamanders. Of all the parcels that were surveyed, only parcel 63 contained this type of habitat.

A few bald eagles are present during the winter on Tims Ford Reservoir. Bald eagles feed primarily on fish which they catch live or scavenge from the reservoir surface or shoreline areas with relatively low levels of human activity. Wintering birds usually roost on sheltered, wooded slopes near the reservoir. No eagles presently nest on Tims Ford. Suitable nesting habitat does exist on Tims Ford Project lands and it is possible that eagles will nest on Tims Ford in the future.

The osprey is a fairly common spring and fall migrant in the area, and much of the reservoir provides suitable feeding habitat. Suitable nesting habitat, in the form of large trees adjacent to the water, is also fairly common on Tims Ford Reservoir. However, no nesting records are known from this area. Ospreys are often fairly tolerant of human activity.

Great egrets, listed as in need of management in Tennessee, were observed foraging on several occasions in wetland areas of Parcel 63. Shoreline areas elsewhere on the reservoir also provide suitable foraging habitat. Suitable nesting habitat does exist on Tims Ford Project land; however, no nesting colonies are known to exist in the immediate vicinity. The nearest major heron colony is located at nearby Arnold Engineering and Development Center. Great egrets are not known to nest there.

Double-crested cormorants, listed as in need of management in Tennessee, were observed near Parcels 63 and 37. These birds were likely transients or non-breeding summer residents. None are known to nest on or near Tims Ford Reservoir. Cormorants are quite common in much of the southeast, especially during the winter, and its listing as in need of management in Tennessee is primarily intended to protect the few nesting colonies in the state.

Mist-net surveys were conducted for gray and Indiana bats at Parcel 63. The Elk River has a well-established riparian zone and long stretches of open water which are typically used as foraging areas by gray bats. The extensive bottomland hardwood forest on Parcel 63 contains numerous hollow trees and several areas with an open midstory, providing typical roosting and foraging areas for Indiana bats. These habitats represented the best suitable habitat for either species on the Tims Ford Lands Planning Parcels. To survey for gray and Indiana bats, TVA biologists placed nets over the Elk River and in the bottomland hardwood forest. Neither species was captured. However, eastern red bats (*Lasiurus borealis*) and eastern pipistrelles (*Pipistrellus subflavus*) were captured. These species are common in the southeast and are not listed by USFWS or the State of Tennessee.

Caves in the reservoir area were also examined for bats. Gray bats have been reported to roost in Pennington Cave during summer months. However, none were found during TVA surveys using harp traps and bat detectors in 1996, 1997, and 1998. The only bat species captured was the eastern pipistrelles. Pennington Cave and Devil's Den Cave were also surveyed during the winter of 1998 for hibernating populations of Indiana bats. No bats were found in either cave during surveys.

Although no gray bats or Indiana bats were captured during surveys, suitable habitat exists for these species on Tims Ford Reservoir. Gray bats from the nearby Woods Dam colony may forage over Tims Ford Reservoir. Due to the presence of many hollow trees in the bottomland hardwood forest in Parcel 63, small colonies of Indiana bats may exist there. Several smaller tracts of hardwood forests were also identified as potential roosting and foraging habitat for Indiana bats.

Except for the mole salamander and the southeastern shrew, no new populations of listed animal species were found. However, suitable habitat for these and other listed species exists on Tims Ford Lands Planning Parcels. These species, their federal and state status, and an indicator of the relative abundance of their suitable habitat are listed in Table 3.6-2.

**Table 3.6-2 State- and Federally-Listed Terrestrial Animal Species Potentially Present on Lands Planning Parcels Due to the Presence of Suitable Habitat**

Common Name	Scientific Name	State Status	Federal Status	Relative Abundance of Suitable Habitat
Gray bat	<i>Myotis grisescens</i>	Endangered	Endangered	Very Common <sup>1</sup>
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Common <sup>1</sup>
River otter	<i>Lutra canadensis</i>	Threatened	-	Very Common
Eastern big-eared bat	<i>Corynorhinus rafinesquii</i>	NMGT <sup>2</sup>	-	Common
Eastern small-footed bat	<i>Myotis leibii</i>	NMGT	-	Common
Allegheny woodrat	<i>Neotoma magister</i>	NMGT	-	Fairly Common
Meadow jumping mouse	<i>Zapus hudsonius</i>	NMGT	-	Fairly Common
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Threatened	Fairly Common
Bachman's sparrow	<i>Aimophila aestivalis</i>	Endangered	-	Common
Lark sparrow	<i>Chondestes grammacus</i>	Threatened	-	Rare
Bewick's wren	<i>Thryomanes bewickii bewickii</i>	Threatened	-	Common
Osprey	<i>Pandion haliaetus</i>	Threatened	-	Fairly Common
Great egret	<i>Casmerodius albus</i>	NMGT	-	Rare
Double-crested cormorant	<i>Phalacrocorax auritus</i>	NMGT	-	Fairly Common
Little blue heron	<i>Egretta caerulea</i>	NMGT	-	Rare
Snowy egret	<i>Egretta thula</i>	NMGT	-	Rare
Least bittern	<i>Ixobrychus exilis</i>	NMGT	-	Rare
King rail	<i>Rallus elegans</i>	NMGT	-	Rare
Cooper's hawk	<i>Accipiter cooperii</i>	NMGT	-	Very Common
Sharp-shinned hawk	<i>Accipiter striatus</i>	NMGT	-	Uncommon
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NMGT	-	Common
Common barn-owl	<i>Tyto alba</i>	NMGT	-	Fairly Common
Northern harrier	<i>Circus cyaneus</i>	NMGT	-	Fairly Common
Northern pine snake	<i>Pituophis m. melanoleucus</i>	Threatened	-	Rare
Eastern slender glass lizard	<i>Ophisaurus attenuatus longicaudus</i>	NMGT	-	Uncommon
Eastern hellbender	<i>Cryptobranchus a. alleganiensis</i>	NMGT	-	Rare
Four-toed salamander	<i>Hemidactylium scutatum</i>	NMGT	-	Common
Barking treefrog	<i>Hyla gratiosa</i>	NMGT	-	Rare

<sup>1</sup> - Refers only to suitable foraging habitat. Suitable roost/breeding habitat for the gray bat is rare, and for the Indiana bat, uncommon.

<sup>2</sup> - NMGT - Deemed in need of management by TWRA

### 3.6.1.2 AQUATIC ANIMALS

Prior to the construction of Tims Ford Reservoir, several kinds of freshwater mussels and, probably, some fishes now listed as endangered or threatened species on either the federal or state level lived in this reach of the Elk River (Isom, et al., 1973; Etnier and Starnes, 1993). These are listed in Table 3.6-3. The flowing-water habitats in which those species lived have been replaced with the standing-water habitats and, as a result, the listed species no longer occur in this area. A fish species considered in need of management in Tennessee, the flame chub (*Hemitrema flammea*), occurs in this region of the state and might exist in extremely small, spring-fed streams which persist in the project area.

A few of the endangered mussels in Table 3.6-3, as well as the boulder darter (*Etheostoma wapiti*), federally listed as endangered, survive in the Elk River downstream of Tims Ford Dam. None of these species occur within at least 15 river miles of the dam.

**Table 3.6-3 State- and Federally-Listed Aquatic Animal Species Historically Known from the Pool Area of Tims Ford Reservoir Prior to Reservoir Construction**

Common Name	Scientific Name	Habitat	State Status	Federal Status
Yellow-blossom pearlymussel	<i>Epioblasma florentina florentina</i> *	Sand & gravel shoals of small to large rivers	Endangered	Endangered
Turgid blossom pearlymussel	<i>Epioblasma turgidula</i> *	Sand & gravel shoals of small rivers	Endangered	Endangered
Shiny pigtoe	<i>Fusconaia cor</i>	Sand & gravel shoals of small to medium rivers	Endangered	Endangered
Fine-rayed pigtoe	<i>Fusconaia cuneolus</i>	Sand & gravel shoals of small to large rivers	Endangered	Endangered
Cumberland monkeyface	<i>Quadrula intermedia</i>	Sand & gravel shoals of medium to large rivers	Endangered	Endangered
Pale lilliput	<i>Toxolasma cylindrellus</i>	Shallow, sandy, gravelly areas in small tributary streams	Endangered	Endangered
Flame Chub	<i>Hemitrema flammea</i>	Small, spring-fed vegetated streams	NGMT**	-

\*Believed to be extinct

\*\* NMGT - Deemed in need of management by TWRA

### 3.6.1.3 PLANTS

Prior to the field inventory carried out as part of this land planning effort, no state or federally listed plants were known from project lands adjacent to the reservoir. Numerous listed species, however, have been reported from elsewhere in the Eastern Highland Rim physiographic province, including Moore and Franklin Counties. Listed plants known from the two project area counties are given in Table 3.6-4. This list was compiled from records in databases maintained by the TVA Regional Heritage Project and the Tennessee Natural Heritage Program. Franklin County has long been known for the presence of a large number of rare plants, most of which are concentrated in remnant grassland and/or savannah habitats northeast of the reservoir.



Table 3.6-4 State- and Federally-Listed Plants Known from Franklin and Moore Counties

Common Name	Scientific Name	State Status	Federal Status
Eggert's sunflower	<i>Helianthus eggertii</i>	Threatened	Threatened
Shinners' false-foxglove	<i>Agalinis pseudaphylla</i>	Endangered	-
Velvety sedge	<i>Carex vestita</i>	Endangered	-
Pink lady's-slipper	<i>Cypripedium acaule</i>	Endangered	-
Horse-tail spike-rush	<i>Eleocharis equisetoides</i>	Endangered	-
Southern lady's-slipper	<i>Cypripedium kentuckiense</i>	Endangered	-
White prairie-clover	<i>Dalea candida</i>	Endangered	-
Small's stonecrop	<i>Diamorpha smallii</i>	Endangered	-
Harper's fimbriatylis	<i>Fimbristylis perpusilla</i>	Endangered	-
Florida Hedge-hyssop	<i>Gratiola floridana</i>	Endangered	-
Ozark bunchflower	<i>Melanthium woodii</i>	Endangered	-
Smooth false gromwell	<i>Onosmodium molle</i> ssp. <i>Subsetosum</i>	Endangered	-
Dwarf sundew	<i>Drosera brevifolia</i>	Threatened	-
Pale purple-coneflower	<i>Echinacea pallida</i>	Threatened	-
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	Threatened	-
Canada lily	<i>Lilium canadense</i>	Threatened	-
Canby's lobelia	<i>Lobelia canbyi</i>	Threatened	-
Globe-fruited false-loosestrife	<i>Ludwigia sphaeocarpa</i>	Threatened	-
Broad-leaved Barbara's - buttons	<i>Marshallia trinervia</i>	Threatened	-
Cutleaf water-milfoil	<i>Myriophyllum pinnatum</i>	Threatened	-
Alabama snow-wreath	<i>Neviusia alabamensis</i>	Threatened	-
Prairie milkweed	<i>Asclepias hirtella</i>	Special Concern	-
American smoketree	<i>Cotinus obovatus</i>	Special Concern	-
Cluster fescue	<i>Festuca paradoxa</i>	Special Concern	-
Sharp-scaled mannagrass	<i>Glyceria acutiflora</i>	Special Concern	-
Goldenseal	<i>Hydrastis canadensis</i>	Special Concern	-
Ovate fiddleleaf	<i>Hydrolea ovata</i>	Special Concern	-
Mountain honeysuckle	<i>Lonicera dioica</i>	Special Concern	-
American ginseng	<i>Panax quinquefolius</i>	Special Concern	-

Field surveys on Project land for listed plants were conducted from July, 1998, through March, 1999. Prior to initiating these surveys, the habitat requirements for potentially occurring listed plants were reviewed, and botanists from the Tennessee Native Plant Society and Arnold Engineering and Development Center were also consulted.

A total of 12 occurrences of five state-listed species were found on six parcels in the study area. One other occurrence of a listed species was found along the reservoir at an existing subdivision. These findings are described in more detail below. No federally-listed plant species were found.

#### Listed Plant Species

Spreading false-foxglove (*Aureolaria patula*), state-listed as threatened and occurring in only four states, was found along both sides of the upper section of the reservoir in sandy soils and on rocky ledges. These occurrences in Parcel 63 are an important range extension of this species. A second site for this species was found on a cliff along the reservoir at an existing subdivision.

A single fruit-producing butternut (*Juglans cinerea*) was discovered on the reservoir shore on Parcel 78; this plant is listed by the state as threatened. Butternuts are declining throughout their range due to a disease, butternut canker. The single tree at the site produced nuts in 1998 but had many dead branches which may indicate the presence of butternut canker disease. There are also a few butternut trees on Tims Ford State Park land.

Southern rein-orchid (*Platanthera flava* var. *flava*), a plant of special concern in Tennessee, was found at three sites in a low forested wetland in parcel 63 at the upper end of the reservoir. About 500 plants grew at one of the sites.

American ginseng was identified in five parcels and may occur in additional areas of ungrazed bottomlands. Trade in American ginseng is federally controlled, and the Tennessee Division of Natural Heritage lists ginseng as of special concern due to potential for over-harvesting. State regulations prohibit ginseng harvesting from most state lands and require the landowner's permission to harvest ginseng from other lands. The presence of ginseng on Tims Ford lands was expected based on its occurrence in nearby areas.

Ramps (*Allium* sp.), listed as a special concern due to commercial exploitation, were found in several scattered clusters at one site in a moist, deciduous forest. The state list recognizes two species of ramps, *Allium burdickii* and *Allium tricoccum*. It is not known which species is found at the Tims Ford site, and both species are uncommon in the surrounding area.

### **3.6.2 ENVIRONMENTAL CONSEQUENCES**

During field inventories conducted to support this planning effort, populations of state-listed plant or animal species were found on six of the plan parcels. An additional state-listed plant population (spreading false foxglove) was found on a tract of land previously committed for residential access. This tract was placed in the Residential Mitigation category during the shoreline categorization process (see Section 2.1.1). The approval of any new water-use facility or vegetation management on TVA land at this site is therefore dependent on the avoidance or mitigation of potential impacts to the false foxglove. This is required regardless of which alternative is selected.

On Parcel 76, a locally significant presence of Little Bluestem is located along the embayment of Matthew Branch. Future uses of this parcel will be delineated through the TDEC's Strategic Management Plan for Tims Ford State Park. It is not likely that the TDEC state park management plan would significantly impact this species.

None of the alternatives would affect endangered fish or mussels, in part because they no longer exist in the area. In addition, no endangered fish or mussels occurring in the Elk River downstream of Tims Ford would be affected. The flame chub, listed as in need of management in Tennessee, may occur in small streams in the project area.

Under all alternatives, two of the tracts (15 and 63) supporting state-listed plants and permanent resident terrestrial animals would be allocated to Zone 3 (Sensitive Resource Management) or a similar preservation-oriented use. This would provide long-term habitat protection for populations of four listed plants, the southeastern shrew, and the mole salamander. It would also protect suitable habitat for some state-listed wetland birds and suitable summer roost and foraging habitat for the federally listed Indiana bat. However, the long-term viability of one of the listed plants (butternut) is questionable because of disease.

The alternatives differ greatly in their potential impacts on other listed species and suitable habitat for listed species. These differences are described below in more detail.

#### **Alternative A**

Under Alternative A, two parcels on which state-listed species reside, parcels 15 and 63, would be managed for protection sensitive resources. These two tracts, as well as some of the other tracts likely to be similarly managed, also provide suitable habitat for the bald eagle, the gray and Indiana bats, and

some state-listed species potentially living in the area. Portions of two other parcels supporting state-listed plants are likely to be managed for Natural Resource Conservation. Protection and, if necessary, active management of the listed plants would be a high priority on these two parcels. Two other parcels supporting state-listed species, parcels 24 and 44, would likely be designated for potential development.

Alternative A would provide for the protection and management of some populations of state-listed species. At least two populations of state-listed species could be impacted because of the projected allocation of their parcels to potential development. One of these species is listed because of concerns over excessive harvesting. The other species is fairly widespread, but poorly known. Other tracts likely to be developed provide suitable habitat for listed species. While this alternative would likely result in the loss of some suitable foraging habitat for federally-listed species, it would not likely have detrimental effects on their current populations. Future residential development of parcels would limit the future growth of populations of some listed species, and, through fragmentation, edge effects, and introduction of invasive exotic species, could affect some populations on sensitive resource management and natural resource conservation parcels. Compared to the other alternatives, Alternative A would likely result in the second highest level of impacts to listed plants and animals. These impacts would likely be insignificant and would not result in the loss of any species from the region. The regional population growth and recovery of some species, however, could be slower than under some other alternatives.

### **Alternative B**

Under Alternative B, two parcels on which state-listed species live, parcels 15 and 63, would be allocated for Zone 3 (Sensitive Resource Management). The other four parcels on which state-listed species live (8, 24, 37, 44) are allocated for Zone 4 (Natural Resource Conservation). Protection and, if necessary, active management of the listed plants would be a high priority on these four parcels. The six tracts on which state-listed species occur, as well as some of the other tracts allocated for Sensitive Resource Management and Natural Resource Conservation, also provide suitable habitat for the bald eagle, the gray and Indiana bats, and some state-listed species potentially residing in the area.

A few parcels (e.g., 14, 76) allocated for Recreation or Residential Development contain high quality forested habitats suitable for use by some sensitive species. Parcel 76 also contains other ecologically important plant communities. While it may be possible to develop portions of these tracts without directly impacting the important habitats, the long term viability of these habitats and species on the tracts would be uncertain.

While Alternative B would likely result in the loss of some suitable foraging habitat for federally listed species, it would not likely have detrimental effects on their current populations. Development of some of the parcels would limit the future growth of populations of some listed species, and, through fragmentation, edge effects, and introduction of invasive exotic species, could affect some populations on Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation) parcels. Compared to the other alternatives, Alternative B would likely result in the second lowest level of impacts to listed plants and animals. These impacts would, however, likely be insignificant and would not result in the loss of any species from the region.

### **Alternative B1**

Under Alternative B, two parcels on which state-listed species live, parcels 15 and 63, would be allocated for Zone 3 (Sensitive Resource Management). The other four parcels on which state-listed species live (8, 24, 37, 44) are allocated for Zone 4 (Natural Resource Conservation). Protection and, if necessary, active management of the listed plants would be a high priority on these four parcels. The six tracts on which state-listed species occur, as well as some of the other tracts allocated for Sensitive Resource Management and Natural Resource Conservation, also provide suitable habitat for the bald eagle, the gray and Indiana bats, and some state-listed species potentially residing in the area.

Under Alternative B1, Parcel 76 which is allocated for Recreation contains high quality forested habitats suitable for use by some sensitive species. Parcel 76 contains other ecologically important plant communities. While it may be possible to develop portions of this parcel without directly impacting the important habitats, the long term viability of these habitats and species on the tracts would be uncertain.

Alternative B1 also includes the new Zone 8 regarded as a conservation partnership zone. The concept to increase protection of these areas by increasing the buffer through acquisition of easements from private landowners is sound but could nonetheless have a potential indirect impact on the threatened and endangered species habitat on adjoining private lands that may be disturbed due to development. Increased buffers should improve water quality, decrease erosion, and enhance the fish habitat with proper management, but increases in wildlife is doubtful in a narrow strip targeted for use as a community water-use facility.

These zones and associated community water-use facilities (if permitted) present a complex set of problems and challenges in terms of management and oversight. To reach the stated goals of decreased erosion, improvements in water quality and habitat management will be required. If these zones are adjacent to open fields, planting and maintenance of cover types, targeted for these goals, will be required with over sight to limit and monitor activity within the conservation zones. Community water-use facilities placed adjacent to mature, forested lands provide public access and increase the likelihood of indirect impacts of development on adjoining lands. This development has the potential to impact unknown threatened and endangered species' habitat through disturbance. During each application for a community facility, a site-specific environmental review at the appropriate level would be conducted to include a review of indirect impacts on Threatened and Endangered species.

### **Alternative C**

Alternative C would allocate parcels containing state-listed species to the similar non-development categories as would likely occur under Alternative A. Parcels 15 and 63 would be allocated to Sensitive Resource Management, and portions of two other parcels, 8 and 37, would be allocated to Natural Resource Conservation. Protection and, if necessary, active management of the listed plants would be a high priority on these two parcels. The remainder of parcels 8 and 37, as well as two other parcels supporting state-listed species, parcels 24 and 44, would be allocated for Residential Development. The long-term survival of the listed species following residential development is unlikely. Some of the other tracts allocated for Sensitive Resource Management and Natural Resource Conservation also provide suitable habitat for the bald eagle, the gray and Indiana bats, and some state-listed species potentially residing in the area.

A few parcels (e.g., 14, 42, 76) allocated for Recreational or Residential Development contain high quality forested habitats suitable for use by some state- and federally- listed species. Parcel 76 also contains other ecologically important plant communities. While it may be possible to develop portions of these tracts without directly impacting the important habitats, their long term viability would be uncertain. Development of some parcels would also limit the future growth of populations of some listed species, and, through fragmentation, edge effects, and introduction of invasive exotic species, could affect some populations on Sensitive Resource Management and Natural Resource Conservation parcels.

Alternative C does protect some of the parcels providing suitable habitat for the federally listed bald eagle, gray bat, and Indiana bat; negative impacts on current populations of these species are unlikely. Several other parcels allocated to Residential Development also contain suitable habitat for these species and their development could slow the regional recovery of these species. Compared to the other alternatives, Alternative C would likely result in the highest level of impacts on listed plants and animals. A few local populations of state-listed species would likely be extirpated, resulting in locally significant impacts.

### **Alternative D**

Alternative D, in comparison to the other alternatives, would allocate the greatest area to Zone 3 (Sensitive Resource Management) and to Zone 4 (Natural Resource Conservation). All of the parcels on which populations of state-listed species are known to occur would be allocated to Sensitive Resource Management or Natural Resource Conservation, where protection and, if necessary, active management of listed species would be a high priority. Most of the tracts containing suitable habitat for state- and federally- listed species and all of the tracts identified as containing uncommon or unique habitats would remain undeveloped. Because of the limited area available for development, the detrimental impacts from fragmentation, edge effects, and introduction of invasive exotic species would be minimized, and, over the

long term, habitat fragmentation could be reduced from present levels. Alternative D would consequently result in the lowest level of negative impacts on listed species and would likely enhance the regional recovery of some species.

### **3.7 WETLANDS**

#### **3.7.1 AFFECTED ENVIRONMENT**

Executive Order 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 the Tennessee Water Quality Control Act of 1977.

Wetlands are defined under the U.S. Army Corps of Engineers' regulations implementing Section 404 of the CWA 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."

Identification of wetlands in the field followed the USACE (1987) criteria. The wetlands have been classified according to the system developed by Cowardin et al. (1979) for the classification of wetlands and deep-water habitats. The wetlands have also been classified according to their hydrogeomorphic (HGM) properties. The hydrogeomorphic classification groups together wetlands that have similar functions as a result of their geomorphic setting, water source, and hydrodynamics (Brinson 1993).

The wetlands identified in the Tims Ford land management parcels during the 1998-99 surveys are in the Palustrine system (P), the forested (FO), scrub-shrub (SS), and emergent (EM) subsystems. In the FO and SS 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) lands, although it is possible that other hydrologic regimes such as saturated (B) and semi-permanently flooded (F) lands occur, especially in parcel 63.

The HGM classes of wetlands in and adjacent to the Tims Ford Reservoir are riverine and lacustrine fringe. Riverine wetlands are located in a floodplain or riparian geomorphic setting. Lacustrine fringe wetlands occur on the shallow margins of reservoirs. The functions of lacustrine fringe wetlands 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. The functions of riverine wetlands include all of the above plus functions related to floodflow alterations.

The following is a brief description of the wetland functions identified along the Tims Ford Reservoir.

**Shoreline stabilization:** 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 in preserving those areas along the main shoreline subject to wave action from boat wakes 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 in preserving those areas in which 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. For instance, nitrate-nitrogen is assimilated by plants, and oil and grease may be eventually broken down by naturally-occurring microorganisms. However, the ability of wetlands to perform this function can be overwhelmed if the capacity of the wetland to retain or transform these contaminants is exceeded. This function should not be used as a substitute for controlling the contaminants at their source.

**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. Wetlands are also habitat for several of state- or federally-listed plant species that are unable to grow under non-wetland conditions.

**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 another wetland function, the export of organic carbon. Plant and other organic material produced in the wetland is exported out of the wetland to downstream consumers during flood events. The qualitative determination of actual or potential wetland function was based on wetland location, hydrologic regime, nearby land uses and disturbances, estimated size of the wetland, and vegetation density and community structure.

Wetlands were identified on 20 of the parcels (8, 15, 24, 26, 28-1, 31, 33, 37, 40, 41, 51, 53, 63, 67, 70, 72, 78, 79, 79A, and 80). With the exception of wetlands in parcel 63 north of Beth Page Road, most of the wetlands identified are located wholly or partially below the 895' contour. Information for each wetland identified during the field survey is presented in Table H-5 in Appendix H.

Excluding the large wetland complex on parcel 63, a total of 41 wetlands were identified. Three of these wetland areas are indicated on Table H-3 (Appendix H) in two sections each (8-2 and 8-3; 51-1 and 51-2; 53-1 and 53-2) to differentiate between the FO and SS portions of the wetland, but they are considered to be three contiguous wetland areas rather than six separate wetlands.

Thirty-five of the wetlands are lacustrine fringe wetlands located at the heads and sides of coves and stream embayments, and on the main reservoir shoreline. These wetlands include areas both within and above the normal summer pool elevation, and include 22 PSS1C; five PFO/SS1C; three PFO1C; one PFO1A, one PSS/EM1C; one PEM/SS1C; and two PEM1C wetlands on the main reservoir and cove shorelines or at cove heads. Two PFO1A wetlands were identified in stream riparian zones just upstream

of the mouth of the stream, but at a slightly higher elevation than normal summer pool. The dominant vegetation species in scrub-shrub and emergent wetlands include black willow, sycamore, buttonbush, alder, water willow (*Justicia americana*), soft rush, and woolgrass. Common species in the forested wetlands include green ash (*Fraxinus pennsylvanica*), hackberry (*Celtis occidentalis*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and box elder.

Six of the wetlands identified during the current survey are small patches of water willow (37-1; 37-3; 37-4; 37-5; 41-2; 41-6; 42-2) that are completely within the summer pool of the reservoir. These non-persistent emergent wetlands are very small, ranging from approximately 0.01 to 0.07 acres, and occur near the shoreline of coves. At winter pool, there may be little or no evidence of these wetlands.

Wetlands in parcels 8, 24, 26, 28-1, 31, 37, 40, 41, 51, 53, 63, 67, 70, 72, and 80 were considered functionally significant (Table H-3). These wetlands were considered to perform, or potentially perform, a number of functions that are important for the maintenance or improvement of water quality, the stabilization of the reservoir shoreline, and the preservation of wildlife habitat. These wetlands include the linear wetlands along the shoreline and in coves and wetlands in or adjacent to disturbed areas. These functionally significant wetlands are referred to as "Category 1" wetlands in subsequent discussions.

Even though many of the wetlands were not considered to be "functionally significant" due to their small size, impacts to these wetlands could result in cumulative wetland impacts in the watershed or localized effects to other resources (i.e., loss of habitat) and, thus, should be avoided or minimized. Such wetland areas were characterized as "Category 2" wetlands for analysis purposes.

All of the wetlands, whether determined for management purposes to be functionally significant or not, would be protected from most direct impacts through compliance with federal mandates and legal requirements for wetlands protection.

A brief description of the functionally significant wetlands and their functions follows. The first number is the parcel number and the second number is the wetland number (i.e., 41-5 is wetland 5 on parcel 41). Parcel 63 contains a large wetland complex and is discussed separately following the other Category 1 wetland descriptions.

**Wetlands 8-2 and 8-3:** Wetland 8-2 is a PFO1C wetland at the mouth of Lost Creek where the stream enters the embayment. This part of the wetland merges into a small PFO1A wetland (8-3) in the riparian zone of Lost Creek. Adjacent to the wetland is a dirt access road that slopes down to the stream area from a nearby paved road. Functions include wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal. The estimated size of the wetland area is approximately 1 acre.

**Wetland 24-1:** This long, fringe, PFO/SS1C wetland is located on the sides and at the head of the Tankersley Branch cove. The estimated size of the wetland is 1.2 acres. Functions include shoreline stabilization, wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal.

**Wetland 26-1:** This long PSS1C wetland is located both at the head and along the shoreline of the cove. The estimated size of the wetland is 1.6 acres. Functions include shoreline stabilization, wildlife habitat, plant species and community diversity, and sediment retention.

**Wetland 28-1-1:** A long, narrow, fringe of PSS1C wetland is on the shoreline of Gourdneck Hollow cove. There is a pasture on the landward side. The wetland abuts an old road or boat launch. The estimated size of this wetland is 0.4 acres. Functions include shoreline stabilization, sediment retention, contaminant removal, plant species and community diversity, and wildlife habitat.

**Wetland 31-1:** This is a PSS1C wetland that encircles the head of a cove. There is steep-sided cattle pasture on one side of the wetland, but it appeared that the cattle were fenced out of the cove. The

estimated size of this wetland is 0.2 acres. Functions include shoreline stabilization, wildlife habitat, sediment retention, and contaminant removal.

**Wetland 37-2:** This is a highly disturbed emergent wetland at the head of a cove. The wetland is located in and on the edge of the water. The land is used as pasture down to the edge of the water and cattle have unrestricted access to the water. Grazing and trampling appear to have had a large impact on the vegetation, resulting in fewer plant species and fewer individual plants. The estimated size of the wetland is 0.2 acres. The functions of an undisturbed wetland in the same location would likely include shoreline stabilization, sediment retention, contaminant removal, plant species and community diversity, and wildlife habitat. These functions are currently diminished because of cattle access to the water and wetland. This wetland was, however, placed in Category 1 because it is very likely that its vegetative structure and functions could be restored and improved if the disturbance (the cattle) were fenced out of the water and shoreline area.

**Wetland 40-1:** This fringe, PFO/SS1C wetland is located around the edges of an embayment at and between where two streams enter. It is in a small area of the Winchester Springs Branch embayment on the upstream side of Route 130. The estimated size of the wetland area is 1.0 acre. Functions include wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal.

**Wetland 41-1:** This is a PEM/SS1C wetland on an alluvial bench on the side of a cove and around the head of the cove. The estimated size of this wetland is 1.1 acres. Functions include wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal.

**Wetland 41-5:** This is a wide PSS1C wetland at the head of a cove. It may grade into a forested wetland above the cove head. Dominant species include black willow, sweetgum, sycamore, river birch, silky dogwood (*Cornus amomum*), soft rush, and sedges (*Carex* sp., *Scirpus* sp.). The estimated size is 1.2 acres. Important functions are wildlife habitat, shoreline stabilization, sediment retention, and plant species and community diversity.

**Wetlands 51-1 and 51-2:** Wetland 51-1 is a narrow, FO wetland that merges into a long, narrow, PSS1C fringe wetland (51-2) along the main reservoir shoreline. The estimated size of the wetland is 5.5 acres. Functions include shoreline stabilization, wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal.

**Wetlands 53-1 and 53-2:** Wetland 53-1 is a PFO1A wetland in a level area that is frequently saturated and may be occasionally flooded. It merges into wetland 53-2 which is a PSS1C fringe wetland on the main reservoir shoreline. This wetland area is located at the tip of a peninsula at Acklen Bend. The estimated size of the wetland is 16.2 acres. Functions include shoreline stabilization, wildlife habitat, sediment retention, plant species and community diversity, and contaminant removal.

**Parcel 63 wetlands:** Parcel 63 contains FO, SS, and EM interspersed with open water areas. Almost the entire area within parcel 63 is a large wetland complex that encompasses temporarily and seasonally flooded areas in the Elk River floodplain north of Beth Page Road and seasonally and semi-permanently flooded areas in the reservoir south of Beth Page Road to River Mile 165. This wetland complex is considered to be an uncommon habitat and community type which is important to the reservoir's biological and landscape diversity. Representative areas within parcel 63 were field surveyed to verify the National Wetlands Inventory (NWI) mapping. The NWI mapping appeared to be generally accurate with respect to wetland boundaries and areas. There were some differences found in the wetland classifications assigned by the NWI. This is a result of wetland vegetation communities changing over time (for example, from a sedge-dominated emergent wetland to a black willow-buttonbush dominated scrub-shrub wetland), and not changing the wetland determination. There are also beaver populations in at least one area that may or may not have been there at the time the NWI-utilized aerial photographs were taken.

In five areas in parcel 63, the field survey findings differed from the NWI mapping. These areas include the wetlands designated as 63-1, 63-2, and 63-3, which are seasonally or temporarily flooded areas in the



floodplain of the Elk River north of Beth Page Road, and wetlands 63-4 and 63-5, which are temporarily or seasonally flooded areas in the floodplain south of Bethpage Road.

**Wetland 63-1:** This is a temporarily flooded, partly wooded and partly cleared area that is used for cattle pasture. This area is not a jurisdictional wetland, although there may be small areas associated with a seep in the floodplain that would meet jurisdictional criteria. The NWI indicates only a linear, PFO1A wetland along a stream that flows through this area.

**Wetland 63-2:** This wetland occurs in an area of "pits" and mounds formed by past sand quarry activities. Most of the area in the "pits" is temporarily or seasonally flooded and meets the criteria for a jurisdictional wetland. The mounds are upland. Because of the complexity of the topography, it would be inadvisable to attempt to delineate a wetland boundary based on the USACE criteria. Thus, the entire "pit"-and-mound area was included in the wetland boundary. The NWI indicates PFO1A and PEM1A wetlands in this area, but they are smaller and of a different shape than the wetland areas identified in the field.

**Wetland 63-3:** This is a relatively undisturbed forested floodplain that lies between a PFO1C wetland to the north and Beth Page Road to the south. The NWI does not indicate wetlands in this area. The area is subject to temporary flooding, but does not have hydric soils; thus, it does not meet the criteria for a jurisdictional wetland. This floodplain forest, however, does perform some of the same important functions, including floodflow alteration and provision of wildlife habitat.

**Wetlands 63-4 and 63-5:** These are actually a single wetland area, part of which appears to be seasonally flooded (63-4; PFO1C), and part temporarily flooded (63-5; PFO1A). The wetland is located in the floodplain and is partially or wholly inundated during high flow events and when reservoir water levels are high. It adjoins an open pasture and emergent wetland and is used by cattle. The NWI indicates a PFO/SS1A along the river shoreline adjacent to and in the area identified during the current survey. This area is an example of not only the change in vegetation communities over time (from SS/FO to FO), but also a change in hydrology that appears to have resulted in an expansion of the wetland. Similar alterations in vegetation and hydrologic regime may have also occurred in other parts of the parcel 63 wetland complex.

Because of its large size and diversity of habitats, this wetland complex is functionally highly significant. The wetlands include lacustrine fringe in the Tims Ford Reservoir section and riverine wetlands along the main channel of the Elk River upstream of the reservoir. Functions include shoreline stabilization, sediment retention, carbon production and export, nutrient cycling, contaminant removal, and functions associated with floodflow alteration. An important function is the provision of a large tract of wildlife habitat which includes an interspersed of forested, shrub, herbaceous, and open- water areas.

**Wetland 67-1:** This is a long, wide shoreline fringe PSS1C wetland on the main reservoir shoreline. There is open, agricultural land on the landward side. The estimated size of the wetland is 15.8 acres. Functions include shoreline stabilization, wildlife habitat, plant species and community diversity, sediment retention, and contaminant removal.

**Wetlands 70-1 and 70-2:** Wetland 70-1 is a wide PSS1C fringe wetland that extends for a long distance along the main reservoir shoreline. Wetland 70-2 is on the shoreline at the mouth of a stream near to wetland 70-1 and, thus, is considered a part of 70-1 for functional and protection purposes. The estimated size of the two wetlands combined is 6.8 acres. Functions include shoreline stabilization, plant species and community diversity, wildlife habitat, sediment retention, and contaminant removal. This wetland is a buffer between the reservoir and open, agricultural land on the landward side.

**Wetland 72-1:** This approximately 0.5-acre wetland is located on the main reservoir shoreline. The point of land on which this wetland is located is primarily pasture down to the shoreline. Thus, this wetland may represent perhaps the only section of the shoreline on this parcel that is stabilized with vegetation. Functions include shoreline stabilization, sediment retention, nutrient removal, plant species and community diversity, and wildlife habitat.

**Wetland 80-1:** This is a large, wide, fringe PSS1C wetland on the main reservoir shoreline. The estimated size is 7.0 acres. The functions include shoreline stabilization, wildlife habitat, plant species and community diversity, and possible sediment retention and contaminant removal from adjacent cleared and developed land.

### **3.7.2 ENVIRONMENTAL CONSEQUENCES**

In all, twenty parcels contain wetlands within at least a portion of the parcel boundaries. Fifteen of these parcels (8, 24, 26, 28-1, 31, 37, 40, 41, 51, 53, 63, 67, 70, 72, and 80) contain functionally significant (i.e., Category 1) wetlands. Category 2 wetlands are located within the remaining 5 parcels (15, 33, 78, 79, and 79A). 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 wetlands protection. Regulatory protection is extended to wetlands under Section 404 of the Clean Water Act and also under the State of Tennessee's Water Pollution Control program. TVA is subject to Executive Order 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...on federal property." Consistent with this requirement, TVA and TDEC would, to the extent practicable, take measures to either avoid adverse impacts to wetlands or mitigate unavoidable effects to wetlands in disposing of land or during TVA's Section 26a review of water-use facilities. Also, wetland protection requirements of Section 404 permitting ensure no net loss of wetland functions and values.

#### **Alternative A**

Under Alternative A, only those wetlands identified as Category 1 (i.e., having functional significance) would be allocated for sensitive resource protection, while several important Category 2 wetlands would not. Under this alternative, five parcels containing Category 2 wetlands would be allocated for Natural Resource Conservation (Zone 4), while two parcels containing wetlands would be allocated for Industrial/Commercial Development (Zone 5) and Developed Recreation (Zone 6). Potential effects on these wetland areas would depend on the type and extent of development and the specific protection measures that would be developed on a site-specific basis. Protection of these areas would be afforded by including parcel-specific descriptions of wetland resources and the imposition of requirements for wetland protection measures on any future site planning or development. Examples might include upland buffer zones between the wetland and upland development, use of best management practices, and the creation of conservation easements.

Under Alternative A, some areas of significant wetlands would be protected by virtue of the allocation of their respective parcels. Although entire tracts containing wetlands of lesser functional significance would not be protected, the wetland areas present on these parcels would be protected under Section 404 of the Clean Water Act and also under the State of Tennessee's Water Pollution Control program. If these areas were impacted by some developmental activity, mitigation requirements would offset any long-term loss of wetland functions. However, even with mitigation there would be some short-term loss of wetland functions in the time it would take for the mitigated wetlands to develop a mature stand of wetland vegetation.

#### **Alternative B**

Under this alternative, twelve parcels containing Category 1 wetlands and two parcels with Category 2 wetlands would be placed in zone 3 or 4, which would provide protection to these wetlands from potential impacts from development. Five other parcels, three of which contain Category 1 wetlands, would be allocated for development (i.e., placed into Zones 5, 6, or 7).

As described above, wetlands present on these parcels would be protected under both state and federal laws. Any potential activities in wetlands would be regulated under these state and federal programs. Development in wetland areas would be avoided whenever a practicable alternative exists.

#### **Alternative B1**

This alternative differs from Alternative B in only minor aspects, with the main difference being in the allocation of two Category 1 wetland areas into Zone 8 (Conservation Partnership). Similar to Alternative B, fourteen parcels containing Category 1 and Category 2 wetlands would be placed in zones 3 and 4. The difference is that there are eleven parcels containing Category 1 wetlands and three parcels containing Category 2 wetlands in these two zones (compared to twelve and two under Alternative B). The number of parcels containing Category 1 wetlands that would be allocated for recreational (parcel 80) and residential development (parcels 31 and 51) would be reduced from five to three parcels. No parcels containing Category 1 wetlands and one parcel (78) containing a Category 2 wetland would be designated for Industrial/Commercial development.

Unlike Alternative B, all or a portion of two of the parcels (28-1; 8-2) containing Category 1 wetlands (28-1; 8-2) would be zoned for Conservation Partnership. Parcel 28-1 is adjacent to parcels in zone 4. The majority of parcel 8, outside of the Zone 8 area, is in Zone 4. The Conservation Partnership Zone should provide these wetlands with a higher degree of protection than in other developmental zones because of the establishment of shoreline buffer zones in exchange for shoreline access.

As with the other alternatives, the potential effects to the wetland areas in those parcels zoned for some type of development, and the specific protection and mitigative measures required, would depend on the type and extent of development. Wetlands present on these parcels would be protected under both state and federal laws, and any activities in wetlands would be regulated under these state and federal programs. Development in wetland areas would be avoided whenever a practicable alternative exists.

Increased boating activities, pollution, and human activity could result in a decline in wetland quality and size when Zone 8 areas directly adjoin a wetland or when there is a proliferation of these activities resulting from multiple water-use facilities surrounding a wetland. Areas of specific concern are those in the vicinity of parcels 71- 1, 71-2, 71-3, 71-4, 52-3, and 52-4 where the proximity of the water-use facilities, in a relatively narrow channel, could cause a decline in quality of the large wetland located on the narrow peninsula across the reservoir from the Murray Lake Estates.

For each Section 26a application for a community facility within Zone 8, a site-specific environmental review at the appropriate level would be conducted to include a review of impacts on wetlands. Impacts to wetlands would be avoided or minimized through appropriate mitigation measures included in Section 26a permits and required by the Corps of Engineers Clean Water Act, Section 404 permits.

### **Alternative C**

Under this alternative, 10 wetlands would be allocated to zones for development(i.e., Zones 5, 6, or 7). Nine of these parcels contain Category 1 wetlands within their boundaries.

Adoption of this alternative would result in the greatest potential for adversely impacting wetlands of the project area. Avoidance of wetland areas and appropriate mitigation for wetland impacts could reduce overall direct effects to wetlands. However, extensive development would increase the potential for indirect (perhaps inadvertent) wetland impacts. Such impacts could result from a variety of conditions, such as changes in surface drainage patterns, contaminated or highly fertilized runoff from lawns, siltation or sedimentation from uphill or upstream clearing, or other changes in hydrological conditions along the shoreline.

### **Alternative D**

Alternative D, the Maximum Land Conservation alternative, provides a marked increase in the number of parcels dedicated to Natural Resource Conservation (Zone 4) or Sensitive Resource Management (Zone 3). All but two of the twenty parcels containing wetlands and all of the parcels containing Category 1 wetlands would be assigned to Zones 3 or 4. Two parcels containing Category 2 wetlands would be allocated to Zones 5 and 6. This increase would benefit the wetlands while allowing for compatible land uses if the proper BMPs were implemented.

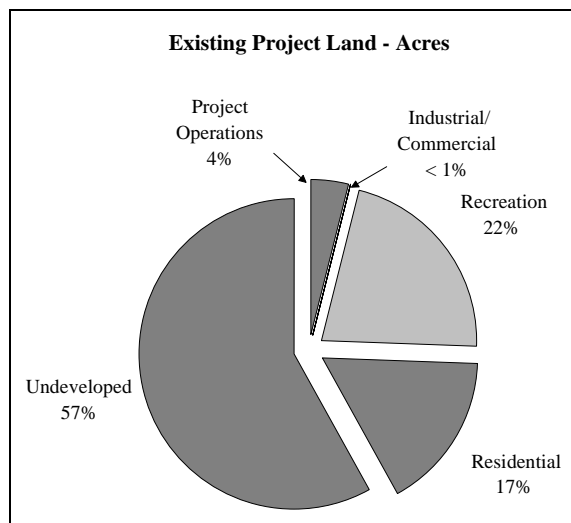
This alternative would provide increased management and protection for Category 1 and 2 wetlands throughout the project area. This alternative would add two additional parcels to a Zone 4 status above all other alternatives.

### 3.8 PROJECTED LAND-USE CHANGES

#### 3.8.1 AFFECTED ENVIRONMENT

The Elk River drains an area of 2,247 square miles in south central Tennessee and north central Alabama. This watershed is a predominantly rural area comprised mostly of fragmented forests and agricultural uses. Tims Ford Reservoir is a predominant feature within the watershed and influences surrounding land-use patterns. Approximately 55 percent of all the land in the watershed is currently in agricultural use with pasture and grassland being the largest component. The current trend of steady growth and development for this region may be accelerated as the “baby boom” generation approaches retirement. The demand for waterfront property may exceed the growth anticipated for the region. The increasing demand for waterfront property often results in conflicting land-use patterns.

Tims Ford Project lands are located in Franklin and Moore Counties, Tennessee. The current project land use consists of agricultural, residential, recreational, and some light commercial/ industrial activities. Public recreational areas consist of day- use areas, parks (city and state), and informal access areas. There are also two commercial marinas. Light industrial or commercial uses include the TDEC office building complex and water intakes.



**Figure 3.8-1 Existing Project Land Uses**

A total of 4,779 acres of project land are undeveloped. This public land provides opportunities for informal recreational use such as bank fishing, hunting, hiking, plant and wildlife observation, and provides important wildlife habitat. It is currently managed by both TVA and TDEC. There are 71 current agricultural areas licensed comprising 1,145 acres of project land, shown in Appendix H, Table H-6. These licenses are for both row crops and pasture. The current practice allows cattle to freely access the water. The existing agricultural licenses have been approved for extending another two calendar years. During this period each license will be evaluated to determine compatibility with the allocated use of the land. Agricultural licensing of public land is an acceptable interim use that can provide diversity to the landscape and also provide wildlife habitat. Proper Best Management Practices will be incorporated into future licenses to provide wildlife habitat and protect soil resources and water quality. Due to potential impacts on water quality and public

recreation, livestock grazing on TVA land will be phased out over time in order to allow those with livestock to obtain other pasture.

Existing residential development and use includes 1,493 acres sold in 21 TERDA-developed subdivisions along 35 miles of shoreline. The 30 private subdivisions and private license include approximately 1,064 acres on backlying property that adjoins project land along 17 miles of shoreline. The adjoining 122 acres of project land along 17 miles of shoreline is allocated to Zone 7 (Residential Development/Access), including the TERDA-sold subdivisions, subdivisions developed on adjoining private land, and project lands fronting the private subdivisions totals 2,679 acres and 52 shoreline miles.

Access rights to the water were included in the deed to most of those TERDA lands sold up to the 895-foot contour and developed for private residential access to the reservoir. These lots with the specified deeded access rights are considered waterfront properties, and the landowners are eligible to request permission from TVA to construct private water-use facilities through the Section 26a process. Other

subdivisions were developed by private individuals on backlying property adjoining Tims Ford Project land. Landowners in these privately-developed subdivisions do not possess the necessary land rights for private water-use facilities or other uses of the water. TVA does not consider such lots as waterfront lots. TVA guidelines require property owners to possess specific deeded rights across public lands in order to have a permitted water-use facility. The access rights for these non-waterfront lots have historically been provided by a land-use license for a fee. All the subdivisions including TERDA- sold land and the privately developed land are listed in Appendix H, Table H-7.

There are eight public recreational use areas which contain a total of 12.1 shoreline miles, ( i.e., 4.4 percent of the total shoreline miles). Additionally, the cities of Winchester and Estill Springs maintain city parks containing approximately 1.1 shoreline miles (less than one percent of the total shoreline miles). Tims Ford State Park occupies 39.3 shoreline miles, which comprises 14.3 percent of the total shoreline. Public-use areas and site-specific information are listed in Table 3.8-1.

**Table 3.8-1 Public-Use Areas**

<b>Public-Use Area</b>	<b>County</b>	<b>Location</b>	<b>Facilities</b>
Lost Creek	Moore	Lost Creek Mile 3.8 Left Bank at Sanders Causeway	Paved parking, a launching ramp, and a courtesy dock
Turkey Creek	Franklin	Hurricane Creek Mile 4.9 Left Bank	Paved parking, a launching ramp, and a courtesy dock
Anderton Branch	Franklin	Anderton Branch off Lost Creek Mile 0.7 Right Bank	Paved parking, a launching ramp, and a dock
Devils Step Campground	Franklin	Elk River Mile 154.4	Paved parking, full setups for campers, a launching ramp, and a courtesy dock
Rock Creek	Franklin	Rock Creek and Elk River Mile 161.9 Right Bank	Paved parking, restrooms, a launching ramp, a courtesy dock, and picnic facilities
Dry Creek	Franklin	Elk River Mile 153.2 Left Bank	Sandy beach, restrooms, and launching ramp with unimproved road access
Pleasant Grove	Franklin	head of Little Hurricane Creek	Paved parking, bathrooms, launching ramp, courtesy dock, and picnic facilities
Tims Ford Dam Reservation	Franklin	Tims Ford Dam on the Left Bank.	Large paved parking areas, boat ramp, courtesy dock, canoe launch, and tailwater fishing area.

#### Other Water Access Points

Tims Ford State Park Marina, located in Tims Ford Rustic State Park on Travis Hollow, is managed by contract and includes a launching ramp, store with kitchen, gas sales, picnic tables, and restrooms.

Winchester City Park, located north of Red Mill Bridge on Boiling Fork Creek in Winchester, has paved walking trails, a formal playground, a meeting hall, a public pavilion with kitchen and tables, playing fields, two courtesy water-use facilities, recreation vehicle (RV) camping, and two launching ramps.

Tims Ford Marina is located in Anderson Branch at the Mansford Bridge on Mansford Bridge Road adjacent to Tims Ford State Park. This private marina operates a restaurant and store, boat sales and repair, rental cabins, gas sales, a launching ramp, and 152 rental boat slips.

Holiday Marina is located in the Center Grove Community near the head of Lick Creek on the left bank at the end of Awalt Center Grove Road. This state-owned marina has a launching ramp, rental cabins, rental boat slips, and a store.

There are several unimproved reservoir access points. Most of these are by bridge crossings, in the back of coves, or where old road beds enter the reservoir.

Currently, the TVA high-voltage transmission lines that cross Project land are the Winchester-Fayetteville-Ardmore (L 5723), the Winchester-Tims Ford (L 2631), the Winchester-Estill Springs (L 2631), the Winchester-Lynchburg (L 2435), and the Winchester-Cowan #1 (L 2514) lines. There are currently no known plans for future utility corridors crossing Project land.

### **3.8.2 ENVIRONMENTAL CONSEQUENCES**

Changes in land use would occur under each alternative. Under all the alternatives, 881 acres (31 shoreline miles) of Project land would be allocated to Zone 3 (Sensitive Resource Protection) to provide protection for state- or federally-protected species and significant wetlands. Previously, individual environmental reviews were conducted on a case-by-case basis for each proposed development to determine if sensitive resources would be impacted.

Currently, there are 4,779 acres that are considered undeveloped and 2,821 acres that could be considered for development. Proposed new development under Alternatives A, B, B1, and C would result in changes to the current land use. Most of the land meeting development criteria are gently sloped with tillable soils and are presently in a combination of pasture or open lands and reverting fields with scattered fence rows and woodlots. The acreage of land-use change resulting under each alternative is listed in Table 3.8-2. Parcels that would result in land-use changes under Alternatives A, B, B1, and C are listed in Appendix H, Table H-8. No new development is proposed under Alternative D; therefore, the only change in land use would be to provide for sensitive resource protection.

**Table 3.8-2 Changes in Land Use by Allocation Zone (Acres)**

<b>Zone</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative B1</b>	<b>Alternative C</b>	<b>Alternative D</b>
5 - Industrial/Commercial	up to 61	61	61	61	0
6 - Recreation	up to 297	297	297	297	0
7 - Residential	up to 2,463	816	698	2,463	0
8 - Conservation Partnership	0	0	33	0	0
Total	up to 2,821	1,174	1,056	2,821	0

#### **Industrial/Commercial Development**

Potential industrial or commercial development for Tims Ford Reservoir could consist of educational facilities and a construction staging area for assembling water use facilities by commercial builders. Under Alternative A, requests for a total of 61 acres could be considered for Zone 5 (Industrial/Commercial Development) on a case-by-case basis. Under Alternatives B, B1, and C, the 61 acres would be allocated for industrial or commercial development purposes. Under Alternative D, no additional land would be allocated for Industrial/Commercial Development.

**Recreation**

Under all alternatives, allocations would be made so that current recreational use would continue, (approximately 279 acres). Under Alternative A, decisions would be made on a case-by-case basis for approximately 297 acres for recreational use.

If Alternative B, B1, or C were adopted, approximately 576 acres would be directly available for recreational use. Parcels 19, 32, and 76 would be designated as future recreational lands. Allocation of Parcel 19 to Zone 6 (Recreation) would allow for possible future expansion of the existing privately-owned marina. Parcel 76 could be used to expand the existing campground and day-use areas. Parcel 32 is conducive for future water-based recreational purposes. Allocating Parcel 80 for recreation would allow for the expansion of the existing Winchester City Park. No new development is proposed under Alternative D.

**Residential Development**

Existing - privately-developed subdivisions which were historically allowed permits and licenses for private water use facilities will be allowed to continue this practice in the future. Project lands fronting these subdivisions are allocated to Zone 7 (Residential Development/Access). Any new subdivision that is not fronting land currently allocated to Zone 7 will not be considered for water-use facilities. Those existing permitted private water use facilities in areas outside of platted subdivisions will be allowed to remain, but these rights may not be transferable or expanded and no new facilities will be permitted.

Proposed - Under Alternative A, there could be an additional 2,821 acres along 47.8 shoreline miles considered for residential development on a case-by-case basis. Using the ratio of 1 acre per lot there could be as many if not more than 2,821 new homesites around the reservoir. Assuming that each shoreline mile could support 25 lots, this alternative has the potential for an additional 1,195 lots adjacent to the reservoir. Added to the existing 1,409 waterfront lots already available, implementation of Alternative A could almost double the number of lots adjacent to the reservoir. Total build-out would represent an 85 percent increase in the number of waterfront lots.

Under Alternative B, 816 acres along 13.1 shoreline miles would be allocated for new residential development. The proposed action states that the new developments will not have waterfront lots, but rather access to the reservoir through designated community facilities. The community facilities would follow the current TVA SMP guidelines. Depending on physical conditions, some subdivisions could have several facilities with a launching ramp, parking, recreational facilities, and a multislip community water-use facility. Using the ratio above, the new developments could have at least 816 new homesites. This is a substantial increase in the number of residential lots.

Alternative B1 reallocates 51 parcels consisting of 33 acres along nine miles of shoreline to the new category - Zone 8 (Conservation Partnership). It is difficult to determine the amount of residential development and associated impacts that could occur as a result of Zone 8. Based on available information, the average acreage of backlying subdivisions is 34 acres. Additionally, the average acreage of all existing subdivisions per shoreline mile is 50 acres. The largest subdivision covers 82.2 acres, while the smallest covers 4.2 acres. As currently proposed, 51 parcels have been allocated to Zone 8 which could support 58 community facilities under the proposed guidelines. Assuming a 34-acre subdivision per Zone 8 parcel, new developments adjoining the Zone 8 parcels could total 1,734 acres or more new homesites adjacent to the reservoir. This is more than triple the number of homesites as compared to Alternative B. A more conservative estimate, assumes a 50-acre per shoreline mile, and could total approximately 450 acres or one and one half times more new homesites adjacent to the reservoir than Alternative B. However, some development has already occurred in the areas behind Zone 8. Further, although the creation of Zone 8 could facilitate some of this development, much of it could occur whether or not this land was allocated to Zone 8.

Under Alternative C, 2,821 acres along 47.8 shoreline miles would be allocated for new residential development. Using the ratio of 1 acre per lot there could be as many if not more than 2,821 new homesites around the reservoir. Assuming that each shoreline mile could support 25 waterfront lots, this alternative has the potential for an additional 1,195 waterfront lots. Added to the existing 1,409 waterfront

lots already available, implementation of Alternative C could almost double the number of waterfront lots. Total build-out would represent an 85 percent increase in the number of waterfront lots. No additional land would be allocated for Residential Development under Alternative D, therefore, there would be no increase in homesites on project land or waterfront lots if this alternative were implemented. Development of private land adjacent to the project would likely continue to occur, but without access to the reservoir the rate of development would be expected to be much slower.

### **Conclusion**

Creation of the Tims Ford Project has been the single most significant change in the land use and landscape of Franklin and Moore County. Except for the dense urban development in the incorporated cities and towns, the highest density of rural residential development occurs around the shores of Tims Ford Reservoir. The original congressional intent of the Tims Ford Project, to foster the economic and social development of the Elk River Watershed, and the creation of TERDA has driven this development both on the project lands and on those adjoining private lands. For all alternatives, beneficial effects for preserving current land uses would be realized from the allocation of 881 acres to Zone 3 (Sensitive Resource Protection) and to varying degrees, Zone 4 (Natural Resource Conservation). Potential impacts to land use would result from allocating currently undeveloped land to Zones 5, 6, 7, and 8, which would result in developments such as industrial/commercial, recreational, and residential uses. This could occur under Alternatives A, B, B1, and C. Implementation of Alternative D would result in little or no adverse changes in land use because no new development is proposed.

The potential for the most significant change in land use would occur under Alternatives A and C with 3,228 acres of project land allocated or suitable for development. This is half of the plannable lands considered under this study. Either of these alternatives have the potential to significantly alter the current land use on and surrounding the project. Residential development alone could potentially include an additional 2,585 homesites. Along with this development would be an exponential increase in development of the surrounding private property. With the influx of additional visitors and homeowners, Alternatives A and C have the greatest potential for significantly affecting land use in the local surrounding area, but would not likely show any significant effect on land use at the regional level. Alternative B limits the amount of new development to project lands and does not provide for additional access to serve new private subdivisions.

Implementation of Alternative B would result in land-use changes for 1,581 acres to accommodate potential new development. Of this total for development, 938 acres is allocated for residential use. Under Alternative B, a majority of the plannable lands (4,486 acres) would be set aside for Natural Resource Conservation and Sensitive Resource Management, which lessens the impacts of the land-use changes. This alternative offers a compromise in the level of development between Alternative D and the higher levels considered under Alternatives A and C. Although this approach balances land-use allocation and lessens the amount of potential development, it will result in land-use changes to considerable amounts of public land.

Alternative B1 reduces the acreage allocated in Alternative B to Zone 7 (Residential Development/Access) and Zone 6 (Recreation) by eight percent, while adding 33 acres to Zone 8 (Conservation Partnership). Land-use impacts would be very similar to Alternative B except for the additional Zone 8 allocation. While the allocation of the 33 acres to Zone 8 is a small portion of the total 6,453 plannable acres, it has the potential to impact land use by encouraging development of the adjoining private property. Despite this potential indirect impact on land use, the conservation partnership easements may offer some protection and benefits to other resources.

Implementation of Alternative D would result in little or no adverse changes in land use because no new development is proposed. Rate of development growth around the reservoir would slow due to the lack of additional available reservoir properties.

Changes in land use, especially to residential use in Alternatives A, B, B1, and C, would also affect the land lying below the 895-foot contour and the associated resources along the shoreline. Typically lot owners in the private subdivisions and waterfront property owners have significantly altered the natural



state of the land by removing the native vegetation, creating lawns, and constructing improvements. The acreage figures do not reflect the number of acres impacted below the 895-foot contour.

Mitigative and protective measures would be needed to lessen the impacts associated with Alternatives A, B, B1, and C. These measures should include careful planning of subdivisions and vegetation restoration. Site-specific construction BMPs and environmentally sensitive planning of new developments such as size of residential lots, "green subdivisions", set back lines, and road construction would lessen potential adverse impacts of land use. For the Zone 8 conservation partnership easements to be effective in protecting the current project land use, additional mitigative measures may be needed. These measures would be identified during the 26a site specific review and could include increasing the buffer easement, not allowing vegetation removal except within a 20-foot wide corridor to serve the community facility, allowing launching ramps only where existing slopes are conducive, and prohibiting grading or filling. The permits and licenses for the community facilities in Zone 8 would include a revocation clause for failure to abide by all the conditions in these instruments. Given past experience with some adjoining landowners encroaching on public land, increasing education and enforcement efforts to protect the conservation partnership buffers and public land would be needed. Without increased emphasis on enforcement to protect the safeguards listed above, the value of the conservation partnership easements could be diminished.

Allocations under any alternative would supersede previous TERDA plans. Both Franklin and Moore Counties have zoning which allocates land into agricultural and residential zones. Most of the lands being planned on Tims Ford Reservoir are considered "unzoned" on the maps. Parcel 36, which the agencies propose to allocate to Zone 7, is allocated to residential development on the Franklin County zoning map. Therefore, the proposed allocations in the Tims Ford Reservoir Land Management and Disposition Plan are consistent with local plans. Although urban growth boundaries are not yet approved for Franklin County, the agencies anticipate that those parcels allocated to Zone 4 would serve as open space within the future urban areas.

### **3.9 CULTURAL RESOURCES**

#### **3.9.1 AFFECTED ENVIRONMENT**

For at least 12,000 years, the Elk River Valley has been an area for human occupation which became more intense through succeeding cultural stages. Archaeological investigations have demonstrated that Tennessee and the Elk River Valley were the setting for each one of these cultural stages, from the Paleo-Indian (11,000-8000 BC), the Archaic (8000-1200 BC), the Woodland (1200 BC-AD 1000), the Mississippian (AD 1000-1500), to the Protohistoric-Contact Period (AD 1500-1750). In addition, historic era cultural traditions have included the Cherokee (AD 1700-present), European- and African-American (AD 1750-present) occupations. Moreover, investigations have provided additional details about the changing environments, shifting subsistence strategies and settlement patterns, and variations in the cultural material associated with prehistoric and historic occupations (Faulkner, 1968; Coverdale, 1972; Hasty, 1973; Hubbert, 1982; Duvall, 1996, 1998; 1999; Lawrence, 1999). The completion of Tims Ford Reservoir inundated most of the archaeological resources located on the alluvial terraces and floodplains. The remaining sites are located on the uplands adjacent to the river and its tributaries.

TVA is mandated under the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA) to protect significant archaeological resources and historic properties located on TVA lands or affected by TVA undertakings. A historic property is "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places." [16 U.S.C. 470w (5)]. Under ARPA, Federal Agencies are exempt from disclosure of locations of historic properties as required by the Freedom of Information Act.

In response to this federal legislation, TVA conducts inventories of its lands to identify historic properties. For the action proposed in this project, the Area of Potential Effect (APE) is the 6,453 acres of retained TVA and TDEC lands being planned or previously committed to specific land uses. The APE, as defined in 36 CFR §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.” The APE for cultural resources would comprise all TVA and TDEC land within the Lands Plan. The objective of the present archaeological survey was to locate and evaluate sites in the APE. Approximately 4,650 acres were surveyed for the lands plan and 69 miles of shoreline were surveyed for the Shoreline Management Plan.

Existing data along with the recent survey results were reviewed, and over 100 archaeological resources were identified within and along the Tims Ford Reservoir. A large number of these resources have been inundated due to reservoir impoundment. A total of 56 archaeological resources have been recorded in the area being planned. Fifty-two of these archaeological resources were recommended to be ineligible for listing in the National Register of Historic Places (NRHP), three were recommended to be potentially eligible for listing, and one site is recommended as eligible for listing. The archaeological resources that are recommended ineligible for listing in the NRHP do not contain deposits that would provide additional data to the archaeological record. For the resources that are potentially eligible for listing, further investigations of the archaeological resources are required to determine whether the resources are eligible for listing in the NRHP. A type site for one local phase of the Woodland Period, the Owl Hollow site, is located on lands covered in this EIS and is considered eligible for inclusion in the NRHP.

Pursuant of 36CFR Part 800, a Phase I archaeological survey has been conducted in the project area, and consultation was conducted with the Tennessee State Historic Preservation Officer (SHPO). Through consultation, it was determined that one archaeological resource was eligible and three archaeological resources were potentially eligible for listing in the NRHP within the lands surveyed for the EIS.

No historic structures have been identified within the Tims Ford Reservoir Land Plan.

### **3.9.2 ENVIRONMENTAL CONSEQUENCES**

Under any of the described alternatives in this EIS, TVA will conduct phased identification and evaluation procedure set forth in 36 CFR §800.4(b)(2), regulations of the Advisory Council on Historic Preservation implementing Section 106 of the National Historic Preservation Act, in order to identify, evaluate, and assess effects on historic properties and to determine the appropriate course of action prior to an undertaking. An Undertaking is defined under 36 CFR §800.16(y), “as a project, activity or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to state or local regulation administered pursuant to delegation or approval by a Federal agency.” Approximately 72 percent of the lands involved in this plan have been surveyed for archaeological resources. Only one archaeological resource was determined eligible and three archaeological resources were determined potentially eligible for listing in the NRHP within the lands surveyed for the EIS. The results of archaeological testing on Tims Ford Reservoir would be consulted prior to undertaking site-specific activities. TVA would continue the present process of case-by-case review in TVA-controlled areas potentially subject to ground-disturbing actions such as dredging, shoreline development, or timber harvesting through Phased identification and evaluation of historic properties. Archaeological resources within these areas will be avoided whenever possible. If avoidance is not possible, then proper procedures will be implemented in the mitigation of the historic property. TVA will take necessary steps to insure compliance with regulatory requirements of NHPA and the ARPA. Under any alternative, the cumulative effects to significant archaeological resources would be minimized by avoidance, protection, and maintenance of the resource or by mitigation through data recovery excavations, pursuant to 36 CFR § 800.

Since no historic structures have been identified within the Plan, this undertaking will have no effect on historic structures.

Indirect and cumulative effects to archaeological resources include, but are not limited to, shoreline erosion due to cyclical inundation and ground disturbing activities. Continual shoreline erosion is practically unavoidable. Proper shoreline stabilization may minimize adverse effects on archaeological sites in some instances and needs to be addressed in a case-by-case manner.

Future disposal or ground disturbance proposed at any parcels not examined during this survey will require an archaeological survey prior to any land transfer or ground disturbance. Furthermore, parcels or portions of parcels 15, 41, 42, 53, and 63 will require additional Phase I testing prior to any ground disturbance or land disposition at areas with a potential for intact archaeological deposits.

**Alternative A**

The No Action Alternative provides for the continuation of TVA's current resource management at the Tims Ford Watershed. Dispersed recreational activities such as fishing, camping, and hiking would have little or no effect on the historic properties; however, development of a campground, parking lot, or a launching ramp could have a significant effect on these properties. There are archaeological resources that are considered eligible or potentially eligible for listing in the NRHP on Tims Ford Reservoir lands. Under this action, site-specific activities proposed in the future would be approved, mitigated, or denied according to the significance of the resource. All historic properties within these areas will be avoided, protected, and maintained. If avoidance is not possible, then any adverse effects to significant resources are mitigated. During mitigation appropriate archaeological investigation will be necessary, and potentially impacted resources will be properly recorded and removed. Alternative A does not provide for specific preservation of archaeological resources through an allocation process. However, TVA will comply with regulatory requirements of NHPA and the ARPA.

**Alternative B and B1**

Alternative B and B1 have the same consequences regarding cultural resources. These alternatives incorporate the Phased Identification and Evaluation procedure to effectively preserve historic properties. All sites recommended as eligible or potentially eligible for listing to the NRHP will require evaluation and/or mitigation if proposed development will have an adverse effect to the sites. Early identification of the presence of cultural resources through zoning avoids the likelihood of soil disturbing activities in areas known to contain historic properties. This would, in turn, save time, reduce costs, and ensure more efficient compliance with section 106 of the NHPA than under Alternative A. All soil disturbing activities that occur on parcels which contain historic properties will be reviewed by a TVA archaeologist. TVA will take necessary steps to ensure compliance with regulatory requirements of NHPA and the ARPA.

The investigations at Tims Ford Reservoir identified archaeological resources on three of the parcels. Three of the archaeological resources identified are in the Zone 3 (Sensitive Resource Management) and one is under Zone 4 (Natural Resource Conservation). Zone 3 and 4 would effectively preserve the resources. If disturbances to the resources could not be avoided, then further investigations would be required to determine the resources' eligibility for inclusion in the NRHP.

**Alternative C**

This alternative would incorporate the Phased Identification and Evaluation procedure to effectively preserve historic properties. All sites recommended as eligible or potentially eligible for listing to the NRHP will require evaluation and/or mitigation if proposed development will have an adverse effect on the sites. Early identification of the presence of cultural resources through zoning avoids the likelihood of soil disturbing activities in areas known to contain historic properties. This would, in turn, save time, reduce costs, and ensure more efficient compliance of section 106 of the NHPA than under Alternative A. All soil disturbing activities that occur on parcels which contain historic properties will be reviewed by a TVA archaeologist. TVA will take necessary steps to ensure compliance with regulatory requirements of NHPA and the ARPA.

Four archaeological sites are identified in the zones of Alternative C. Three of the archaeological resources identified are under Zone 3 (Sensitive Resource Management) and one is in Zone 7 (Residential Development/Access). Zone 3 would effectively preserve the resources. Further investigations will be required if the resources cannot be avoided. Zone 7 would have the most potential for development, and the identification of archaeological resources within this zone would enable development to avoid, protect, and maintain the resources effectively. However, if the resources could not be avoided, then further investigations would be required to determine the resources' eligibility for inclusion in the NRHP.

**Alternative D**

Under this alternative, no new development or ground disturbance is proposed; therefore, cultural resources on all parcels (surveyed or unsurveyed) would not be directly affected. The implementation of this alternative would not change TVA's responsibility as a Federal Agency to protect archaeological resources as required in ARPA and NHPA. A management and protection plan for these resources will be prepared by TVA pursuant to the requirements of NHPA and ARPA.

This alternative will incorporate the Phased identification and evaluation procedure to effectively preserve historic properties. All sites recommended as eligible or potentially eligible for listing to the NRHP will require evaluation and/or mitigation if proposed development will have an adverse effect to the sites. Early identification of the presence of cultural resources through zoning avoids the likelihood of soil disturbing activities in areas known to contain historic properties. This would, in turn, save time, reduce costs, and ensure more efficient compliance of Section 106 of the NHPA than under Alternative A. All soil disturbing activities that occur on parcels which contain historic properties will be reviewed by a TVA archaeologist.

The investigations at Tims Ford Reservoir identified archaeological resources on three of the parcels. Three of archaeological resources identified are under Zone 3 (Sensitive Resource Management) and one is in Zone 4 (Natural Resource Conservation). Zone 3 and 4 would effectively preserve the resources. If the resources could not be avoided, then further investigations would be required to determine the resources' eligibility for inclusion in the NRHP.

Alternative C has the highest potential to affect historic properties. The remaining Alternatives (A, B, B1, and D) have a lower potential to affect historic properties than Alternative C.

Since Contact No. 98RE2-229151 does not specify covenants for federal compliance pursuant to 36 CFR § 800, a Memorandum of Agreement (MOA) will be prepared and executed for identification, evaluation, and treatment of historic properties that are eligible for inclusion in the NRHP within the APE. National Register eligibility will be evaluated in consultation with the SHPO and other consulting parties according to stipulations of the MOA executed with the SHPO. Furthermore, mitigation of adverse effects to any historic property will be conducted according to the stipulations in the MOA.

**3.10 RECREATION****3.10.1 AFFECTED ENVIRONMENT**

The Tims Ford Reservoir region contains a number of public recreational areas, which draw hundreds of thousands of visitors annually. The demand for water-based recreation remains high and pressure to increase other types of recreation in and around the reservoir grows annually. However, the availability of overnight lodging is somewhat restricted. The Tims Ford State park offers seasonal cabin rentals, and the Tims Ford Marina has constructed approximately 15 new cabins. According to public comments received during the initial public scoping period, recreational opportunities in high demand include overnight lodging, hiking trails, protection of existing public lands (especially those with unique natural features), and wildlife observation areas.

Tims Ford Reservoir encompasses 10,680 acres covering 275 miles of shoreline. Current residential access to the Reservoir is approximately 52.4 miles (19 percent) of the total shoreline miles. Tims Ford State Park comprises 38.2 of the shoreline miles (13.9 percent). The nine Public Recreational Use Areas occupy 12.1 shoreline miles (4.4 percent), and the City of Winchester and Estill Springs City Park Site contain approximately 1.1 shoreline miles (less than 1 percent).

Although no accurate data have been established concerning the number of users of recreational facilities in the reservoir area, most officials believe that the usage is high and the demand continues to grow annually. Since 1996, Tims Ford State Park has seen significant increases in visitors. According to records, 890,054 people visited the State Park in 1998. This is an increase of 46 percent (or 413,000 people) compared to those who visited the park in 1996. Trends and analyses reveal that the region will

continue to experience moderate to high levels of residential and industrial growth. Because of this steady growth into the next millennium, anticipated demand for associated recreational opportunities from residents as well as tourists will likely remain high. Tims Ford Reservoir area is well suited to accommodate most, if not all, of these future recreational opportunities and needs.

Water-based recreation continues to be a driving force behind the anticipated and continued development of the property surrounding the reservoir. For nearly 30 years, water-based recreation on Tims Ford Reservoir has been extremely popular, and no decrease is anticipated. Activities such as water skiing, fishing, sailing, windsurfing, motorboating, swimming and the increasing popularity of personal watercraft bring thousands of visitors to the area. As the reservoir becomes more crowded, visitors will be turning to the Elk River and other streams to pursue recreational activities. Stream boating continues to gain in popularity nationwide, especially on rivers such as the Elk that are deemed unsuitable for power boating but have tremendous opportunity for canoeing and, possibly, kayaking. The portion of the Elk River below Tims Ford Dam is currently a haven for trout fishermen in middle Tennessee. The river is stocked primarily with rainbow and brown trout from March until September of each year.

Currently, 52.4 miles of Tims Ford shoreline has residential development. Three marinas are located on Tims Ford Reservoir. Tims Ford Marina has recently expanded to 282 slips with 20 spaces for parking vehicles with trailers. Holiday Marina has 77 slips and approximately 52 spaces for parking vehicles with trailers. Tims Ford State Park Marina does not have marina slips, but has 50 designated parking spaces for vehicles with trailers. There are eight public-use areas with boat launching ramps, plus launching ramps at Tims Ford State Park, Tims Ford Marina, and Holiday Marina. These are designed to provide parking for approximately 295 vehicles and trailers. On-site observation during the three major summer holiday periods revealed that most, if not all, available established parking spaces at the Public Access Areas are full, and additional overflow or illegal parking areas are used as well. There are also private ramps and old road beds (which serve as informal launch ramps) leading into the reservoir. Thus, the actual number of vessels may be twice the number of available parking spaces.

Carrying capacity, with respect to water-based recreation, is the capability of a waterway to provide an opportunity for certain types of satisfactory and safe experiences over time without significant degradation of the resource. The concept of Optimum Capacity, i.e., "the appropriate level of use based upon resource and social capacity considerations, management objectives, safety and other factors," (National Water Safety Congress, 1996) was used in determining potential effects to water-based recreation.

### **3.10.2 ENVIRONMENTAL CONSEQUENCES**

The following information pertains to the environmental consequences surrounding the five Alternatives presented in this environmental document. Adoption of each of the alternatives could have both positive and negative effects on recreational opportunities.

In order to assess potential impacts on recreational boating opportunities, some basic assumptions were made using existing data. Boat traffic on the reservoir is assumed to originate from three major sources: 1) residential areas having water access, 2) public and informal boat ramps, and 3) marina slips. The amount of residential shoreline to account for vessels added due to residential development, parking availability at public boat ramps, and the amount of marina slips, were estimated to approximate potential increases in boaters for each alternative (see Table 3.10-1). The following assumptions were made.

1. Each residential shoreline mile could contain approximately 35 homes with private water-use facilities, including one power boat. This assumes that each lot would be 100 foot in average width plus another 50 foot for infrastructure, natural conditions, etc.
2. Using the parking area as a measure at public-use boat ramps and marinas, an additional 417 vessels can be expected on a major holiday. Due to the observed use of informal launching areas, private ramps, and illegal parking at public ramps, this number was doubled to 834, which is considered to err on the conservative side.
3. Twenty-five percent of boats from residences or stored at marinas could be in use during typical summer weekend days.

Even though the anticipated new residential development under Alternatives B, B1, and C would consist of group facilities only, the assumption above was used to provide an estimate of additional vessels being added to the reservoir. Obviously, many of the existing facilities could contain more than one vessel. This does not take into account the other homes in existing subdivisions that do not have direct water access but would have a need to use the reservoir facilities as well. Additionally, the analysis included the assumption that existing areas of residential development would be fully developed, with private water-use facilities.

For Alternatives B, B1, and C (and possibly A), two parcels were identified as possible locations for relocation and/or expansion of existing marinas. Determination of exact location, size, number of slips, harbor limits, etc. would be necessary before actual impacts to carrying capacity could be assessed. For analysis purposes, it is assumed that each expansion would add approximately 100 slips, for a total of 200 additional slips. This is based on the recent expansion at Tims Ford Marina of 90 slips.

Effects associated with each alternative were identified based on additional or lost recreational opportunity, estimating long-term changes in facility demand, and evaluating changes to the recreational experience.

**Table 3.10-1 Projected Cumulative Increase in Recreation Boating by Alternative**

Characteristic	Existing Condition	Alternative				
		A	B	B1	C	D
Miles of residential shoreline	52.4 (19%)	52.4 - 90.1 (19 - 33%)	65.5 (24%)	63.0 (23%)	90.1 (33%)	52.4 (19%)
Vessels in use from residential development	459	459 - 788	573	1,153	788	459
Vessels launched from ramps or other areas	834	834	834	834	834	834
Vessels in use from marina slips	71	71 - 121	121	121	121	71
Total potential vessels	1,364	1,364 - 1,743	1,528	2,108	1,743	1,364
Surface area per boat* (acres)	7.8	6.1 - 7.8	7.0	5.1	6.1	7.8
Projected increase in boats (percent)	0%	0 - 28%	11%	35%	28%	0%

\* Tims Ford has 10,680 acres of surface area.

#### **Alternative A**

Under this alternative, existing allocations for recreational use would continue. This currently includes only a few existing sites with narrowed boundaries designated for recreational purposes. The total area dedicated to recreation under this alternative would be approximately 279 acres. However, decisions would be made on a case-by-case basis for the 6,453 acres of plannable land. No comprehensive plan for developing recreation exists under this alternative. The number of sites and the acreage dedicated to recreational uses are likely to increase as both agencies review needs for additional recreational opportunities.

For Alternative A, there are 52.4 miles of existing residential shoreline, and a maximum of 37.7 miles could be added on a case-by-case basis. This could increase the number of residential lots by 1,319. Additionally, 200 marina slips could be added from proposed marina facility expansions. Numbers of boats on the reservoir at any given time could increase slightly under Alternative A as the residents of existing developed areas continue to invoke rights for private water-use facilities. However, it could

potentially increase by as much as 28 percent (see Table 3.10-1) as development is approved on a case-by-case basis.

The cumulative effects associated with implementation of Alternative A are as follows. All recreational day use areas would continue to be available. Parking and other facilities that support these areas would also remain. Over the long-term (0 - 25 years), this alternative could result in cumulative impacts. Approximately 297 acres being available potentially for future recreational opportunities; however, the majority of land adjoins existing recreational areas which limits the possible uses. It is also anticipated that residential lots would increase under this alternative; therefore, the number of personal watercraft vessels would likely increase, which without proper planning could be detrimental in the long term.

### **Alternative B**

If Alternative B were adopted, the eight Public Recreational Use Areas (boat ramps, courtesy water-use facilities, restrooms, picnic areas) would continue to exist, and most of the property surrounding these sites would be proposed as a public recreational park area. Thus, this alternative provides for the creation of additional recreational opportunities other than water-based activities. Through this alternative, approximately 576 acres would be directly available for recreational use.

Under Alternative B, parcels 76 and 32 would be designated as future recreational lands. Both tracts have significant topographical and reservoir frontage features that make them suitable for developed public recreational areas. Parcel 76, with 2.2 miles of shoreline and containing 131.5 acres, is unique in that it could be used to expand the existing campground and day-use areas. Parcel 32 has 1.1 shoreline miles and 89.3 total acres. It is conducive for future water-based recreational purposes.

Another important recreational area is Parcel 79, the Dry Creek Public Recreation Use Area. This site contains 27.6 acres with 0.6 miles of shoreline. Although some recreational activities are already taking place (beach, boat ramp), this site is not being used to its full potential. The topographical lay of the land and proper balance of open space and forested areas create a site ideal for development into a high use recreational area.

Alternative B would also allow for the expansion of the existing Winchester City Park. The addition of Parcel 80 would add approximately 26.4 total acres and 1.3 shoreline miles to the 55-acre park site.

Parcel 11 would be added to Tims Ford State Park. Parcel 11 adds a small portion, 9.3 acres at the northern end of Ross Branch Creek area, to complete the State Park system around that particular cove. Parcel 19, which encompasses 45.8 total acres and 0.9 shoreline miles, is being allocated for recreational use for possible future expansion of the existing privately-owned marina.

Parcel 42 would be allocated as Zone 4 (Natural Resource Conservation), and Parcels 41 and 43 would be allocated to Zone 3 (Sensitive Resource Management) Sensitive Resource Management. The resulting primary recreational opportunities are considered to be extremely low-impact and passive recreational use. In summary, this alternative would allow for substantial expansion of public and commercial recreational facilities to help meet long-range recreational needs while maintaining natural, undeveloped conditions along a substantial portion of the Tims Ford shoreline. This would ensure attractive conditions for both active and more passive forms of recreation. For these reasons, the selection of this alternative would be beneficial to recreation.

The proposed additional 13.1 miles of residential shoreline would result in approximately 458 new residential waterfront lots, for a total of 2,292 residential lots on Tims Ford Reservoir. The proposed marina facilities could increase the number of boat slips by 200. This could potentially increase the recreational boating activity on the reservoir by approximately 11 percent (see Table 3.10-1).

Under Alternative B, as much as 576 acres could be directly available for recreational use with several new parcels held strictly for recreational purposes. All existing facilities would continue to operate as normal as well as providing for additional recreational opportunities (hiking, picnicing, camping, etc.) for the next twenty-five years. Comprehensive planning is vital to this alternative. Additionally, residential

waterfront lots will increase under this alternative, but with a proper planning process, group watercraft storage, and the potential for two new marinas would lessen the impact caused by personal watercraft storage. However, under this alternative watercraft usage on Tims Ford Reservoir would increase. Under this alternative no adverse cumulative effects are noted.

### **Alternative B1**

If Alternative B1 were adopted, all existing and proposed recreational areas/sites will remain as identified in Alternative B. However, 51 sites originally contained in Zone 4 (Natural Resource Conservation) have been classified as Zone 8 (Conservation Partnership). These 51 sites consist of 9.0 shoreline miles and 33 acres and are primarily designed to allow for shoreline protection and community boat facilities. Under this proposal, community water-use facilities would be designed based upon a site specific review, (not to exceed 2,000 square feet); however, launching ramps could be considered as well. If a 2,000 square foot facility is used as a basis for analysis, and considering that each slip in that facility would be based on a 10- by 20-foot area, a minimum of 10 watercraft could be placed at each of the 51 Zone 8 areas. Additionally, seven parcels are large enough to be considered for two community water-use facilities. This could mean an increase of 580 new watercraft in addition to the 573 previously identified in Alternative B; this totals 1,153 vessels in use from residential development. These 1,153 vessels along with the 834 vessels identified as being launched from ramps or other areas and along with the 121 vessels in marina slips, totals 2,108 vessels that are in use at any one time. This is a 35 percent increase from the existing conditions and reduces the overall surface area per boat to 5.6 acres. Again, under this alternative personal watercraft usage will increase, and the use of proper planning and safety precautions would minimize boating hazards. Increased boat usage could lead to increased shoreline erosion and reduce water quality.

### **Alternative C**

If Alternative C were adopted, approximately 60 percent of the total acreage available could be used for residential development and perhaps some commercial development. Adoption of Alternative C may be detrimental to the expansion of the existing recreational opportunities and the creation of new ones. Many prime tracts suitable for future recreational and conservational uses would be lost. The concentration of hundreds of new homesites and the addition of thousands of new residents in the Tims Ford Reservoir area could, over time, further degrade the current and potential public recreational areas. This could eventually reduce the value of Tims Ford Reservoir as a tourism and public recreational resource.

The potential impact of Alternative C on recreation could be mitigated through the promulgation of a Park-Land Dedication Ordinance by the County(ies) and/or jointly with the municipalities. This ordinance would require developers to set aside adequate property (size and suitability) in all Planned Unit Developments (PUD) that would be developed into park areas. Such an ordinance could also provide the opportunity for the County/City to accept the cash value for potential park sites from the developers in order to set aside the money for recreational purposes. The development of this type of ordinance could be considered for Alternative A, B, B1, or C.

The acres attributed to recreation under Alternative C are the same (576) as under Alternative B. However, there would be basically no possibility of increasing this amount in the future, and the type of recreation could be significantly changed. Thus, the selection of this alternative would result in a significant reduction in potential public recreational benefits on Tims Ford Reservoir.

Under Alternative C, the proposed additional 37.7 miles of residential shoreline would eventually result in approximately 1,319 new residential waterfront lots. This would result in a total of 3,153 residential lots on Tims Ford Reservoir. The proposed marina facilities could increase the number of boat slips by 200. This could potentially increase the existing boating activity on the reservoir by approximately 28 percent (Table 3.10-1).

Alternative C was developed to provide a high level of residential/commercial development. The existing recreational areas would continue to operate as normal but with no room for land expansion and additional recreational opportunities. With this alternative, at least a 28 percent increase in projected personal watercraft usage can be expected due to the intense development of new residential property. Many



prime tracts of land will be lost for recreational development during the next twenty-five years, which would result in residents demanding additional recreational opportunities; however, the land base necessary to create such opportunities will have been eliminated. This alternative would likely have adverse cumulative effects on recreation.

The acres attributed to recreation under Alternative C are the same as under Alternative B. However, there is basically no possibility under this alternative of increasing this amount in the future, as there would be under Alternative B, and the type of recreation could be changed.

### **Alternative D**

Alternative D allows for preservation and protection of vital and sensitive resources in the region. However, only 279 acres are dedicated for recreational purposes under this alternative. This is nearly a 50 percent decrease from Alternatives B and C. Although Alternative D does restrict the initial acreage, through proper planning and mitigation, many of these parcels (3, 12, 19, 23, 27, 32, and 79) might well be used for future passive recreational opportunities. Although this alternative would maximize opportunities for the more passive forms of outdoor recreational use, its adoption would constrain opportunities for meeting long-term needs for water-based recreation and tourism facilities on Tims Ford.

No new development is proposed under Alternative D. Thus, the level of recreational boating activity is expected to increase slightly as residents of the existing developed areas continue to obtain permits for private water-use facilities. However, adoption of Alternative D would not directly cause increases in boating activity.

Alternative D was developed to provide a high level of natural resource and sensitive resource management. Under this alternative all existing recreational opportunities would continue to exist. However, the number of new acres specifically set aside for recreational purposes will be reduced by about half. In addition, the residential development would also be greatly reduced, thus creating less demand for traditional high use recreational opportunities including personal watercraft during the next twenty-five years. Many of the tracts designated for natural resource management could be used for passive recreation (i.e., hiking, horse back riding, primitive camping, etc.) although there is no guarantee this would happen. This alternative is viewed as having no adverse or positive cumulative effects upon the recreation spectrum.

### **Conclusion**

Tims Ford Reservoir and the surrounding lands afford various recreational opportunities. Much of the demand for recreation centers on water-based activities, such as boating. Demand for water-based recreational opportunities is likely to increase as residential areas around the reservoir increase. Other, non-water-based recreational opportunities, such as hiking, camping, etc. would tend to decrease with increasing residential development.

Thus, adoption of Alternative D, which does not tend to promote extensive residential or commercial development, would extend opportunities for passive, non-water-based recreation. Obviously, alternatives that promote residential development (i.e., Alternatives A, B, B1, and C) would likely cause increased levels of boating activity. Because Tims Ford is a popular reservoir, recreational boating levels could reach or exceed carrying capacity. Such increases in boating activity are not likely under Alternative A or D.

## **3.11 VISUAL**

### **3.11.1 AFFECTED ENVIRONMENT**

Tims Ford Reservoir was constructed just downstream of Woods Reservoir near the headwaters of the Elk River. It lies west and in sight of the lower Cumberland Mountain range amid rolling dairy pasture lands and sections of low-lying ridges. The vegetative cover surrounding the reservoir varies from sage fields to hardwood forests. Most typical of the reservoir's shoreline is hardwood timber cover spotted with

pockets of cedar and pine. Much of the surrounding countryside is composed of farmland which is being used predominately for livestock and dairy production.

Tims Ford supports a variety of residential developments. Additionally, the towns of Winchester and Estill Springs consume portions of its shoreline. Homes built along the shoreline vary from cabins and second homes to large, upscale permanent residences. These developments exist on open, cleared countryside as well as on steep, heavily wooded ridges. There appears to be a fairly even distribution of development around the reservoir shore with only a few areas of reservoir surface that are not in view of a subdivision or individual shoreline home. Only one major commercial marina is located on the reservoir. It is at a central location adjacent to Tims Ford State Park and serves the public with in-water boat storage and boat sales. A number of parks, campgrounds, and boat launching facilities can also be seen at various points serving the public with reservoir access. Scenic Highway 50 passes through the Tims Ford Reservoir area and the dam reservation.

Water towers, transmission line crossings, and bridges are among the more noticeable manmade features in the visual landscape of the reservoir. Residential development, with its associated water access facilities (water-use facilities, boat houses, and access steps and walks), make up the greatest portion of manmade facilities that create a visual departure from a natural reservoir setting. However, there are some coves and creek embayments with undeveloped natural surroundings available to boaters and fishermen. The criteria used for visual assessment are included in Appendix E. USDA Forest Service (1974) methodology was used in the visual analysis.

### **Variety Classes**

Variety classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are more important and those which are of lesser value from the standpoint of scenic quality. The classification is based on the premise that all landscapes have some value, but those with the most variety or diversity have the greatest potential for high scenic value. There are three variety classes which identify the scenic quality of the natural landscape:

**Class A - Distinctive** - This class applies to those areas where features of landforms, vegetative patterns, water forms, and rock formations are of unusual or outstanding visual quality. They are usually not common in the character type.

**Class B - Common** - This class includes those areas where features contain a variety in form, line, color, and texture or combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

**Class C - Minimal** - Those areas whose features have little change in form, line, color, or texture are considered Class C. This class also includes all areas not found under Classes A or B.

### **Sensitivity Levels**

Sensitivity levels are a measure of people's concern for the scenic quality of the landscape. Sensitivity levels are determined for land areas viewed by those who are traveling through the countryside on developed roads; are residents of the area; or are recreating at reservoirs, streams, and other facilities. Therefore, some degree of visitor sensitivity will be established for the entire land base. Three sensitivity levels are employed. Each represents a different level of user concern for the visual environment.

**Level 1** - Level 1 includes all areas seen from primary travel routes, use areas, and water bodies, existing and proposed, where at least one-fourth of the viewers have a major concern for the scenic qualities. Highly sensitive communities, such as one where a large portion of the population is not directly related to performing the farming activities characteristic of the area, would also be assigned to Level 1.

Level 1 - This level includes all areas visible from secondary travel routes, use areas, and water bodies (existing and proposed) where at least three-fourths of the viewers have a major concern for scenic qualities. All roads leading directly to major areas of interest, recreational composites, and historic sites, in addition to roads classified as "Scenic Highways," are to be assigned Sensitivity Level 1.

Level 2 - This level includes all areas seen from primary travel routes, use areas, and existing and proposed water bodies, where fewer than one-fourth of the viewers have a major concern for scenic qualities.

Communities where a large portion of the population is directly related to performing farming activities would be included at this level. Level 2 includes all areas seen from secondary travel routes, use areas, and existing and proposed water bodies, where at least one-fourth and not more than three-fourths of the viewers have a major concern for scenic qualities. Examples are all roads leading directly to secondary areas of interest, recreational composites, and historic sites. Sensitivity Level 2 does not include travel routes and use areas of only occasional visitation.

Level 3 - Level 3 includes all areas seen from secondary travel routes, use areas, and water bodies where less than one-fourth of the viewers have a major concern for scenic qualities. Level 3 does not include any areas seen from primary routes or areas. Examples are areas seen from secondary travel routes receiving only occasional use and land areas not visible from any travel route, use area, or water body.

### **3.11.2 ENVIRONMENTAL CONSEQUENCES**

#### **Alternative A**

The Visual/Aesthetic quality of the reservoir could change under this alternative, depending on the type and amount of development that could occur. No lands suitable for development would be set aside for resource protection. Proposals for development would be subjected to individual land-use reviews. Scenic quality would more than likely suffer. Future public and political pressures could become determining factors in the types of and places at which development would occur. The visual/aesthetic resource could be significantly impacted.

#### **Alternative B**

Under this alternative, parcel designations would more accurately predict future changes in the scenic quality of Tims Ford Reservoir. Both the public and the current residential land owner would have some idea of what might occur on any particular parcel in the future. While some parcels would be placed into sensitive resource management and resource conservation, others would be designated for residential and recreational development. Approximately 816 acres of undeveloped project land would be allocated for future homesites, and 297 acres would be designated for recreational access to the reservoir. Under this alternative the increases in auto and boat traffic, the added rights-of-way for required infrastructure, and the potential loss of approximately 20.5 miles of undeveloped shoreline would significantly affect the visual resource of Tims Ford Reservoir.

#### **Alternative B1**

Under Alternative B1, the addition of Zone 8 would allow community water-use facilities and would have some visual effects on Tims Ford Reservoir. One of the greatest visual resources on Tims Ford Reservoir is found in the Little Hurricane and Owl Hollow Creek embayments. These coves have no residential development and offer the boater and reservoir recreator an area centrally located on the reservoir as a destination point out of sight of development. Although, the locations of the proposed Conservation Partnership zones should not affect these areas, there would, however, be some cumulative visual impacts associated with the addition of Zone 8. However, the construction of water-use facilities would not create a visual departure from the existing setting in these sections of the reservoir. Impacts would result from increased levels of boat traffic as launched boats could be more easily left at community water-use facilities and more frequently used. By permitting more water-use facilities along the Tims Ford shoreline due to the creation of Zone 8, more backlying residential development could occur on adjoining private land which will generate the need for more infrastructure. This infrastructure with its associated rights-of-ways, roadways, and support structures will have a cumulative negative visual impact on the aesthetic resource of the Tims Ford area.

**Alternative C**

Under a planned maximum land development alternative, approximately 2,585 acres of public land could be developed for residential and recreational purposes. Approximately 55.1 miles of natural shoreline could potentially be changed by development. The general visual quality of the reservoir that currently exists would be significantly impacted. Overcrowded conditions and a reduced number of undeveloped coves available to the boater for fishing and anchoring would likely be the result of adopting this alternative. Residential development, the presence of reservoir users, and the required infrastructure to support this development would be visually dominant.

**Alternative D**

Under Alternative D, no new development outside of existing uses would be allowed. That is, all lands would be unavailable for development and would be allocated to natural resource conservation. Large tracts of undeveloped shoreline would remain intact, which would preserve existing scenic resources for public enjoyment. Reservoir users and visitors to the Tims Ford area would be given a variety of scenic resources to experience under this alternative. Existing stretches of wooded shoreline as well as some coves and embayments would be preserved, absent of development. Subdivision development would be limited to existing designated tracts. Home owners and potential buyers of homes could be assured with some degree of certainty of the long-term views that they could expect. Visual quality around Tims Ford Reservoir would benefit from adoption of this alternative.

**3.12 OTHER ISSUES****3.12.1 AIR QUALITY****3.12.1.1 AFFECTED ENVIRONMENT**

The Clean Air Act empowers the U. S. Environmental Protection Agency (EPA) to establish rules and regulations to protect the nation's air quality. Under this authority, the EPA has set primary and secondary ambient air quality standards for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate, and sulfur dioxide. These standards are designed to protect the health and welfare of citizens.

Historical air quality data gathered within the State of Tennessee indicate that Moore, Franklin, and the surrounding counties are in attainment with ambient standards.

In 1997, the EPA revised the standards for two of the criteria pollutants, ozone and particulate, to more restrictive levels. When the state's air quality data are evaluated under the new standards in the designated years of 2000 and 2002, some counties may not be in attainment with these new standards. However, because Moore and Franklin Counties are considered rural areas, air quality in these counties is unlikely to exceed the new standards.

Prevention of Significant Deterioration (PSD) rules under the Clean Air Act protect air quality in national parks and Wilderness areas classified as Class I areas. During the permitting process, new or expanding sources within 31 miles of a Class I area must closely examine the impact of projected emissions on the area. Depending on the significance of the impact of the emissions, the permitting agency can approve or deny the permit. The Federal Land Manager can request that the review of the impacted area be extended to a distance greater than 62 miles beyond the boundary of a Class I area when considering large air pollution sources. The State's PSD permitting authority, Division of Air Pollution Control, works closely with the Class I Federal Land Manager during the PSD permitting process to resolve issues and concerns about potential air quality impact. However, in all cases, the state is the PSD permitting authority.

**3.12.1.2 ENVIRONMENTAL CONSEQUENCES**

For the alternatives considered in this FEIS, the allocation of lands to Industrial/Commercial Development and Residential Development has the potential to impact air quality. Other land uses (e.g., project operations, sensitive resource protection, natural resource conservation, and recreation) are not expected

to cause any significant effects to air quality. Potential effects associated with resultant recreation, industrial/commercial development, and residential development are described below.

### **Recreation**

There would be an increase in emissions to the ambient air from increased usage of watercraft under Alternatives A, B, and C. However, this increase in emissions is not expected to impact the State of Tennessee's ability to meet ambient air quality standards in Moore and Franklin counties. The EPA has established standards for emissions for engines used in off-road applications such as watercraft. Manufacturers of engines used for this application are required to comply with these standards. As watercraft come into compliance with the standards, air emissions are not expected to be a problem.

### **Industrial/Commercial Development**

Any significant air contaminant source that plans to locate or expand in the area will be required to file a permit application with the TDEC. The source must show compliance with the applicable air quality standards to be permitted. The PSD review will ensure that emissions from new industrial sources located in the project area (under any of the alternatives) would not adversely impact air quality in the Class I areas. Under Alternatives A and D, 6 acres (0.6 shoreline miles) would be allocated for industrial or commercial development purposes to accommodate existing land uses, which currently include a water intake (Parcel 7A) and an office building complex (Parcel 83). Under Alternatives A, B, B1, and C, 61 additional acres (1.2 shoreline miles) would be considered for industrial or commercial development purposes.

Tims Ford does not accommodate commercial navigation, as there is no navigation lock for the dam. Any new industrial/commercial areas under Alternatives A, B, B1, and C would consist of light commercial activities and would provide opportunities for community education facilities and for a staging area for commercial operators to assemble floating piers.

Under Alternative A, requests for any or all of the additional 61 acres would be considered on a case-by-case basis. Under Alternative D, no additional land would be allocated for Industrial/Commercial Development. Under Alternatives B, B1, and C, the likelihood of industries with significant air contaminant sources locating on Tims Ford project lands is very low. Therefore, potential impacts to regional air quality from commercial/industrial development are unlikely.

### **Residential Development**

Under Alternatives A and D, 122 acres (17.1 shoreline miles) would be allocated for Residential Development/Access to accommodate existing licensed residential access. Under Alternative A, up to 2,585 acres could be considered for residential development on a case-by-case basis. Under Alternative B, 938 acres (30.2 shoreline miles), including existing licensed residential access, would be allocated for Residential Development/Access. Under Alternative B1, 821 acres (28.2 shoreline miles), including existing licensed residential access, would be allocated for Residential Development. Under Alternative C, 2,585 acres (64.9 shoreline miles), including existing licensed residential access, would be allocated for Residential Development. No additional land would be allocated for Residential Development under Alternative D.

Any potential impacts to air quality from residential development would be insignificant regardless of the alternative, as residential development typically has minimal effects on air quality. Emissions from the operation of construction equipment and fugitive dust from grading operations would be controlled effectively by following proper preventive maintenance schedules for equipment and applying reasonable precautionary measures to minimize fugitive dust. Once construction is completed, normal activities that take place in residential neighborhoods, such as space heating and the use of gas-powered equipment, would contribute some minor emissions. However, the overall impact on regional air quality from these sources would be negligible.

### 3.12.1.3 CONCLUSION

Potential impact on air quality under any of the alternatives depend on the type of development that takes place. Residential development would have very little impact. Commercial development will have a slight impact on air quality. The greatest potential impact is from industrial development. Because new and expanding industrial sources are regulated under state permitting requirements, anticipated effects on air quality will be within acceptable limits.

## 3.12.2 FLOODPLAINS

### 3.12.2.1 AFFECTED ENVIRONMENT

The 100-year floodplain on Tims Ford Reservoir is the area inundated by the 100-year flood. The 100-year flood elevation on Tims Ford is elevation 893.3 feet mean sea level (msl) at the dam (Elk River Mile 133.3). This elevation is used throughout the reservoir. The 500-year or "critical action" floodplain on Tims Ford is the area below elevation 894.2 feet msl. On Tims Ford Reservoir lands, all property below the 895-foot contour is retained by TVA. Thus, any actions that could potentially directly affect floodplains on project lands would be subject to jurisdiction by TVA.

### 3.12.2.2 ENVIRONMENTAL CONSEQUENCES

All property disposition and allocations involve property above elevation 895. The 100-year floodplain is below that elevation. Therefore, under any alternative, there would be no direct impacts to the 100-year floodplain. Indirect impacts on the 100-year floodplain that may result from activities associated with development such as the construction of private water use facilities are not expected to be significant. For these activities, there is no practicable alternative to locating in the floodplain as determined by TVA in 1981 in the memorandum entitled "Class Review of Certain Repetitive Actions in the 100-Year Floodplain."

Under all of the alternatives, any fill material placed between elevations 860 feet msl and 888 feet msl would be subject to a charge for lost power storage, and any material placed between elevations 873 feet msl and 895.0 feet msl would be subject to the requirements of the TVA Flood Control Storage Loss Guideline. Those alternatives with additional residential and recreational development, such as Alternatives B, B1, and C, would likely generate several requests for dredge and fill activities each year.

## 3.12.3 TRANSPORTATION

### 3.12.3.1 NAVIGATION

#### **Affected Environment**

There is no commercial navigation on Tims Ford Reservoir; however, TVA installs and maintains navigational aids on land surrounding the reservoir to assist recreational boaters. There are 32 onshore day boards located at intervals on the Elk River between Tims Ford Dam and Elk River Mile 162.2 that provide boaters information on river miles. Where possible, the day boards are located so that boaters can travel in a straight line of sight from one day board to the next. Seventeen onshore directional signs mark the entrance of large creeks into the Elk River. Directional signs show the name of the creek and point in the upstream direction of the creek. Maintenance is performed once a year to replace missing or damaged navigational aids, and vegetation is removed from the immediate vicinity of the signs to ensure that they are visible to boaters. Navigational aids, either day boards or directional signs, are located on the shoreline of Parcels 12, 14, 20, 24, 28, 33, 34, 36, 38, 39, 41, 47, 51, 52, 54, 69, 73, 75, 76, and 79.

#### **Environmental Consequences**

Under all alternatives, there would be no significant impact on navigational aids used by recreational boaters. The main concerns are the continued placement of the signs along the shoreline and visibility of the signs. Because navigational aids are located along the shoreline, the construction of water use

structures associated with residential development or marinas would have the greatest potential for impacting navigational aids. Requests for water-use facilities, boathouses, fishing piers, and launching ramps within 50 feet of navigational aids would be reviewed by TVA's navigational program during the Section 26a permitting process. The Section 26a permit process would ensure that water-use structures constructed along the shoreline would not reduce visibility of the signs or compromise their placement on the shoreline. Industrial and commercial developments that do not involve the placement of structures in the reservoir would have no impact on navigational aids.

### 3.12.3.2 AUTO TRAFFIC

#### Affected Environment

Primary access to the project lands is via State Route 55 from the northwest or U. S. Highway 64 from the southeast. Route 55 and Highway 64 are 4-lane principal highways from Tullahoma and Winchester, respectively, to Interstate 24, which is approximately 18 miles to the east of the project lands. Route 55 merges with State Route 50 northwest of the Plan area and continues westward into Fayetteville. Highway 64 continues westward and merges with Route 50 just west of Fayetteville about 15 miles west of the Plan area.

Several roads traverse the Plan area between Route 55 and Highway 64, including U. S. Highway 41A, State Route 50, State Route 130, and Mansford/Awalt/Chestnut Hill Roads. These roads serve as connector and feeder routes to the primary access roads. Highway 41A is a 4-lane roadway in the developed urban areas and a high-quality 2-lane route with good shoulder width and alignment in rural areas. Routes 50 and 130 are high- to mid-quality 2-lane secondary roadways. The Mansford to Awalt and Mansford to Chestnut Ridge routes are 2-lane secondary roads with often limited sight distance and sometimes little to no shoulder width. Numerous smaller county roads lead from these connector roads to the individual project lands.

The average daily traffic (ADT) counts for the primary and connector roads are shown in Table 3.12-1. ADT values were taken from "Tennessee City & County Traffic Maps showing 1997 Average Daily Traffic" by the Tennessee Department of Transportation. Some existing significant traffic generators for the area include the AEDC to the northwest, the Nissan production facility to the northeast, and the industrial park to the east. The AEDC connects to State Route 55. Both the Nissan facility and the industrial park access Highway 64.

**Table 3.12-1 Existing ADT Count for Roads Surrounding and Traversing Plan Area**

Road	Description	Existing ADT
Highway 64	Mixed 4-lane & high quality 2-lane, US highway	3,800
Route 55	Mixed 4-lane & high quality 2-lane, State route	13,600 (to I-24) 6,390 (2-lane)
Route 130	High to mid quality 2-lane, State route	5,070
Route 50	High to mid quality 2-lane, State route	1,770
Highway 41A	Mixed 4-lane & high quality 2-lane, State route	12,130
Mansford & Awalt	2-lane, limited shoulder & sight distance	1,850 & 1,530
Mansford & Chestnut Ridge	2-lane, limited shoulder & sight distance	1,850 & 840

#### Environmental Consequences

The alternatives for the Tims Ford Project land include a wide range of possible land uses in the development of the area. The alternatives have many parcels allocated to land-use zones which could include industrial and commercial development, developed recreation, and residential development. These types of development would result in the generation of additional traffic on the adjacent roadway

network. The methodology, as defined by Trip Generation, used to determine the additional trip generation estimates is based on an independent variable (acreage) for each particular land use for a specified day or time period (weekday). Based on several field studies of existing recreational homes, marinas, parks, golf courses, light industry, manufacturing, industrial parks and warehousing, estimates of vehicle trip ends or vehicles per day were used to determine how the existing traffic would be affected. The project area was divided into sectors using existing population and average daily traffic data to determine traffic flow direction of the expected generators.

The additional traffic due to the proposed alternatives would result in increases in average daily traffic as shown in Table 3.12-2. This level of analysis provides a broad overview of the predicted impact. The state multi-lane highways (Highway 64 and Route 55 to I-24) would provide higher capacity levels and an increase in traffic would tend to be less noticeable. Although some of the percentage increases in ADT are rather high, the roads in this area are generally underutilized and an increase in traffic will not result in a major change to the existing service levels of the local roads. The secondary connector and feeder routes have existing traffic conditions where there is stable flow, but drivers are restricted in their freedom to select speed. In some cases, the additional traffic generated would result in a noticed traffic flow that becomes subject to considerable and sudden variation and reduced freedom to maneuver, but operating speeds remain tolerable for short periods of time. The numerous smaller county roads that lead to the connector roads would experience large increases in traffic volume. Also, some parcels to be developed do not have access. These roads which lead to the connector roads may have to be upgraded, and new roads may have to be developed for the traffic conditions expected. Over a long period of time, there is a natural progression to improve the quality of the local roadway network. Therefore, as traffic increases, roadway networks would also improve. Also, the increases in traffic will occur slowly over a long span of time, so that traffic conditions will not change suddenly and will not be perceived by the user as a significant change. Users of the local roadway network tend to be multi-users of the entire Tims Ford Project land area. Some of the future traffic projected would likely be entirely self contained within the project area (i.e. a trip from a nearby recreation home to the local golf course). Such traffic occurs typically at an off-peak hour and as such does not generally affect road users commuting through the project area.

**Table 3.12-2 Average Daily Traffic Increases for Roads Surrounding and Traversing Plan Area**

Road	Existing	Alternative				
	ADT	A	B	B1	C	D
Highway 64	3,800	5%	14%	14%	18%	10%
Route 55	13,600	1%	3%	3%	5%	1%
	6,390	5%	30%	30%	48%	7%
Route 130	5,070	6%	27%	27%	41%	8%
Route 50	1,770	40%	180%	180%	225%	125%
Highway 41A	12,130	2%	5%	5%	6%	3%
Mansford	1,850	2%	46%	46%	54%	2%
Awalt	1,530	12%	82%	82%	95%	21%
Chestnut Ridge	840	2%	2%	2%	2%	2%

Increases in traffic due to the dedicated land uses of Alternative A are relatively small. Most of the parcels for this alternative, though, have yet to be zoned and will be evaluated on a case-by-case basis. Adoption of Alternative D also would have relatively small increases in traffic due to no additional development. Alternatives B, B1, and C both have noticeable effects on the roadway system; however, Alternative C has the greatest overall increase in traffic conditions due to the maximum economic growth philosophy. Alternative B has a balanced approach between that of development and conservation and increases to the roadway network are less than those under Alternative C. Alternatives B and B1 will be similar in average daily traffic increases, although community facilities under Alternative B1 could cause small traffic



increases as compared to Alternative B. Changing Parcel 14 from Zone 7 to Zone 4 reduced ADT increases on State Route 50.

Possible mitigative efforts that could be made to improve traffic would likely be made over time by the appropriate county highway department. Physical improvements to increase road capacity could include intersection redesign, construction of additional vehicle lanes throughout road segments, construction of passing lanes in certain locations, realignment to eliminate some of the no-passing zones, increased shoulder width, etc. New roads that would be constructed for access that lead to the secondary connector roads would likely be designed based on detailed field studies to assure adequate traffic conditions.

The potential traffic impact for all four alternatives would be insignificant. Implementation of Alternatives A or D would generate very small percentage increases in traffic as compared to the existing ADT. Under these two alternatives, the additional traffic would not reduce the level of service currently provided by the local road network. Alternative C shows the highest percentage increases in traffic. Overall the road network has sufficient capacity to handle the additional traffic for this alternative, albeit at some count locations this will be at a level of service reduced from that currently provided. Given the time over which development will take place, the increase in tax base due to the development, and the nature of the traffic increase, it is likely that mitigative measures would naturally be taken by the appropriate transportation authorities involved. Similarly, the traffic generated under Alternative B and B1 can be handled by the existing road network with the level of service slightly reduced at only a few locations. The mitigative efforts mentioned above would again tend to offset this increase.

### **3.12.4 SOCIOECONOMICS**

#### **3.12.4.1 AFFECTED ENVIRONMENT**

The Tims Ford Reservoir lies in Franklin and Moore Counties in lower middle Tennessee, near to the Tennessee-Alabama state line.

##### **Population**

The 1998 population of the two counties in the Tims Ford area is estimated by the U. S. Bureau of the Census to be 42,723, an 8.1 percent increase over the 1990 population of 39,511. This growth rate is slower than that of the state, which is estimated to have grown by 11.3 percent. Table 3.12-3 shows the population and population projections for Franklin and Moore Counties and how they compare to both the state of Tennessee and the U. S. There are 1,968 lots that have been platted in subdivisions or other private developments around Tims Ford Reservoir, not all of which have been developed. Over half (1,063) of these are waterfront lots. If all these lots were developed and used as full-time residential units, the total population impact on the area around the reservoir would likely be about 5,300 persons, including more than 2,800 living on waterfront lots.

**Table 3.12-3 Population and Population Projections 1980-2010**

County	1980	1990	1998	2005	2010
Franklin	32,075	34,798	37,458	39,537	41,076
Moore	4,519	4,713	5,265	5,536	5,735
Area Total	36,594	39,511	42,723	45,073	46,811
Tennessee	4,591,023	4,877,203	5,430,621	5,966,000	6,180,000
United States (000)	226,542	248,710	270,029	285,981	297,716
Percent Change In Population					
County	1980-1990	1990-1998	1990-2005	2005-2010	1998-2010
Franklin	8.5	7.6	13.6	3.9	9.7
Moore	4.3	11.7	17.5	3.6	8.9
Area Total	8.0	8.1	14.1	3.9	9.6
Tennessee	6.2	11.3	22.3	3.6	13.8
United States	9.8	8.6	15.0	4.1	10.3

Source: U. S. Bureau of the Census, Census of Population; Woods & Poole.

### Labor Force and Unemployment

In 1999 the civilian labor force of the area was 21,170, as shown in Table 3.12-4. Of those, 890 were unemployed, for an unemployment rate of 5.2 percent. Moore County's unemployment represented 2.4 percent of its labor force while Franklin's represented 4.5 percent. The unemployment rate for the combined two counties, 4.2 percent, was above the state rate, 4.0 percent, yet higher than that of the nation, 4.9 percent. Franklin County's rate was higher and Moore County's lower than both the state and national rates.

**Table 3.12-4 Labor Force Data, Residents Of Tims Ford Area, 1997 Annual Average**

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Franklin	18,240	17,420	820	4.5
Moore	2,930	2,860	70	2.4
Area Total	21,170	20,280	890	4.2
Tennessee	2,818,800	2,705,300	113,500	4.0
United States	139,368,000	133,488,000	5,880,000	4.2

Source: Tennessee Department of Employment Security; U. S. Bureau of Labor Statistics.

### Jobs

The number of jobs in the Tims Ford area has risen fairly steadily over the past several years. In 1996 the area's total wage and salary employment was about 12,000, an increase of 21.2 percent since 1989. About 87 percent of these jobs were in Franklin County.

In 1996 manufacturing industries accounted for about 16 percent of the Tims Ford area's wage and salary jobs. However, in 1989 manufacturing accounted for about 26 percent of the jobs. The number of manufacturing jobs declined during this period in both counties. The service sector was the area's largest employer, providing around a third of the area's wage and salary employment. The service sector experienced an employment increase of almost 44 percent between 1989 and 1996.

### Occupation Patterns

While Franklin County has a higher proportion of its workers in managerial and professional jobs than the state average, Moore County's share is lower. The combined counties' share is 19.4 percent, compared to 22.6 percent statewide. Conversely, the area has a higher share of its workers in the lower-paying, blue-collar jobs. While the shares in Franklin County are somewhat similar to the statewide averages,

Moore County has proportionally fewer managerial and professional workers and more lower-skilled, blue-collar workers.

### **Income and Retail Sales**

Per capita personal income in the area increased by 10.6 percent between 1989 and 1996. This increase was less than the 14.7 percent increase experienced by the state of Tennessee but greater than the 8.1 percent national increase. The per capita income of area residents in 1996 was \$15,917, a level significantly below either the state or national levels, \$20,037 and \$22,223, respectively. Franklin County's per capita income of \$16,114 is somewhat higher than that of Moore County, which is \$14,526.

The manufacturing sector currently generates 18.6 percent of the area's earnings by place of work, about the same as the national average of 18.0, but below the state average of 22.5 percent. In Franklin County 18.5 percent of earnings are generated from manufacturing while in Moore County the share is 19.4 percent.

### **Housing**

Based on 1990 median values of owner-occupied homes, housing prices are generally lower than elsewhere in the state. Franklin County's median housing value was \$48,700, while Moore's was slightly higher at \$50,300. The median value of housing in the state of Tennessee was \$58,000 in 1990.

## **3.12.4.2 ENVIRONMENTAL CONSEQUENCES**

Under all the alternatives, socioeconomic impacts would result largely from the use of land for recreational, industrial or commercial, and residential use. Alternatives A and D include 6 acres with approximately 0.6 shoreline miles available for industrial or commercial development purposes. Alternatives B and C include 67 acres and approximately 1.8 shoreline miles for industrial or commercial development purposes.

### **Alternative A**

Socioeconomic impacts would result largely from the use of land for recreational use, for industrial or commercial use, and for residential use. Under Alternative A, 6 acres with about 0.6 shoreline miles are allocated for industrial or commercial development purposes to accommodate existing land uses. Additional lands could be utilized for Recreational or for Residential Development; roughly 2,821 acres could be used for this purpose (not including an additional 123 acres with 52.4 miles of shoreline, which are existing residential land and would likely be considered for residential access). These uses would likely result in significant impacts to the local economy.

### **Alternative B**

Under Alternative B, 67 acres with about 1.8 shoreline miles would be classified as Industrial or Commercial Development to accommodate existing land uses and light commercial development. The light industrial development consists of an existing office building complex and a staging area for assembling boat water-use facilities. Also under Alternative B, 576 acres with approximately 13.8 miles of shoreline would be available for Recreation. Depending on the type of development, there could be an important impact on the local economy if persons from outside the local area are drawn to this development. However, the impacts cannot be assessed with specificity in the absence of proposals for recreational development. Residential development could also result in important impacts on the local economy. This alternative allocates 938 acres (30.2 shoreline miles), in addition to existing licensed residential access, for Residential Development. Using the assumptions in TVA's Shoreline Management FEIS (TVA, 1998), this could result in increased population in waterfront lots of about 1,800 persons. In addition, backlying lots might be developed for residential use, resulting in an increase of another 2,200 persons. While much of this population would consist of persons who would otherwise live elsewhere in the general area, developments that are well designed and marketed regionally or nationally would attract some residents from other areas, particularly retirees.

**Alternative B1**

Under Alternative B1, the socioeconomic impacts would be very similar to those of Alternative B. Compared to Alternative B, there are 117 fewer acres allocated to Zone 7 (Residential Development/Access) and 87 more acres allocated to Zone 4 (Natural Resource Conservation), along with the addition of a new Zone 8 (Conservation Access) which is coupled with a new management strategy to establish a wider shoreline buffer zone in certain areas. These changes are discussed in Section 2.2.3. Most of the changes in the acreage allocated to Zones 4 and 7 result from moving Parcel 14 which has 128 acres from Zone 7 (Residential Development/Access) to Zone 4 (Natural Resource Conservation). This change would likely reduce the population increase along the reservoir, but the difference would not be important in the overall context of population, income, and employment in the area. These changes, however, would have positive impacts on property values around the reservoir. Property values would be expected to be somewhat higher than under Alternative B for three reasons. First, Alternative B1 would provide opportunities for water access via community water-use facilities for residential units that otherwise would have no water access. Next, it would provide better views and improved attractiveness in some important parts of the reservoir. Finally, it would slightly reduce the number of residential lots that could potentially become available on the reservoir.

**Alternative C**

Under Alternative C, as under Alternative B, the same 67 acres with about 1.8 shoreline miles would be classified as Industrial or Commercial Development to accommodate existing land uses and light commercial development. The light industrial development consists of an existing office building complex and a staging area for assembling boat docks. Also under Alternative C, as under B, 576 acres with approximately 13.8 miles of shoreline would be available for Recreation. Depending on the type of development, there could be an important impact on the local economy if persons from outside the local area are drawn to this development. However, the impacts cannot be assessed with specificity in the absence of proposals for recreational development. Residential development could also result in important impacts on the local economy. This alternative allocates much more land to residential development than any of the other alternatives. 2,585 acres (64.9 shoreline miles) in addition to existing licensed residential access would be designated as Residential Development/Access. Using the assumptions in TVA's Shoreline Management FEIS (TVA, 1998), this could result in increased population on waterfront lots of about 3,700 persons. In addition, backlying lots might be developed for residential use, resulting in an increase of another 4,600 persons. While much of this population would consist of persons who would otherwise live elsewhere in the general area, developments that are well designed and marketed regionally or nationally would attract some residents from other areas, particularly retirees.

**Alternative D**

Under Alternative D, as under Alternative A, 6 acres with about 0.6 shoreline miles would be classified as Industrial or Commercial Development to accommodate existing land uses. However, under Alternative D, only 279 acres, with approximately 7.7 miles of shoreline, would be available for Recreation. Depending on the type of development, there could be an important impact on the local economy if persons from outside the local area are drawn to this development. However, the impacts cannot be estimated with specificity in the absence of proposals for Recreational Development. On the other hand, this alternative allocates no additional land for Residential Development other than the land that already is in or sold for residential use. Therefore, the only impact on population would be indirect impacts resulting from increased economic activity from recreational development, except for the possibility of minor impacts from light industrial or commercial development as discussed above. However, there are lots already sold for residential use that have not been developed. There would continue to be population impacts as these lots are developed, as there would be under any of the alternatives.

**3.13 ENVIRONMENTAL JUSTICE****3.13.1 AFFECTED ENVIRONMENT**

The nonwhite population in both Franklin and Moore Counties is a smaller share of total population than in the state as a whole. The poverty rate in both counties is also lower than the state average. The portion of

these counties in which the reservoir itself is located (Census tracts 9601, 9602, 9603, 9604, and 9605 in Franklin County, and 9901.98 in Moore County) also has nonwhite population shares and poverty levels below the state average. The nonwhite population share and the poverty level in this area are similar to Franklin County, but both are higher than in Moore County. The nonwhite population and percent of persons below the poverty level is shown in Table 3.12-5.

**Table 3.12-5 Nonwhite Population and Poverty Levels**

	<b>Percent Nonwhite Population, 1990</b>	<b>Percent Persons Below Poverty Level, 1989</b>
Franklin County	6.4	14.4
Moore County	3.9	6.5
Reservoir Census Tracts	6.6	13.0
Tennessee	17.0	15.7

Source: U. S. Census of Population, 1990

### **3.13.2 ENVIRONMENTAL CONSEQUENCES**

In the reservoir area, as well as in the two counties in which the reservoir is located, both the nonwhite population and the share of persons below poverty level is lower than the state average. None of the proposed land uses would displace residents or create disproportionate impacts on disadvantaged populations in the area. Any additional recreational opportunities created would be available to all on an equal basis; increased recreational activity is not expected to have significant impacts on nearby residents. Therefore, there are no disproportionate impacts on disadvantaged populations.

### **3.14 ECONOMIC BENEFITS AND COSTS**

Under any of the alternatives, there would likely be increases over time in the economic benefits accruing from Tims Ford Reservoir and the lands around the reservoir. One source of economic benefits would be increased property values and the resulting increases in local government revenues. Another would be increased local sales tax revenues. Increased sales from growth in tourism would increase income and employment, as well as sales tax revenues, in the Tims Ford area.

There are a number of intangible economic benefits associated with each of the alternatives. These include the value of the scenic beauty of the area in general, the view from specific residential and commercial sites, and the value of non-market recreational activities such as hiking, bird watching, and photography. Property values may be positively affected by proximity to parks, open space, greenways, and recreational trails as well as proximity to the reservoir.

Development would result in additional costs to local (and probably state) governments and could increase costs to area residents, recreational users, and other visitors to the area. Development inevitably leads to increased capital and maintenance costs for infrastructure, such as roads and water and waste water systems. Costs of public safety such as fire and police protection and emergency health services would likely increase. School costs would also be impacted if county populations increase as a result of development. These additional costs are not always offset by increases in local government revenues (see Horchem and Gottfried, 1998; Muller, 1975; Muller and Dawson, 1972; Schaenman and Muller, 1974). Less tangible costs include increased congestion and crowding, loss of informal recreational opportunities, and loss of open space and visual quality. Water quality may be threatened, resulting in increased costs to maintain an acceptable level of quality.

Additional residential development around the reservoir would increase the value of the affected property. However, much of this increase in population around the reservoir would consist of persons who would live elsewhere in the affected counties if property were not available around the reservoir. Therefore, the net financial impact on property values and on local tax revenues would be less than the increases that

would otherwise accrue if people from counties other than the affected counties were to purchase properties around the reservoir.

Development that resulted in losses in the quality of life in the area, such as scenic views, overall attractiveness, access to informal recreational opportunities, and the lack of congestion and crowding, would ultimately result in negative impacts on property values, even though short-term impacts might be positive.

Additionally, TVA pays tax equivalent payments to Franklin and Moore counties. Information regarding dollars paid directly to Moore and Franklin Counties in lieu of taxes plus dollars that were paid to the State which were redistributed to these counties for 1998 and 1999 is presented in the Table 3.14-1.

**Table 3.14-1 Tax Equivalent Payments**

	Franklin County	Moore County
1998 - \$ Paid Direct	\$10,215	\$2,190
1998 - \$ State Distribution	\$532,602	\$88,326
1999 - \$ Paid Direct	\$10,215	\$2,920
1999 - \$ State Distribution	\$595,992	\$99,529

#### **Alternative A**

Under Alternative A, plannable land would be considered for specific uses on a case-by-case basis. Existing uses, however, would likely continue. Existing residential areas without land rights for water access would likely be considered for residential access, affecting 122 acres and 17.1 miles of shoreline. The 881 acres of land containing sensitive resources would be maintained in a protective category, and about 1,958 acres deemed not suitable or capable for development could be managed for Natural Resource Conservation. Six acres are in existing light commercial use, and 279 acres have existing recreational uses. The remaining 2,821 acres could be considered for development for residential, recreational, and/or industrial or commercial uses.

Development of these lands would increase income and employment in the area, and would, at least initially, increase property values. However, development negatively impacting the intangible benefits of the area (such as general scenic beauty, specific views, informal recreational opportunities, and water quality) would ultimately begin to have negative impacts on property values as the area begins to be less desirable for residential and recreational use. Detrimental impacts on property values would also affect local government property tax revenues. Sales taxes would increase as long as population and recreational visitation continued to grow, but would also be negatively impacted if loss of attractiveness diminished the market for the reservoir and surrounding area. Costs to the local government would increase as more roads are needed and used more frequently, as water and waste water systems have to expand, as school systems have to expand, and as more tax revenues are required for public safety. Lack of overall planning would make it more difficult to control such impacts.

#### **Alternative B**

Alternative B calls for the creation of additional recreational opportunities, including activities that are not water based. As these opportunities are developed, property values would increase. These increases would occur directly as a result of increased demand for property for developmental purposes and also indirectly because the increase in recreational opportunities would make the area more desirable both to visitors and to potential residents of the area. This increase in property values would lead to an increase in property tax revenues to the local governments. In addition, the increased expenditures for goods and services on the part of tourists would increase sales tax revenues to the local governments.

These additional recreational opportunities also would create more job opportunities and additional income in the local area. Intangible benefits of the area also would be better maintained or even

enhanced with the availability of more informal recreational opportunities than likely would be the case under Alternative A. Views and general scenic beauty of the area would be better maintained and this type of development would be less detrimental to water quality than the more extensive development that would be likely under Alternative A. Also, this type of development is likely to be less detrimental in the long term to property values than under Alternative A.

Additional government outlays would be required for public services, as discussed above under Alternative A. However, additional costs for most public and community services would likely be less than under Alternative A.

#### **Alternative B1**

Alternative B1 is similar to Alternative B, but it has 117 fewer acres allocated to Zone 7 (Residential Development/Access) and 87 more to Zone 4 (Natural Resource Conservation). It also allocates some narrow shoreline strips to a new category, Zone 8 (Conservation Partnership), which is coupled with a new management strategy to establish a wider shoreline buffer zone in certain areas. As a result of this and other adjustments, including possible water access via community water-use facilities for property otherwise without water access, Alternative B1 most likely would result in slightly lower population along the reservoir but improved scenic and environmental characteristics. This improvement in views and the environment would have positive impacts on property values, leading to somewhat higher property values than under Alternative B. In turn, property tax revenues would probably be somewhat higher than under Alternative B. At the same time, intangible benefits (beauty, views, informal recreation opportunities, water quality) would be greater than under Alternative B.

#### **Alternative C**

Alternative C, Maximum Land Development, would involve the disposition of all uncommitted suitable and capable parcels for development (residential, commercial/industrial, and recreation). Almost one-third of the shoreline miles (64.0 miles) would be available for residential development. There would be more residential development under this alternative than under any of the other alternatives. Development of this land for residential uses would quickly increase property tax revenues to local governments. However, this type of development is likely to have detrimental impacts on scenic beauty and views and on water quality and would eliminate many opportunities for informal recreation. These impacts would, over time, diminish the attractiveness of the area and ultimately begin to have negative impacts on property values, income and employment in the area, recreational usage, and both property and sales tax revenues to local governments. This alternative also would likely result in greater cost increases for all public and community services than any of the other alternatives, except possibly Alternative A.

#### **Alternative D**

Alternative D would allocate all uncommitted lands for natural resource conservation. No new land development would be allowed, although existing uses would be allowed to continue. Because there would be no new development, property values and local government revenues from property and sales taxes would not be directly impacted. However, this alternative would maintain an attractive environment that would over the long term enhance the value of property in the area and that would make it a more desirable area in which to live. This enhanced attractiveness would have positive impacts on property values of lands adjacent to and nearby the undeveloped areas of the reservoir. By improving the attractiveness of the area, not only property values but also property tax and sales tax revenues would increase. Also, adoption of this alternative would likely result in smaller impacts on the need for public and community services than any of the other alternatives.

#### **Summary**

In the short term, adoption of Alternative C probably would have the greatest positive impact on income, property values, and local government revenues from property and sales taxes. Much of this gain, however, would be at the expense of the intangible benefits (scenic beauty, views, informal recreation opportunities, and water quality). Adoption of Alternative C would likely also result in the greatest increase in the total cost of public and community services, except possibly for Alternative A. Over the long term, Alternative B and B1 with their emphasis on a balance of development and resource protection would likely have the greatest positive economic impact because they would do a much better job of

protecting the overall attractiveness of the area and the area's intangible benefits while allowing development of some tracts of land. Also, the impacts from Alternatives B and B1 on the total cost of public and community services would likely be less than those under Alternatives A and C, and about the same or slightly less than under Alternative B, but more than under Alternative D. The impacts of Alternative A might be similar to those of Alternative C, although the lack of a plan would make this future much less certain. Adoption of Alternative D would have the most positive impacts on intangible benefits and the overall attractiveness of the area. However, the lack of development would mean reduced positive impacts on income, employment, property values, and local government tax revenues. At the same time, it would likely have the least impact on total cost of public and community services.

### **3.15 UNAVOIDABLE ADVERSE EFFECTS**

Disposition and commitment of the project lands and shoreline for residential access and commercial recreation is possible and/or proposed in four of the alternatives (A, B, B1, and C). These alternatives (A, B, B1, and C) would result in an increase in residential, recreational, and commercial shoreline development. The commercial development is light industrial, consisting of an existing office building complex and a staging area for assembling boat docks.

Additional development of project lands would result in losses of forested area, local impacts to wildlife habitat required by forest species, and increase suitable habitat for cowbirds. Suitable habitat for cowbirds would, in turn, impact the nesting success of other birds. Shoreline development also could result in a loss of potentially suitable, but presently unoccupied habitat for shoreline-using endangered and threatened species. The functions and values of wetlands could also be impacted by some shoreline development. Aquatic habitat suitability would decrease as more shoreline is opened for residential development. Residential development could also lead to nutrient enrichment of some reservoirs and fecal coliform contamination in some embayments.

From a recreational standpoint, residential shoreline development could essentially privatize public lands in front of reservoirfront houses, even though a strip of land adjacent to the shoreline would still be public. This unavoidably displaces informal recreational site users. Impacts associated with recreation are similar to residential, especially with developed cabin sites typically found around commercial marinas. Campgrounds can similarly impact habitat by removing understory vegetation. Lands allocated for development that would result in disposition (mainly residential) would no longer be available for public use. This would impact outdoor activities such as hiking, swimming, and hunting.

### **3.16 RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

Disposition and commitment of the project lands and shoreline to residential access and commercial recreation is a long-term decision that would decrease the productivity of the land for forest, wildlife, recreational, agricultural, and natural area management. Long-term productivity decreases would be greatest for Alternative C. Alternative B and B1 would have some decreases and the extent of impacts for Alternative A are difficult to predict, as they would depend on the outcome of future case-by-case reviews. The types of changes that occur with residential development would result in a decline in the habitat quality for some terrestrial species and an increase in 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 development would occur under Alternatives A, B, B1, and C and result in population increases 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.



### **3.17 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Irretrievable use of nonrenewable resources (i.e., fuel, energy, and some construction materials) would occur under Alternatives A, B, B1, and C due to residential shoreline development. However, most of the new development would not result in a region-wide population increase. This means that the same development could occur somewhere else in the region. Therefore, most (if not all) of these resources could be used somewhere in the region to provide the same residential development services, regardless of the alternative chosen.

As shoreline is converted to residential use, the land would be essentially permanently changed and not available for agricultural, forestry, wildlife habitat, natural area, and recreational uses in the foreseeable future. This is an irreversible commitment of land which would be greater in magnitude under those alternatives that open larger amounts of shoreline to residential access and development.

### **3.18 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

#### **Project Operations**

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

#### **Sensitive Resource Protection**

Sensitive Resource Protection areas are allocated the same for all four 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 type of activities. The level of these activities is considered to be minimal.

#### **Natural Resource Conservation and Sensitive Resource Protection**

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, 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. Adoption of Alternative D would have the largest demand for this type of energy use, as it has the largest amount of acreage allocated for Natural Resource Conservation.

#### **Industrial/Commercial Development**

In general, allocations made for this land-use category are for existing practices and/or land uses. Alternative A could include up to 67 acres with approximately 0.6 shoreline miles available for industrial or commercial development purposes. Alternatives B, B1, and C include 67 acres and approximately 1.8 shoreline miles for industrial or commercial development purposes. Alternative D includes 6 acres with approximately 0.6 shoreline miles available for development. No additional increases in energy usage would result from industrial or commercial development.

#### **Recreation**

Recreational activities that would require short-term and long-term energy would be marinas, campgrounds, public-use areas, and parks. Short-term energy would be from machines used to clear the land for and construct additional marinas and campgrounds under Alternatives A, B, B1, and C. Long-term energy would be required for the operation and maintenance of facilities and land. Types of activities would include, operation of facilities and fuel for machines to maintain vegetation. The largest increase in energy use would be from additional marinas and campgrounds under Alternatives B, B1, and C. Alternative D would only require long-term energy for maintenance of the existing recreation areas, such as public-use areas, state and local parks, and campgrounds.

### **Residential Development**

Energy is required to build and maintain residential areas, as well as to manage vegetation around residences and the shoreline. Although shoreline development is not likely to have much influence on regional energy use trends, those alternatives that allow the most residential development would result in relatively greater short- and long-term energy usage. Short-term energy would be from machines used to clear the land for residential development, and long-term energy usage would be from energy to power the homes and from fuel used to maintain lawns. While part of the residential development would be for persons who would otherwise live elsewhere in the general area, other residences would be weekend/vacation homes for residents of larger surrounding cities such as Huntsville, Alabama. Additionally, developments that are well-designed and marketed regionally or nationally could attract some residents from other areas, particularly retirees. Alternative C would have the largest demand due to the largest allocation for residential development, followed by A, B1, and B. Alternative D would have very little effect in that it does not allocate any additional land for residential development.

The Shoreline Management Initiative EIS (TVA, 1999) determined that among the residents in general, certain energy end-uses would be more likely to be found in shoreline homes. These include water pumps, additional decorative and security lighting, boat lifts, and boat heaters. Estimated annual incremental electricity usage would range from 300 kWh to 700 kWh per home. Average incremental energy usage would probably be towards the lower end of the range. In addition to electricity usage, gasoline consumption could be higher for shoreline residents. Those who commute to work would potentially have to travel longer distances. Also, shoreline residents are likely to use more boat gasoline when compared to the average Franklin or Moore County resident.

Adoption of Alternative D would tend to conserve energy in that no new development would be allowed on the project lands. However, more land would be managed for natural resource conservation resulting in more fuel use for machines to conduct management activities mentioned earlier.

### **3.19 PROPOSED MITIGATION MEASURES**

The following proposed mitigation measures would be considered in preparing the Record of Decision (ROD):

New residential development would be required to have groundwater protection plans submitted by the developer to TDEC for approval prior to development.

Throughout the construction phase of new subdivisions, periodic site visits to check for potential erosion problems and the use of BMPs would be needed.

Fringe wetlands would be avoided during any future development and/or permitting activities.

Parcels containing uncommon terrestrial habitats or plants would be protected by avoidance during any future developmental activities. Sale deeds related to disposition would include conditions that would require avoidance of the resource on the parcel.

Livestock grazing on TVA property will be phased out as alternative water sources and pasture are obtained.

An environmental site review will be required during the Section 26a process for requests for facilities within the Zone 8 (Conservation Partnership) parcels.

## Chapter 4

### 4.0 LIST OF PREPARERS

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## Chapter 5

### 5.0 LIST OF AGENCIES AND INDIVIDUALS CONSULTED

The Draft EIS was distributed to the following federal, state, and local agencies. Copies were provided to three local libraries and the TVA Resource Stewardship Office for the public to review.

#### **Federal Agencies**

U. S. Environmental Protection Agency, Region IV  
Heinz J. Mueller  
Atlanta, Georgia

U. S. Fish and Wildlife Service  
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H.C. Blake Co., Inc. Huntsville AL 35801	Robert Alexander Lutz FL 33549	Rene Arnaud Winchester TN 37398
Huntland Dev. Co. Huntland TN 37345	Leslie Alkenburg Winchester TN 37398	Charles Ary Fayetteville TN 37334
Showcase TV & Appliance Rentals Huntsville AL 35810	Nancy Allen Rutherford Cty. Courthouse, Room 1 Murfreesboro TN 37130	Joseph Ashbaugh Lynchburg TN 37352
John P. McKee & Douglas C. Hess Madison AL 35758	Sandra Allen Estill Springs TN 37330	James Askew Huntsville AL 35803-4205
Charles Abbott Estill Springs TN 37330	Earl Amacher Lynchburg TN 37352	Richard Bagby Winchester TN 37398
Charles Abbott Estill Springs TN 37330	Leon Amacher Tullahoma TN 37388	W.Y. Bailey Belvidere TN 37306
William Abbott Estill Springs TN 37330	Nancy Amacher Tullahoma TN 37388	Billie Baker Huntsville AL 35815
Virgil Abernathy Fairview TN 37062	Freida Anderson Tullahoma TN 37388	Butch Baker Winchester TN 37398
Lloyd Ackerman Winchester TN 37398	James Anderson Estill Springs TN 37330	Johnny Ball Huntsville AL 35805
Rhonda Acklen Decherd TN 37324	Norman Anderson Winchester TN 37398	Katherine & T.M. Ball Tullahoma TN 37388-2465
Melvin Acree Estill Springs TN 37330	Thomas Anderson Estill Springs TN 37330	Randell Ball Scottsboro AL 35768
Gerald Adams Winchester TN 37398	Fred Anderson Winchester TN 37398	Theodore Ball, Jr. Tullahoma TN 37388
Leslie Adams Estill Springs TN 37330	Wade Anderson Winchester TN 37398	James Ballard Winchester TN 37398
Monty Adams Winchester TN 37398	Mark Andrews Estill Springs TN 37330	Robert Ballard Winchester TN 37398
		Morton Banks Huntsville AL 35802

Ronald Barnes Winchester TN 37398	Lera Bell Gainesville FL 32607	Howard Blood Huntsville AL 35801
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Robert Beaty Estill Springs TN 37330	Anthony Blackmon Huntsville AL 35758	Robert N. Bracken Winchester TN 37398
Sid Beckham Estill Springs TN 37330	Peter Blanc Winchester TN 37398	Ronald Bradford Estill Springs TN 37330
Sidney Beckman Estill Springs TN 37330	Clifford Blankenship Winchester TN 37398	Brad Bradtke Estill Springs TN 37330
Donald Beddingfield Huntsville AL 35811	Larry Dean Bledsoe Huntsville AL 35806	M.B. Bragg Estill Springs TN 37330
John F. Bell Winchester TN 37398	Bob Blevins Brentwood TN 37027	



Marion Bragg Tullahoma TN 37388	Roland E. Brown Huntsville AL 35803	Emmett Caldwell Estill Sprgs. TN 37330
J.C. Branch Winchester TN 37398	John & Lois Bruner Belvidere TN 37306	Bryan K. Callison Estill Springs TN 37330
Bobbie & Bob Breeden Huntsville AL 35811	Mary Ann Bryan Huntsville AL 35801	Jeffrey Campora Winchester TN 37398
Austin Brewer Columbia TN 38401	George Bryant Decherd TN 37324-0201	Joe Canary Decherd TN 37324
Margarete Brewer Winchester TN 37398	Thomas Buchanan Huntsville AL 35802	Robert Canon Tullahoma TN 37388
Jacob H. Bridges, III Tullahoma TN 37388	T. Mark Buford Brentwood TN 37027	Luther Carden Huntsville AL 35810
Robert Brislin Huntsville AL 35810	Renee Buhmann Huntsville AL 35801	Kathy Carothers Wartrace TN 37183
Harry Broad Huntsville AL 35811	Patrick Burgess Estill Springs TN 37330	Thomas Carr Spring Hill TN 37174
Helen Broadway Huntsville AL 35801	Caleb Burgoyne Huntsville AL 35801	John Carson Winchester TN 37398
Bill Brooks Winchester TN 37398	Larry D. Burnett Shelbyville TN 37160	Bernard Carter Franklin TN 37064
Joseph & Gwen Brooks Lynchburg TN 37352	Mr. Tommy Burns Lewisburg TN 37091	Troy Carter Nashville TN 37211
Charles Brooks, Jr. Estill Springs TN 37330	Ruth Burris Lynchburg TN 37352	Troy Carter Winchester TN 37398
Campbell Brothers Columbia TN 38402	David H. Burt Decherd TN 37324	Robert E. Carver Murfreesboro TN 37120
Art Brown Nashville TN 37211-3139	James Burt Tullahoma TN 37388	Eric Cates Manchester TN 37355
James C. Brown Franklin TN 37064	Harold Burton Tullahoma TN 37388	Joseph Cates Bowling Green KY 42104
Lawrence Brown Nashville TN 37215	E.D. Burwell Huntsville AL 35801	Henry Cauble Tullahoma TN 37388
Michael & Georgia Brown Huntsville AL 35801	James Bush Murfreesboro TN 37130	Richard Chadwick Estill Springs TN 37330
Richard Brown Madison AL 35758	Blake Butler Shelbyville TN 37162	Eugene Chamberlain Estill Springs TN 37330
Richard and Paula Brown Huntsville AL 35801	Joe Byrne Winchester TN 37398	Archie & William Champion Huntsville AL 35802

Gail Chapman Tieton WA 98947	James Click Marietta GA 30066	Mary Corvin Estill Springs TN 37330
William Chapman Huntsville AL 35801	James Clines Garden City MI 48135	Richard Counts Huntsville AL 35811
Gerald & Daisy Chase Decherd TN 37324	George Clinnard Lynchburg TN 37352	Mr. Paul G. Cousino Murfreesboro TN 37128
Roy Cheshire Winchester TN 37398	J. Daniel Cloud Winchester TN 37398	Gregory Cowley Lake Ridge VA 22192
Harold Childers Huntsville AL 35815	Jerry Clowers Lynchburg TN 37352	Don Cox Decherd TN 37324
Murray Childester Normandy TN 37350	Mr. Joe C. Cody Huntsville AL 35802	Michael Coyne Franklin TN 37064
Garth Childress Signal Mtn. TN 37377	Christopher Coffee Huntsville AL 35806	Dale Crabtree Winchester TN 37398
Charles Choate Murfreesboro TN 37129	Thomas Cohenour Winchester TN 37398	Paul Crabtree Estill Springs TN 37330
Jeffrey Choate Madison AL 35758	Mr. John Cole Lewisburg TN 37091	Douglas Craig Hendersonville TN 37075-5542
Charles Church Thompson Station TN 37179	Mr. Tom Cole Dalton GA 30721	Robert Critchfield Estill Springs TN 37330
Robert Cinato Winchester TN 37398	Ralph Cole Huntsville AL 35801	Steve Cromwell Murfreesboro TN 37130
Jeffery Clancy Winchester TN 37398	Gary V. Conchin Huntsville AL 35804	James Crosslin Estill Springs TN 37330
Dorothy Clark Tullahoma TN 37388	Robert Connelly Winchester TN 37398	Glyn Crossno Estill Springs TN 37330
Douglas Clark Winchester TN 37398	Harold Cookston Decherd TN 37324	Charles Crowell Winchester TN 37398
Thomas Clark Pelham TN 37366	Howard Cooper Shelbyville TN 37160	Eugene Crowell Shelbyville TN 37160
James Clayton Winchester TN 37398	Lynn Cooper Winchester TN 37398	Elise Crowson Huntsville AL 35801
Faye T. Cleek Estill Springs TN 37330	Hoyt Copeland Estill Springs TN 37330	H.W. Crumrine Huntsville AL 35801
L.C. Clendenon Huntsville AL 35801	Donald Cornelius Huntsville AL 35802	Gene Crystal Arlington Hts. IL 60004
James Click Winchester TN 37398	Lary Deith Corum Huntsville AL 35810	Bill Culbertson Estill Springs TN 37330

Bill Cunningham Marietta GA 30066	James Dark Lynchburg TN 37352	Jack Dennis Winchester TN 37398
Raymond Cunningham Tullahoma TN 37388	Robert Darnall Huntsville AL 35810	Dennis Dewitt Estill Springs TN 37330
Mayor Lane Curlee Tullahoma TN 37388-0807	L.C. Daugherty Estill Springs TN 37330	Donald Dickinson Winchester TN 37398
Warren Currah Tullahoma TN 37388	William Davenport Tullahoma TN 37388	Bruce Diplacido Huntsville AL 35801
Donald R. Curry Brentwood TN 37027	Dewayne David Shelbyville TN 37160	Mr. Albert Dismukes Ft. Walton Bch. FL 32548
Anthony Curtis Estill Springs TN 37330-0481	Bill & Sally Davis Estill Springs TN 37330	Phillip Disser Nashville TN 37205
Ms. Laura Cushing Bear DE 19701	Cindy Davis Estill Springs TN 37330	Sarah Donegan Shelbyville TN 37160
Kathryn Steele or Cynthia McDermott Estill Springs TN 37330	Floyd D. & Joanne Davis Estill Springs TN 37330	Leo Donley Estill Springs TN 37330
Janice Daily Estill Springs TN 37330	John Davis Estill Springs TN 37330	Doe Dooley Meridianville AL 35759
Edward Daly Jessup MD 20794 David & Lisa Dammann Lynchburg TN 37352	Kenneth Davis Winchester TN 37398	Mr. Joe L. Dooley Meridianville AL 35759
Richard Danhof Winchester TN 37398	M.E. Davis Estill Springs TN 37330	Roger Dooley Winchester TN 37398
Donald Lee Daniel Estill Springs TN 37330	Sadie & Bill Davis Winchester TN 37398	John Dow Winchester TN 37398
Elizabeth Daniel Estill Springs TN 37330	Virginia F. Davis Franklin TN 37064	Doug Dowdle Brentwood TN 37027
Joe K. Daniel Nashville TN 37214	Mr. James E. Davis, Jr. Huntsville AL 35801	Dudley Doyle Fayetteville TN 37334
Richard Daniel Winchester TN 37398	Robert Davis, Sr. Huntsville AL 35804	Lynn Drayton Ft. Lauderdale FL 33301
Shelia Daniel Huntsville AL 35811	George Dawson Huntsville AL 35802	Anne Drewry-Peterson Winchester TN 37398
James Daniel, Jr. Huntsville AL 35801	James Day Winchester TN 37398	Bill Dubois Winchester TN 37398
	Jable Dean Lynchburg TN 37352	David Duesterhaus Tullahoma TN 37388
	Anthony Dematted Chattanooga TN 37401	Whitney Duhon Winchester TN 37398

Andrew Duncan Winchester TN 37398	Loren Thomas Erickson Estill Springs TN 37330	Rose Farrar Lewisburg TN 37091
Dan Duncan Winchester TN 37398	Frank & Verna Ernst Huntsville AL 35810	Mr. Oscar Farris Winchester TN 37398
Mary Lou Dunn Antioch TN 37013	Forest Erwin Winchester TN 37398	Waldon Faulk Lynchburg TN 37352
Charles Dunn, Sr. Winchester TN 37398	Scott Erwin Huntsville AL 35803	Edward Fay, Jr. Huntsville AL 35801
Anneliese Dunnington Huntsville AL 35810	Wayne Eslick Winchester TN 37398	Ralph & Marther Feiser Estill Springs TN 37330
Mr. & Mrs. Billy Durm Lynchburg TN 37352	William Estes Winchester TN 37398	Charles Feltner Estill Springs TN 37330-3571
Raymond L. Dyer Winchester TN 37398-4621	Gerald Eurell Manchester TN 37355	Vance & Phyllis Fentress Lynchburg TN 37352
Jim Edens Estill Springs TN 37330	Daniel Lee Evans Meridianville AL 35759	Mr. & Mrs. J. Fernando Brentwood TN 37027
Erwin Ehrenberg Mufreesboro TN 37129	Don Evans Huntsville AL 35801	Sandra Feustel-Koch Winchester TN 37398
Bobby Elder Harvest AL 35749	Frank Evans Estill Springs TN 37330	Tulio Figarola Huntsville AL 35802
Thomas Ellington Tulahoma TN 37388	Ron & Betty Evans Estill Springs TN 37330	Michael Allen Finks Mufreesboro TN 37129
Clovis Elliott Estill Springs TN 37330	Larry Evans Lynchburg TN 37352-9517	Billy Foote Manchester TN 37355
Ernest Elliott Estill Springs TN 37330	H.L. Everett Huntsville AL 35811	Charles Ford Winchester TN 37398
Marion Elmore Huntsville AL 35802	Carol Fager Nashville TN 37211	Lemuel Forrester Madison TN 37115
George Elrod Huntsville AL 35801	Ray Fambrough Huntsville AL 35801	Dudley Fort, Jr. St. Andrews TN 37372
Mr. Carl D. Engel Huntsville AL 35802	Clifford Fanning Estill Springs TN 37330	Bruce Foster New Port Richey FL 34654
Elmer England Huntsville AL 35811	James Fanning Fayetteville TN 37334	Howard & Donna Foster Estill Springs TN 37330
John Epley Tulahoma TN 37388	Joe Fanning Lynchburg TN 37352	Ricky Foster Winchester TN 37398
William Epton Huntington Bch. CA 92649	Ms. C.H. Fanning Estill Sprgs. TN 37330	

Vernon Foster Winchester TN 37398	Glendon & Betty Gattis Tullahoma TN 37388	Ruth Golden Lynchburg TN 37352
W.R. Foutch Hazel Green AL 35705	Joseph Gauthier Huntsville AL 35803	Roger Goodhue Middle Grove NY 12850
Riley Fowler Watrace TN 37183	Larry George Kingwood TX 77345	Thomas Goodwin Winchester TN 37398-0434
Harold Fraley Winchester TN 37398	Richard Gerwe Tullahoma TN 37388	Robert Goodwin Athens GA 30606-3362
Hugh Fraley Winchester TN 37398	Beverly Gibbs Winchester TN 37398	John Grace Cary NC 27511
Jim Frederick Brandon FL 33510	George Gibbs Winchester TN 37398	Dwight Graham Winchester TN 37398
William Freeman, MD Tullahoma TN 37388	Tim Gifford Flintville TN 37335	Margie & Cliff Grammer Tullahoma TN 37388
Lever Fulmer Lynchburg TN 37352	Brent Gill Lynchburg TN 37352	David Grant Winchester TN 37398
David Furman Huntsville AL 35802	Charles M. Gill Nashville TN 37215	Thomas Grant Harvest AL 35749
Ronald Galligani Winchester TN 37398	Maurice Gilley Chickamauga GA 30707	Jim Grantham Tullahoma TN 37388
James Gamble, Jr. Huntsville AL 35802	Hollis Gilliam Columbia TN 38401	Ronald Graves Winchester TN 37398
Mr. Ted Gandy Huntsville AL 35801	David Gillies Lynchburg TN 37352	Frank and Bonnie Gray Huntsville AL 35801
Michael Garfield Estill Springs TN 37330	Edwin Gleason Estill Springs TN 37330	Pete Gray Winchester TN 37398
Alec Garland Manchester TN 37355	Harry Glenn Estill Springs TN 37330	William Gray New Market AL 35761
Cordell Garner Sherwood TN 37376	Larry Godbey Lewisburg TN 37091	Edward Green Huntsville AL 35801
Mr. Bruce M. Garnett Huntsville AL 35801	Steve Godfrey Winchester TN 37398	Richard Green Huntsville AL 35802
Betty Garrett Estill Springs TN 37330	Jerry Godwin Land O'Lakes FL 34639	Donald Gregory Estill Springs TN 37330
George Garrison Estill Springs TN 37330	James & Lori Golden Fayetteville TN 37334	Ronald Griffith Franklin TN 37064
Cress Garvin Hazel Green AL 35750	Michael Golden Winchester TN 37398	Ronald H. Griffith Franklin TN 37064

Joyce Griffin Huntsville AL 35801	Steve & Bonnie Hammond Brentwood TN 37027	George Heeschen, Jr. Huntsville AL 35801
Sarah Griggs Winchester TN 37398	Vaughn Hankins Winchester TN 37398	James Helton Huntsville AL 35801
Charles E. Grissom Shelbyville TN 37160	Gail & John Hansen Winchester TN 37398	Jerry Helton New Market AL 35761
James Groves Winchester TN 37398	W.M. Harborth Hazel Green AL 35750	Alvin Henderson Estill Springs TN 37330
Marilyn Grundy Huntsville AL 35801	James Harding Huntsville AL 35801	W.F. Henderson Winchester TN 37398
Walter George Grundy Huntsville AL 35801	Keith Harmon Murfresboro TN 37127	W.S. Henley Decherd TN 37324
William Guess Winchester TN 37398	John & Linda Harper Lynchburg TN 37352	Claudie Hensley Lynchburg TN 37352
James Gustine Tullahoma TN 37388	Thomas O. Harris, Jr. Lewisburg TN 37091	James S. Hereford Fayetteville TN 37334-0802
James Haight Meridianville AL 35759	Mike & Gloria Hart Estill Springs TN 37330	Mr. & Mrs. Herman Decherd TN 37324
George Hale Huntsville AL 35805	Thomas Hastings Tullahoma TN 37388-4902	Dean Herron Estill Springs TN 37330
Carl Hall Lynchburg TN 37352	Billy Joe Hasty Estill Springs TN 37330	James Herron Estill Springs TN 37330
Don Hall Winchester TN 37398	Wayne Hawkersmith Winchester TN 37398	Jim Herron Estill Springs TN 37330
Nancy Hall Winchester TN 37398	Ned Hawn Franklin TN 37064	William Hess Huntsville AL 35803
Ronald Hall Estill Springs TN 37330	Jack Hayes Winchester TN 37398	Humphrey Heywood Chattanooga TN 37405
Tom Hall Winchester TN 37398	Nan Haygood Huntsville AL 35811	Gerald Hice Estill Springs TN 37330
Howard Hall, Jr. Winchester TN 37398	Phillip Hayse Decherd TN 37324	Ralph Hilder Winchester TN 37398
William J. Hamby McMinnville TN 37110	Gary Hazelwood Lynchburg TN 37352	Donna & Randy Hill Estill Springs TN 37330
George Hamill Lynchburg TN 37352	Kirk Hebert Brentwood TN 37027	George Hill Huntsville AL 35802
Bradley Hamlin Lockport IL 60441	Fred Heddens Harvest AL 35749	Steve Hill Lawrenceburg TN 38464

Tim & Tina Hill Nashville TN 37205	Annie Huband Bagby Winchester TN 37398	Charles Jackson Bedford IN 47421
Hershel Hilliard Belvidere TN 37306-2617	M. L. Hughes Franklin Lakes NJ 07417	James & Linda Jackson Pasadena MD 21122
Jeffrey Hindman Huntsville AL 35801	Mr. Bobby Hughes Hazel Green AL 35750	Ray Jackson Estill Springs TN 37330
Steven Hinshaw Winchester TN 37398	Paul Hughes Winchester TN 37398	Paul Jalbert Lynchburg TN 37352
Iain D. Hiscock Winchester TN 37398	Richard Hull Huntsville AL 35801	Edward James, Jr. Estill Springs TN 37330
Randy Hobson Shelbyville TN 37160	Evelyn Hulsey New Market AL 35761	John Jarrell Shelbyville TN 37160
Clifford Hoffman Estill Springs TN 37330	Joe Hunter Huntsville AL 35811	Steven & Brenda Jefferson Fayetteville TN 37334
James Holeman Huntsville AL 35802	Riley Hunter Huntsville AL 35811	Russell Jeffries Huntsville AL 35802
Ken Holland Fayetteville TN 37334	Charles Hunter Winchester TN 37398-4669	Buford Jennings Lynchburg TN 37352
James Holliman, Jr. Winchester TN 37398	Bill Hunter, III Columbia TN 38401	Warren Jensen Huntsville AL 35801
Mike Holt Lynchburg TN 37352	Noah Hurst Huntsville AL 35802	Mark Jmansky Huntsville AL 35806
James Holtsclaw Estill Springs TN 37330	James W. Hurst 100 Cherokee Lane Winchester TN 37398-4621	Douglas John Madison TN 37115 Arthur Johnson Winchester TN 37398
Frank Honkanen Brownsboro AL 35741	Hugh Hurst, Jr. Winchester TN 37398	Donald Johnson Winchester TN 37398
Christine Hopkins Winchester TN 37398	Ben Huskey 1102 Old Mansford Rd. Winchester TN 37398	Henry Johnson Tullahoma TN 37388
Majorie Hopkins Winchester TN 37398	Joe Hyde Estill Springs TN 37330	Larry Johnson Meridianville AL 35759
Chris Horgen Huntsville AL 35801	Howard Irick Huntsville AL 35802	Mary Susan Johnson Huntsville AL 35801
Edwin Horton Winchester TN 37398	Robert Irvine Winchester TN 37398	E. Johnston Lewisburg TN 37091-6943
Ronald Hortter Estill Springs TN 37330	William Irvine W. Palm Bch. FL 33407	S. David Johnston Huntsville AL 35801
Lowell Howell Winchester TN 37398		

Albert E. Jones Estill Springs TN 37330	Arthur Kendall Estill Springs TN 37330	Mr. Bob Lamb Meridianville AL 35759
Clarence Jones Winchester TN 37398	Mike Kennedy Hazel Green AL 35750	Billy Land Orlando FL 32822
John Jones Huntsville AL 35803	Daniel Kilpatrick Winchester TN 37398	Charles Land Nashville TN 37207
Larry C. Jones Winchester TN 37398	Charles King Winchester TN 37398	Margarite Lane Fayetteville TN 37334
Joyce Jones Estill Springs TN 37330-3480	Jill Kinsey Tullahoma TN 37388	Susan Langhout Owens Crossroads AL 35763
Earle Jones III Lynchburg TN 37352	Jacob Kirchner Winchester TN 37398	Paul Lanius Estill Springs TN 37330
Joseph Jones, Jr. Madison AL 35758	Robert Kirk Huntsville AL 35801	Ronald Lanman Woodbridge VA 22192
Flynt Jordon Sevierville TN 37862	Dave Kirkpatrick Franklin TN 37069	Elizabeth LaRoche Murfreesboro TN 37129-5856
P. Roa Kakani Huntsville AL 35801	James Kirland Cartersville GA 30120	Buryl Larson Winchester TN 37388
Vernon Kalt Estill Springs TN 37330	Richard Klan Huntsville AL 35803-1904	Jay Laue Winchester TN 37398
Robert Kamm Estill Springs TN 37330	James Klima Novi MI 48375	Larry Laughlin Brentwood TN 37027-4690
Danny Keahey Oklahoma City OK 73150	Glendel Knight Murfreesboro TN 37130	Kyle Lausee Lynchburg TN 37352
Dorothy Keebler Huntsville AL 35803	Clayton Knight Lynchburg TN 37352	Joe B. Lawhorn Estill Springs TN 37330
Ms. Tammy Sue Keese Estill Springs TN 37330	Erol Knott The Woodland TX 77381	Vincent D. Lawrence Estill Springs TN 37330
Mr. Jack Kellerman Decatur AL 35603	Allen & Mickey Knowles Estill Springs TN 37330	Bev. R. Laws Houston TX 77079
Jim Kelly Murfreesboro TN 37129	Daniel Konrad Winchester TN 37398	C.W. Laxson Winchester TN 37398
Padgett Kelly Murfreesboro TN 37132	Peter Kracht Monterey CA 93940	Lothery Laxton Winchester TN 37398
Louise Kemper Winchester TN 37398	Mr. Daniel Lagrone Toney AL 35773	Robert Lea, Jr. Winchester TN 37398
	Lyle Lamar Dalton GA 30720	



Lawrence Leach Winchester TN 37398	Jim Littlejohn Nashville TN 37215	Terry A. Majors Winchester TN 37398
John Lee Pensacola FL 32504	Steve Lodholz Tullahoma TN 37388	Herling Manning Winchester TN 37398
Ted Lee Tullahoma TN 37388	Mark & Sandra Long Taft TN 38488	Jerry Mansfield Fayetteville TN 37334
Wilburn Lee Hampton Cove AL 35763	Tim Long Shelbyville TN 37160	Scott Mantooth Estill Springs TN 37330
Charles Ivy Lee, Sr. Tullahoma TN 37388	Thomas Long, Jr. Jasper TN 37347	Duane Marshall Huntsville AL 35801
Joseph LeFan, Jr. Huntsville AL 35802	Jerry B. Loony Lewisburg TN 37091	John F. Marshall Shelbyville TN 37160
Paul LeGrand Huntsville AL 35801	Ed Lowery Franklin TN 37064	Wayne Martin Wartrace TN 37183
Robert Lenard Brentwood TN 37027	Anthony Lowhorn Estill Springs TN 37330	Ellen Marxer Estill Springs TN 37330
Joe Lester Tullahoma TN 37388	Bobby R. Lowrance Estill Springs TN 37330	Ginger Mashe Lynchburg TN 37352
Kenneth Letson Huntsville AL 35801	Manford Lude Sorrento FL 32776	Davis Grant Mason Winchester TN 37398
J.D. Lewter, Jr. Meridianville AL 35779	Otis Luttrell Winchester TN 37398	Hugh Mason Deer Park NY 11729
George Lide Huntsville AL 35802	Mr. Lamar Lyle Dutton GA 30720	Keith Mason Winchester TN 37398
Ken & Sara Liechty Estill Springs TN 37330	Margaret Lynch Winchester TN 37398	Livoy Massey Winchester TN 37398
Gail Lightfoot-Allen Tullahoma TN 37388	William and Becky Lynch Estill Springs TN 37330	Thomas Massey Estill Springs TN 37330
Michael Liles Estill Springs TN 37330	Celia Jay Mackey Huntsville AL 35801	Steve Mathews Estill Springs TN 37330
Paul Liles Estill Springs TN 37330	Roger MacQuarrie Estill Springs TN 37330	Charles Mattson Columbia TN 38401
Renata Limmer Huntsville AL 35802	Roger MacQuarrie Nashville TN 37205	Jere Matty Winchester TN 37398
Robert Lind Winchester TN 37398	Dr. Phil Maddox Huntsville AL 35801	Mrs. O. Maxine Estill Springs TN 37330
James K. Linton Brentwood TN 37027	Dr. Ben Mahan Estill Springs TN 37330	Michael Maxon Belvidere TN 37306

James M. Maxwell, Jr. College Grove TN 37046	Richard McKamey Lynchburg TN 37352	Darrin Miller Manchester TN 37355
Chester May Huntsville AL 35801	John Paul McKee Estill Springs TN 37330	James Miller Spring Hill TN 37174
Ronald Mayes Estill Springs TN 37330	Anneva McKinnon Estill Springs TN 37330	James B. Miller Estill Springs TN 37330
Robert Maynor, Jr. Gurley AL 35748	John McKissick Madison Hts. MI 48071	Michael Miller Estill Springs TN 37330
Michael McAllister Tampa FL 33615	Douglas McKnight Escondido CA 92026	Monte Miller Winchester TN 37398
Ed McAnally Lynchburg TN 37352	John McKnight Tullahoma TN 37388-0025	Vernon Miller Tullahoma TN 37388
Joe McCabe Estill Springs TN 37330	Robert McLelland Ooltewah TN 37363	John Millican Pulaski TN 38478
Thurman McCay Decherd TN 37324	Robert McMullen Estill Springs TN 37330	Larry Mills Hixson TN 37343
Roy McClain Estill Springs TN 37330	Stan McNabb Tullahoma TN 37388	Thomas Roy Millsap Winchester TN 37398
Dr. T.L. McClarney Tullahoma TN 37388	Thomas McNamara Winchester TN 37398	Dale Minor Winchester TN 37398
David McCleskey Winchester TN 37398	Jack McQuinn Huntsville AL 35801	Charles Mitchell Waverly TN 3785
Edward McCool Huntsville AL 35801	James & Jane McWhorter Huntsville AL 35811	Arthur Moenck Winchester TN 37398
John McCord Belfast TN 37019	Daniel McWhorter Aurora CO 80016-2155	Richard Moffett Winchester TN 37398
Pastor Ron McCormack Estill Springs TN 37330	Bob Meredith Winchester TN 37398	Orvill Moffitt Estill Springs TN 37330
Don McCrary Estill Springs TN 37330	Lewis E. Midden Franklin TN 37067	Stephanie Moffitt Riverview FL 33569
Edward McGhee Manchester TN 37355	Joseph Mignogna, Jr. Estill Springs TN 37330	Kenneth Montag Brentwood TN 37027
Thomas McGill Winchester TN 37398	Kenneth Mikota Winchester TN 37398	Donald Moody Winchester TN 37398
Linda McGovern Franklin TN 37064	James Milam, Jr. Huntsville AL 35816	Ralph Mooneyham Shelbyville TN 37160-5920
Mike McGuire Winchester TN 37398	Clifton & Vernon Miller Tullahoma TN 37388	David Moore Huntsville AL 35806

Harold Moore Fayetteville TN 37334	Frank Murphy Estill Springs TN 37330	Mr. Lonnie Norman Manchester TN 37355
James Moore Madison AL 35758	James Murray Los Olivos CA 93441	Leland Northcutt Estill Springs TN 37330
Jerry Moore Estill Springs TN 37330	John Murray Murfreesboro TN 37129- 5856	Wiley Northcutt Winchester TN 37398
Marvin & Carolyn Moore Winchester TN 37398	Irene Myers Huntsville AL 35810	Richard Novak Estill Springs TN 37330
McKinley D. Moore Nashville TN 37221	Mr. Jay M. Myers Huntsville AL 35802	Dieter Nowak Tulahoma TN 37388
Mr. Jerry Moore Huntsville AL 35801	Ted Myers Estill Springs TN 37330	Michael Nowakowski Huntsville AL 35802
Joe Moorehead Winchester TN 37398	James Myrick Huntsville AL 35811	Wayne Nuckolls Winchester TN 37398
John Morgan Thorington, Jr. Huntsville AL 35801	James P. Nault Estill Springs TN 37330- 3668	Mr. Jerry Nutt Huntsville AL 35801
George Caddgar Morgan, Jr. Huntsville AL 35801	Marsha Neal Shelbyville TN 37160	Millard Oakley Livingston TN 38570
George Morren Winchester TN 37398	Ross Neal Estill Springs TN 37330	Paul O'Biff Jordan Winchester TN 37398
Albert Morris Estill Springs TN 37330	Charles Neel Tulahoma TN 37388	Virginia O'Brien Germantown TN 38138
Jeff Morris Winchester TN 37398	Fred Neumann Cowan TN 37318	Robert Odom Lynchburg TN 37352
Joe Morris Winchester TN 37398	Richard New Janesville WI 53545	Joe E. O'Hare Winchester TN 37398
Kenneth Morris Huntsville AL 35811	Robert Newschaefer Huntsville AL 35802	Greg O'Neal Estill Springs TN 37330
Ronald Morrison Winchester TN 37398	John Newton Winchester TN 37398	Richard Ort Winchester TN 37398
Seyed Mortazavi Huntsville AL 35801	Mamie & C.W. Nippers Tulahoma TN 37388	Robert Osteen Estill Springs TN 37330
Greg Motley Winchester TN 37398	William Noblitt Hermitage TN 37076	William Ott Lynchburg TN 37352
J.S. Mullins Winchester TN 37398	D.C. Norman Kelso TN 37348	William Otterbein Winchester TN 37398
Michael Mullins Decherd TN 37324		Robert Owen Estill Springs TN 37330

William Owens, Jr. Columbia TN 38401	Brady Patrick Estill Springs TN 37330	George Philyaw Huntsville AL 35801
Edward Palmer Winchester TN 37398	Jeff Patrick Estill Springs TN 37330	Frank Phipps Belvidere TN 37306
Lonnie Palmertree Estill Springs TN 37330	Pat Patrick Estill Springs TN 37330	Robert Piatt Winchester TN 37398
Rudolph Pardini Winchester TN 37398	Joel Patterson Cleveland TN 37312	Mark Pickens Huntsville AL 35803
Jewell Parker Woodbury TN 37190	David Patton Tullahoma TN 37388	Oliver Pickens Winchester TN 37398
Joseph Parker Tullahoma TN 37388	J.B. Patton Tullahoma TN 37388	Mr. R.W. Pickering Franklin TN 37067
Paul Parker Shelbyville TN 37160	Mr. Tom Paul Madison AL 35757	Kenneth Pickett Huntsville AL 35802
Richard Parker Germantown TN 38139-5616	Wallace Peacock, Sr. Huntsville AL 35811	Ronald Pidgeon Huntsville AL 35801
Thomas Parker, Sr. Winchester TN 37398	Robert Pearson Chattanooga TN 37402	Mr. Wayne Pierce Carrollton GA 30117
Alliene Parks Belvidere TN 37306	James Pearson, Jr. Huntsville AL 35811	Jim Pierce Rainbow City AL 35906-3326
David Parks Shelbyville TN 37160	Frank Pechvekonis Panacea FL 32346	Robert Irving Pinner Estill Springs TN 37330
John Allan Parks Winchester TN 37398	Mr. Randy Pemberton Huntsville AL 35806	Elwood Pitts Seattle WA 98122
David Parrish Estill Springs TN 37330	Thelma Pemberton Nashville TN 37217	Marilyn Poe Huntsville AL 35814
Jim Parrish Estill Springs TN 37330	Jerlene Perry Winchester TN 37398	Ned Pollard Columbia TN 38401
Jim Parrish Winchester TN 37398	Steven and Sue Petersen Germantown MD 20876-4372	Wayne Pollock Winchester TN 37398
Jack Parsons Fayetteville TN 37334	Brent Petry Winchester TN 37398	Robert Pomatto Lewisburg TN 37091
Douglas Partin Winchester TN 37398	Robert Petry Winchester TN 37398	Glendon Ponder Smithville TN 37166-8166
Mike Partin Altamont TN 37301	Kenneth E. Phillips Springville TN 38256-4619	Margaret Posey Winchester TN 37398
John R. Pastorial Nashville TN 37217		Jeff Potts Estill Springs TN 37330

Jess T. Power, III Huntsville AL 35801-1669	Mrs. Ron Reagan Winchester TN 37398	Robert Richards Estill Springs TN 37330
David Prescott, Sr. Tullahoma TN 37388	Jerome P. Reamer Brentwood TN 37027	J.B. Richardson Fayetteville TN 37334
Mr. Robert Preston Murfreesboro TN 37127	William Reavis Winchester TN 37398	Lynn Richardson Fayetteville TN 37334
Robert & Lois Preston Arlington TN 37014	Robert Reece Tullahoma TN 37388	Bobby Richey Tullahoma TN 37388
Thomas Price Lynchburg TN 37352	William Reed Lynchburg TN 37352	Jimmy Richey Manchester TN 37355-3519
Terry Priest Estill Springs TN 37330	Robert Reeder Estill Springs TN 37330	Allen Richt Winchester TN 37398
Deborah Prince Tullahoma TN 37388	Frank Reid Estill Sprgs. TN 37330	J.R. Riddle Lynchburg TN 37352
Mancel Prince Winchester TN 37398	Robert Reineri Murfreesboro TN 37133	W. A. Riehl Huntsville AL 35802
Roger Prince Nashville TN 37215	William Reisinger New Eagle PA 15067	Clyde Rilely Huntsville AL 35816
Timothy Prosser Huntsville AL 35810	Gregory Renner Estill Springs TN 37330	Shawn Rincon Winchester TN 37398
Francis Pusateri Estill Springs TN 37330	James Reynolds Severna Park MD 21148	Robert Rittenberry Shelbyville TN 37160
James Quade Huntsville AL 35802	Robert Reynolds Huntsville AL 35801	B.E. Roark Winchester TN 37398
Mr. Joe M. Rackley, Jr. Rogersville AL 35652	Arnie Rhodes Huntsville AL 35801	Lora Roark Estill Springs TN 37330
Charles Rambo Winchester TN 37398	Robert & Sally Rhodes Estill Springs TN 37330	Nelson Roark Maryville TN 37801
Mr. Hector Ramirez, Jr. Huntsville AL 35801	Troy & Shirley Rhoton Winchester TN 37398	Jack Robbins Huntsville AL 35805
John Rampy Winchester TN 37398	Richard Rhudy Estill Springs TN 37330	Ms. Hazel Robbins Huntsville AL 35802
Arthur Rand, Jr. Burke VA 22015	Jane Ricci Winchester TN 37398	Steve Robbins Estill Springs TN 37330
Prasado Rao Kakani Huntsville AL 35801	Charles & Jill Rice Harvest AL 35749	John L. Roberson Estill Springs TN 37330
Horace Ready Estill Springs TN 37330	Bob Richards Loudon TN 37774	Thomas Robert Micale Fords NJ 08863

Earl Roberts Murfreesboro TN 37133	Don Ross Estill Springs TN 37330	Ronald Schlagheck Huntsville AL 35803
William Roberts Huntsville AL 35815-0422	Charles Roth Nashville TN 37210	Craig Schmitz Huntsville AL 35801
George Robertson Chapel Hill TN 37034	William Rothe Estill Springs TN 37330	Raymond Schmitz, Jr. Orland Park IL 60462
Mr. Danny Robertson Huntsville AL 35804	Byron Rouse Huntsville AL 35802	Myra Schuck Winchester TN 37398
Ben Robinson Murfreesboro TN 37129	Delbert Rozell Tulahoma TN 37388	Donald Schueler Lynchburg TN 37359
Michael Robinson Huntsville AL 35803	Sheila Rudge Tulahoma TN 37388	Mr. John F. Schulite Madison AL 35758
Charles Robinson Huntsville AL 35801-4111	Charles Rudolph Meridianville AL 35759	Virgil Schultz Huntland TN 37345
Thomas Roddy Winchester TN 37398	Maurice Ryan Winchester TN 37398	Morris Seay Tulahoma TN 37388
John Rodgers Estill Springs TN 37330	Eugene & Anna Sanders Winchester TN 37398	Charles Sebolt Estill Springs TN 37330
Charlie Rogers Tulahoma TN 37388	Frank Sanders Winchester TN 37398	Manfred Segewitz Huntsville AL 35811
Gayle Rogers McDonald TN 37353	James Sanders Lancaster CA 93536	Maxine Seitzinger Fayetteville TN 37334
Jesse Rogers Estill Springs TN 37300	Robert Sanders Huntsville AL 35814	Ron & Linda Self Lewisburg TN 37091
Tommy Rogers Estill Springs TN 37330	Ted Sanders Tulahoma TN 37388	Robert Seroka Estill Springs TN 37330
Clyde Rollins Shelbyville TN 37160	Robert Sanderson Dellrose TN 38453	Bonnie Seville Lynchburg TN 37352
Mary E. Rolman Lynchburg TN 37352	Josef Santisteban Brentwood TN 37027	Don Shadow Winchester TN 37398
Mary Romman Lynchburg TN 37352	Wade Savage, Jr. Franklin TN 37064	Earl Shahan Winchester TN 37398
Billy Rose Winchester TN 37398	William Saville Lynchburg TN 37352	Benjamin Shahan, Jr. Murfreesboro TN 37129
Dennis Rose Winchester TN 37398	Curt Schiffner Estill Springs TN 37330	Robert Shanks Cowan TN 37318
Robert Rose Winchester TN 37398	Dena Schillreff Lynchburg TN 37352	Doug Sharp New Market AL 35716

Jonathan B. Sharpe Huntsville AL 35801	Don Simon Winchester TN 37398	Jerry Smith Winchester TN 37398
Donald Shasteen Lynchburg TN 37352	Howard Simpkins Estill Springs TN 37330	John Thomas Smith Estill Springs TN 37330
James Shasteen Winchester TN 37398	Jewel Simpson Estill Springs TN 37330	Kenneth Smith Estill Springs TN 37330
Johnny & Betty Shasteen Tulahoma TN 37388	Norman Simpson Estill Springs TN 37330	Kenny Smith Tulahoma TN 37388
William Shasteen Huntsville AL 35801	Bob Sims Columbia TN 38401	Louise Smith Tulahoma TN 37388
Mr. Roy Shaw Athens AL 35611	David Singer Winchester TN 37398	Mac Smith Madison AL 35758
Larry & Wynona Sheaks Fayetteville TN 37334-6956	Wayne Sisk Winchester TN 37398	Miles Smith Winchester TN 37398
Charles Shell Huntsville AL 35802	Robert Skidmore Winchester TN 37398	Mr. C.F. Smith Estill Springs TN 37330
Ernest & Mary Shelton Winchester TN 37398	Dan Skinner Huntsville AL 35802	Nathan Smith Huntland TN 37345
Tom Shemwick Winchester TN 37398	Joel Bradley Slaton Winchester TN 37398	Parker & Jane Smith Winchester TN 37398
Edward Sherman Winchester TN 37398	Bill Smith Huntsville AL 35801	Philimond Smith Madison AL 35758
Andrew Sherrill Estill Springs TN 37330	Bobby & Flo Smith Normandy TN 37360	Phillip Smith Nashville TN 37211
Cynthia & Vernon Sherrill Manchester TN 37355	Edgar D. Smith Estill Springs TN 37330	R. Pierson Smith Tulahoma TN 37388
Gale Shores Nolensville TN 37135	Gerald Smith Winchester TN 37398	Ralph Smith Huntsville AL 35802
Mr. Don E. Shotts Huntsville AL 35801	Heide Smith Huntsville AL 35802	Richard Smith Estill Springs TN 37330
Thomas Wayne Sibley Huntsville AL 35802	James Smith Lynchburg TN 37352	William Smith Winchester TN 37398
Robert Silver Winchester TN 37398	James Smith Lynchburg TN 37352	John Smith, Jr. Belvidere TN 37306
John Simmons Winchester TN 37398	James Smith Huntsville AL 35810	Thomas Smithson Winchester TN 37398
James Simms Winchester TN 37398	Jerome Smith Estill Springs TN 37330	Cindi Smith-Walters Murfreesboro TN 37132

Barry Snider Madison AL 35758	Heyman Stephens Huntsville AL 35811	Mr. Charles Sullivan Huntsville AL 35811
William Snider Estill Springs TN 37330	Philip Stephens Winchester TN 37398	Paul Summer Huntsville AL 35805
Anthony Sobul Huntsville AL 35801	John McKee & Steve Davison Estill Sprgs. TN 37330	Edna Summers Estill Springs TN 37330
Charlie Sons Winchester TN 37398	James Stewart Tulahoma TN 37388	Betty Superstein Manchester TN 37355
Davis Sons Winchester TN 37398	Robert Stewart Huntsville AL 35801	Gene Suszek Ossineke MI 49766
Vincent F. Sorgi Lynchburg TN 37352-5011	David Stockton Winchester TN 37398	Sue Sutton Wartrace TN 37183
Charles Spaulding Winchester TN 37398	Elaine Stockton-Taylor Huntsville AL 35801	David Swann Estill Springs TN 37330
Charles E. Spears Winchester TN 37398	Mary Anita Stoker Tulahoma TN 37388	Jerry Sweeney Columbia TN 38402
Robert Speers Winchester TN 37398	Don Stotser Huntsville AL 35801	Ezralee Swing Estill Springs TN 37330
George Spencer Shelbyville TN 37160	Robert Strand Cocoa Beach FL 32931-3037	Roy C. Syler Belvidere TN 37306
James Spencer Winchester TN 37398	Glen Strange, Jr. Brentwood TN 37027	Ernest Tabor, Jr. Estill Springs TN 37330
Thomas Spittler Las Vegas NV 89109	Mr. Joe Strickland Huntsville AL 35801	Rex Talley Fayetteville TN 37334
Betty & Carl Spray Estill Springs TN 37330	Kay Strobel Huntsville AL 35802	Nancy Tarleton Winchester TN 37398
Bob Staber Winchester TN 37398	Mark Stroop Pulaski TN 38478	Barry Tawwater Estill Springs TN 37330
Mike Stalls Winchester TN 37398	Norman Strotheide Winchester TN 37398	Alf Taylor Lynchburg TN 37352
John & Betsy Stalzer Sarasota FL 34241-6406	Peggy Stubblefield Winchester TN 37398	Betty Taylor Tulahoma TN 37388
Tim Steigerwald Decatur AL 35603	Danny Sullivan Winchester TN 37398	Edgar Taylor 7615 Quail Dr. Huntsville AL 35803
Richard Steiner Lynchburg TN 37352	Danny & Gwen Sullivan Winchester TN 37398	Jackie D. Taylor Shelbyville TN 37160
William Steiner Murfreesboro TN 37128		



Randall Taylor Winchester TN 37398	Carlos Tirres Tullahoma TN 37388	Johnnie B. Walker Winchester TN 37398
Robert & Jean Taylor Brentwood TN 37027	Rodney Toon Roswell GA 30075	Robert Walker Estill Springs TN 37330
Ritchie Taylor Denton TX 76201-6382 Gregory H. Terry Lynchburg TN 37359	Jeff & Carolyn Torell Nashville TN 37221-6528	Winston Walker Chattanooga TN 37405-4246
Bill Thacker Estill Springs TN 37330	Ray H. Tortenson Winchester TN 37398	Robert Vernon Walker, Jr. Estill Springs. TN 37330
Billy Thomas Tullahoma TN 37388	Eugene Trondsen Franklin TN 37064	Terry Wallace Lewisburg TN 37091
Billy & Nancy Thomas Lynchburg TN 37352	William Troupe Winchester TN 37398	Mary Waller Estill Springs TN 37330
Mr. & Mrs. Billy S. Thomas Estill Springs TN 37330	George Trusty Franklin TN 37064-4948	Bogue Waller Brentwood TN 37027-4114 Richard Walsh Lynchburg TN 37359
Mr. Billy Thomas Lynchburg TN 37352-0206	David Tucker Winchester TN 37398	Mary Jane Walters Winchester TN 37398
Reece Thomas S. Pittsburg TN 37380	David Tully Huntsville AL 35811	Ronald Walton Estill Springs. TN 37330
Sam Thomason Estill Springs TN 37330	Patricia Ann Vaso Winchester TN 37398	James Walton Winchester TN 37398-2203
James Thompson Estill Springs TN 37330	Ralph Vaughn Murfreesboro TN 37133	Ernest Ward Yuba City CA 95993
James Thompson Huntsville AL 35810	Steven Vercruysse Athens AL 35611	William Warren Estill Springs TN 37330
Claus Thormaehlen Manchester TN 37355	Lester Vihon Tullahoma TN 37388	James Warren Saint Marys GA 31558-5912
Sherry Thurmond Huntsville AL 35805	James Vowell Lynchburg TN 37352	Winford Waters Huntsville AL 35801
Theodore Tingley Estill Springs TN 37330	Billy W. Waggoner Estill Springs TN 37330	Mr. Rudolph Weaver New Market AL 35761
Eddie Tinsley Tullahoma TN 37388	Vern Wake Estill Springs TN 37330	Robert Weddington Winchester TN 37398
Eddie C. Tinsley Estill Springs TN 37330	Earl Wakefield Pulaski TN 38478	Dean M. Weiland Brentwood TN 37027
James Tipps Lynchburg TN 37352	Roy Waldron Murfreesboro TN 37129	Ron Weller Winchester TN 37398
	Mr. Larry Waldrup Huntsville AL 35803	

Ronald Wenzel Columbia TN 38401	Wayne Williams Winchester TN 37398	L.E. Wright Tullahoma TN 37388
Henry O. West Shelbyville TN 37160	Kevin Williams Bell Buckle TN 37020-6047	Thomas Wright Huntsville AL 35801
Roger West Winchester TN 37398	Thomas Willingham Brentwood TN 37027	Thomas Wright, Jr. Huntsville AL 35801
Brian Wettlaufer Tullahoma TN 37388	Harold Wilson Huntsville AL 35810	Donald Wynkoop Winchester TN 37398
Robert White Estill Springs TN 37330	James Wilson Auburn AL 36830	Gerald Yager Brentwood TN 37027
James White Alpharetta GA 30022-4881	James Wilson Madison AL 35758	Tammy Yarbrough Winchester TN 37398
Jack Whitfield Tullahoma TN 37388	Otis K. Wilson Estill Springs TN 37330	Charles Yokley Estill Springs TN 37330
Tom Wiel Brentwood TN 37027	Mr. Danny Windham Madison AL 35758	Don York Estill Springs TN 37330
Anthony Wielicki Pulaski TN 38478	Rena Clare Wiseman Winchester TN 37398	Henry Younes Brownsboro AL 35741
James Wiese Brentwood TN 37027	Robert Wiseman Winchester TN 37398	Dana Young Winchester TN 37398
James Wilhelm Manchester TN 37355	W.T. Wiseman Winchester TN 37398	Robert Young Tullahoma TN 37388
Leroy Wilkerson Lynchburg TN 37352	R. Wayne Wolfe Madison AL 35758	Mr. Peter S.K. Yu Huntsville AL 35801
Arvis Williams Winchester TN 37398	Larry Woodard Huntsville AL 35802	James Zaugg Winchester TN 37398
David Williams Nashville TN 37217	Arnold Woodhams Lewisburg TN 37091	James Zeisse Mequon WI 53092
James C. Williams Brentwood TN 37027	Manley Woodrow Hazel Green AL 35750	John and Jean Zielke Winchester TN 37398
Leon Williams Winchester TN 37398	Charles Woodruff Shelbyville TN 37160	A.C. Zirkle Estill Springs TN 37330
Linda Williams Fayetteville TN 37334	Larry Woods Nashville TN 37212	Ross B. Zorn Huntsville AL 35803
Robert Williams Winchester TN 37398	Charles Woosley Gurley AL 35748	Otis Smith, Jr Decherd TN 37324
Ryland Williams Estill Springs TN 37330	Douglas Wright Franklin TN 37064	Mark Clark Fayetteville TN 37334

Trish Poe Nashville TN 37215	Senator Bill Frist Nashville TN 37205	Rep. Shelby Rhinehart Nashville TN 37243-0137
Franklin County Adult Activity Center, Inc. Winchester TN 37398	Mayor Eddie Frost Florence AL 35631	Mayor Ricky Sons Altamont TN 37301-0200
Mary Sons Winchester TN 37398	Mayor Pete Garner Estill Springs TN 37330	Mayor Daniel M. Speer Pulaski TN 38478-0633
Bob Dean Estill Springs TN 37330	The Honorable John Gaul Estill Springs TN 37330	Loretta Spencer, Mayor of Huntsville Huntsville TN 35804
City of Winchester Winchester TN 37398	Mr. & Mrs. Everett Hill Decherd TN 37324	Senator Pete Springer Nashville TN 37243-0025
County Commissioner Chairman Florence AL 35631	Rep. W. Van Hilleary Tullahoma TN 37388	Robert Stephenson, Mayor of Hartselle Hartselle AL 35640
County Commissioner Chairman Athens AL 35611	Rep. Doyle Lewis Nashville TN 37243	Senator Fred Thompson Nashville TN 37203
Mayor David Bean Winchester TN 37398-1700	Charles Mitchell, Mayor of Muscle Shoals Muscle Shoals AL 35662	Mayor John Ed Underwood Fayetteville TN 37334-0013
Representative Mae Beavers Nashville TN 37243	John G. Morgan, Comptroller of the Treasury Nashville TN 37243-0260	Rep. John White Nashville TN 37243
Senator Charlotte Burks Nashville TN 37243-0215	Speaker Jimmy Naifeh Nashville TN 37243	Lt. Gov. John Wilder Nashville TN 37243-0001
Walter Butler Nashville TN 37243-0446	Mayor Coy A. Noblitt Manchester TN 37355-1521	Dan Williams, Mayor of Athens Athens AL 35612
Senator Jerry W. Cooper Nashville TN 37243-0214	The Honorable Mayor of Sheffield Sheffield AL 35660	Justin P. Wilson, Deputy Governor Nashville TN 37243-0001
The Honorable James Damron Huntland TN 37345	Mayor Robert E. Phillips Lewisburg TN 37091-0968	Mike Butler Tennessee Conservation League Nashville TN 37209-3257
The Honorable Clay K. Dyer Cornersville TN 37047	Rep. Pete Phillips Nashville TN 37243-0162	James Bird, Cultural Resources Office, Eastern Band of Cherokee Indians Cherokee NC 28719
Mayor Clayton Ezell Lawrenceburg TN 38464- 0590	Louis Price, Mayor of Scottsboro Scottsboro AL 35768	Jennie Terrapin, History & Cultural Office, Cherokee Nation of Oklahoma Tahlequah OK 74465
Rep. Joe Fowlkes Nashville TN 37243-0165	Mayor Julian Price Decatur AL 35602	
Rep. George Fraley Nashville TN 37243		

Julie Moss, United  
Keetoowah Band  
Tahlequah OK 74465

Toye Heape, Exec. Director,  
TN Commission of Indian  
Affairs  
Nashville TN 37243-0469

Janice Nolan, American Lung  
Association  
Nashville TN 37203

Cumberland Harpeth  
Audubon Society  
Nashville TN 37212-0631

Roy Settle, Coordinator  
Johnson City TN 37604

East TN Environmental  
Business Assoc.  
Oak Ridge TN 37831-5483

Bruce Wood, BURNT  
Nashville TN 37212

Rob Skinner, Environmental  
Action Fund  
Nashville TN 37203

Dennis B. George  
Cntr. for the Management,  
Utilization & Protection of  
Water Resources  
Cookeville TN 38505

Dr. Jack N. Barkenbus,  
Director  
University of TN,  
Environment Center

Knoxville TN 37996-0830

Edith Beaty Heller  
University of Memphis  
Memphis TN 38152

Randy Brown, Exec. Director  
Foothills Land Conservancy  
Maryville TN 37804

Ronald Lambert  
Clinch River Community  
Project  
Sneedville TN 37869

Bill Stevens  
Foothills Parkway Association  
Gatlinburg TN 37738

Councilman David Crockett  
Chattanooga TN 37402

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## Appendix A

### ***Agreements between TVA, TERDA, and TDEC***

Agreement Between the Tennessee Elk River Development Agency and the Tennessee Valley Authority, Contract No. TV-27333A, May 17, 1966 - Provided for the parties to engage in a cooperative program of comprehensive, unified resource development for the purpose of fostering the orderly physical, economic, and social development of the Elk River area; and whereas the development of the Elk River Area required the construction of the Tims Ford Dam and Reservoir in order to reduce flooding, and provide a source of water for municipal, industrial, agricultural, and domestic use and a recreation source, and whereas TVA and TERDA acquired certain landrights as determined by TVA to be necessary for the construction and operation of the Tims Ford Dam and Reservoir and such adjoining land and landrights as were determined to be necessary to assure adequate protection, full development, and optimum use of the resources created by the Tims Ford Dam and Reservoir. This contract was supplemented 16 times and was subsequently terminated by the signing of contract TV 50000A.

Agreement Between the Tennessee Elk River Development Agency and the Tennessee Valley Authority, Contract No. TV-50000A, September 18, 1980 - Terminated Contract No. TV-27333A and was signed on September 18, 1980. Established a TVA/TERDA coordination committee continue to cooperate in the development of a comprehensive program of unified resource development for the Elk River area and assure full utilization of the resources of the Tims Ford project. All plans and programs which are developed for such purposes shall be directed towards the physical, economic, and social development of the Elk River area. Such plans will provide water supply for agricultural, industrial, and municipal purposes; the development of water quality control; and the development and use of the reservoir and shoreline lands. Such plans and programs will be subject to requirements deemed necessary by TVA for the proper operation and maintenance of the Tims Ford Dam and Reservoir for flood control and electric power generation; TERDA will be directly responsible for developing, administering, and implementing such plans and programs and the operation and management of the Tims Ford project subject to the terms of this agreement; with the technical advice and assistance of TVA.

Public Chapter No. 816, House Bill No. 2463, An Act to amend Tennessee Code Annotated, Title 4 - On April 26, 1996, the Tennessee General Assembly, by statute, terminated TERDA and transferred all of TERDA's powers, duties, contractual obligations, and functions to TDEC. Public Chapter 816 of the 1996 Acts of the Tennessee General Assembly terminated the activities of the Tennessee Elk River Development Agency. The Act transferred the powers, duties, contractual obligations and functions of TERDA to the Tennessee Department of Environment and Conservation. The property and funds of TERDA were transferred to TDEC. The Act provides that if TDEC sells or leases property, proceeds will be divided between TDEC and the counties identified in Public Chapter 816. A scanned copy Public Chapter 816 follows.

Agreement Between the Tennessee Department of Environment and Conservation and the Tennessee Valley Authority, Contract No. 98RE2-229151, February 10, 1998 - In response to Public Chapter 816 TVA and TDEC entered into a contract to replace Contract No. 5000A. The Contract defines the general responsibilities of the agencies, and provides that they develop a Land Management and Disposition Plan for project lands about the 895-foot msl contour line. Pursuant to the requirements of the Contract the agencies have developed the Draft Plan, which provides the basis for Alternative B discussed herein.



**PUBLIC CHAPTER NO. 816**

PUBLIC CHAPTER NO. 816  
HOUSE BILL NO. 2463

By Representatives Karnali, Garrett, Brooks, Rigsby, White, Beavers, Rhinehart, Lewis, Phillips  
Substituted for: Senate Bill No. 2911  
By Senators Haynes, Cooper

AN ACT to amend Tennessee Code Annotated, Title 4, relative to boards, commissions and other governmental entities.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF TENNESSEE:

SECTION 1. Tennessee Code Annotated, Section 4-29-224(a), is amended by deleting item (22) in its entirety.

SECTION 2. (a) Notwithstanding the provisions of Tennessee Code Annotated, Section 4-29-112, or any other law to the contrary, the Tennessee Elk River Development Agency, created by Section 64-1-301 shall terminate and shall cease all activities on the effective date of this act.

(b) All powers, duties, contractual obligations and functions of the agency are hereby transferred to the Department of Environment and Conservation.

SECTION 3. All funds allotted to and held by the Tennessee Elk River Development Agency shall be distributed as follows:

- (1) All contractual obligations and cooperative agreements with the Tennessee Valley Authority shall be satisfied,
- (2) All administrative costs of the department to operate and maintain two (2) offices to effectuate tile purposes of this act; and
- (3) Any remaining funds shall be distributed to the following counties which are part of the Elk River watershed:
  - (A) Coffee County;
  - (B) Franklin County;
  - (C) Giles County;
  - (D) Grundy County;
  - (E) Lauderdale County, Alabama;
  - (F) Lawrence County;
  - (G) Limestone County, Alabama;
  - (H) Lincoln County;
  - (M) Marshall County; and
  - (N) Moore County.

Such remaining funds shall be distributed to the counties as follows:

The commissioner or his designee, with the assistance of the Comptroller of the Treasury, shall conduct an accounting of all funds transmitted by the Tennessee Elk River Development Agency to the counties in the Elk River watershed from July 1, 1986 to the effective date of this act. The remaining funds shall be distributed to the counties in the Elk River watershed in such amounts so that each county shall have received approximately the same amount of funds from July 1, 1986 through the termination and distribution of the remaining assets of the Tennessee Elk River Development Agency. Such remaining funds shall be distributed to the following counties:

- (A) In Franklin County, a sum sufficient, not to exceed thirty thousand dollars (\$30,000), shall be allotted to construct a building for the volunteer fire department in the community of Broadview. The remaining funds distributed to Franklin County shall be allotted solely for capital projects for educational purposes;
- (B) In Grundy County, all funds shall be allotted solely for new capital projects for educational purposes. No funds received as a result of this act shall be used for repairs or renovations of existing structures;
- (C) In Coffee County, all funds shall be allotted to the nonprofit education foundation program in such county which has received a determination of exemption under § 26 U.S.C. 501(c)(3) of the Internal Revenue Code and which is filed with the Secretary of State;

(D) In Moore County, fifty percent (50%) of the funds shall be allotted to the Moore County Commission to be used solely for educational purposes for grades K-12, and fifty percent (50%) of the funds shall be allotted to Motlow State Community College to be used solely for such college's nursing program;

(E) In Giles County, fifty percent (50%) of the funds shall be allotted to the nonprofit education foundation program in such county which has received a determination of exemption under § 26 U.S.C. 501(c)(3) of the Internal Revenue Code and which is filed with the Secretary of State, and fifty percent (50%) of the funds shall be allotted to the industrial development board in Giles County which is chartered by the State of Tennessee;

(F) In Lincoln County, all funds shall be allotted to the Fayetteville/Lincoln industrial development board to be used solely for capital projects.

(G) In Marshall County, all funds shall be allotted solely to the Marshall Education and Communication Center Project in Marshall County; and

(H) In Lawrence County, fifty percent (50%) of the funds shall be allotted to the nonprofit education foundation program in such County which has received a determination of exemption under § 26 U.S.C. 501(c)(3) of the Internal Revenue Code and which is filed with the Secretary of State, and fifty percent (50%) of the funds shall be allotted to the industrial development board in Lawrence County which is chartered by the State of Tennessee. If no such industrial development board exists, then fifty percent (50%) of the funds shall be allotted to the county's legislative body to be appropriated by such body solely for capital projects to enhance economic development in Lawrence County;

(I) In Lauderdale County, all funds shall be distributed to the Alabama Elk River Development Agency for use in funding area development projects in Lauderdale and Limestone Counties which are jointly approved by the Alabama Elk River Development Agency and the Tennessee Valley Authority; and

(J) In Limestone County, all funds shall be distributed to the Alabama Elk River Development Agency for use in funding area development projects in Lauderdale and Limestone Counties which are jointly approved by the Alabama Elk River Development Agency and the Tennessee Valley Authority.

SECTION 4. All Interests in real property and in water rights held by the Tennessee Elk River Development Agency shall be transferred to the Department of Environment and Conservation. If the Department of Environment and Conservation sells or leases any parcel of land or any other property transferred from the Tennessee Elk River Development Agency, the proceeds of such sales or leases shall be distributed as follows:

- (1) Fifty percent (50%) shall be retained by the department to effectuate the purposes of this act; and
- (2) Fifty percent (50%) shall be distributed among the counties in the manner as described in Section 3 of this act.

SECTION 5. The General Assembly hereby urges the Department of Environment and Conservation to not charge boat dock fees, enhancement fees or development fees as a charge to access to Tims Ford Lake or for the purpose of shoreline improvements as set forth in Tennessee Code Annotated, Section 64-1-303(1)(F).

SECTION 6. The General Assembly urges the department to dispose of all remaining properties belonging to the Tennessee Elk River Development Agency as expeditiously as practicable and lawful.

SECTION 7. Any project initiated by the Tennessee Elk River Development Agency that has received final approval from the Tennessee Valley Authority shall be implemented as provided in the agreements between the parties or any successor of a party.

SECTION 8. Nothing in Sections 4 and 6 of this act, as amended, shall apply to lands held for the purposes authorized by Chapter 528 of the Public Acts of 1993 or for expansion of Tims Ford State Park.

SECTION 9. The General Assembly hereby urges the department to maintain any lands it may acquire pursuant to this act which are not deemed suitable for development as natural habitats for the preservation of game, non-game and endangered wildlife species.

SECTION 10. In addition, the General Assembly urges the department to work with landowners in areas around Tims Ford Lake to ensure that the department has adequate ingress and egress to all its properties and to ensure that the landowners have adequate ingress and egress to their properties.

SECTION 11. The Tennessee Code Commission is hereby directed to make any and all necessary changes to Tennessee Code Annotated to reflect the provisions of this act.

SECTION 12. If any provision of this act or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the act which can be given effect without the invalid provision or application, and to that end the provisions of this act are declared to be severable.

## **Appendix B – Public Scoping**

### **Press Releases**

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION  
401 Church St, 21st Floor L&C Tower Nashville, TN 37243 615/532-0109

### **PUBLIC INPUT SOUGHT ON LAND USE IN TIMS FORD RESERVOIR AREA**

For Immediate Release  
Friday, October 2, 1998

(NASHVILLE) — The Tennessee Department of Environment and Conservation (TDEC) and the Tennessee Valley Authority (TVA) are seeking public input on land use for the Tims Ford Reservoir area in Moore and Franklin Counties.

“We need public input on land use in this area to make the decisions that represent all interests,” said TDEC Commissioner Milton H. Hamilton, Jr. “We sincerely intend to take all comments into consideration.”

TDEC, in partnership with TVA, will use public comment to develop a land use plan for the Reservoir area. Public comment will help determine the necessary level of environmental review, which is required by the National Environmental Policy Act.

Two public meetings are scheduled:

- Monday, November 9, Franklin County High School, 925 Dinah Shore Boulevard, Winchester, Tennessee
- Tuesday, November 10, Lincoln County High School, 1233 Huntsville Highway, Fayetteville, Tennessee

Both meetings will be held from 6 PM - 9 PM local time.

Written comment will be accepted through December 1, 1998 and should be sent to: The Land Use Plan, 401 Church Street, 20th Floor L&C Tower, Nashville, TN 37243.

To comment by electronic mail, TDEC has developed an on-line survey that may be accessed at. The survey can be mailed to residents, and may be requested by calling 1-800-604-9346 (toll-free) or 253-2106 within the Nashville calling area.

The Tims Ford Project was created in 1963 for navigation, flood control, power generation, economic and social development in the Elk River area of Tennessee. The Project was operated and managed by the Tennessee Elk River Development Agency (TERDA) until April 26, 1996. At that time, the Tennessee General Assembly transferred responsibilities to TDEC.

Media Contact: Lola Potter, Public Information Officer  
(O) 615/532-0288 (P) 888-860-9548 (H) 615/385-9657

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION  
401 Church St, 21st Floor L&C Tower Nashville, TN 37243 615/532-0109

**PUBLIC INPUT SOUGHT ON LAND USE IN  
TIMS FORD RESERVOIR AREA**

For Immediate Release  
Tuesday, November 3, 1998

(NASHVILLE) — The Tennessee Department of Environment and Conservation (TDEC) and the Tennessee Valley Authority (TVA) will facilitate two public meetings this month on land use for the Tims Ford Reservoir area in Moore and Franklin Counties.

“Public response is really going to guide us in this,” said TDEC Commissioner Milton H. Hamilton, Jr. “We’ve made it easy for anyone to give us their opinion on land use for the area ... through our public advisory events, our webpage, a toll-free telephone number and a survey we’ve mailed to people who’ve responded.”

TDEC and TVA will use public comment to develop a land use plan for the Reservoir area. Public comment will help determine the necessary level of environmental review, which is required by the National Environmental Policy Act.

Two public meetings are scheduled:

- Monday, November 9, Franklin County High School, 925 Dinah Shore Boulevard, Winchester, Tennessee
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Both meetings will be held from 6 PM - 9 PM local time.

Written comment will be accepted through December 1, 1998 and should be sent to: The Land Use Plan, 401 Church Street, 20th Floor L&C Tower, Nashville, TN 37243.

To comment by electronic mail, an on-line survey may be accessed at [www.state.tn.us/environment/elk/](http://www.state.tn.us/environment/elk/). The survey can be mailed to residents, and may be requested by calling 1-800-604-9346 (toll-free) or 253-2106 within the Nashville calling area.

The property surrounding the Tims Ford Project was managed by the Tennessee Elk River Development Agency (TERDA) until April 26th, 1996. At that time, the Tennessee General Assembly transferred responsibilities to TDEC.

###

Media Contact: Lola Potter, Public Information Officer  
(O) 615/532-0288 (P) 888-860-9548 (H) 615/385-9657

**Fax Numbers for TV Stations and Newspapers**

WAAY TV 31	Huntsville, Alabama	Fax No. (256) 533-5191
WAFF TV 48	Huntsville, Alabama	Fax No. (256) 534-4101
WHNT TV 19	Huntsville, Alabama	Fax No. (256) 536-9468
Times Daily	Florence, Alabama	Fax No. (256) 740-4717
Huntsville Times	Huntsville, Alabama	Fax No. (256) 532-4420
News Courier	Athens, Alabama	Fax No. (256) 233-7753

Note: These are the media who received the news releases in Alabama. TDEC also faxed news releases to numerous daily and weekly papers throughout Middle Tennessee. We do not have a listing of those in Tennessee.

<b>Table B-1 Media Outlets During Scoping</b>		
<b>Newspaper</b>	<b>Date</b>	<b>Title of Article</b>
Tullahoma News, Tullahoma, TN	October 18, 1998	State seeking input on acreage at Tims
Tullahoma News, Tullahoma, TN	October 18, 1998	Tims Ford Land: Tennessee and TVA are still pondering what to do with former TERDA acreage under vague legislation
Herald-Chronicle, Winchester, TN	October 19, 1998	TDEC, TVA Will Hold Tims Meet
Midstate	November 8, 1998	Meetings to address Tims Ford Lake land
Moore Co. News, Lynchburg, TN	November 8, 1998	Public input sought on use of 5,000 acres at Tims lake
Times-Gazette, Shelbyville, TN	November 4, 1998	Tims Ford comment sought



# **Tims Ford Land Management and Disposition Plan**

## ***Scoping Report***







**Background and Purpose**

The Tims Ford Project was created by the Tennessee General Assembly and Congress in 1963 for the purposes of economic and social development in the Elk River Area. The State of Tennessee, in partnership with the Tennessee Valley Authority (TVA), is in the process of developing a Land Management and Disposition Plan (Land Use Plan) to fulfill the legislative intent of Public Chapter 816. The Land Use Plan will systematically identify and evaluate the most suitable use of public land.

The purpose of the Tims Ford Land Management and Disposition Plan Scoping Report is to identify the range of issues that should be considered in the development of the Environmental Assessment and subsequent Land Use Plan of public land surrounding Tims Ford Reservoir.

From October 2, 1998 through December 4, 1998, the Tennessee Department of Environment and Conservation (TDEC) sought comments from citizens and recreational users. Individuals were invited to complete a written survey about Tims Ford (see Appendix). Surveys were mailed to individuals whose names were compiled on a TDEC mailing list or to individuals who called 1-800-604-9346 to request a survey. Individuals could also access TDEC’s website at “www.state.tn.us/environment/elk” and complete the on-line survey or send written comments via mail or e-mail. Surveys were also distributed during public meetings. The solicitation of public comments was sought through news releases to regional and local newspapers and the distribution of flyers announcing public input opportunities

**Public Meetings**

In addition to the survey, citizens were invited to attend public meetings in Winchester, Tennessee (November 9, 1998) and Fayetteville, Tennessee (November 10, 1998). The public meeting in Winchester was attended by 145 individuals, and 36 individuals attended the public meeting in Fayetteville. At each public meeting, all attendees were invited to participate in focus groups, where they were asked to respond to questions concerning the management of Tims Ford Lake. Participants were randomly broken into smaller groups, with ten focus groups in Winchester and two focus groups in Fayetteville. Each focus group included a group facilitator and a recorder.

**Survey Respondents**

Approximately 1000 surveys were mailed. Additionally, 125 visits to the Tims Ford website were noted and 15 individuals contributed comments via letters and e-mail. A total of 350 surveys were completed. Of these, 316 surveys were received by mail and 34 by Internet.

Survey data were collected from respondents residing in 20 counties. Eighty-four percent of respondents reported that they owned lake front property adjacent to Tims Ford Lake. Ninety-one percent of the respondents residing in Franklin and Moore Counties reported that they owned lake front property adjacent to Tims Ford Lake. Sixty-nine percent of respondents living outside the immediate vicinity of Tims Ford Lake (Franklin and Moore Counties) reported that they owned lake front property adjacent to Tims Ford Lake.

<b>Frequencies of Counties</b>					
Franklin, TN	214	Coffee, TN	8	Wilson, TN	1
Moore, TN	24	Maury, TN	5	Fulton, GA	1
Madison, AL	22	Marshall, TN	3	Greene, OH	1
Williamson, TN	18	Bedford, TN	3	Hamilton, TN	1
Lincoln, TN	17	Giles, TN	2	Lauderdale, AL	1
Davidson, TN	11	Bradley, TN	1	Baxter, AR	1
Rutherford, TN	10	Washington, TN	1	Unknown	5

**Lake Visitation**

The majority (94%) of respondents indicated that they have used the public lands around Tims Ford Lake within the past year. Respondents also reported that they visited the public lands around Tims Ford Lake an average of 31 times per year (range = 0 - 365).

**Scoping Report****Activity Preferences**

For survey question 3 (see Appendix), respondents were asked to refer to a list of recreational activities and indicate whether they: a) prefer to use Tims Ford Lake for the activity; b) would only use the area if the proper facilities and opportunities were provided; c) are not interested in using Tims Ford for the activity; or d) do not participate in the activity.

***Prefer to Use Tims Ford***

Most respondents indicated they **prefer** to use Tims Ford Lake for:

- Boat launching
- Fishing
- Hiking
- Marina/boating
- Nature photography
- Picnicking
- Pleasure boating
- Skiing
- Special events
- Swimming in designated and informal areas

***Do Not Participate in This Activity***

Most respondents indicated they **do not participate** in the following activities:

- Bicycle riding (mountain and other bikes)
- Camping (informal and developed)
- Golfing
- Horseback riding
- Hunting
- Jet skiing
- Driving off-road vehicles
- Sailing

There were no clear majority preferences within the remaining two categories (e.g., respondents would only use the area if the proper facilities and opportunities were provided; they were not interested in using Tims Ford for the activity).

Scoping Report

Table 1 displays the list of activities for which survey respondents indicated their preferences. For each activity, reading across each row, percentages indicate the distribution of responses in each preference category. For each activity, the preference category with the greatest percentage is shaded.

**For example:** The first activity listed is bicycle riding (mountain bikes). The table indicates that 9% of all respondents prefer to use Tims Ford for bicycle riding; 13% would use Tims Ford for bicycle riding if the facilities were provided; 12% are not interested in using Tims Ford for bicycle riding; and 67% do not participate in bicycle riding. This last preference category is shaded since most respondents (67%) indicated they do not participate in bicycle riding.

**Table 1. Percentages of Activity Preferences**

Activities	Prefer to use Tims Ford Lake for this activity	Would use Tims Ford Lake if facilities were provided	Not Interested in using Tims Ford Lake for this activity	I do not participate in this activity
Bicycle Riding (mountain bikes)	9%	13%	12%	<b>67%</b>
Bicycle Riding (other than mountain bikes)	24%	21%	10%	<b>45%</b>
Boat Launching	<b>78%</b>	7%	6%	9%
Camping-Informal Site	14%	1%	19%	<b>56%</b>
Camping-Developed Site	24%	11%	18%	<b>47%</b>
Fishing	<b>83%</b>	7%	2%	9%
Golfing	23%	30%	6%	<b>41%</b>
Hiking	<b>37%</b>	31%	10%	22%
Horseback Riding	6%	25%	11%	<b>58%</b>
Hunting	11%	18%	17%	<b>54%</b>
Jet Skiing	38%	3%	13%	<b>46%</b>
Marina/Boating	<b>72%</b>	8%	6%	15%
Off-Road Vehicles	3%	11%	20%	<b>66%</b>
Nature Photography	<b>43%</b>	14%	5%	38%
Picnicking	<b>64%</b>	15%	6%	14%
Pleasure Boating	<b>88%</b>	4%	2%	7%
Sailing	24%	4%	5%	<b>67%</b>
Skiing	<b>59%</b>	3%	5%	33%
Special Event	<b>33%</b>	26%	16%	25%
Swimming: Designated Area	<b>43%</b>	19%	15%	24%
Swimming: Informal Area	<b>70%</b>	9%	8%	14%

Note: Shaded areas indicate majority preference for that activity.

**Scoping Report**

Survey respondents were given the opportunity to write in any activity not listed on the survey. Table 2 displays the preferences for these *other* activities. For each activity, reading across each row, the number indicates the frequency of responses in each preference category.

**For example:** Reading across the first row (activity listed), five respondents wrote in bird watching/wildlife viewing as an additional activity. Three respondents indicated that they prefer to use Tims Ford Lake for this activity and two respondents indicated that they would use Tims Ford for this activity if the facilities were provided.

**Table 2. Frequencies of Activity Preferences**

Activities	Prefer to use Tims Ford Lake for this activity	Would use Tims Ford Lake if facilities were provided	Not Interested in using Tims Ford Lake for this activity	I do not participate in this activity
<b>OTHER</b>				
Bird Watching/Wildlife Viewing	3	2	0	0
Sightseeing	2	0	0	0
Drawing/Painting	1	0	0	0
Canoeing	1	0	0	0
Snorkeling/Scuba Diving	1	0	0	0
Paddle Boating	1	0	0	0
Tennis	0	2	0	0
Jogging/Walking	0	1	0	0
Pistol Shooting	0	1	0	0

**Scoping Report****Planning Priorities**

For survey question 4 (see Appendix) respondents were asked to refer to a list of facilities, areas, and/or services and to indicate: a) the amount of change needed; and b) the appropriate degree of priority necessary in regard to Tims Ford Lake.

**Amount of Change**

Respondents indicated the level of change needed in regard to Tims Ford Lake using the following categories: a) need less; b) about the right amount; c) need more; or d) no opinion.

***Need Less***

Most respondents indicated the need for **less**:

- Timber production
- Industrial and economic development
- Theme parks

***About the Right Amount***

Most respondents indicated there is **about the right amount** of:

- Brochures and signs
- Full-service campgrounds
- Primitive campgrounds
- Docks, piers, and covered boat slips
- Marina areas
- Public fishing piers
- Swimming beaches
- Year-round boat ramps with parking
- Public recreation areas

***Need More***

Most respondents indicated the need for **more**:

- Hiking trails
- Interpretative centers/museums
- Overnight lodging
- Paved trails, signs, and observation towers
- Preservation of natural areas/open space
- Protection of cultural artifacts/historic sites
- Protection of endangered species
- Shoreline conservation zones
- Shoreline erosion control
- Water quality protection
- Protection of public lands with unique natural features
- Protection of wetlands
- Ecological study areas for local schools/universities
- Wildlife observation areas

Most respondents indicated **no opinion** regarding boat stack storage, equestrian trails, and hunting areas.

### Scoping Report

Table 3 displays the list of facilities, areas, and/or services. Reading across each row (facility, area, and/or service listed), percentages indicate the distribution of responses in each change category. For each row, the preference category with the greatest percentage is shaded.

**For example:** The first service listed is brochures and signs directing the public to natural areas. The table indicates that 3% of all respondents report that less change of signs/brochures is needed; 49% report that about the right amount exists; 36% report that more signs/brochures are needed; and 12% had no opinion. Since most respondents (49%) indicated that about the right amount of signs/brochures exist, this category is shaded.

<b>Table 3. Percentages of Responses for Change</b>				
<b>Facilities, Areas, Services</b>	<b>Need Less</b>	<b>About the Right Amount</b>	<b>Need More</b>	<b>No Opinion</b>
Brochures/Signs	3%	49%	36%	12%
Full-Service Campgrounds	7%	43%	30%	21%
Primitive Camping	13%	33%	24%	30%
Boat Storage	12%	30%	22%	37%
Docks, Piers, and Covered Boat Slips	12%	44%	34%	11%
Equestrian Trails	6%	13%	33%	49%
Hiking Trails	3%	19%	59%	20%
Hunting Areas	28%	16%	20%	36%
Industrial Development	60%	18%	13%	9%
Interpretative Centers	12%	23%	40%	26%
Marina Areas	8%	48%	39%	5%
Lodging	5%	37%	49%	8%
Paved Trails	8%	32%	44%	16%
Natural Areas	3%	23%	65%	8%
Cultural Artifacts	4%	28%	51%	18%
Endangered Species	9%	27%	51%	14%
Public Land	4%	24%	64%	8%
Wetlands	7%	28%	53%	12%
Piers	9%	41%	40%	11%
Public Recreation Areas	7%	50%	39%	4%
Study Areas	8%	17%	53%	22%
Shoreline Conservation	7%	30%	57%	6%
Erosion Control	2%	18%	76%	4%
Swimming Beaches	6%	44%	38%	12%
Theme Parks	73%	5%	6%	16%
Timber Production	56%	18%	11%	15%
Water Quality	2%	17%	79%	2%
Observation Areas	4%	27%	61%	9%
Boat Ramps	6%	50%	36%	8%

Note: Shaded areas indicate majority preference for that activity.

Scoping Report

Survey respondents were given the opportunity to write in any facility, area, and/or service not listed on the survey. Table 4 displays these *other* preferences. For each facility, area, and/or service, reading across each row, the number indicates the frequency of responses in each change category.

**For example:** Reading across the first row (facility, area, and/or service listed), seven respondents wrote in restricted jet ski areas. One respondent reported that about the right amount of restricted jet ski areas existed. Six respondents reported that more restricted jet ski areas were needed.

<b>Table 4. Frequencies of Responses for Change</b>				
<b>Facilities, Areas, Services</b>	<b>Need Less</b>	<b>About the Right Amount</b>	<b>Need More</b>	<b>No Opinion</b>
<b>OTHER</b>				
Restricted Jet Ski Areas	0	1	6	0
Horse Facilities	0	0	4	0
Restaurants	0	0	3	0
Dry Creek Facility	0	3	2	0
Adding Rockfish	0	0	2	0
Control of Docks	0	0	2	0
Wildlife Reserve	0	0	2	0
No-Wake Zones Near Private Docks	0	0	2	0
Non-Powered Boating Areas	0	0	1	0
Places to Gas Boat	0	0	1	0
Handicapped Accessible Boating	0	0	1	0
Education Facility	0	0	1	0
Clean Restrooms	0	0	1	0
Fossil Hunting Area	0	0	1	0
Water Level (full pool)	0	0	1	0
Control Boat Size	0	0	1	0
Game (hunting) Management	0	0	1	0
Boating Education	0	0	1	0
Residential Subdivisions	1	1	0	0

**Scoping Report****Amount of Priority**

Respondents indicated the level of priority necessary in regard to Tims Ford Lake using the following categories: a) low priority; b) medium priority; c) high priority; or d) no opinion.

***Low Priority***

Most respondents indicated the following to be a **low priority**:

- Primitive camping
- Industrial and economical development
- Boat stack storage
- Theme parks
- Docks, piers, and covered boat slips
- Timber production

***Medium Priority***

Most respondents indicated the following to be a **medium priority**:

- Brochures and signs
- Paved trails
- Full-service campgrounds
- Public fishing piers
- Interpretative centers/museums
- Public recreation areas
- Hiking trails
- Swimming beaches
- Marina areas
- Ecological study areas for local schools and universities

***High Priority***

Most respondents indicated the following to be a **high priority**:

- Overnight lodging
- Shoreline conservation zones
- Preservation of natural areas/open space
- Shoreline erosion control
- Protection of cultural artifacts/historic sites
- Water quality protection
- Protection of endangered species
- Wildlife observation areas
- Protection of wetlands
- Year-round boat ramps with parking
- Protection of public land with unique natural features

Many respondents had **no opinion** concerning equestrian trails and hunting areas.



Scoping Report

Table 5 displays the list of facilities, areas, and/or services. Reading across each row (facility, area, and/or service listed), percentages indicate the distribution of responses in each priority category. For each row, the preference category with the greatest percentage is shaded.

**For example:** The first service listed is brochures and signs directing the public to natural areas. The table indicates that 36% of all respondents report that brochures/signs should be a low priority; 37% report that they should be a medium priority; 15% report that they should be a high priority; and 13% had no opinion. Since most respondents (37%) indicated that brochures/signs should be a medium priority, this category is shaded.

<b>Facilities, Areas, Services</b>	<b>Low Priority</b>	<b>Medium Priority</b>	<b>High Priority</b>	<b>No Opinion</b>
Signs	36%	37%	15%	13%
Full-Service Campgrounds	29%	34%	16%	22%
Primitive Camping	37%	28%	10%	24%
Boat Storage	41%	22%	9%	28%
Docks, Piers, and Covered Boat Slips	30%	28%	29%	13%
Equestrian Trails	23%	24%	13%	41%
Hiking Trails	14%	39%	27%	20%
Hunting Areas	33%	16%	17%	35%
Industrial Development	41%	12%	35%	13%
Interpretative Centers	25%	37%	16%	23%
Marina Areas	28%	34%	30%	9%
Lodging	22%	31%	35%	12%
Paved Trails	21%	34%	29%	17%
Natural Areas	10%	18%	65%	8%
Cultural Artifacts	11%	24%	51%	15%
Endangered Species	15%	20%	55%	10%
Public Land	8%	19%	66%	6%
Wetlands	13%	21%	56%	9%
Piers	25%	35%	27%	13%
Public Recreation Areas	26%	40%	27%	7%
Study Areas	16%	35%	31%	19%
Shoreline Conservation	9%	24%	62%	6%
Erosion Control	4%	17%	75%	5%
Swimming Beaches	24%	41%	20%	15%
Theme Parks	60%	5%	19%	16%
Timber Production	44%	17%	27%	13%
Water Quality	3%	11%	83%	3%
Observation Areas	13%	34%	44%	10%
Boat Ramps	21%	34%	35%	10%

Note: Shaded areas indicate majority preference for that activity.

**Scoping Report**

Survey respondents were given the opportunity to write in any facility, area, and/or service not listed on the survey. Table 6 displays these *other* preferences. For each facility, area, and/or service, reading across each row, the number indicates the frequency of responses in each priority category.

**For example:** Reading across the first row/facility, area, and/or service, six respondents wrote in restricted jet ski areas. All six respondents indicated that restricted jet ski areas should be a high priority.

<b>Table 6. Frequencies of Responses Identifying Priorities</b>				
<b>Facilities, Areas, Services</b>	<b>Low Priority</b>	<b>Medium Priority</b>	<b>High Priority</b>	<b>No Opinion</b>
<b>OTHER</b>				
Restricted Jet Ski Areas	0	0	6	0
Dry Creek Facility	0	0	3	0
Wildlife Reserve	0	0	3	0
Horse Facilities	0	0	3	0
No Wake Zones Near Private Docks	0	0	2	0
Control of Docks	0	0	2	0
Restaurants	0	0	2	0
Non-powered Boating Areas	0	0	1	0
Adding Rockfish	0	1	1	0
Clean Rest-rooms	0	0	1	0
Fossil Hunting Area	0	0	1	0
Residential Subdivisions	0	0	1	0
Education Facility	0	0	1	0
Water Level (Full Pool)	0	0	1	0
Control Boat Size	0	0	1	0
Boating Education	0	0	1	0
Game (hunting) Management	0	0	1	0

## **Allocation of Land**

For survey question 5 (see Appendix), respondents were asked to report their preferences concerning the allocation of public land for specific land uses using the following categories: a) too much land; b) about right amount; c) need more land; or d) no opinion.

### ***Too Much Land***

Respondents indicated that too much land is allocated for:

- Industrial areas

### ***About Right Amount***

Respondents indicated that about the right amount of land is allocated for:

- Business development
- Commercial recreational areas
- Residential areas

### ***Need More Land***

Respondents indicated that more land was needed for:

- Resource management areas
- Informal recreation areas
- Sensitive resource areas

**Scoping Report**

Table 7 displays the list of specific land uses. Reading across each row (specific use listed), percentages indicate the distribution of responses in each allocation category. For each row, the preference category with the greatest percentage is shaded.

**For example:** The first land use listed is business development. The table indicates that 13% of the respondents report that too much land is allocated to business development; 52% report that about the right amount of land is allocated to business development; 32% report that more land is needed for business development; and 3% had no opinion. Since most respondents (52%) indicated that about the right amount of land is allocated to business development, this category is shaded.

**Table 7. Percentages of Preferences for Land Allocation**

Land Uses	Too Much Land	About the Right Amount	Need More Land	No Opinion
Business Development	13%	52%	32%	3%
Commercial Recreational Areas	8%	61%	30%	1%
Industrial Areas	45%	36%	4%	15%
Informal Recreation Areas	4%	38%	51%	7%
Residential Areas	25%	56%	17%	2%
Resource Management Areas	3%	34%	58%	5%
Sensitive Resource Areas	7%	35%	48%	10%

Note: Shaded areas indicate majority preference for that activity.

Survey respondents were given the opportunity to write in any specific land use not listed on the survey. Table 8 displays the preferences for these *other* uses. For each land use, reading across each row, the number indicates the frequency of responses in each allocation category.

**For example:** Reading across the first row (land use listed), two respondents wrote in education facilities. Both respondents indicated that more land was needed for education facilities.

**Table 8. Frequencies of Preferences for Land Allocation**

Land Uses	Too Much Land	About the Right Amount	Need More Land	No Opinion
<b>Other</b>				
Education Facilities	0	0	2	0
Hunting	0	0	2	0
Places to Gas Boat	0	0	1	1
Subdivisions	0	0	1	0
Quiet Areas	0	0	1	0
Remote Camping	0	0	1	0
Activities for Children	0	0	1	0
Fossil Hunting Areas	0	0	1	0
Horse Riding Trails	0	0	1	0
Lighted Tennis Courts	0	0	1	0
Marina near Winchester	0	0	3	0

**Open-ended Questions**

Survey questions 8, 9, and 10 were open-ended questions (see Appendix). Respondents were asked: a) what they valued most about Tims Ford Lake; b) major problems or issues that would need to be addressed over the next ten years; and c) what features (man-made or natural) respondents prefer to see when looking at the land around the lake.

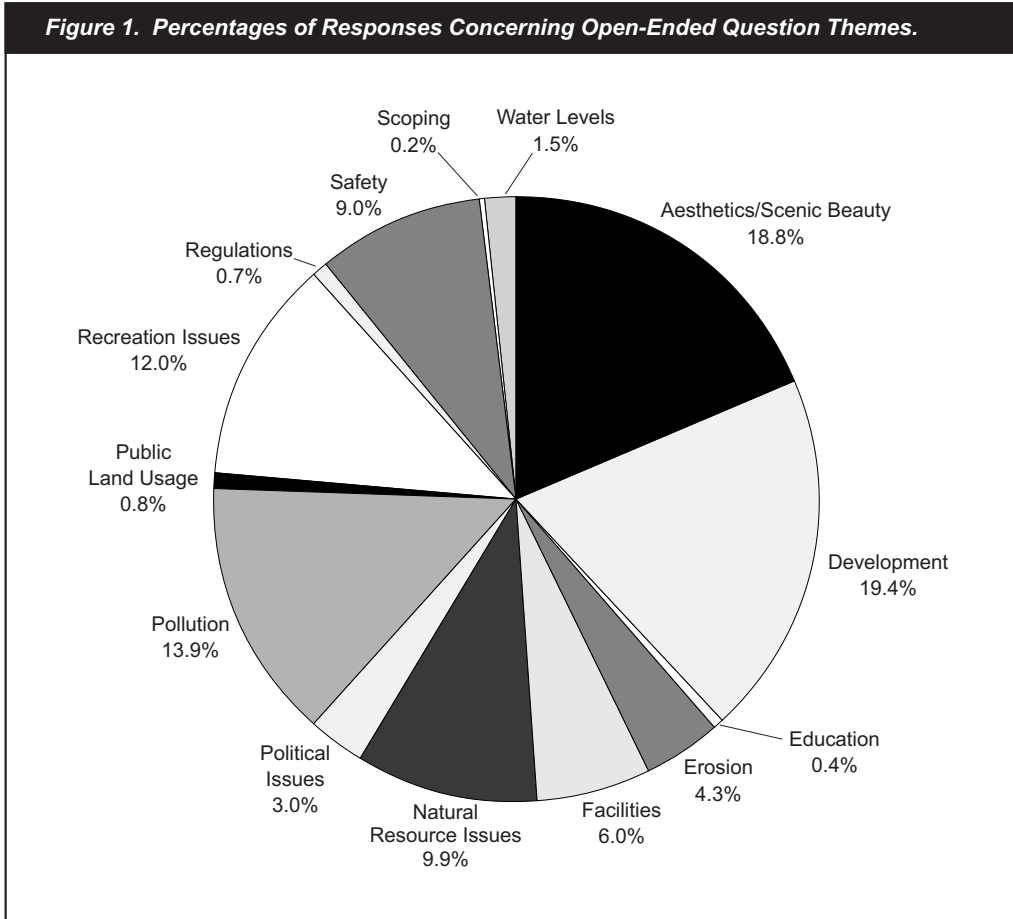
To aid the reader in locating the “open-ended” survey data, a listing of themes and page numbers is provided below.

<b>Theme Reference Guide</b>	<b>Page</b>
Aesthetics/Scenic Beauty .....	15
Development .....	15
Education .....	18
Erosion .....	19
Facilities .....	19
Natural Resource Issues .....	20
Political Issues .....	22
Pollution .....	24
Public Land Usage .....	25
Recreation Issues .....	25
Regulations .....	28
Safety .....	29
Scoping .....	30
Water Levels .....	30

Scoping Report

Figure 1 represents the percentage of total responses by themes identified in the analysis. The chart quickly identifies six sectors exhibiting the greatest responses. Those issues are as follows:

- Development
- Recreation
- Aesthetics/Scenic Beauty
- Natural Resources
- Pollution
- Safety



All responses were compiled and analyzed using qualitative data analysis techniques (Ethnograph computer program). From the responses provided, 14 themes (and additional sub-themes) were identified, with comments summarized and combined within each appropriate theme/subtheme. Because the comments were summarized and combined, the exact wording of the comments was not always used. The number in the right hand box indicates the number of times that comment was made by survey respondents. Respondents could make several different comments for each question.

**For example:** Under the theme/heading of Aesthetics/Scenic Beauty, there were 186 comments regarding the value of natural/undeveloped areas; 79 comments regarding the enjoyment of the natural beauty, scenery, and view; etc.

Scoping Report

<b>AESTHETICS/SCENIC BEAUTY</b>	
We value the natural/undeveloped areas (e.g., trees, woods, forests, fields, hills, wildflowers, coves, rock outcroppings, wildlife)	186
Enjoy the natural beauty, scenery, and view	79
We value the attractive/natural shoreline	33
Enjoy the privacy, peace, and quiet	17
Enjoy the beauty of the water and surrounding areas	9
Keep it rustic/rural	3
I would like to see a water fall (like Hampton coves, Huntsville)	2
Would like to see more colors near the golf course	1
Relative to other Tennessee lakes, Tims Ford is the prettiest one of all	1
Tims Ford is a great lake	1
This is the best kept and nicest park I have visited in TN, GA, NC, and SC	1
We value the beautiful recreational areas	1
Hills, lakes, and mountains create a vista that is unexcelled	1
<b>SUBTOTAL</b>	<b>335</b>
<b>STRUCTURAL AESTHETICS</b>	
Would like clean, architecturally pleasing, and well maintained structures (e.g., houses, cabins, beautiful skyline)	15
Concerned about the dilapidated docks, boat slips, decks, and walk ways	15
Area is clean and well kept (e.g., public areas, yards, buildings)	12
More public access/construction will erode the beauty	2
No trailer parks	2
Would like underground utilities	2
Marinas are well maintained in Estill Springs area	1
Need road up-keep	1
Any structure should be built to enhance the natural surroundings of the lake	1
State park is well designed and fits the lake	1
I am concerned about the lack of maintenance of public areas	1
<b>SUBTOTAL</b>	<b>53</b>
<b>TOTAL</b>	<b>388</b>
<b>DEVELOPMENT</b>	
<b>LIMIT/CONTROL FUTURE DEVELOPMENT</b>	
I value that Tims Ford is not overly developed	34
Keep development to a minimum	14
Don't destroy the land and wildlife with unrestricted development	7
I value that Tims Ford is open to public use with adequate safeguards (under TERDA) as not to stress the area with more recreation, residential, and commercial use than it presently has	2
This land is beautiful because of the strict guidelines provided for land owners, small businesses, and industry	2
The public lands around Tims Ford should be kept in a natural state with development required to facilitate public access kept to a minimum (e.g., trails, parking lots)	2
There is enough building on the lake. Leave what is now present and do not over-build.	2

Scoping Report

There needs to be sensitivity to the amount of land to be developed, the location of the development, the type of development, and the timing of the development (which should be spaced over several years)	2
Existing development was orderly/controlled	2
I think that the amount of development around the lake is about right.	1
I would like to see less development of marina slips, homes, and businesses	1
How much development is enough?	1
Development should not just be for the rich, but for all to use – it is a great asset to the local people, the state of TN, and the US	1
Lets go slowly, preserving what we have to provide development opportunities for future generations	1
Developers should be restricted as TERDA developments were	1
Maintain all development with strict codes and outstanding planning	1
<b>SUBTOTAL</b>	<b>74</b>
<b>OPPOSE FURTHER DEVELOPMENT</b>	
Leave it as is	23
We have very little natural beauty left – uncontrolled development will hurt this beautiful resource	16
Over-utilization and over-development is a concern	10
I want to see undeveloped land	9
No development	9
Why should land developers benefit from the sale/abuse of the shoreline? Don't give land use to the real estate industry/businesses/developers.	6
I am concerned about lake front development	3
If TERDA did not set land aside for development, then why is it being developed?	1
The lake is being over-built	1
The beauty, peace, and quiet have been lost due to all the lake development	1
I wish to see public access areas that are not developed	1
Maintain undeveloped shoreline	1
I hate to see Tims Ford's accelerated growth	1
No high rises	1
<b>SUBTOTAL</b>	<b>83</b>
<b>BALANCE DEVELOPMENT WITH NATURAL RESOURCES</b>	
A major problem is how to develop the area for the economic benefit of the surrounding counties while keeping the natural aspects of the lake and wildlife in tact. Balance the various interests and avoid excessive commercialization of the land.	12
It has a good balance of developed and undeveloped areas at present	7
I feel industrial, residential, and recreational development are all necessary as well as preservation of the natural areas, wetlands, forests, and endangered species. I report that if the two sides got together a long term plan could be developed which would meet everyone's needs. I don't advocate compromise, I promote synergy.	2
The vista coupled with the natural beauty of the commercialized environment is unique and should be preserved at all costs	1
I value some land for residential use, farm use, hunting and fishing areas, and wildlife habitats	1
We need nice cabins, houses, restaurants, and lodging isolated from the natural beauty of the open fields	1



## Scoping Report

We need more public use without detracting from the natural look	1
Man-made structures should blend with natural ones instead of obliterating them	1
A study should be done to calculate the minimum amount of traffic that the lake can manage while still remaining a pristine enjoyable area (not overused or over-built)	1
<b>SUBTOTAL</b>	<b>27</b>
<b>COMMERCIAL/INDUSTRIAL DEVELOPMENT</b>	
Excessive commercialization/over population/over development (on and around lake) is/will be a problem	61
There is a need for proper control of lake commercialization.	
Uncontrolled or too rapid development will pose a problem	12
I value the natural setting. Don't over commercialize. The less man-made, the better.	10
I want minimal businesses. I do not want to see large industries.	7
No commercial buildings or activities. Prevent commercial development.	7
Lake pollution due to excess construction or commercialization is a concern - no polluting industries	6
I value the lack of congestion due to industrial development	3
I am concerned that with over-development, conservation and preservation of natural resources are not the #1 priorities	1
There needs to be more private marinas, lake front picnic areas, and some private commercial development	1
We should allow managed development, both residential and commercial, in areas that otherwise are not prosperous for the public and private sectors of this lake	1
At this rate of development, in 10 years all you will see are houses and boat docks and the only trees will be in someone's yard	1
I value that most of the development has been recreational and residential rather than industrial	1
I value the lack of cheap development (e.g., bait shops, small business operations)	1
We need some private development of a commercial nature	1
<b>SUBTOTAL</b>	<b>113</b>
<b>RESIDENTIAL DEVELOPMENT</b>	
Most development should be for public use rather than private (residential) use – keep residential development to a minimum	19
We don't need more subdivisions. There are sufficient vacant lots in existing subdivisions.	9
Residential development should be carefully controlled	7
I am opposed to developing new residential areas – there are too many houses	7
I am concerned about the development of additional lake front properties with dock privileges	4
Residential development should be spread out	3
Homes should be built while keeping scenic qualities in tact (e.g., low profile cabins)	3
I would like to see homes and a few businesses – leave Tims Ford area for residential development only	3
I am concerned with the overtaking of all the wooded areas for homes and industry – houses are infringing on habitat areas	3
I wish to see more (nicely developed) residential development	3
Allow moderate amount of small subdivisions in well planned areas	3
Build up-scale/high quality homes only	2

**Scoping Report**

I would like to be able to use the lake without being in someone's back yard. Residential over-development is taking this ability away.	2
If the building of homes on the shoreline isn't curtailed, the lake will be polluted and an eye-sore	1
Residential areas are very nice	1
No more than 15-20% of the land should be used for residential development. Tims Ford should remain a wildlife and recreation area.	1
The moderate amount of residential development still allows a pleasant experience for boaters	1
Work with developers to create a common lake-side area without individual homes	1
I enjoy the pristine beauty in the areas where private residences have not encroached	1
Housing developments should have a restrictive covenant so that the land and size of house are properly balanced	1
I would like to see some condos with dock privileges for retired folks	1
Care has been taken to only allow subdivisions to occur on one side of the creek. Each home has wood and water access. Tims Ford state park was built with good quality construction.	1
We need more land to be opened up for home development around Maple Bend and Estill Springs	1
Require a minimum square footage (approx. 1,500 sq. ft.) for any home to be developed	1
<b>SUBTOTAL</b>	<b>79</b>
<b>OPEN MORE LAND FOR DEVELOPMENT</b>	
Tims Ford Lake is beautiful but is not being used and developed as Franklin county residents were promised. Our land was taken, not developed, and kept by our government. Its time to return to the people what was taken from them.	8
There is too much undeveloped shoreline	5
Tims Ford can handle more development but development should not be done to the point of congestion (development with good management)	4
Based on your e-mail site, it sounds like there are various parcels of land for sale. If so, how do I get more information about the size, location, what is on it, what types of developments are allowed, etc.?	2
Donate land to the towns/cities so they can develop parks, etc.	1
Need comprehensive use of natural areas for recreational opportunities	1
Develop the land near Awalt Bridge according to the previous land use plan	1
Develop lands around the lake for private use keeping under the guidelines of TDEC	1
<b>SUBTOTAL</b>	<b>24</b>
<b>TOTAL</b>	<b>401</b>
<b>EDUCATION</b>	
We need to teach lake users how to keep it environmentally clean	3
We need a nature center including a theater to tell about the area (e.g., natural history)	2
We need more information about the trees, wildflowers, and animals found in the area	1
We need to get enough land donated to the "Foundation for Educational Excellence" for development of a first class higher education facility that would serve several areas concerned with a 2 or 4 year college, vocational school and Adult Basic Education from the same building	1
We need an education facility	1
Provide access for study and observation	1
<b>TOTAL</b>	<b>9</b>

## Scoping Report

<b>EROSION</b>	
<b>SHORELINE</b>	
Increased shoreline erosion is a concern. We must preserve the natural shoreline by controlling erosion (e.g., rip rap, buffer zone).	47
The high speeds of the boaters and jet skis coming and going from the coves is eroding our shorelines 3-5 feet per year due to excessive wave action. Our docks take a beating and the banks are wasting away.	24
Need more no wake areas on the lake (especially in coves). Limit the horsepower on boats and limit speed of jet skis.	5
Most private owners are protecting their shoreline with rip rap or sea walls but the public owned shoreline is being washed away	2
Erosion is caused by fishing boats/personal water craft too close to the shoreline. Ocean size boats should not be allowed.	2
Keep most of the trees and plants to prevent erosion	2
Erosion of the shorelines is caused by fluctuating water levels. We have lost at least 1 foot per year for the last 15 years (totaling 12-15 feet of shoreline).	1
Shoreline erosion is caused by additional residential developments	1
Clear-cutting along banks by landowners cause erosion	1
<b>SUBTOTAL</b>	<b>85</b>
<b>SOIL</b>	
Soil erosion is a concern	5
<b>SUBTOTAL</b>	<b>5</b>
<b>TOTAL</b>	<b>90</b>
<b>FACILITIES</b>	
<b>COMMERCIAL/PUBLIC USE</b>	
I would like more restaurants (e.g., a nice sit-down water front restaurant which blends into the environment)	11
We need more water accessible restaurants, overnight facilities, cottages, inns, conference meeting rooms, etc. The missing element in much of the current development is the lack of quick access to public and private facilities.	11
We need another marina where you can purchase fuel	10
We need a new, modern marina (with gas, service, and food) in the immediate Winchester area	8
We need more cabins (e.g., in state park)	4
I value the public boat launches/ramps	3
We need upkeep of public use areas (e.g., water falls, docks, lake-side structures)	3
I value the state park	3
We need ramps for all visitors	3
A water park would be nice as well as more places for young people to swim with lifeguards	2
State park areas seem well maintained and managed	2
I would appreciate a new restaurant/lodging near the Bear Creek golf course like the one at Fall Creek Falls or Henry Horton State Park	2
The Lost Creek area needs a marina with gas pumps	1
We need the development of a marina in the Dry Creek area	1
We need a marina near Devils Recreation Area	1
Need at least one additional marina with gas on eastern side of lake	1

Scoping Report

There needs to be another commercially operated marina/resort/campground at the upper end of the lake (Estill Springs)	1
We need more private marinas	1
Need gas on the lake near the Bass Club	1
We need Pickwick access	1
I would like a hotel much like Fall Creek Falls	1
Facilities should be controlled and maintained. Upgrades need to occur more often (i.e., boat ramps and piers).	1
From the cabins on the lake, you can not see the water in the summer. You don't have a view of the lake except from 1 or 2 cabins out of 20.	1
I would like to be able to stay in the cabins on the lake and have a pier to leave my boat overnight without having to take it out of the water	1
Marinas are OK but be conservative in the total number allowed	1
Would like to see an outdoor meeting place (to bring in craft shows, entertainment, etc.)	1
The floating boat dock at Rock Creek was poorly designed. It is very difficult for a lone fisherman to launch a boat at this dock. Evidently, it was designed for professional fishermen as there are usually 2 per boat. The floating dock that was torn down was ideal for us senior citizens who fish alone.	1
<b>SUBTOTAL</b>	<b>77</b>
<b>PRIVATE WATER USE FACILITIES</b>	
I wish to have a dock on my waterfront. Please lift the dock building moratorium.	12
Dock approval for private land owners is a major problem	7
We should have no more boat docks on land not already designated for such use. Over-development will cause crowding and additional management.	7
TDEC should allow either a private boat dock or a neighborhood boat storage area developed by the subdivision according to TDEC standards	4
We need solid, well maintained boat docks	5
Unauthorized docks are a problem	3
Prohibit the building of large, unattractive boathouses and docks (both stationary and floating)	2
I did not submit a dock permit while TERDA was still active and have not been able to since. What is the progress on this issue?	2
We were told that we could build a dock, but when a request was made in 1997, it was denied. The authorities should have notified the landowners of the change.	1
As development is planned for economic benefit for everyone (getting property back on tax records) docks are essential and should be planned accordingly	1
Wake damage to residential docks is a problem	1
Access to the lake could be provided with community docks for multiple users, thereby protecting the aesthetic value of the lake and public shoreline	1
I value my TVA approved dock and access. I hope that existing lake access will be grandfathered in any land use plan.	1
<b>SUBTOTAL</b>	<b>47</b>
<b>TOTAL</b>	<b>124</b>
<b>NATURAL RESOURCE ISSUES</b>	
I would like to see trees left uncut along the banks. Keep the forests undisturbed. I would like to see mature large trees (e.g., pine, hardwood).	34
Preserve our natural resources (e.g., trees, shoreline, rock formations, water falls)	29

## Scoping Report

Preserve the shoreline	15
Keep Tims Ford clean. Maintain public and natural areas.	5
I value the native trees and vegetation	5
Need more shoreline vegetation. Develop shallow water vegetation.	3
I want to see the preservation of natural vegetation and terrain	3
We need natural resource development, i.e., timber production is an important part of ensuring long term quality protection, wildlife habitat improvement, and accessibility to the forest to its users	3
Newer homes should be required to retain trees	3
I am concerned with timber management. Timber needs to be managed and harvested in an appropriate manner to prevent aged and decaying trees from falling to the ground as well as monetary return on the property.	2
Just let nature take its course. Let the land grow naturally.	2
We need a conservation area around Tims Ford Lake	2
Don't overpopulate	1
So few places in our country are being preserved. Our children need nature.	1
I am concerned about industrial and forestry exploitation	1
Need to protect the wetlands	1
I value the environment	1
We need planned forestry programs	1
Care has been taken to preserve a number of creeks and woods	1
I wish to see nature preserves and museums	1
Is the development of wetlands feasible?	1
I am concerned with declining forest health and loss of wildlife habitat and species due the lack of forest management	1
Tims Ford represents a natural resource through tourism and the production of timber	1
I value ecology	1
By developing a responsible management plan, and using proper ecologically friendly harvest methods, income could be produced to fund some of the development of such things as horse and hiking trails	1
<b>Sub Total</b>	<b>119</b>
<b>WILDLIFE</b>	
I value the wildlife	45
I wish to see more wildlife management areas	11
Preserve natural habitats	7
I value the water fowl/birds. Keep them protected.	4
I am concerned about the exodus of wildlife (e.g., deer, red fox, wild turkeys, raccoons)	2
I would like to see migrating birds (more herons and hawks)	2
Too much development results in poor habitation for wildlife	2
Reserve some wooded areas for wildlife	1
Need to maintain fish habitat/cover	1
I am concerned with the disappearance of water inhabitants (e.g., frogs)	1
I want to see bald eagles	1
I value the endangered eagles and flying squirrels	1

**Scoping Report**

Need more bird seeding along the shoreline	1
Provide areas for endangered species	1
I value the geese	1
I am concerned about the loss of nesting areas	1
The Canadian geese are a nuisance	1
I would like to see an animal refuge area	1
Designate coves or areas of the lake as primary fish areas. Work to provide sunken brush/tree habitat areas.	1
<b>SUBTOTAL</b>	<b>85</b>
<b>TOTAL</b>	<b>204</b>
<b>POLITICAL ISSUES</b>	
<b>LAND MANAGEMENT/ LAND USE PLAN</b>	
I am concerned with keeping the fat cats and politically powerful people from developing the land for personal gain	2
I am concerned about too much government control on property owners	2
I value the good shoreline management	2
The current political environment has been set back 50 years	1
When Tims Ford was created, the people understood that it was for power generation and flood control as well as economic and social use. What happened to this earlier concept or was it just to benefit a few fortunate or privileged citizens?	1
An issue is how to integrate the many lake homes existing on the lake with the overall plan for development of the remaining lake property	1
I am concerned with trying to stop big development from corrupting the system and trying to buy TDEC	1
I would appreciate the right to take care of my own shoreline frontage	1
We are participating in a management plan presently simply by not having one	1
Make sure capitalization is held to a minimum	1
This lake is beautiful because, in part, of the strict guidelines provided for the land owners	1
There is too much management	1
Shoreline management is a concern	1
I am concerned with the establishment of an equitable lake front property use policy	1
I value that Tims Ford is owned by TVA and land development should be controlled through them, not through individuals	1
I am concerned about crooked state of officials, greedy land developers, and crooked politicians	1
One politician in particular could not have his way and lied to get the efficient agency abolished	1
I am concerned about "selling out" to political or lobbying pressures	1
What organization will control the area?	1
What existed prior to the demise of TERDA?	1
Get the politics out of the management of Tims Ford Lake Project	1
<b>SUBTOTAL</b>	<b>25</b>
<b>PUBLIC PARTICIPATION/REPRESENTATION</b>	
There are no problems if a committee is formed to manage the land from the 2 counties involved: Franklin and Moore. Put land management into local hands.	5

Scoping Report

Decisions regarding Tims Ford should be decided by a panel made up of individuals who own property on the lake or adjacent counties and an environmental advisor. Its future should not lie in the hands of one individual.	1
TVA tends to listen to people from Huntsville and others who use the lake only as a weekend resort. Listen to the residents of the Tims Ford community	1
If this is a property owner funded program then the property owners should have more voice in the control.	1
<b>SUBTOTAL</b>	<b>8</b>
<b>TAXATION/FUNDING</b>	
Tims Ford is valuable and should be placed on the tax books to secure additional revenue for the county that originally lost the tax base	3
I am concerned about fair real estate taxation	2
I am interested in the \$7 million taken from TERDA-where is it? Why has it not been spent according to PC 816?	1
Franklin county residents were paid almost nothing for lake front property and then must pay \$100,000 for a lot. Something is not right with this picture.	1
I have paid a land use fee for several years after acquiring my property. If this land is sold, I should be given the option to purchase since I have spent approximately \$20,000 on rip-rap and boat docks.	1
The challenge is to balance revenue with environmental protection	1
We should worry less about the tax base and a gain for a few developers. Our greatest concern is for the future of development (e.g., the Fanning Bend project).	1
Why is Franklin so greedy for new, additional taxes?	1
The tax base is out of control and unfair	1
I value the ability to increase our tax base though the controlled development of these lands	1
Taxation should be equal for all of the county, not just lake residents	1
I have been paying property taxes as if I had lake front property with dock approval. My property value should not be compared to a typical lake front property but instead should be considered a typical county property with a view.	1
<b>SUBTOTAL</b>	<b>15</b>
<b>TVA/TERDA</b>	
Reinstate TERDA. I did not agree with the sunseting of TERDA.	2
Who will maintain and police former TERDA assets?	2
It seems to me that the conservation department and TVA are not aware of what the other is doing	1
TVA should sell the land at public auction and spend the money on improving the lake to make it more it more efficient for TVA as well as for the citizens.	1
TVA does not need to be in the land development business, therefore excess property needs to go to public auctions within the next 10 years and the money raised should be distributed among the educational needs of the watershed district.	1
TERDA did a good job at keeping the lake beautiful with shoreline restrictions.	1
Keep state senator from gaining a major economic advantage through release of public land to private development. He did away with TERDA for the specific purpose of gaining control of more land.	1
I was forced to sell my property to TVA. I would like to regain ownership of that property	1
A few Franklin people had a big part in terminating TERDA; this was a mistake	1
I am concerned with TVA's attitude toward landowners trying to improve the aesthetics of the shoreline adjacent to their property	1

## Scoping Report

There needs to be a central point of contact for all the resources which makes up Tims Ford Lake management. Currently, it is next to impossible to get any problems addressed. TDEC, TVA, and TWRA pass the buck when it comes to areas of responsibility.	1
<b>SUBTOTAL</b>	<b>14</b>
<b>TOTAL</b>	<b>61</b>
<b>POLLUTION</b>	
<b>WATER QUALITY</b>	
Maintaining water quality is important. Pollution is a concern.	118
I value the clean lake and water quality	29
More development brings more pollution and less beauty and cleanliness. Industry/commercialization creates pollution.	13
Control/reduce agricultural/residential waste (e.g., fertilizers, pesticides, herbicides) into waterways feeding into the lake. Cattle and pig waste are currently fed into feeder streams (e.g., Boiling Fork in Williams Cove). Get the cows out of the lake.	12
Sewer systems should be used instead of septic tanks. Restrict any future development that does not provide for sewer treatment.	8
I am concerned with sewage pollution. Make provisions for sewage systems.	8
I am concerned with septic tanks around the lake	5
Boaters are causing lake pollution (e.g., Tims Ford Marina pumping station normally doesn't work)	3
Don't allow development (e.g., septic tanks, runoff from parking lots, roads, golf courses) that will permit unfiltered land runoff into the lake. I am concerned with industrial waste.	3
I value that there is no industrial/commercial waste going into the lake	2
If you get more houses on the lake, our water will not stay as it is now due to the increased need for sewage systems	2
We should minimize usage of public lands for any activity that pollutes or damages the land. Control recreational visitors and their negative impacts.	2
Canadian geese are polluting the water. Control/eliminate these flocks.	2
In 1977 when we bought our lot, Tims Ford was crystal blue, and I could see the bottom in 12-15 feet of water. It is now murky.	1
The golf course at the state park can adversely affect the water quality with fertilizers and pesticides. I hope this is monitored closely.	1
I worry that cities such as Estill Springs and Winchester are not careful since septic tanks are allowed so close to small branches of the lake	1
Pollution is bad in areas	1
The major issue to be dealt with in the future will be an adequate quality water supply from the lake area all the way to Muscle Shoals, AL	1
I would like to see a beautiful clean lake where the property owners have access to the lake and are encouraged to maintain the lake in an environmentally safe manner	1
I know for a fact that houseboats at the marinas dump their raw sewage into the lake. This needs to be stopped.	1
We need a lot less oil and gas spillage	1
I am concerned with the pollution from Tullahoma	1
Monitor sewage run-off from dense areas (e.g., Estill Springs has no city sewers)	1
Improve water quality to increase fish habitat	1
Maintain environmental quality	1
<b>SUBTOTAL</b>	<b>219</b>



Scoping Report

<b>NOISE POLLUTION</b>	
I am concerned with the noise	8
I am concerned with the proliferation of noisy jet skis	7
Larger and faster boats contribute to noise pollution	2
<b>SUBTOTAL</b>	<b>17</b>
<b>LITTER</b>	
I am concerned with water pollution due to people throwing all kinds of debris/garbage into the lake	16
There is an excess of trash. Control litter.	14
Should be no trash or refuse along the banks. Keep the shoreline clean.	13
The land is clean	3
I am concerned with trash from private dock usage	1
Each ramp should have a small dumpster	1
Litter laws need to be enforced	1
Litter and illegal dumping contributes to the ruined scenery and water quality	1
I am concerned about pollution of forests due to excessive trash	1
It is appalling to see the amount and quality of trash that comes down Rock Creek	1
<b>SUBTOTAL</b>	<b>52</b>
<b>TOTAL</b>	<b>288</b>
<b>PUBLIC LAND USAGE</b>	
I am concerned about the disposal of available land	5
Land use is very important	2
Keep public use confined to Tims Ford parks as much as possible	1
I value the quality of the land use on and around the lake	1
I value the fact that this is public land purchased with my tax dollars from the US Federal Treasury	1
I hope TDEC considers the unique responsibility they have to keep the lake a wonderful, pristine environment for all our grand and great grand children to enjoy	1
It is not possible to provide a wilderness experience around an 11,000 acre lake in a populated area such as middle Tennessee. The objective should be to allow as many people as possible to find their activity without turning the lake into an amusement park.	1
We need to utilize the properties already available to us in the Dry Creek area	1
I value the right for farmers to rent this land	1
Winchester should be taking advantage of its location on the lake, but it is not	1
High priority should be given to manage remaining public lands for recreational opportunities for the general public	1
My interest is in the Turner Cemetery. The point of their origin in Franklin County should be recognized and preserved.	1
<b>TOTAL</b>	<b>17</b>
<b>RECREATION ISSUES</b>	
<b>FORMAL RECREATION</b>	
I value the trails (hiking, biking, and nature). Keep them well maintained.	20
The golf course is a great addition. It looks great. I anticipate the golf course is better than average.	19
Add hiking/biking trails (e.g., around the shoreline, unpaved, with parking areas and proper markings)	9
I request the establishment of equestrian trails. This would provide a much needed form of recreation.	9

**Scoping Report**

The state park gives people a great place to go to enjoy the lake. It is beautiful and offers everything a family would want or need.	6
The state park area could be expanded (e.g., any type of low profile recreational area which doesn't spoil the natural area)	6
I value the quality of recreation, unique facilities, and multiple recreational uses	5
We need more camping facilities (with water, electrical hook-ups, and public bath houses)	4
I value the (primitive) camping areas	4
I would like to see more (lakefront) picnic areas	4
It will be good to have recognition for state park and lake (regarding golf course). This is a positive for Tims Ford Lake.	2
We need more children's play areas	2
I would like to see sandy beaches	2
I value the picnic areas	2
No more golf courses	2
Make the features more available to all citizens (e.g., camping, rest-rooms, etc.)	2
I would like to see the completion of the golf course	1
I would like more primitive camping	1
I would like a campground with a horse facility	1
Need rest areas (decks, benches, etc.)	1
We have concern about primitive camping at boat camp areas where there is human waste via no restrooms	1
I would like to see Dry Creek and other areas opened to camping	1
We use the lake for fishing and boating	1
I value horseback riding	1
I enjoy the use of the water ski slalom course located in Ray Branch	1
I would like to see small parks and swimming areas	1
I value the playground and swimming area	1
Looking at the elevations, I think a whitewater rafting course could be constructed below the dam.	1
You should have destinations such as waterfalls, caves, overlooks, etc. (similar to Smokies) with a variety of distances (1/4 mile to 5 miles) for people of all ages	1
I value the minimum services for access (e.g., boat ramps, hiking trails)	1
We like to rent pontoon boats and launch kayaks to explore the inlets	1
We need more campsites for RVs (which are separated from tenters)	1
The trails, parking lots, etc. required to facilitate public access should be kept at a minimum	1
If you need a few more camp grounds, etc. for tourists, fine, but don't overdo it	1
The staff and rangers at Tims Ford are the best anywhere	1
I value the recreational use by families	1
I want to see nature, not public swimming areas, and campgrounds. I've seen other lakes where the general public use areas have ruined the natural resources.	1
<b>SUBTOTAL</b>	<b>120</b>
<b>INFORMAL RECREATION</b>	
I value the hunting areas (e.g., water fowl hunting)	5
I value the skiing	2

Scoping Report

I value the swimming areas	2
I value the boating	2
Camping should be stopped in non-designated areas (e.g., road-side) and boat ramps	2
Swimming beaches are well kept and available to the public at convenient times	1
Tims Ford Lake is ideal for water skiing due to its narrow fingers with a high protected shoreline	1
Keep the four wheelers off the shores when the water is low	1
There should be no campers or tents allowed on the banks. They should receive stiff fines if caught.	1
I appreciate having a place for recreation, wildlife and nature viewing	1
No hunting	1
I value outdoor activities	1
Now you must have the lessee permission to hunt on TVA land. This should be changed.	1
The purpose of the public lands around Tims Ford should be to provide outdoor recreation like hiking, hunting, and nature photography	1
Recreation should promote health and physical fitness	1
<b>SUBTOTAL</b>	<b>22</b>
<b>FISHING</b>	
We value using the lake/undeveloped shoreline for fishing	7
There is a decline in the fishing (number of fish taken seems to be low). The fishing has gotten really bad. Fishing needs improvement.	5
Ever since the introduction of rock fish and hybrid striped bass into the system, overall fishing results have decreased. A program should begin to restore good general fishing to the reservoir as opposed to the special interest fishing of those introduced breeds. Get rid of rock fish.	4
Limit major fishing tournaments	4
TWRA should make a long term sustained effort to stock fish in the reservoir to restore the fishing quality that existed years ago	3
We need more public fishing areas	2
An effort should be made to improve fishing in the reservoir (e.g., introduce aquatic plant life to the currently barren bottom)	2
Would like to see hydrilla in lake for fish cover	1
Keeping the lake as more of a recreational fishing venue would help the erosion	1
We need a fishing platform/walkway on either Mansford or Awalt bridge	1
<b>SUBTOTAL</b>	<b>30</b>
<b>LAKE ACCESS/PUBLIC USE</b>	
I appreciate public access, especially for those confined to the shore. I value the easy access for fishing and boating.	17
I value that the public land/state park is available for public use (e.g., hunting, camping, hiking, etc.)	13
I value the private access to the lake	2
I am concerned about the demand for more public access	2
Tims Ford is easily accessible/convenient	2
I am concerned that the businesses and current land owners try to control appropriate access to the lake	1
I appreciate the Pickwick access	1
Need more accessibility for the handicapped	1

## Scoping Report

I value the lack of accessibility for public use	1
I value the year-round availability and access	1
Allow large tract owners the ability to access lake for boat docks and fishing	1
Move public access to TFC property instead of private land owners having the monopoly of the land	1
Development is happening even though lake access has not been granted	1
Lets keeps it accessible for all to use who want to enjoy it	1
<b>SUBTOTAL</b>	<b>45</b>
<b>CONFLICTING USES</b>	
Large high powered speed boats and jet skis are a major problem. Overuse could ruin the area for everyone.	9
We need the "no wake" buoys to protect our shorelines in the little coves/residential areas	9
Sea-doods are ruining the peace and eroding the shoreline. There are too many sea-doods in the coves (they should be in open water). Regulate sea-doods.	6
Outlaw jet skis	2
I am concerned about conflicting requirements for residential areas vs. hunting areas, industrial development vs. protection of natural areas, and extreme sports vs. traditional outdoor enjoyment	2
I have come to the realization that those who come to the lake for high-powered thrills (jet skis, jet boats, ATVs) usually stop coming back when their toy breaks or when they can't afford the fuel. I would like to see more opportunities for people to use the lake for what is there, not for an open and unregulated speedway. Those are the people who will be long-term users and partners in protecting the lake for the future.	1
I do not feel that fishermen have priority on the water above that of property owners	1
There is too much boating	1
The lake should be for everyone, not the real-estate people and the rich	1
<b>SUBTOTAL</b>	<b>32</b>
<b>TOTAL</b>	<b>248</b>
<b>REGULATIONS</b>	
The land owners joining the TVA land and the lake should have boat dock privileges and not have to wait	2
I am concerned with keeping people with houses and docks within the rules of development	1
I am concerned with land owner rights (e.g., ownership of land bordering the lake by TDEC)	1
An individual should have the same rights as a realtor or developer. They could care less about the beauty of the lake. There should be guidelines regarding docks, excess, erosion control, etc.	1
I value the preservation and respect for land use codes when established after public hearings, debate, and input	1
Charge the public launch fees to pay state employees collecting the fees and to establish a fund to reimburse dock owners for damages done due to reckless operators	1
It seems to me that when public land is auctioned off to become private (TVA subdivision), the rules about the clearing and erosion are negated. It seems to be governed by the amount of money to be made and the buyers.	1
The land is public, and for any agency to deny access to the lake with a "No Trespassing" sign is not in the best interest of anyone	1
What restrictions will farmers face?	1
Allow undergrowth clean-up on so-called public lands (land between property owners of shoreline)	1
Close dead-end roads so people will not use them from drinking and drugs	1

Scoping Report

I would like to see the water use facilities rules enforced	1
Don't give the hunting rights to the person farming TVA land. The leases being paid now are too little to entitle them to exclusive rights	1
I would like to see my boundary go to the lake	1
<b>TOTAL</b>	<b>15</b>
<b>SAFETY</b>	
Boaters/skiers travel at high speed to the detriment of others. Could separate areas be set up for fishing/boating/swimmers and jet skis? Jet skiers do not respect others on the lake. Keep them away from houses on the lake. A fatal accident is only a matter of time. They need age, speed, proximity regulations.	38
Boat traffic is a concern	36
I am concerned with water craft users not obeying the rules. Safety is a concern.	16
Water police are very inadequate. We see TWRA on the water maybe twice a season. Need more policing of water craft.	8
We need greater restrictions for jet ski users, an education program for skiers/boaters, and enforcement by TWRA officers of restrictions.	5
Drinking and driving water craft is a concern	5
Too many jet skis are driven by young people which imposes a danger onto others	2
Need to maintain and enforce safety of boat ramps (e.g., Neils Bridge)	1
Require boat/jet ski operators to pass safety and common sense exams	1
Need more patrol and boating laws	1
Tims Ford is a nice safe place to carry grandchildren without fear of vandalism	1
No-wake zones are not well observed. I really resent that.	1
There should be more control of speed by law enforcement officers (especially around private docks)	1
Have a modern navigation system and markings for the total lake	1
Need fire protection	1
<b>SUBTOTAL</b>	<b>118</b>
<b>CROWDING ISSUES</b>	
Overuse/over population of recreational areas/state park is a great concern. Over population will detract from natural beauty.	33
We appreciate that Tims Ford is not over crowded and over developed	18
During the summer and on weekends it is hazardous on the lake due to crowding and irresponsible PWC and boat owners	6
The lake is being over-built and the increase in crowded conditions will become intolerable	5
There are too many people wanting to use the lake and not enough public land for hiking, picnicking, and hunting	3
We like the ability to drop anchor in an unpopulated Tims Ford cove and swim/rest without being disturbed. We hope it remains the same.	1
The campsites are always crowded in the summer and on weekends	1
The only time the lake is used to its maximum is on the July 4th weekend. The rest of the time, you are in danger if your boat breaks down because no one is close enough to help.	1
I am concerned with the over population by cattle in residential areas	1
<b>SUBTOTAL</b>	<b>69</b>
<b>TOTAL</b>	<b>187</b>

Scoping Report

<b>SCOPING</b>	
<b>SURVEY</b>	
Thank you for this thoughtful survey	1
Keep up the great work you are doing	1
Many of us participated in a large survey in 1996 when TDEC assumed responsibility. It had a very good intention and, with this interest, seems to have never existed. What happened to that effort (e.g., results)? This seems to be the same effort again.	1
<b>SUBTOTAL</b>	<b>3</b>
<b>PUBLIC MEETINGS</b>	
I'm wondering if your November 9th meeting is to benefit the people or just to gain input as to how to handle the excess land on the lake	1
<b>SUBTOTAL</b>	<b>1</b>
<b>TOTAL</b>	<b>4</b>
<b>WATER LEVELS</b>	
The lake level should not be drawn down so low (it makes the shoreline look bad, can't use docks, damages fish population)	14
Keep water level more stable (to prevent boat damage, to increase shoreline vegetation)	13
If Tims Ford is a recreational facility, why is it necessary to draw so much each year?	2
I realize that TVA controls the lake levels. But TDEC could do more to require a fun lake. 1998 was the best year in the last 5-6, but was still almost 2 feet below pool most of the summer. Why?	1
Notify dock owners of lake raising and lowering	1
<b>TOTAL</b>	<b>31</b>

**Public Meetings**

During November 9-10, 1998, focus group sessions were conducted during two public meetings in Winchester, TN and Fayetteville, TN to facilitate public involvement and to identify the range of issues and concerns that should be considered in the Land Use Plan. The public meeting in Winchester was attended by 145 individuals, and 36 individuals attended the public meeting in Fayetteville. Participants were asked: 1) What do you value most about the public land around Tims Ford Lake?; 2) Over the next ten years, what will be the major problems or issues that must be dealt with regarding the management of Tims Ford Lake?; and 3) What other information or issues should be identified that may impact the development of the Tims Ford Environmental Documents and Land Disposition Plan? All responses were recorded on flipcharts during the focus groups. Additionally, participants were given colored, adhesive dots to place on the flipcharts that indicated which responses to each of the questions were most important.

To aid the reader in locating the “public meeting” survey data, a listing of themes and page numbers is provided below.

<b>Theme Reference Guide</b>	<b>Page</b>
Aesthetics/Scenic Beauty .....	32
Development .....	32
Education/Communication .....	34
Erosion .....	35
Facilities .....	35
Natural Resource Issues .....	35
Political Issues .....	36
Pollution .....	39
Recreation Issues .....	39
Safety .....	41
Scoping .....	41
Water Levels .....	42

All responses were compiled and analyzed using qualitative data analysis techniques (Ethnograph computer program). From the responses provided, 12 themes (and additional sub-themes) were identified, with comments summarized and combined within each appropriate theme/subtheme. Because the comments were summarized and combined, the exact wording of the comments was not always used. Comments deemed most important by focus groups (colored dots) are included in the tables below in **bold italics**.

**For example:** Under the theme/heading of Aesthetics/Scenic Beauty, the value of beautiful, natural features of the lake, the preservation of the shoreline, etc. were deemed important during the public meetings (as seen in bold italics). Comments regarding the value of woods, wildlife, and change of colors, the preservation of wooded areas, etc. were noted during the public meetings.

Scoping Report

<b>AESTHETICS/SCENIC BEAUTY</b>
<i>Value the beautiful, natural aesthetics/features of the lake and area</i>
<i>Preserve natural, pristine beauty of shoreline/lake</i>
<i>Value the lack of congestion</i>
<i>Preserve the undeveloped areas and places without human intervention</i>
<i>Value the beauty of the state park and consider expansion</i>
<i>Value the beauty, serenity, wildlife viewing</i>
<i>Like the visual natural appearance—the undeveloped and natural woods</i>
Value the woods, wildlife, and change of colors
Preserve the beauty of the wooded areas
No light pollution—can see the stars
Natural beauty belongs to the people
Protect beautiful and peaceful environment
Value the natural features around the lake
Enjoy the peace and serenity that it offers
<b>STRUCTURAL AESTHETICS</b>
<i>Value well-kept docks and having standards for the land and the lake</i>
Would like underground vs. overhead utilities
Keep lake perimeter natural—no marina
Marinas need to be checked for quality
Value the beauty of community, e.g., small town atmosphere
Limit visible, large buildings
Value the lack of development—not a lot of motels, marinas, or houses
<b>DEVELOPMENT</b>
<b>OPPOSE FURTHER DEVELOPMENT</b>
<i>Value lack of development. Want no more development.</i>
Have all of the commercial development that we need
Prime land should be left in natural state, not for development
<b>LIMIT/CONTROL FUTURE DEVELOPMENT</b>
<i>Over development of shoreline is a concern</i>
<i>Keep low level of development, e.g., no large buildings, no more than 20% of land</i>
<i>Concerned about over development</i>
<i>Spread out development</i>
<i>Land is overdeveloped—want restrictions compatible to land with planning and zoning</i>
<i>Greed of developers and public officials which results in over development is the major problem</i>
<i>Need to control development</i>
<i>Need infrastructure development—current state cannot support development</i>
<i>Leave 1/2 to 3/4 of land in natural state to preserve for recreation</i>
<i>Limit development which will impact water quality</i>
<i>Any development must be controlled—amount, size, type, location, style—to protect the natural beauty</i>
<i>Need careful thought regarding development and high concentration of development in particular areas</i>



Scoping Report

<b><i>Like as is, but I bought a lot and don't want to deprive others</i></b>
<b><i>Careful development to not change environment</i></b>
<b><i>Value large expanse of undeveloped land</i></b>
<b><i>Want controlled expansion of small amount of land</i></b>
Value that development is controlled and limited
Value quality developments on Tims Ford lake
Lake is presently controlled but if not properly restricted and controlled, there will be problems
Want slow, orderly development
Don't want area to look like Gunter'sville or Percy Priest with elbow to elbow development
Lake property is overdeveloped
Development needs to be limited and spread out for all users—public and private
Development should not be so piecemeal
Value land adjoining public property due to limited development opportunities
Do not turn development over to private developers
Control development of shoreline—development should be away from shoreline to preserve it
Identify lands that do or do not need to be developed
Management must have regulations to prevent over-building
Consider development only on lands that can be developed
Balanced, controlled development to ensure land values and quality
Appreciate park and camping as is
Development around lake will have to face environmental issues
Big developers will just try to make and not try to control
Evaluate potential impacts before developing
Enough development—maybe marina, but no housing
<b>RESIDENTIAL DEVELOPMENT</b>
Homeowners should be able to construct water-use facilities
Need further consideration of housing development
No multiple dwellings
Should we have condos on the lake?
Value the economic growth from subdivisions
Spread out development—Fannie Bend does not make sense—500 houses planned next to adjacent development
Hopkins Point with 200-300 houses across from marina is congested
Value the area property for recreation and a place to live
Gear residential development to retirees
No more residential development
<b>COMMERCIAL/INDUSTRIAL DEVELOPMENT</b>
<b><i>Control industrial development and prevent if possible</i></b>
Strongly consider impact on environment related to added to industrial development
No industrial development of Tims Ford lake
No theme parks—no Dollywood

**Scoping Report**

Spot developments in large expanse is not acceptable (e.g., Owl Hollow/Maple Bend, Little Hurricane, Kitchen's Creek)
Prefer tourism rather than industry
Master plan should avoid "free for all" commercial development
Delete industrial development on lake
Limit commercial development—the beauty of the area is enhanced by lack of poor development
Need to spread commercial developments strategically (e.g., need fuel source in Winchester city area)
Don't want to see commercial or industrial development on waterfront
<b>BALANCE DEVELOPMENT WITH NATURAL RESOURCES</b>
<i>Balance between developed and undeveloped shorelines</i>
<i>Preserve lake environment as relates to lake development</i>
<i>How to develop plan to allow development—maintain natural beauty and water quality</i>
<i>Need a well rounded plan that considers a balance between development and recreation</i>
<i>Balance economic potential with environmental concerns</i>
<i>Use proper BMPs to see that development does not impact the environment</i>
Would like a balance of development and nature
Need coordinated and balanced development
Balance development with nature and consideration of the water stream system below the dam
Balance agricultural uses
Strategic balance between various public use areas (e.g., green belts, marinas, hiking trails, parks, etc.)
Some measurable development can help areas while still maintaining balance between natural areas and development
Definition of development may include things that are in harmony with environment
Want both economic development and environmental interests to work together synergistically
Do not want clustered development so that natural areas are well distributed
Consider percentage of land developed and impact on environment
Value both development and preserving serenity and environment
<b>OPEN MORE LAND FOR DEVELOPMENT</b>
<i>Don't exclude development on Tims Ford—need to develop all of shoreline</i>
Land is not being utilized
Value undeveloped areas that can be developed
Consider outlying areas
Provide sites for worthy organizations
<b>EDUCATION/COMMUNICATION</b>
Land use for schools and environmental educational activities
Want undeveloped lands set aside for environmental education
Dry Creek land should be donated to county for college
Should post organizational chart of who's who on Internet
Should post Public Chapter 816 of Public Acts of 1996 on Internet
Need better communication between TVA and citizens

<b>EROSION</b>
<i>Concerned about erosion and loss of land</i>
<i>Shore bank erosion by wave action from boats is a concern</i>
Erosion from too many boats and jet skis is a concern
Permission should be given to rip rap shoreline before home construction
Erosion control primarily fronting developed areas—educate public to options
What is going to happen to the buffer zone land?
Prevent erosion—publish rules for this and ensure universal conformity to rules
Want TVA and TDEC to become more involved in preventing erosion
<b>FACILITIES</b>
<b>PRIVATE WATER USE FACILITIES</b>
<i>Docks should be allowed by anyone owning a house on the lake</i>
<i>Need to allow docks on non-TERDA land</i>
<i>Want private boat docks to be permitted and regulated but not everywhere</i>
<i>Control by setting standards for boat docks and shoreline and way to enforce this</i>
<i>Will we be able to build docks?</i>
<i>There has been a change in our understanding regarding docks</i>
Permitting problems for boat docks is a concern
There is no consistency in decisions regarding boat docks
Needs to be fairness to small property owners for docks and private water use facilities versus commercial developers (TERDA)
Subdivisions planned before demise of TERDA should have right to build boat docks
Need uniform boat dock regulations, inspections, and enforcement—want public input into process
Protect aesthetic value of shoreline by developing community dock facilities
Value ramps on lake—don't understand why housing developments have private ramps. Why can some get piers and others not?
Standards for water use facilities
People who don't live in a developed subdivision can't have docks—address this policy in land plan
How come some can have docks and others not?
Everyone who owns property should have privilege of building boat docks, provided house is built immediately
Want common boat storage use areas
Who has dock access and what is the process?
Docks should only be in one area of lake, not spread out congesting nature
<b>NATURAL RESOURCE ISSUES</b>
<i>Value the natural resource to provide economic growth and improve quality of life</i>
<i>Value open space for wildlife refuge</i>
Value the natural areas for wildlife (e.g., deer)
Value wildlife
Value the availability of open space for wildlife
Value the river that runs through Fayetteville—what ever is done on the lake impacts the river
Want wildlife on public land, not horses or cows

Scoping Report

Quality trees must be protected
No one should be allowed to clear-cut their property
Value an interest in stewardship of the land
<b>POLITICAL ISSUES</b>
<b>LOCAL PARTICIPATION</b>
<i>Form committee of Moore and Franklin counties by legislation to manage the land around the lake</i>
<i>How will decision to dispose of land be made? Citizen opinion and participation should not be squeezed out by developers.</i>
<i>Need local committee of Moore and Franklin county residents to work on local needs of low and middle income families</i>
<i>Resent people from Nashville or Washington telling us how to run our river</i>
<i>Need some public agency involved for control on lake</i>
<i>Multi-county agency should develop areas not private developers</i>
Local committee to make policy to control water and land development
Who makes decisions and how did they get there? Are they appointed?
Needs to be a chartered agency (non-political) for oversight of development
Need local management, contact, and decision-making especially for Moore and Franklin counties
Citizens should be able to participate with state agency to make decisions
Any provision for county or city government or local citizens to appoint a representative regarding lake and park decisions?
It is the public's land and they should have the opportunity to have input to how it is used
Need local representation in decision-making
Need committee in Franklin and Moore counties to control development and be responsible
Want more local participation and input to lessen resentment
How many people are on the committee and how many are from Nashville or the surrounding counties?
Establishment of local committee to control development and act as advisory to state or controlling authority
Finding out what public thinks is most important
Counties should have a part in the management
Want board with all ten counties represented
Development should be for public not personal benefit
<b>FUNDING/REVENUE/TAXATION</b>
<i>Value the positive economical impact on areas, (e.g., fishing, boating, homes)</i>
<i>A good tax base would help implement the plan</i>
<i>Need a financial plan that will fund existing or new public facilities so that they will not become a future tax burden</i>
Land back on tax roles due to lakefront development
Where is funding coming from for lake improvements?
Lake taxes should be used on the lake
Concern that lake property owners may be taxed (by county) greater than other property off reservoir
Large amount of land should remain in public ownership
Can we buy or lease the land?
What will happen to the leases for lands that are non-TERDA developed and paying TVA a fee to use? Want rights for adjacent landowners.

Scoping Report

Fines for clear-cutting should be used to replant trees so we won't have stripped areas
Value taxes for people in the county
What do TVA/TDEC plan to do with the money from the land they sell?
Tax revenue potential is valuable
Landowners are being over taxed
Broader tax base
Under/lack of development costs tax revenue
Lands should be turned back to counties to manage and put on tax roles
People from outside the county should have to pay a fee for access
TVA should continue to impose fees, in addition to increasing its shoreline management zone.
Where is the \$7 million that was to be divided among the counties?
Lake access property has a higher assessed value than other properties
Over saturation of land sales market
\$7 million could be used to compensate landowners
Value the economic benefit of lake as a tourism draw
Has any land been sold in last 2 years? Why or why not?
Tax revenue for people in the county
Counties are losing \$200K per year
What happened to money in treasury and how much was there?
Value development to support a tax base
Concerned about increasing tax rates and affordability of living on lake
Initiate new revenue streams that include user fee to off set maintenance costs and reduce taxes
Concerned about escalating property taxes
How will land be sold and how will the money from the sale of the lands be used?
Please distribute money among all Elk River counties
<b>TVA/TERDA/TDEC</b>
<b><i>What have we learned from TERDA's termination? What caused them to be terminated?</i></b>
<b><i>Land is in Franklin and Moore counties—TVA and TDEC not in best position to manage land</i></b>
<b><i>Impressed with TERDA management by controlling development but can't see TDEC doing as well</i></b>
<b><i>Liked that TERDA was developing lands and plans</i></b>
<b><i>Inconsistency in policy as relates to shoreline use fronting non-TERDA subdivision and other property</i></b>
Reinstate TERDA
Is TERDA land on hold?
TERDA had best land management plan in the South
What is TVA's policy for land use rights?
Concerned over TVA's loss of funds from Congress and need to include that impact in planning
TVA or TDEC shouldn't have a better deal for developing SD than any private developers
Thought TERDA had good plans
Don't like current management
Need one regulatory agency that has the authority to enforce the laws to the benefit of all

Scoping Report

<b>LAND USE PLAN/LAND MANAGEMENT</b>
<i>Land should go back to the people who live next to the lands, the original owners, or the counties</i>
<i>Careful management and decisions about what happens to land</i>
<i>Want good tracts of land left for future needs and generation</i>
<i>Lake has been carefully developed over the years. Don't want to see hasty decision which will not take the future into account.</i>
<i>Short term planning is not good enough—need long term plan</i>
<i>Length of time to make useful decisions by agencies to benefit local communities</i>
<i>Value land use classification (e.g., college, historic site, park)</i>
Length of time to implement land plan (18 months)?
Should keep as much land as public as possible
Concerned about current level of personnel to manage such a dispersed public land area
Need to have an Environmental Impact Study
Everyone should be treated fairly
Concerned about management of shoreline
What will happen to land already developed?
Where is SMI on Tims Ford?
TVA should reduce its decision to reduce the SMZ to 25 feet
Adjacent land owners should have first right of refusal on sale of TVA lands
Plan needs to include how it will be implemented
Control farm leasing (e.g., no hunting rights or cattle and livestock rights; lack of fairness in market price for land)
Need consistent plan for ownership and land usage down to water
Are we looking at land below the lake (e.g., access points, shoreline erosion)?
Land use plan should guide rather than mandate
Process is too long—it's already been studied and there hasn't been another piece of property on tax books
Property owners in Tims Ford area should not receive more consideration than non-property owners regarding use of public use areas at Tims Ford
Want a plan that will maximize use for the public
Need a long term plan that is flexible and doesn't have to be implemented all at one time
Wouldn't have this problem of land plan if hadn't taken so much of land originally plus restricted use of docks for original landowners
Keep plan open for future modification
Clean up the law enforcement
Turn property not used for lake management back to original owners
Concerned about taking land for high income people (e.g., golf course)
Any property sold by TVA should be offered to adjoining property owners
Who's going to control the use of public land?
Concerned about making the best use of lake resources using sound ecological practice rather than public opinion
How do you bring in services to go along with growth and demand?
Use and lease of shoreline property by license

Scoping Report

<b>POLLUTION</b>
<b>WATER QUALITY</b>
<i>Concerned about water pollution and preserving water quality</i>
<i>Concerned about impact of development (e.g., sewage, waste disposal, septic tanks) on water quality</i>
<i>Concerned that over development will increase pollution and litter</i>
<i>Want high environmental quality in lake and downstream</i>
<i>Need sewage and waste disposal</i>
<i>Need enforcement (rules, policies) regarding water quality</i>
Concerned about septic tanks polluting water
What is being done about PCBs in Woods Reserve?
Controls are needed for non-point source pollution septic tank failure from 48 existing subdivisions, two marinas, and future development
Failing septic tanks not a problem
Need sewer system instead of septic tanks
Need control and education for litter and pollution
Should not depend on volunteer labor and resources for clean-up after "mess ups," when proper restrictions could be put in place to avoid destruction in the first place
What BMPs or regulations apply to development
Pollution will cause wildlife to leave
Spend more time on EIS. In past EIS, the water quality checked out okay in cove/marina—this was disappointing.
Cows are polluting lake from leased property
Water quality is not compromised by development
Dying fish problem is a concern
Protect environmental quality of lake from greed of private developers
Protect potable water supply upstream and downstream
<b>LITTER</b>
Value the lack of litter fronting development shoreline
Concerned with increase of litter and trash on lakeshore
Abuse of undeveloped former TERDA land (public land) from trash dumping
More patrolling is needed to address litter problems
Grass clippings from yards is washed into the reservoir
There is debris on the NE side of lake during spring rains
Need cleanup during drawdowns
<b>NOISE</b>
<i>Noise from jet skis and speed boats is a concern</i>
Noise around lake land is a concern
Noise—dB level from boats is a concern
<b>RECREATION ISSUES</b>
<b>FORMAL RECREATION</b>
<i>Need more camping facilities at Tims Ford and upgrades (hook ups)</i>
<i>Want lodge and restaurant at state park</i>
<i>Want more cabins at the state park</i>

**Scoping Report**

<b>Enjoy state park</b>
Would like to see more hiking trails
Need more horse trails
Need to maintain existing park facilities (ramps, bathhouses, campgrounds)
Want marina located near Winchester
Want more walking trails around lake on TVA property
Will public use facilities be retained by government or offered for sale?
State park needs more facilities for low and moderate income people (e.g., swimming pool, horse riding, playground)
Need more balanced recreation access—walking trails, picnic tables, etc.
Need gas pumps for fishing
Want state park expanded
Enjoy sporting (e.g., boating and fishing)
Want white-water rafting below dam
Would like to see designated horseback riding areas
Devil Step is the only campground
Enjoy using park campground
Want to go onto land and hunt with some kind of management control
Want primitive camping
Park is really nice
Value bike trails
Want another marina far removed from the existing marinas
Want another marina
Want additional marina in upper end of lake (e.g., Estill Springs)
Housing, motels, and restaurants are needed to meet growing demand
Tims Ford Park needs to add facilities to make it a resort park
Public boat ramps should be maintained for public use
Need more areas for boat launching—substantial sized ramps and swimming beaches
Need more common use areas
<b>INFORMAL RECREATION</b>
Recreational value of the lands that the state will develop
Value the recreational potential
Value the public recreation and green space
Area good for fishing
Value lake fishing
<b>LAKE/PUBLIC ACCESS</b>
<b><i>Need consideration to private land-locked properties adjacent to public parcels</i></b>
Need more public access
How will public lands be managed adjoining private property?
Need more handicapped accessibility
Concerned about accessibility to public lands that are leased



Scoping Report

People who own land not in subdivisions should be able to get lake access
If only access is over private land, government land should go back to private owner
Need more access for others than homeowners
Park has good facilities
Appreciate the level of public access
<b>CONFLICTING USES</b>
<i>Need balance between current and future users (i.e., those who want property natural vs. those who want a marina)</i>
Increase in boat and jet ski use is a problem
Like to have restrictions and education related to jet ski activity
<b>CROWDING ISSUES</b>
<i>Heavy lake traffic is a concern</i>
Improve present roads and build new ones to alleviate traffic and road problems
Concerned about boat traffic and overcrowding—is there a way to limit lake use?
Managing development will not necessarily manage lake overcrowding
Look at what other states are doing to manage over crowding
Found state park to be a refuge from mad crowds
<b>SAFETY</b>
<i>Need control of personal water craft</i>
<i>Need more supervision from TWRA (other than special holidays) to control the vast number of personal water crafts and boats</i>
Concern about boating safety (any fast water craft)
Need age limits of water craft users
Need enforcement of existing laws for boaters
Riding too close to boat houses is a problem
Concerned with water safety
Value no wake zones with or adjacent to residential areas, coves, and commercial marinas
Concerned about police and fire protection for remote areas of lake
There are no navigation lights on bridges at Tims Ford
Establish a lake police force
Boating and drinking is a concern
Need more buoys in residential coves
Need greater law enforcement as population and development increases
Concerned about the use of firearms (i.e., guns/shooting pellets)
Hunting must be limited within 1000 feet and on ridges adjacent to homes because deer hunting bullets carry a good distance
<b>SCOPING</b>
Maps do not show where development is
Map needs improvement
How many projects have been done in similar fashion?
Need complete information
Subdivisions (e.g., Hopkins Point) are not marked on map

**Scoping Report**

Need map with all existing development
Capture all developed areas on map
<b>WATER LEVELS</b>
<i>It is desirable to regulate water level within 5' zone rather than the current 15' fluctuation</i>
Water levels are dropped too early exposing mud flats and leaving tremendous amount of silt/erosion
Limit drawdown—it hurts fishing and contributes to erosion
Evaluate current fluctuation guide curves
Want less drawdown
Maintain higher pool with less fluctuation
Maintain level pools during fish spawning times
Plan needs to address lake fluctuation
Keep bridge elevations the same
TVA should publish drawdowns plus return fill

**APPENDIX**  
**Tims Ford Survey**





*WHAT DO YOU THINK ABOUT TIMS FORD LAKE?*

1. Have you visited any public areas around Tims Ford Lake within the past year (check the appropriate box)?
  - a.  Yes
  - b.  No
  
2. If yes, how many times in a year do you estimate you visit public areas around Tims Ford Lake (write in the appropriate number in the space provided)? \_\_\_\_\_
  
3. For every activity listed, check the appropriate box that follows.

	<i>Prefer to use Tims Ford Lake for this activity</i>	<i>Would use Tims Ford Lake if proper facilities and opportunities were provided</i>	<i>Not interested in using Tims Ford Lake for this activity</i>	<i>I do not participate in this activity</i>
Bicycle riding (mountain bikes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bicycle riding (other than mountain bikes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat launching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping-not in a formal campground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping in a developed campground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Golfing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hiking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horseback riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jet skiing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marina/boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Off-road vehicles (ATV, Jeep, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nature photography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picnicking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pleasure boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sailing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special event/festival/homecoming, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming - designated (beach park, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming - informal areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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4. For every facility, area, and/or service listed, indicate the amount of change needed and the appropriate degree of priority necessary in regard to Tims Ford Lake.

Facilities, Areas, and/or Services	Change				Priority			
	Need Less	About the Right Amount	Need More	No Opinion	Low	Medium	High	No Opinion
Brochures and signs directing the public to natural areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campgrounds full-service (electric, water, sewer, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping primitive (no hookups)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commercial boat stack storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Docks, piers, and covered boat slips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equestrian trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hiking trails (dirt paths)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial and economic development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interpretive centers/museums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marina areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overnight lodging (cabins, cottages, resort lodges, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paved hiking trails, signs, and observation towers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preserve natural areas/open space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect cultural artifacts/historic sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect endangered species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect public land that has unique natural features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect wetlands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public fishing piers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public recreation areas (campgrounds, parks, picnic pavilions etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set aside ecological study areas for local schools or universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoreline conservation zone (shoreland vegetation for wildlife, water quality, visual)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoreline erosion control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming beaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Theme parks (like Dollywood or Disney)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quality protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife observation areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Year-round boat ramps with parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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5. TDEC is interested in your preferences concerning the allocation of public land for specific uses. How do you feel about the amount of land already devoted to these specific uses?

<i>Land Uses</i>	<i>Too Much Land</i>	<i>About Right Amount</i>	<i>Need More Land</i>	<i>No Opinion</i>
Business development (shops, restaurants, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commercial recreation areas (commercially operated marinas, resorts, campgrounds, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial areas (water intakes, industrial sites, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informal recreation areas (hiking trails, bike trails, primitive camping, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Residential areas (subdivisions, docks, other shoreline structures associated with lakeside homes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resource management areas (forests, wildlife areas, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensitive resource areas (wetlands, cultural, endangered species, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other purposes (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Indicate the county you live in (note this information will be used to help ensure that a range of different counties were represented). \_\_\_\_\_

7. Do you own lake front property on Tims Ford Lake (check the appropriate box)?

- Yes
- No

8. What do you value most about the public land around Tims Ford Lake?

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## **Tims Ford DRAFT EIS AND LUP Response to Public Comments April 2000**

Comments were received from November 10, 1999 to February 9, 2000 regarding the Tims Ford Draft Environmental Impact Statement (EIS). TDEC and TVA received comments from 268 people, agencies, and organizations during this comment period. Comments were received via letters, electronic mail (e-mail), telephone messages, petitions, and oral comments recorded at the public meetings.

Due to the volume of comments and their frequent similarity, TDEC and TVA have summarized and combined the comments and responses. This resulted in 41 issue categories and 39 parcels that received specific comments. Also, the summarized and combined comments have been categorized for easier public review. Because comments were summarized, the exact wording was not always used. It should not be assumed that all individuals identified with combined comments necessarily support all facets of that comment. TDEC and TVA attempted to retain important differences among comments when summarizing or combining them. However, a number of summarized comments may still be somewhat repetitious because further refinements could have distorted an important element of a specific comment. In some instances, individuals submitted multiple comments and were identified with more than one category.

Additionally, letters from 10 agencies and organizations were received and addressed separately. Seven letters were received from United States and State of Tennessee Senators on behalf of their constituents. These constituents also provided comments directly to the Plan and EIS. These constituents and their issues were addressed directly in this report.

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## 1. Prefer Alternative A

- *I want Tims Ford to remain undeveloped. I vote for the pro-conservation plan. I think that is Plan A. Comment by:* Gobble, Bobby; Wright, Jerry and Joann (Highland Acres Subdivision); Nippers, C.W.

**Response: Under Alternative A, the No Action Alternative, development could increase by 28 percent. Alternative D does not provide for any additional development. Your comment has been noted.**

- *We would like to vote for Alternative A. Comment by:* Wright, Jerry and Joann (Highland Acres Subdivision)

**Response: Your comment has been noted.**

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## 2. Prefer Alternative B

- *I agree with alternative B, but I would consider it the most aggressive approach. Comment by:* Robbins, Steve

**Response: Your comment has been noted.**

- *I agree with the selection of alternative B. It has a good balance of development and conservation. The only improvement could be the development of more areas for fishing from the shore. A good location for it would be at bridges; put in some parking spaces and path to the shore at each bridge crossing. Comment by:* Lowrance, Bobby; Shasteen, A. L., Jr.

**Response: There are 8 existing public use areas, 6 of which are located near bridges. There are 3 bridges that are not adjacent to public recreation areas - 2 in Parcel 88 and 1 in Parcel 75. With the exception of these three bridges, the agencies will consider additional opportunities for fishing access with parking at the other bridges.**

- *Your balanced Plan B looks good; however, I would like to submit a few changes. Allow one or two more developments on the North side of the lake. This area has been neglected since the beginning. Comment by:* McClure, Larry

**Response: The agencies have considered more development on the north side of the lake under Alternative C. Under Alternative B, development on the north side of the lake is considered, but to a lesser extent.**

- *Alternative B is my choice for development on Tims Ford Lake. Enough commercial development to promote tourism commerce for Franklin and Moore Counties. I do think a little less land development that you have in B could or should be considered. Comment by:* Parrish, David; Smith, Edgar D.

**Response: In response to public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. One of the modifications was to reduce Residential Development by 118.6 acres and 2.5 miles of shoreline.**

- *In favor of Alternative B Plan.* **Comment by:** Hurst, Hugh; Schueler, Donald; Roberts, William S.; Singer, David A., Jr.; Hoffman, Cliff; Cowan, Honorable Ronnie O. (Franklin County Recreation Committee); Murphy, Frank; Miller, Dr. Monte B. (Tims Ford Council); Sherrill, Andrew; Mocierbacher, Josef; McAnally, Ed; Silver, Robert C.; Ray, Gary M.; Foster, Graham and Eva; Steigerwaldt, Henry; Fentress, Dr. & Mrs Vance

**Response: The comment has been noted.**

- *"B" only if development spread out on rest of lake! Otherwise "D." If more development includes the area of Hopkins Point and Highland Ridge then "NO." As they are completely developed in this central, integral part of the lake traffic flow any added development would be unattractive to the natural beauty...* **Comment by:** Linton, J. K.

**Response: We assume the comment refers to Parcel 36, which is known as Fanning Bend. This parcel was placed in Zone 7 because of its location, accessibility, and topography, and because it is a platted development previously approved by TERDA for residential development.**

- *I like the recommended development plan very much.* **Comment by:** Moore, Mac; Torstenson, Ray

**Response: The comment is noted for the record.**

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### **3. Prefer Modifying Alternatives B and C**

- *Alternative B, the stated preferred plan, does not allow enough residential development nor agricultural use. I recognized the need to find a satisfactory compromise; I recommend an expansion somewhere in between Alternative B and Alternative C.* **Comment by:** Franklin County Government (Montgomery F. Adams, Jr.); Bouwkamp, Doug
- *I recommend a Plan that exemplifies the best of both B and C. I recommend this because I believe that land can be developed and the environment (all biomes) can be protected and improved at the same time.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)
- *I do not think Alternative B provides for sufficient land for future development.* **Comment by:** Thomas, Bill

**Response: The comments have been noted. We realize that Alternative B calls for allocating less development than Alternative C. However, both agencies have sought to achieve a balance between development and conservation in developing Alternative B.**

- *While I am personally inclined to support Alternative D which would allow no additional development, I think a more reasonable approach is a variation of Alternative B (which I will call B1) which would allow for the development of land for public use, but disallow the development of additional land for private use. B1 would permit additional hiking trails, swimming beaches, and camping areas. It would permit the construction of schools and other educational facilities at appropriate places. It would allow the construction of additional facilities which are owned by the public and dedicated for the use of the public. B1 would not permit the development of additional residential areas, private marinas, industrial parks, or other land uses intended for exclusively private benefit. I am aware there are public benefits to such developments through enhanced tax bases and from the revenues of the developments being returned to state and local governments. In my opinion, however, the public as a whole which uses and enjoys the lake they have paid for*

will be better served by leaving it undeveloped and dedicated to resource conservation and the aesthetics of undeveloped shorelines rather than being further privately developed.

**Comment by:** McGuire, Michael E.

**Response:** Your comments are noted.

- We urge TVA and TDEC to carefully reconsider the balance of public and private development considerations at Tims Ford with a view of the long term future needs of the public in mind. **Comment by:** Tennessee Wildlife Resources Agency (Aubrey D. McKinney)

**Response:** This comment is noted for the record.

- However, from a practicable perspective, we would not oppose TVA's selection of Alternative B since it is a "balance" of land development and conservation. If Alternative D is not selected, EPA would also support a hybrid alternative (between D and B) that favors more conservation and less development than proposed in Alternative B. If a reasonable alternative such as D, a D-B hybrid, or B is selected, EPA would not favor the No-Action Alternative in the sense that the status of the area would remain uncertain and as such, may conceivably be developed more so than any of the action alternatives currently propose.

**Comment by:** U.S. Environmental Protection Agency (Heinz Mueller)

**Response:** This comment is noted for the record. Alternative B was modified to include an additional conservation tract and is presented as Alternative B1 in the Final EIS. Under this alternative, the proposed allocation for Parcel 14 would be changed to Zone 4 (Natural Resource Conservation). Also, under this alternative, the amount of proposed residential development would be reduced by 118.6 acres and 2.5 miles of shoreline. Please refer to the Final EIS for additional information on this alternative.

- Our members believe that more not less public land will be needed to adequately conserve our state's natural resources for future generations. They also believe it is fundamentally wrong to take private land through condemnation, then allow it to be sold for private gain. However, the League understands the unique situation at Tims Ford Reservoir and submits the following compromise—between Alternatives B and D—as the highest and best use of public land under the circumstances. **Comment by:** Tennessee Conservation League

**Response:** The comment has been noted. As a result of public comment, Alternative B was modified to include an additional conservation tract. The modified alternative is presented as Alternative B1 in the Final EIS. Under this alternative, the proposed allocation for Parcel 14 would be changed to Zone 4, Natural Resource Conservation. Additional information on the modified alternative is presented in the Final EIS.

- RECOMMENDED REVISIONS FOR ALTERNATIVE B **Integrated open-space residential planning**—Great strides have been made by planners and developers in many U.S. communities for balancing the need for development with a need to preserve open space and protect the quality of community life and natural resources. Open space development, or cluster development, has been shown to be profitable and highly sought after by home buyers. Enclosed with our comments is a copy of a chapter from the publication Better Site Design: A Handbook for Changing Development Rules in Your Community. We have included this as part of our comments to show that the concept of open space development is economically practical, environmentally friendly, and publicly supported..... Consequently, parcels slated for residential development in the EIS are ideal sites to showcase innovative development practices. For these reasons, the League requests that Tims Ford EIS specify all Parcels classified for development, either residential or industrial,

have a development overlay incorporating principles described within Better Site Design: A Handbook for Changing Development Rules in Your Community. Further, we ask that Tennessee Department of Environment and Conservation and the TVA, hire an outside organization or consultant experienced in alternative development techniques (see enclosed resume as an example), the set parameters for the development overlay, which will then be included in EIS. We also recommend the consulting organization and/or consultant, TDEC and TVA work with Moore and Franklin County stakeholders to develop the guidelines, review and approve site plans before building begins. **Comment by:** Tennessee Conservation League

**Response: During the implementation process, the referenced book will be considered for applicability to future residential subdivisions within areas allocated as Zone 7.**

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#### 4. Prefer Alternative C

- *I would like Alternative C maximum development.* **Comment by:** Feldhaus, Pam; Williams, Susie

**Response: The comment is noted for the record.**

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#### 5. Prefer Alternative D

- *I am in favor of option D.* **Comment by:** Coyne, Michael; Godwin, Jerry; Ball, Theodore; Brace, Douglas A.; Tingley, Ted; Thompson, Timothy and Laura; McKee, John Paul; Karhu, Vicky; Quigley, Roger; Sanders, Gene
- *Further shoreline development should be curtailed; therefore, I support Plan D—which calls for no further shoreline development.* **Comment by:** Rambo, Pauline; Stephens, Marcia; Finney, John
- *Please consider adopting alternative D and save the natural beauty we have in the area.* **Comment by:** McGovern, Terrance M.; Hobson, Randy; Honkanen, Frank A.; Karhu, Renate; Scarborough, J. R.; Holmes, Cliff
- *In reviewing of the Draft Environmental Impact Statement, Alternative D with the maximum land conservation appeals to us.* **Comment by:** Carothers, Kathy; Smith, Ben L.; Walker, Debbie; Shanks, Robert F., Sr.; Mason, James E.; Banks, Sylvia and Morton
- *We prefer Alternative D because it has the least negative impact on the environment surrounding the lake.* **Comment by:** Sanders, Eugene and Anna (Tims Ford Council); Pollock, Wayne; Shanks, Burt; Scarborough, Nancy; Howell, Toby; Balsley, Bill
- *After reading parts of the Draft, I have come to the conclusion that Alternative D would be the best path for Tims Ford. This lake is one of the few highland reservoirs left in Tennessee that has been left in a near pristine state.* **Comment by:** Maglothin, Richard L. II; Walker, Bob; Williams, David
- *Based on the information in the DEIS and comments from members of the Indian Community in the area around Tims Ford Reservoir, the Tennessee Commission of Indian Affairs would favor Alternative D – Maximum Land Conservation.* **Comment by:** Tennessee Commission of Indian Affairs (Toye Heape); Reynolds, N. L.
- *I would not mind slow controlled growth, but the options I see don't limit the growth to being slow! I would prefer the conservationist view point D but I don't think TVA will allow this to happen.* **Comment by:** Heiss, Robert
- *No further development is the responsible plan for Tims Ford.* **Comment by:** McQuinn, J. H.

- *The Service prefers alternative D for TVA's and TDEC's involvement in the land management plan, and believes it will benefit fish and wildlife resources of the area and provide adequate recreational opportunities.* **Comment by:** U.S. Fish and Wildlife Service (Lee A. Barclay, James H. Lee)
- *The Tennessee Conservation League appreciates the opportunity to comment on this draft environmental impact statement (EIS). The League has long advocated for the conservation and sustainable use of Tennessee's land, water, and wildlife. Long-standing League policy advocates maintaining public lands for public use; therefore, the League strongly supports Alternative D, the maximum land conservation alternative.* **Comment by:** Tennessee Conservation League
- *The Tennessee Ornithological Society is a non-profit organization of about 1,000 members dedicated to the study, enjoyment, and conservation of birds. After studying the information presented in the document, we cannot endorse the choice of Alternative B as the preferred alternative. We endorse the section of Alternative D, which, compared to the other alternatives, provides a much higher level of protection and enhancement of the areas natural resources.* **Comment by:** Tennessee Ornithological Society

**Response:** These comments are noted for the record. The agencies will not make a decision until after the Final EIS has been completed. Alternative D will be given due consideration.

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## 6. Oppose Alternative A

- *Alternative A should be rejected since it will involve significant transfers of development rights to individuals and corporations. Lands purchased with tax payer dollars for the general public use should not be subsequently sold to benefit a small number of individuals.* **Comment by:** Smith, Ben L.

**Response:** The agencies considered other alternatives that involved less transfer of development rights. All of these alternatives will be given proper consideration in making the final decision. When lands are sold by TDEC, it will be through advertised sealed bids or public auction.

- *The quality and natural beauty of the lake needs to be maintained and improved. Alternative A will not achieve these objectives.* **Comment by:** Finney, John; Brace, Douglas A.

**Response:** The comment is noted for the record.

- *Alternative A is too vague and uncertain on the environment surrounding the lake.* **Comment by:** Sanders, Eugene and Anna (Tims Ford Council)

**Response:** This is partly a reflection of uncertainties associated with continuation of past management trends, which is defined as the "No Action" alternative. Under Alternative A, there are 386 acres for Project Operations, 881 acres for Sensitive Resource Management, and 1,958 acres for Natural Resource Conservation. Industrial/ Commercial development could range from 6 to 67 acres, Recreation could range from 279 to 576 acres, and Residential development could range from 122 to 2,585 acres. Please refer to Appendix G for a listing of parcels and their respective zone allocations for each alternative. Because land disposal decisions would be made on a case-by-case basis under Alternative A, some uncertainty exists about the actual impacts on the environment.

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## 7. Oppose Alternative B

- *Alternative B should be rejected since it will involve significant transfers of development rights to individuals and corporations. Lands purchased with tax payer dollars for the general public use should not be subsequently sold to benefit a small number of individuals.*

**Comment by:** Smith, Ben L.

**Response: The agencies have considered alternatives that considered varying degrees of transfer of development rights. All of these alternatives will be given proper consideration in making the final decision. In accordance with Public Chapter 816, TDEC is encouraged to dispose of those lands deemed suitable for development.**

- *Alternative B increases development 33%--much too much.* **Comment by:** Ball, Theodore; Ball, Katherine; Balsley, Bill

**Response: This comment has been noted for the record.**

- *I am definitely against Alternative B as it is now written.* **Comment by:** Sanders, Ted J.; Karhu, Vicky
- *I am against Alternative B of the Plan because it locates two proposed residential developments in an already highly populated and developed area of the lake. Parcel 14 (Jolly's Rock/Wiseman's Branch) 118.6 acres, and Parcel 36 (Fanning Bend) 204.6 acres, should not be developed since there is already a greater population shoreline density in this area then anywhere else in the remaining shoreline acreage of Tims Ford reservoir.*

**Comment by:** Otterbein, W. G.

**Response: Alternative B has been modified in response to public comments, and is presented as Alternative B1 in the Final EIS. Under this alternative, the proposed allocation for Parcel 14 would be changed to Zone 4, Natural Resource Conservation. Justifications for the allocation change are that: the parcel is adjacent to a sensitive resource area and natural resource conservation lands; it is well forested and contains several small openings, which if managed properly, could provide exceptional wildlife habitat, and it is located directly opposite Tims Ford State Park, which would maintain the viewshed of the State Park. The other parcel identified in your comment did not meet these characteristics, and its allocation to Zone 7 has been retained.**

- *Although TVA's SMI (Shoreline Management Initiative) will apply to Tims Ford, the Blended Alternative selected by TVA provides a lower level of conservation restrictions than those recommended by this agency. Alternative B would therefore allow for significantly more residential development than appears prudent or necessary to us. SMI would further allow for more shoreline development on all residential development (including committed lands) than should be allowed.* **Comment by:** Tennessee Wildlife Resources Agency (Aubrey D. McKinney)

**Response: The comment is noted for the record. A similar comment was noted previously in the SMI Record of Decision issued in May 1999.**

## 8. Oppose Alternative C

- *Alternative C is completely unacceptable. You must resist the pressure you will receive from real estate agents and county officials looking for more tax money to open more of the lake*

to residential development. *C is not an option!* **Comment by:** Sanders, Eugene and Anna (Tims Ford Council); Quigley, Roger; Heiss, Robert

**Response:** This comment has been noted.

- *Alternative C—maximum land development—should be restricted since there are not sufficient safeguards in place, or committed, to assure that this level of development will not destroy sensitive natural areas.* **Comment by:** Smith, Ben L.

**Response:** Although Alternative C is the maximum land development alternative, the alternative would have certain safeguards in place to protect sensitive resources. Please refer to Section 3.18 of the Final EIS.

- *The quality and natural beauty of the lake needs to be maintained and improved. Alternative C will not achieve these objectives.* **Comment by:** Brace, Douglas A.; Finney, John

**Response:** The comment is noted for the record. Impact analysis of Alternative C in the EIS states that 55.1 miles of natural shoreline could potentially be changed by development.

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## 9. Satisfied with Draft EIS

- *Thanks for the Draft Environmental Impact Statement. This is an outstanding report and the proposed plans look great.* **Comment by:** Patterson, Joel L.; Dammann, Lisa and David; Shemwick, Tom; Carroll, Marvin; Vineyard, Joe and Jeanne; Fraley, George (Tennessee General Assembly)
- *We are very favorably impressed with the scope, detail and quality of the draft EIS.* **Comment by:** Ball, Theodore; Robbins, Steve; Littlejohn, James H.; Franklin County Planning and Zoning Department (Mark H. Dudley); Mullins, John (Foundation for Educational Excellence)
- *I think that the EIS has struck the appropriate compromise between the needs to preserve the ecological vitality of the region... Allowing more development will bring in more property and sales tax revenues, and provide more jobs. However, as the EIS points out, greater shoreline development has several downsides : decreasing access to the water, decreased aesthetics, and potential decrease in water quality.* **Comment by:** Gottfried, Robert
- *I would like to compliment the two agencies on their work to date. I have read the Draft Environmental Impact Statement: Tims Ford Land Management and Disposition Plan, and I think you did an exemplary job of capturing the myriad of thoughts which were presented at the first round of meetings.* **Comment by:** McGuire, Michael E.
- *The Fish and Wildlife Service has reviewed the documents and offers the following comments. The DEIS adequately describes the resources within the project impact area and the proposed actions' impact on these resources.* **Comment by:** U.S. FISH AND WILDLIFE SERVICE (Lee A. Barclay, James H. Lee)
- *Our review indicates that the proposed management plans would not affect any on-going or planned programs within the Nashville District.* **Comment by:** U.S. Army Corps of Engineers (Ronnie Smith)

**Response:** The comments are noted for the record.

- *The draft provides very good data to gain an objective opinion. We would again like to see the water quality and environment issue at the top. Also, provide in final definite residential*

allocation and time frame for parcel offer or sale. Since the history was well covered in draft, little needs to be in the final. Concentrate on actions, schedules, and future intentions on management. **Comment by:** Jackson, James and Linda

**Response:** The parcels proposed for disposal are those in Zone 7 (Residential Development). A final plan approved by the TVA Board of Directors and Tennessee State Building Commission will identify parcels allocated for disposal. The Implementation Process will detail the method and conditions for disposition of parcels.

- We understand that this approach for selecting a blended alternative is consistent with policy in the finalized TVA's general Shoreline Management Initiative (SMI) EIS, which considered "residential shoreline development impacts throughout the Tennessee Valley" (pg. 1-3). **Comment by:** U.S. Environmental Protection Agency (Heinz Mueller)

**Response:** The comment is noted for the record.

- **EPA EIS Rating** – We rate this DEIS as an "EC-1" (Environmental Concerns; no substantive additional information requested). We base this rating on the uncertainties relative to environmental impacts associated with the TVA-preferred Alternative B, which allows more development of undeveloped plannable lands than is currently the case, particularly when other alternatives (D and potentially a D-B hybrid) proposing less development are available. We encourage TVA to continue to exercise control over reservoir planned development and monitor any development areas before and after construction. **Summary** – Although Alternative B preferred by TVA limits residential development associated with the Tims Ford Reservoir compared to presented Alternative C (maximum land development) it would nevertheless allow more residential development than currently (Alternative A: No-Action) or that is proposed for presented Alternative D (Maximum Land Conservation). Accordingly, EPA inherently has environmental concerns with such an action, but also recognizes that selected Alternative B is a balance between land development and conservation and is consistent with policy in TVA's SMI EIS and is also, at least in part, based on public responses. **Comment by:** U.S. Environmental Protection Agency (Heinz Mueller)

**Response:** Although Alternative B was the preferred alternative for the Draft EIS, all alternatives are currently under consideration. In response to public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. The management strategy on certain specific lands allocated to Zone 4 in the Draft EIS has been modified under Alternative B1. Specifically, within Zone 4, there are numerous locations where the public land above the 895-foot contour is very narrow. As such, this narrow strip does not provide a sufficient conservation buffer to protect water quality, conserve shoreline habitat, protect shorelines from long term erosion, or retain shoreline aesthetics. Due to the close proximity of private property to the lake, these narrow public land areas have traditionally presented unique management problems, from both a property administration and a resource conservation perspective. Accordingly, these specific areas have been identified and allocated to a new zone -- Zone 8, Conservation Partnership. The primary objective within this zone is to establish a wider shoreline buffer zone by fostering shoreline protection partnerships with the adjacent private property owners. In Zone 8 public lands, TVA may approve requests for limited community water use facilities in exchange for protection easements transferred from the adjacent property owners. A more detailed description of Zone 8, Conservation Partnership, is provided in the Final EIS.

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## 10. Dissatisfied with Draft EIS

- *In the future a cogent summary of the plan would be more effective, useful and cheaper. Much of the current plan should be in a supplement available on request.* Comment by: Batchelder, F. E.

**Response: An executive summary will be mailed to those on our mailing list. The Final EIS and Final Land Plan will be available to those that specifically want to review the document.**

- *So much information for such a little—after all this time is this all you can offer? TERDA had all this. Tell us what you are going to sell and when.* Comment by: Sons, Charles E.

**Response: The parcels proposed for disposal are those in Zone 7 (Residential Development). A final plan approved by the TVA Board of Directors and Tennessee State Building Commission will identify parcels allocated for disposal. The Implementation Process will detail the method and criteria for disposition of parcels.**

- *The EIS is grossly inadequate in terms of cultural resource documentation. There needs to be a detailed or current survey done before any further development.* Comment by: Karhu, Vicky

**Response: Additional cultural resources information has been added to the Final EIS. As stated on page 3-19 of the Draft EIS, there are 19 sites on the plannable parcels that are potentially eligible for inclusion on the National Register of Historic Places. Future disposal or ground disturbance on parcels not examined by cultural surveys will require an archeological examination prior to the transfer of property or any ground disturbance.**

- *The TDEC study, if implemented, would have a significant negative economic impact on some citizens, the current and future Metropolitan tax base, and further land developments within the Metropolitan area surrounding Tims Ford Reservoir.* Comment by: Moore County Government (Billy Thomas); Franklin County Government (Montgomery F. Adams, Jr.).

**Response: The agencies disagree that a federal recreation resource such as Tims Ford Reservoir has negative economic impacts. Tourism can have positive economic benefits. Residential and commercial development obviously increase tax revenues, and this information is reflected in the Draft EIS. TVA and TDEC also recognized that different types of development have both tangible (e.g., infrastructure) and intangible (e.g., environmental) costs. Because these public lands are not on the county tax rolls, TVA pays tax equivalent payments to Franklin and Moore counties. Information regarding dollars paid directly to Moore and Franklin Counties in lieu of taxes plus dollars that were paid to the State which were redistributed to these counties for 1998 and 1999 is presented in the table below. The purpose of the land plan and the accompanying EIS was to consider a variety of environmental, economic, and social factors to develop a plan that would provide substantial public benefits while protecting the environment. Additional information has been added to the Final EIS in Section 3.12.4.**

	Franklin County	Moore County
1998 - \$ Paid Direct	\$10,215	\$2,190
1998 - \$ State Distribution	\$532,602	\$88,326
1999 - \$ Paid Direct	\$10,215	\$2,920
1999 - \$ State Distribution	\$595,992	\$99,529

- *It seems apparent that the group was given the answer before the study began. It is obvious from the input received that the people did not want the lake developed. Yet, the group ignored the people and recommended development anyway. Developing Fanning Bend in an already overcrowded area of the lake is a travesty. You are recommending killing a part of the lake to save the rest. Private boat docks should NOT be allowed as the plan recommends. I resent the arrows shot at the lake residents. It was very unprofessional and you should be ashamed and should apologize to us. We are the ones who know first hand the environmental and safety problems already at the lake. The video quoted a few figures for results of the surveys taken from the people. Please provide me a copy of the overall tabulation, by categories, of comments. Comment by: Gray, Frank*

**Response: No decisions will be made until the Final EIS has been completed. The agencies have objectively considered a range of alternatives for accomplishing a land plan. TVA and TDEC technical staff working on the Land Management and Disposition Plan and the EIS recommended the Preferred Alternative based on public scoping comments, existing contracts with TDEC and TVA, Public Chapter 816, and recognition of the presence of sensitive resources. A public scoping report was prepared and was presented as Appendix B of the Draft EIS. Parcel 36, Fanning Bend, was placed in Zone 7 because of its location and access, its topography, and because it is a platted development previously approved by TERDA for Residential Development.**

- *The EIS does not adequately address cumulative impacts of development on counties downstream from the reservoir as required by NEPA. Comment by: Tennessee Conservation League*

**Response: To the extent that future actions are reasonably foreseeable, the agencies have included cumulative effects on resources affected by the land allocations.**

- *According to DEIS Sections 1.1 and 1.2, the land being planned is owned by both TVA and TDEC. The DEIS should include a map showing the boundaries of each agency's ownership. We feel TVA is under no obligation to make any of its lands available for expanded residential development. Comment by: Tennessee Ornithological Society*

**Response: TVA and TDEC entered into a contractual agreement to develop a unified and comprehensive land use and disposal plan for the Tims Ford Reservoir to meet the intent of Public Chapter 816. This plan involved both state and federal lands, and this planning effort was conducted without distinguishing between state and federal lands. However, a map showing TVA and TDEC properties is available from TVA upon request.**

## 11. Dissatisfied with Map

- *I strongly feel that access to the lake is misinterpreted by many people using the lake. My particular concern is for my strip portrayed on the map as "residential access" above the 895' contour abutting my property, that is very steep and narrow. The subdivision is incorrectly named and is shown as a "private subdivision." The "residential access" behind my property is maybe 10 feet in width and should never be used freely to camp, etc. by others because it is about 30' from my house and between my house and boat dock.*

**Comment by:** Simpson, Norman W.

**Response: A private subdivision is referred to in this EIS/Plan as a subdivision developed by a non-TERDA entity. Lands designated for residential access are public lands, and they will remain available for public use. Maps in the Final EIS and the Plan and have been changed to clearly differentiate between existing Residential Access and proposed Residential Development.**

- *Analysis of the different options by the public is severely hampered as only alternative (preferred) B is graphically shown on the Exhibit 1 map. Further, a Parcel by Parcel listing in the plan is supported by information steering the readers toward Plan B. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)*

**Response: Each alternative represents a planning approach. The Preferred Alternative was used to develop the proposed plan and map. The agencies believe that the parcel descriptions in the Land Management And Disposition Plan, along with the table in Appendix G, provide an adequate description of each alternative.**

- *Rock Creek Estates is labeled improperly, it should be Wild Geese Landing. Residential access should be better defined and more organized in presentation to the public.*

**Comment by:** Simpson, Norman W.

**Response: The map in the Final EIS has been changed to correctly identify Wild Geese Landing. The maps and land plan have been modified to show the difference between Residential Access and Residential Development.**

- *I believe the map included in the draft environmental impact statement show part of 59, classified as Zone 4, to include part of my property. **Comment by:** Herron, Dean*

**Response: The boundary of Parcel 59 has been changed on the map in the Final EIS to reflect its correct location.**

- *TVA and TDEC have jointly left out of a comprehensive Land Management and Disposition Plan 1.32 plans of right to allow expansion of Tims Ford State Park in 1997—access to the lake permitted in June 4, 1997, and a right for a pier to be allowed to be hooked with a small tract of land in Cynthia Hollow. I certainly believe this is an oversight on your map and in your draft. I request this be corrected before your final draft. Maybe show it as Zone 8 – Residential access – prior to the park expansion and to always to be with that property.*

**Comment by:** Sanders, Frank

**Response: Both agencies are aware of the existing permit. This permit will be honored, i.e., "grandfathered." The Land Management and Disposition Plan and map do not reflect existing private water use facilities on committed lands.**

## 12. Pollution and Water Quality

- *It appears that the water quality of Tims Ford lake may be significantly impacted by the large numbers of livestock that have direct access to the lake. We recommend that livestock be excluded from the lake and a 100 foot shoreline management zone (SMZ) be incorporated into current future and agriculture licensing. Comment by: U.S. Fish and Wildlife Service (Lee A. Barclay, James H. Lee)*

**Response: Both agencies have agreed to work with licensees to reduce potential adverse effects to water quality by including appropriate measures in licenses renewed in the future. Measures include providing alternative water sources; minimizing access through watering lanes; establishing 50-foot buffers, and implementing agricultural best management practices (BMPs).**

- *We further recommend establishment of a 100 ft SMZ along zones 5, 6, and 7. Thank you for the opportunity to comment on this action. Comment by: U.S. Fish and Wildlife Service (Lee A. Barclay, James H. Lee)*

**Response: In the Record of Decision for its Shoreline Management Initiative, TVA determined that a 50-foot Shoreline Management Zone (SMZ) for residential areas (i.e., Zone 7) would protect water quality and shoreline habitat as well as meeting the needs of adjacent landowners. For Zones 5 and 6, the width of the SMZ would be determined on a case-by-case basis.**

- *My main concern is for water quality and wildlife. Excessive development will have a polluting effect as I'm sure you are well aware. Comment by: Smith, Jerome D.; Miller, Dr. Monte B. (Tims Ford Council); Pollock, Wayne; Ayers, Floyd; Mullins, John (Foundation for Educational Excellence); Richards, Robert; Edens, Jim*

**Response: The comment has been noted.**

- *Enforce farm stock access rule and other pollution reduction rules. Comment by: Tingley, Ted*

**Response: The landowner is responsible for complying with all local, state, and federal regulations. Both agencies will work with the agricultural licensees to implement agricultural Best Management Practices (BMPs).**

- *Lack of responsibility for private business to help educate and eliminate the pollution by patrons using their facilities. Post laws dealing with pollution at all public access sites. Comment by: Simms, James R. (Tims Ford Council)*

**Response: Both agencies participate in programs that promote environmental awareness, such as the National Clean Boating Campaign.**

- *No further development is the responsible plan for Tims Ford. The lake is slowly dying from septic tank pollution as well as pleasure boating. Comment by: McQuinn, J. H.; Jackson, Ray D.; Scarborough, Nancy*

**Response: In response to concerns about septic tanks, TVA and TDEC have done additional analysis, and Section 3.1 of the EIS has been revised. Strict adherence to TDEC Division of Groundwater Protection rules in siting, design, installation, and operation of**

**these systems would allow development to proceed without water quality being compromised by wastewater (see Section 3.3). Although adoption of either Alternative B and C could lead to an increase in boat traffic (increases of 12 and 28 percent, respectively), we believe there is adequate surface acreage available to accommodate this increase in traffic.**

- *If the lake was utilized for maximum development then the chances of polluting the lake increase. Every house and building that is built on or near the lake will compound the problems of pollution. Homeowners use herbicides and pesticides to control their environment and these contaminates ultimately enter the lake...the water people drink comes directly out of the lake. Of particular concern is potential impact on water quality in the lake that will come with more lawns (nationally a large source of water pollution via herbicides and fertilizers) and septic failures. I expect runoff from the new golf course to create water quality problems.* **Comment by:** Gottfried, Robert; Maglothin, Richard L. II; Smith, Edgar D.; Town of Estill Springs (Alderman Robert Dean); Balsley, Bill; Walters, John J.; Edens, Jim

**Response: This comment has been noted. These potential impacts are discussed in Section 3.3 of the Final EIS.**

- *The Executive Summary clearly states that the reservoir is an area of Karst geology that make groundwater flow rates and directions difficult to determine. If you cannot determine the flow rates and directions of the groundwater, then how can you determine the amount of pollutants that enter the lake?* **Comment by:** Maglothin, Richard L. II

**Response: Because the hydrogeologic characteristics of the subsurface have been only moderately defined, we were unable to precisely estimate the amount of contaminants that might be entering the reservoir in the Draft EIS. Similarly, contaminant source types, locations, and quantities are undetermined at this time. Predictions of this type, especially on a regional scale, are likely to produce inaccurate results.**

- *The other uses in the definition such as: Business parks, Industrial access, Barge terminal, Fleeting areas, etc., do not appear to be environmentally responsible.* **Comment by:** Panzarella, Philip P.

**Response: These uses are typical for land allocated to Zone 5 (Industrial and Commercial Development). Some of these uses (e.g., barge terminal and fleeting areas) are not appropriate on every reservoir, including Tims Ford Reservoir.**

- *It is a beautiful treasure this lake and hopefully the expansion and development will be kept to a minimum, especially the marinas. Regulate the number of slips and especially those for large houseboats, which cause more pollution of the water and erosion of the banks than other water craft, should be part of the long-term plans.* **Comment by:** Martin, Bill

**Response: Expansion of existing marinas and development of new marinas are subject to TVA approval and subsequent environmental review. In its approval and environmental review process, TVA will consider such factors as potential erosion and water quality impacts.**

- *As new growth occurs in the surrounding cities so does the use of water vehicles and more importantly, the use of boats with "heads." There must be laws enforcing pump out regulations. Houseboats especially need to be responsible for the waste water. In the past I have heard and witnessed waste pumped into the lake.* **Comment by:** Hawn, Ned W.



**Response:** Current TDEC regulations prohibit boats from discharging wastewater directly into Tims Ford Reservoir. Holiday Marina, Tims Ford Marina, and Tims Ford State Park Marina currently have pump-out facilities for use by the public.

- *The area across from Tims Ford Park has been built up and now find water quality and plant life disappearing as wild azaleas and mountain laurel are scraped off for building. The lake is no longer as clean as when we came. Comment by:* Larson, Buryl and Noveta

**Response:** The subdivisions near the Tims Ford State Park were previously approved for residential development. Section 3.2.1 of the Final EIS has been revised to describe the water quality trends on Tims Ford Reservoir.

- *Second, cattle and water quality. In 30 years I've not known of a single instance of real pollution from cattle on rented land. I found interesting one comment in your scoping report about how clear the lake was when these folks came here in 1977. Cattle were then and had been for years a part of Tims Ford (and of the Elk River for generations before that). Since that time the number of cattle has steadily decreased as tracts have been developed. In their place you have hundreds of homes with individual septic systems. I realize some lake users don't like to see cattle in the lake, but if there's a problem with E-coli in Tims Ford, it's not the cows. Comment by:* McCain, Phillip

**Response:** A recent University of Tennessee study conducted by Extension Specialist, Dr. Robert Burns, has shown that uncontrolled cattle access can have negative impacts on streams. Provision of water gaps or cattle access lanes along with the fencing of the shoreline can effectively control shoreline erosion. Buffer zones and established riparian areas are also excellent Best Management Practices (BMPs) to protect the shoreline and decrease sediment loss.

TVA prefers to limit direct access for livestock to water in the reservoir. Where access is allowed, TVA requires use of BMPs such as cattle crossings or water gaps and streambank fencing. The Wheeler Watershed Team provides technical assistance and identifies funding sources for designing and implementing these BMPs. Cost sharing demonstration projects are also considered.

- *We need to be very conscious of maintaining the shorelines, protecting with a buffer strip back from the lake. We need not to develop on steep slopes or on drainage areas that go into the lake. I think the overall stream basin needs to be studied to determine what areas need to be preserved, where the retention basins should be put to eliminate sediment going into the lake and prevent excessive runoff and siltation in the lake. We should have a buffer and not allowed to be denuding the lots next to the lake because the very steep slopes will allow the runoff and sedimentation to go into the water. The one last comment I have is I think the cattle should be removed from at least three hundred feet (300') around the lake because they create an additional BOD loading on the lake, itself. Comment by:* Lee, Don

**Response:** The criteria used to identify parcels suitable for development included consideration of slope and terrain. Parcels proposed for new development will incorporate a 50-foot buffer above the 895-foot contour and will be subject to vegetation management requirements. TDEC recently formulated a four-year strategic plan to protect and enhance Tennessee's rivers, lakes, wetlands and groundwater, and to ensure they support a healthy environment and public uses. TDEC is responsible for monitoring water quality and for identifying opportunities and innovative strategies for improving water quality.

**The Division of Water Pollution Control works with landowners, farmers, and industry to limit the impacts of various activities to Tennessee's waters. Please see the previous response regarding TVA's livestock policy.**

- *The DEIS clearly states that water quality (dissolved oxygen) and benthic aquatic life in the lake are degraded (rated 'poor') due primarily to nutrient loading. The report also states that existing septic systems are likely failing at a 30% rate. Alternative B (TDEC/TVA preferred) would allow 2,292 residential lots to develop including 458 lake front lots. We therefore question the DEIS conclusion that water quality is "...unlikely to be significantly degraded" with build out of Alternative B. Further water quality declines are likely to affect what is now a very popular and productive fishery. Species of immediate concern to us in this regard are walleye and striped bass. Comment by: Tennessee Wildlife Resources Agency (Aubrey D. McKinney)*

**Response: In response to concerns about septic tanks, TVA and TDEC have performed additional analyses, and Section 3.1 of the EIS has been revised. Septic systems are regulated by the Division of Ground Water Protection (GWP). GWP issues construction permits for septic systems, and this process includes a soils evaluation. For lots in excess of 5 acres, this is done on a lot-by-lot basis. Lots smaller than 5 acres require approval as a subdivision, and a soils map must be prepared by a licensed soil scientist. Unless there is sufficient, suitable soil, GWP will not issue any construction permits. If failures are occurring, it may be for reasons other than improper design or construction. GWP responds to complaints about system failures. Appropriate enforcement action will be taken to correct the identified problems and protect water quality. With appropriate evaluation of the site, construction of the system, and education of the homeowner, system failures can be minimized.**

- *Water Quality – Under the category of Land Use, Table 2.3-3 states that "459 new water front lots could be built." If so, will such homes generally be on septic tank or on a sewer system? Would construction of septic tanks be denied if soil filtration is not acceptable (or lot sizes are too small) and would any permitted and constructed tanks be periodically inspected to prevent leakage into the reservoir? Also, will TVA water quality assurance teams periodically sample for fecal bacterial contamination along waterfront properties? Comment by: U.S. Environmental Protection Agency (Heinz Mueller)*

**Response: New development will proceed with the appropriate treatment system determined on a case-by-case basis. The TDEC Division of Water Pollution Control (WPC) policy dictates that certain wastewater treatment systems be considered and found to be unsuitable before other systems will be considered. The alternatives to be considered and the order of consideration are as follows:**

1. **Connection to a municipal/public sewer system or subsurface onsite disposal as regulated by the Division of Ground Water Protection (GWP).**
2. **Onsite disposal by spray or drip irrigation as regulated by WPC.**
3. **Direct discharge to a waters of the State.**

**Development cannot proceed unless a suitable wastewater treatment system can be approved. Systems permitted by WPC will receive regular inspection. WPC design criteria for Septic Tank Effluent Pumping (STEP) systems require that the septic tanks be watertight and be tested for watertightness both at the manufacturers facility and after they have been placed in the ground. The GWP issues a construction permit and performs an inspection before the system is covered. GWP regulations call for the septic tanks to be watertight. There are no State provisions that require the GWP to inspect systems after the installation has been inspected and approved. However, the Division has provisions in**

**place to respond to complaints about system failures and to require that the system be repaired, if needed.**

- **No additional septic-tank waste systems**—On page 3-3 the draft EIS states that “30 percent of 371 septic systems visible on photographs of the Tims Ford Reservoir shoreline area exhibited a high probability of failure or suspicious moisture patterns.” This section further states that the geology of the area, in concert with ground water and surface water patterns, may allow for the contamination of the reservoir by waste resulting from human activities (e.g., industrial releases, fuels spills, faulty septic systems). **Comment by:** Tennessee Conservation League

**Response:** In response to concerns about septic tanks, TVA and TDEC have performed additional analyses, and Section 3.1 of the EIS has been revised. Interpretation of infrared photographs indicated distinctive moisture patterns in 14 percent of the septic tanks visible, and suspicious moisture patterns in 16 percent of the septic tanks visible. However, suspicious moisture patterns do not necessarily depict a high probability of septic tank failure. Other indicators of septic tank failures may include lush growth, moisture patterns, soft/spongy earth above the system, out of crop, and full capacity. The presence of one of these indicators does not necessarily mean a system failure. Soil type and liquid fertilizer resulting from a normal septic tank operation can produce moisture patterns on the surface. Septic lines naturally cultivate grounds. Assessment of septic tank failure indicators is dependent on weather conditions, soil disturbances, effluent loading, system capacity, and the age of system.

The Final EIS has been revised to show that septic tank failures are not categorized with oil/fuel failures. These are two different categories of environmental impacts. Industrial releases and fuels spills mentioned are assumed to be accidental releases. As such, they could happen at any location, and material from such releases could likely enter ground water or surface water. The Division of Water Pollution Control (WPC), the Division of Underground Storage Tanks (UST), and the Division of Solid Waste Management would work to insure that an adequate cleanup was done to protect waters of the state in the event of such a spill or accident. UST has regulations regarding underground gasoline storage tanks at service stations and markets. Otherwise, very little can be done beforehand to lessen the impact from such releases.

- *Currently water quality in Tims Ford Reservoir is varied. Water quality has been rated “poor” in terms of dissolved oxygen content, “fair” in terms of sediment pollution, and “good” for Chlorophyll production. The reservoir is impacted directly by low dissolved oxygen discharges from Woods Reservoir, municipal sewage plants, and siltation resulting from agriculture. Based on the draft EIS, only Alternative D would minimize the worsening water quality in Tims Ford Reservoir.* **Comment by:** Tennessee Conservation League

**Response:** Certain environmental and water quality problems are inherent due to the design of the reservoir. The impoundment slows the Elk River, causing it to drop its sediment load. At the same time, the broad expanse of water, compared to the original channel, causes temperature increases and promotes algae growth. The increased sediment load and temperature tend to drive oxygen levels down. These factors affect water quality even in the absence of development. If the release of water from Woods Reservoir is other than surface overflow, these same factors could result in a low dissolved oxygen downstream of the discharge.

Agriculture and silvicultural operations are exempt from certain requirements of the Water Quality Control Act (T.C.A. 69-3-101 et seq.). Complaints about runoff from such

operations, non-point source pollution, are presently referred to the Tennessee Department of Agriculture and the Tennessee Division of Forestry. WPC regulates discharges to Tims Ford Reservoir and its various tributaries through the National Pollutant Discharge Elimination System (NPDES) permit program. These NPDES discharges would continue to be regulated under any of the alternatives. As discussed in the EIS, Alternatives B and C could potentially increase sewage and siltation. Site-specific proposals would be closely monitored to minimize these additional impacts.

- *In response to these facts, the League recommends that within the context of Alternative B, no additional septic-tank waste systems be allowed. Specifically, the League proposes that alternative waste management systems be utilized. Technologies, such as "grinder" sewage-treatment systems, are now available, economically feasible, and effective at treating wastewater. Comment by: Tennessee Conservation League*

**Response:** The review conducted by TDEC Ground Water Protection in the process of issuing construction permits for septic systems includes a soils evaluation. For lots larger than 5 acres, this is done on a lot-by-lot basis. Lots smaller than 5 acres are subject to approval as a subdivision, and require a soils map prepared by a licensed soil scientist. Unless there is sufficient, suitable soil, GWP will not issue any construction permits.

WPC encourages the use of alternative technologies. The technology mentioned, "grinder" systems, is a collection system technology. This type of collection system transports the wastewater to a wastewater treatment facility for treatment and ultimate disposal. This would probably discharge to the reservoir. WPC is encouraging treatment technologies which produce a high quality effluent with little operator attention. Disposal of the treated effluent by spray or drip irrigation is the preferred option, but a discharge to the reservoir could be considered. The prohibition of septic systems would not guarantee that the wastewater from additional development would not enter the reservoir.

The best way to insure that ground water, surface water, and ultimately Tims Ford Reservoir are protected is to evaluate each development on a case-by-case basis and ensure that the appropriate technology is designed, installed and used.

- *Enhanced shoreline buffer zone—The League recommends that no less than 100-foot shoreline buffer zone be implemented for all public lands proposed for residential or industrial development. Additionally, we recommend no less than a 100-foot shoreline - buffer for those public lands adjacent to existing residential development, for which deeded rights of access to the reservoir will be sold to the backlying property owner. Comment by: Tennessee Conservation League*

**Response:** In the Record of Decision for the Shoreline Management Initiative, TVA determined that a 50-foot wide Streamside Management Zone would provide an adequate buffer zone for residential areas. This was a compromise between a minimum 25 feet to protect water quality and a wider zone needed for shoreline habitat creation and protection.

- *No present or future analysis was made for the effects of urban sprawl and growth in the reservoir or downstream--water quality loss or the resulting cost of repair. Comment by: Tennessee Conservation League*

**Response:** Potential effects on water quality are addressed in Section 3.3 of the EIS. The agencies determined that water quality thresholds would not be exceeded as long as TDEC requirements are met. Because much of the reservoir is in rural areas, the agencies do not

**believe that city sewers would generally be available in development areas. As described previously, other wastewater treatment systems would likely be used.**

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### 13. Litter

- *We the landowners are the people who pick up the trash dumped into the lake by boaters and people camping in unauthorized areas. I don't see sanctions being enforced to preserve the beauty of the shoreline from the litter standpoint.* **Comment by:** Pastoral, John R. (Golf Shores Subdivision); Perry, Alton
- *It is very disappointing to see the amount of litter floating on the lake following a weekend. The source of this pollution should be found and eliminated.* **Comment by:** Montag, Ken
- *I feel there should be a committee of people to clean the area when the lake is down.* **Comment by:** Rouse, Marcia

**Response: Camping is generally allowed on all TVA lands surrounding reservoirs excluding dam reservations. Camping in State-managed areas is limited to designated camp sites. Law enforcement officers routinely enforce litter regulations. TVA assists in organizing annual lake clean ups on Tims Ford Reservoir. Clean up participants are represented by other State and local groups, including lake users and home owner associations.**

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### 14. Erosion

- *The removal of trees and other indigenous plants will cause runoff during periods of rain and cause further silting of the water, which will directly affect the quality of the water... The DEIS predicts that erosion will cause soil to enter the lake from the construction of any structures. Looking at the condition of the soil does it make sense to allow this land to enter the lake?* **Comment by:** Maglothin, Richard L. II

**Response: With respect to vegetation management, TVA's Shoreline Management Policy (SMP) applies to Tims Ford reservoir. This policy requires adjoining residential landowners to submit vegetation management plans for the use of TVA land. Section 3.18 of the EIS has been revised to reflect a requirement for a vegetation management plan that will require review and approval from TVA. All parcels allocated for Zone 7 (Residential Development) where there will be new residential development will have a 50-foot Shoreline Management Zone (SMZ) above the 895-foot contour. TVA will retain fee ownership of this SMZ. Site-specific construction BMPs and environmentally sensitive planning of new developments could lessen potential adverse impacts to water quality.**

- *I am in favor of keeping a maximum amount of acreage as wilderness space left undeveloped to prevent erosion and contamination of the water.* **Comment by:** Mullins, John (Foundation for Educational Excellence)

**Response: The comment is noted for the record.**

- *Too many sea-doo's and fast boats are eating away the shore, requiring loads of rock to protect the shoreline.* **Comment by:** Larson, Buryl and Noveta

**Response: Both agencies share your concern about bank erosion and shoreline protection. Please see Section 3.4 of the Final EIS for more information on shoreline erosion. TWRA currently regulates watercraft operation on State waters.**

- *Shoreline erosion caused by increased boat traffic is a major problem. TVA should offer some assistance to remedy this problem. Develop a plan to prevent shoreline erosion. Possibly helping with cost of rip-rap or other erosion control devices. Comment by: Edens, Jim*

**Response: Upon request, TVA provides ongoing technical assistance to waterfront property owners regarding erosion control. TVA periodically conducts erosion control demonstration projects. Because of the benefits of erosion control projects undertaken by private landowners, TVA waives the processing fee for shoreline protection projects.**

- *I have a complaint about the Slalom Ski course located in Anderson Branch. Is it permitted? The ski boat traffic has broken my dock and eroded my shoreline due to wave action. The course has probably adversely affected the entire area and should be moved. Comment by: Best, Tom*

**Response: This slalom ski course is currently approved by TVA under Section 26a. The Wheeler Watershed Team examined the course and were not able to substantiate your complaint. Please contact the Wheeler Watershed Team at (256) 386 2560 if you have questions or need additional information.**

- *Cattle and shoreline stability. In almost 30 years I can't recall ever seeing a place that I thought had been damaged by cattle use. I'm told such a site exists. In that case, I'm sure the leaseholder would cooperate with TVA/TDEC to correct the situation. That would be the model I would suggest for the future, rather than wholesale banning of grazing. The erosion of shoreline, the undermining and loss of shoreline trees are occurring on Tims but not because of cattle. If that were the case there are lots of areas that have never have cattle that would not have these problems – yet. They occur there just the same. The reason for this is that practically all this deterioration is due to wave action. Comment by: McCain, Phillip*

**Response: We agree that wave action can be a significant cause of erosion. However, TVA and TDEC also believe that direct access to the water by cattle can cause bank erosion and subsequent water quality problems. As previously noted in Section 12 of the Response to Public Comments (Pollution and Water Quality), studies have been conducted that indicate uncontrolled cattle access to the reservoir has a negative impact on bank erosion and water quality. Both TVA and TDEC will work with property owners in developing BMPs that will limit cattle access to the reservoir.**

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## **15. Maintenance**

- *Boat dock quality should be severely controlled. Many junk boat docks currently in place should be condemned and replaced. Comment by: Singer, David A., Jr.; Taylor, Ewing*

**Response: TVA regulates the construction of water use facilities. Although TVA does not strictly control the quality of the construction materials used or the structural design of facilities, these facilities are closely monitored for compliance with any conditions of the approval and with the regulations. TVA may revoke approvals and remove facilities that are not constructed in accordance with the plans as approved by TVA, or if facilities are not kept in a good state of repair. TVA's Wheeler Watershed Team routinely patrol Tims Ford Reservoir.**

- Our property line to the lake on the east is approximately 450 feet. We have been mowing and maintaining about 200 feet of this property since we have lived here. We are requesting permission to continue this maintenance program because we believe that it harms no one and enhances our quality of life. The lake will grow up and look really bad from the lake to the property which has been developed. There should be some rules to how they maintain this property. I've always maintained the TVA area as far as mowing because it gives me a nice lakefront view. I totally resent the fact that they're stopping me from doing this. **Comment by:** Green, John; Peck, Pam

**Response: Vegetation management along the shoreline is handled on a case-by-case basis. The amount of vegetation management allowed depends on the zone designation of the public land fronting your property. Property owners are encouraged to contact the Wheeler Watershed Team at (256) 386-2560 for information about Vegetation Management Plans.**

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## 16. Water Levels

*Curious to see what will be done about lake level flux—too much this year (1999, several trees at shoreline fell due to fluctuation)...we noticed extensive erosion this summer—the water level is too high at 888 for trees most of the summer. Why not stay at 886 to 887 in an effort to maintain shoreline?* **Comment by:** Dammann, Lisa and David

**Response: Tims Ford is a multipurpose reservoir, and it accommodates flood control, power generation, water supply, recreation and water quality purposes. Tims Ford was designed to have a minimum operating reservoir level of 883 from mid-May through mid October. This provides five feet of reservoir storage during the summer for multiple purposes. To provide as much discretionary release water in the reservoir for use during the summer and early fall, the reservoir is filled to its preferred level of 888 feet by mid spring, weather permitting. The reservoir space from elevation 888 to 895 (i.e., top of gates elevation), is reserved specifically for temporary use during flood control operations. Limiting the fill to a lower level, say 886 or 887, would significantly reduce the water available for power generation, downstream flow augmentation for water quality and water supply. It would also result in overall lower pool elevations and could possibly detract from reservoir recreation use.**

- We definitely need enforcement of the 898 line. **Comment by:** Torrell, Carolyn M.

**Response: The Wheeler Watershed Team routinely conducts shoreline inspections to detect encroachments that are located below the TVA boundary line, the 895 contour. Please forward specific information to the Wheeler Watershed team at (256) 386-2560.**

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## 17. TERDA

- TERDA was a splendid agency—desperately need more development land for residences—we need a better tax base. **Comment by:** Sons, Charles
- Let local people run the Tims Ford area—put TERDA back in business. **Comment by:** Burgoyne, Caleb; Ball, Theodore; Ball, Katherine
- Some consideration should be given to those who have used the lake since before TERDA was dissolved. **Comment by:** Pastorial, Susan; Ingle, Douglas A.

**Response: These comments have been noted for the record.**

- *(Understand that a plan was put forth years ago when the Dam was put in, why not dust off this plan and take a look)* **Comment by:** Kennedy, Mike

**Response:** Please refer to Section 2.1.2. (see page 2-6 of the Draft EIS). An early concept for land uses on the reservoir is illustrated in Table 2.1-4. It assumed residential development would be less prominent (i.e., small cabins and cottages) than the current type of residential development we see on Tims Ford today. The agencies have presented another alternative (Alternative C), which is consistent with many of the objectives of the original plan. The original concept could not be used in its entirety because it was not comprehensive, and it did not consider sensitive resources and other environmental concerns.

- *The TVA lands acquired under eminent domain were taken against the will of landowners for public use. Selling these lands back to the public, in my mind, would be an affront to those landowners and a breach of public trust. It is my understanding the TVA lands would not be sold, only former TERDA lands. Consequently, from an ethical perspective I believe that this is a correct course of action.* **Comment by:** Gottfried, Robert

**Response:** You are correct that Public Chapter 816 refers only to the disposition of former TERDA lands. Lands currently owned by TVA were obtained in situations where the original landowners were unwilling to sell during the land acquisition for Tims Ford Reservoir. This land was deemed necessary for project operation and was acquired by TVA under eminent domain. In the past, TVA declared such property surplus and transferred land to TERDA for its disposition for Project purposes.

Both agencies feel the original project objectives would be best met by the creation and implementation of a unified reservoir land management and disposition plan. In order to implement these objectives, both State- and TVA-owned property were included in the draft plan. The planning process allocated all parcels of land to their most suitable uses, thus providing for economic and residential development of the reservoir while protecting important sensitive resources. Tims Ford project lands identified for sale will be sold at fair market value by public auction or by advertised sealed bids. The distributions required by Public Chapter 816 through the sale of lands for development and the economic development of those lands provide economic benefit to the reservoir and Elk River watershed.

- *Statements in the TERDA Long Range Plan (page 1-4) and Public Chapter 816 (page A-6) may appear paradoxical; however, I submit they are in fact complimentary. This paradox is based in part on use of a model biased toward developers and county governments. For instance, economic impacts are measured in terms of income and tax gains without considering taxpayer/ratepayer and business costs, the sociological impact of change against evolving values, or the ethics of who gains and loses.* **Comment by:** Tennessee Conservation League

**Response:** The analysis in the EIS is not biased toward any particular interests because it considers a range of alternatives including maximum development and maximum conservation. The agencies will weigh both quantifiable and non-quantifiable considerations prior to making a decision.



## 18. Favor Expanding State Park

- *Addition to the park and other areas is a great idea.* **Comment by:** Faulk, W. R.

**Response:** This comment is noted for the record.

- *Consideration should be given to disposing of development in residential access areas in such a way as to maximize the income and use this income for capital improvements at Tims Ford State Park (e.g., inn, restaurant, conference center, campgrounds, group lodge, marina expansion, etc.). Net profit from the sale of property should go to Tims Ford State Park exclusively for the development of a inn (with a quality restaurant and development of another RV camp ground).* **Comment by:** Hurst, Hugh; Silver, Robert C.

**Response:** The agencies are seeking to balance economic benefits with natural and sensitive resource protection. The disposition of TDEC's proceeds from land sales has not yet been determined.

## 19. Oppose Expanding State Park

- *Metro opposes the placing of additional Moore County lands into the Tims Ford State Park.* **Comment by:** Moore County Government

**Response:** The portion of Parcel 3 in Moore county was placed into Zone 6 in order to provide a contiguous boundary for the State Park while incorporating the existing public use area Anderton Branch. It also provides visual continuity and protection of existing State Park property and the public use area.

- *The report includes four pieces of shore-line property bordering Moore County in the Tims Ford Park, disregarding an earlier resolution by the Metropolitan Council to not include any land within the park.* **Comment by:** Moore County Government (Billy Thomas)

**Response:** Parcel 10 and the immediately adjoining State Park property is an existing TERDA-developed public use area that TDEC proposed to manage as part of the State Park. These comments were considered prior to the 1997 decision to include the land into the State Park. Parcel 10 would remain allocated to Zone 6, Recreation, due to the established recreational use.

- *State park does not need all that land—leave islands alone. Let TN wildlife police the area shoreline and islands—leave area shoreline and islands alone—leave proposed state park lands as they exist today.* **Comment by:** Burgoyne, Caleb

**Response:** Public Chapter 816 specifically authorized TDEC to utilize reservoir lands for the expansion of the Tims Ford State Park. Sites proposed for inclusion in the State Park include areas where there are existing recreation facilities such as boat ramps, which require ongoing management. Other areas being reviewed for inclusion in the State Park would accommodate expansion of existing recreation operations (e.g., Parcel 76, which is adjacent to Devil's Step Campground). Other areas could be reserved for future recreation development opportunities (e.g., Parcel 32). Please note that no islands are proposed for addition to the State Park. Those islands that are coded with a red hatched line pattern are already a part of Tims Ford State Park. Officers of the Tennessee Wildlife Resources Agency do not have general police powers. Because of the nature of the land ownership

**and the activities that are likely to take place on these lands, we anticipate that TVA police, State Park rangers, and TWRA officers will have some overlapping jurisdiction.**

- *On the map, there is a designated Parcel 4. To the right of that parcel, there is land that shows being committed to the State Park. Actually, in order to access that land for the State Park, you would have to transfer private property. Our perspective on that is that would be one case in point that the land could be put to bid if the State owns it or a public auction if TVA owns it so that it becomes contiguous with the residential developed property. There is a private residence that adjoins that property and that seems to be a more common sense approach to the development of that little peninsula, nor a larger peninsula that's designated Tims Ford State Park right below Parcel 4. Comment by: Bowling, Janice*

**Response: Even though vehicular access may not be available to the site, this property remains public land accessible by water or by foot. As such, this property is available for informal recreational activities. The rationale for allocating Parcel 4 to Zone 4 is provided in the parcel descriptions of the Land Use and Disposition Plan.**

## **20. Natural Resources**

- *All lands not already committed should be designated as natural resource conservation, state parks, or sensitive resource management. Comment by: Kirk, Larry D.; Miller, Dr. Monte B. (Tims Ford Council)*
- *It is my opinion that the land surrounding Tims Ford should remain undeveloped and left in its natural state...Preservation of natural areas should be a high priority in land management. I hope it stays as pristine and natural as it is... Comment by: Kurfman, Kathy; Childress, Garth R.; Pepper, J. Ross; Strohmeier, Clint; Carothers, Kathy; Voorhies, Jessie W.; Quigley, Roger; Cambron, Kathy L.*

**Response: These comments have been noted.**

- *A limited amount of forest and wildlife management, to the extent that it does not severely impair the public's enjoyment of these open spaces, is also acceptable. Also to be kept in mind are the ecological functions these public lands provide to keep Tims Ford Lake clean with a reasonable population of healthy aquatic life. Comment by: Strohmeier, Clint*

**Response: Under all the alternatives, forest and wildlife management activities would be conducted in Zone 4 areas. The lands would be managed for maintenance of ecological functions and to support informal recreational opportunities for the public.**

- *Shoreline forestation and lower story vegetation can be protected by adequate regulation, limitation, and enforcement of rules that limit vegetation removal, rules and incentives that promote regeneration, and plantings. Land can be developed and the environment (all biomes) can be protected and improved at the same time. Comment by: Franklin County Government (Mark H. Dudley); Cambron, Kathy L.*

**Response: TVA and TDEC agree that appropriate application of these measures can effectively prevent shoreline erosion and prevent water quality degradation. The Shoreline Management Policy guidelines are designed to protect the integrity of the shoreline, and deal especially with vegetation removal.**

- *It is essential to the Native tradition to have wild and natural places to visit and to hunt and fish in order to maintain personal harmony and to teach our children.* **Comment by:** Tennessee Commission of Indian Affairs (Toye Heape); Ayers, Floyd

**Response:** The comment is noted for the record.

- *As there is growing incentive for clear cutting hardwoods and replacing them with pine trees, I ask that the Tims Ford land currently in agricultural use be permitted to return to a natural state of indigenous trees and plants without pine plantations. If there is potential for reclaiming grassland with native prairie grasses, I encourage you to do so.* **Comment by:** Ayers, Floyd

**Response:** The Tims Ford Land Management and Disposition Plan will be used to guide future land management decisions on Tims Ford Reservoir. TVA's intends to prepare unit-based natural resource management plans for TVA-owned lands allocated to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation) after the Tims Ford Land Plan is completed. With customer/stakeholder input, these "tactical" unit plans will enable TVA to develop goals and objectives for these lands and to determine the appropriate management activities to be applied to achieve the desired future results. Future timber management, open lands management, establishment of native grasses, and natural succession are management options that could be considered to achieve some future desired conditions on Tims Ford lands. However, no decisions will be made on the level or types of resource management for Tims Ford lands until a unit management plan, with customer/stakeholder input, has been developed.

- *All natural resources should be conserved for educational and rustic recreational areas.* **Comment by:** Scarborough, Nancy; Rouse, Marcia

**Response:** Implementation of Alternative D would result in conservation of these natural resources. Under the other alternatives, these resources would be protected in the areas allocated as Zones 3 and 4. Please refer to Table 2.3-1, Comparison of Alternatives.

- *The future of our economy probably resides to a great extent in the quality of life we offer: a rural setting with high quality recreational opportunities in the form of the lake and mountain areas. They provide the basis for a growing tourism and recreation industry. These natural resources already have attracted large numbers of high-income and highly educated people to live in our area. In many parts of the country new businesses establish themselves in these sorts of areas that offer attractive natural surroundings. Our future growth may depend in large part upon our protecting the natural resources that give rise to these amenities and ensuring that development does not compromise them.* **Comment by:** Gottfried, Robert

**Response:** Your comment has been noted.

- *Why will it take TVA 5 - 10 years to develop a resource management plan as described in paragraph 3.18?* **Comment by:** Maglothin, Richard L. II

**Response:** The time required for such plans depends on funding, staffing levels and existing priorities.

- *It is legally and ethically incumbent on processes like this EIS to employ the latest advances in the natural and social sciences to measure current and predicted future trends, then*

*weigh costs against benefits before evaluating options and making recommendations.*

**Comment by:** Tennessee Conservation League

**Response:** The agencies have used current methodologies available in the natural and social sciences to conduct the impact analysis. The agencies agree that a traditional cost-benefit analysis may be helpful in comparing alternatives and making decisions. However, there are non-quantifiable factors that need to be considered in this and other land plan decisions. The agencies believe a land allocation plan is a type of action with many non-quantifiable considerations and will consider these in the decision-making process.

- *The DEIS and Plan fails to include much readily available information on the natural resources of the surrounding region. For example, the report "Managing Natural Resources – A Planning Guide for the Elk River Watershed," recently published by TWRA, TDEC, and TVA, and the databases on which the report was based, do not appear to have been used in the preparation of the DEIS and Plan. The maps in this report show regionally high vertebrate species richness, and regionally high species richness of breeding birds on Tims Ford lands. The land use/land cover map in the report also shows that the Tims Ford lands contain a significant proportion of the forested lands in the Highland Rim section of the watershed.*

**Comment by:** Tennessee Ornithological Society

**Response:** A variety of information concerning natural resources, including the reference cited, was used in developing the Affected Environment section of the EIS.

## **21. Restrict/Oppose Development**

- *Would like to have development severely limited on Tims Ford Lake to maintain the beauty of the lake, to limit pollution which is already affecting the lake, and preserve the quality of life in Franklin and Moore counties.* **Comment by:** Richards, Robert; Edens, Jim; West, James H.; Torrell, Carolyn M.; Walters, John J.; Duckett, Carol; Burgoyne, Caleb; Linton, J. K.; Kimzey, William

**Response:** The comment has been noted.

- *...citizens from across the United States have purchased lots in 11 subdivisions that were developed by TERDA. They have invested their life savings in many instances, and have purchased the lot and built homes in good faith. It is not now fair to decrease the value of their investment by flooding the market with dot-to-dot development. I support only a plan which would use Tims Ford lands to the best benefit of the public. This can only be accomplished by decreasing residential development and increasing protection of the lake environment that ultimately protects my water supply in Fayetteville. This all calculates to no more development at Tims Ford by the State and especially not by selfish private interest groups.* **Comment by:** Fitzpatrick, Peggy

**Response:** The comment is noted.

- *I feel the lake is near capacity and further development of residential and recreational uses will detract from its current attraction to visitors.* **Comment by:** Maglothlin, Richard L. II; Kaye, Gerald W.; Kurfman, Kathy

**Response:** This comment is noted for the record.

- *Please preserve the undeveloped areas. No more development on Tims Ford. I am strongly opposed to any further development of industrial and commercial property on Tims Ford Lake. I would like to see no further development on Tims Ford Lake. Large, uninterrupted tracts of land need to be preserved for posterity's sake.* **Comment by:** Ashley, Donna (Trail of Tears Association); Lipscomb, Jeff; Kistenbroker, John; Knight, Joseph C.; Gray, Frank; Walker, Bob; Owens, Danny; Phillip, Eddie and Connie; Reynolds, N. L.; Roper, Eric; White, James R.; Gobble, Bobby; Hoff, Donald; Bandy, Don F.; Miller, Dr. Monte B. (Tims Ford Council); Balsley, Bill; Tennessee Commission of Indian Affairs (Toye Heape); Cook, Ricky and Jill; Banks, Sylvia and Morton; Scarborough, J. R.; Williams, David; Medley, F. Glenn; Duckett, Carol; Sherrill, Andrew; Miller, Robert and Bonnie; Fisher, Gary E.

**Response: Under Alternative D, no new development is proposed. The agencies will not make a decision until after the Final EIS has been published. Alternative D will be given due consideration. Under Alternative B, 70 percent of the plannable lands would be allocated to Zone 3 (Sensitive Resource Protection) and Zone 4 (Natural Resource Conservation). Under Alternative B1, 71 percent of the plannable lands would be allocated to Zones 3 and 4. Under the various alternatives, 44 to 88 percent of the plannable lands would be allocated to Zones 3 and 4.**

- *Excessive development will have a polluting effect as I'm sure you are well aware. Hopefully the people having the final say are not politicians. Ideally, no further development will take place.* **Comment by:** Smith, Jerome D.; McQuinn, J. H.; Maglothin, Richard L. II

**Response: These comments have been noted.**

- *I fear unmanaged development could lower property values for current owners in the residential zones.* **Comment by:** Finney, John

**Response: New information regarding Economic Benefits and Costs has been added to the Final EIS. Any additional development would be managed using the mitigation measures identified in this EIS. A final plan approved by the TVA Board of Directors and Tennessee State Building Commission will identify parcels allocated for disposal. The Implementation Process will detail the method and conditions for disposition of the parcels. Such managed development is not expected to lower property values.**

- *We are concerned citizens who believe strongly the Tims Ford shoreline areas should not be developed. Conservation should be our guiding principle. The state is unlikely to ever create additional recreation and scenic preserves in the future.* **Comment by:** Martin, Elizabeth; Donaldson, Walter; Wilson, Bill

**Response: No new development is proposed under Alternative D. The agencies will not make a decision until after the Final EIS has been published. Alternative D will be given due consideration. Future uses of State Park land will be delineated through TDEC's strategic management plan for Tims Ford State Park. This process will evaluate and identify appropriate land uses within the State Park based on local needs and priorities.**

- *Slowly spreading out build-up along the waterlines may save this lake from becoming so environmentally spoiled as many others are.* **Comment by:** Larson, Buryl and Noveta
- *This public land should be used for the best interest of the public and not for the profit of a few individuals.* **Comment by:** Johnson, Henry E., Jr.; Lane, Margarete A.; Strohmeier, Clint; Taylor, Ewing; Taylor, R. E.; Wood, Adelle; Reeder, Robert; Steigerwaldt, Henry

- *I am very much in favor of your proposed conservation plan to preserve most of the public land around the lake. If development is allowed, I think it should be very limited with strict guidelines for its use. Comment by: Snyder, Barbara*

**Response: These comments are noted for the record.**

- *I favor limited development based on a plan to be developed and approved in advance that is controlled; lot size and sewage systems. I would be very leery of a plan-as-you-go approach. Comment by: Lacy, William A.; Gregory, Donald*

**Response: The Land Management and Disposition Plan is consistent with this philosophy and provides for controlled development.**

- *...all the bulldozing of trees and the clearing of land for new construction of homes and businesses that seems to be going for some time now in many places is APPALLING TO ME!! And it seems that few government officials care!? Now I read that these county officials and YOU [State Senator Jerry Cooper] want to allow this same thing to occur all around Tims Ford Lake!! Once this beautiful land is gone IT IS GONE! And ALL because these people want more money to spend. Therefore I oppose you [State Senator Jerry Cooper] in your ignorant stance on this matter! Our future generations need this land protected, and you can be on the right side of this issue by opposing this new land development around such a beautiful area. Comment by: Steigerwaldt, Henry*

**Response: The alternatives in the EIS represent a broad range of development and conservation options. Each alternative will be given due consideration in making the final decision.**

- *Whereas, the national organization of Trout Unlimited ... did unanimously vote in favor of the option for the least further future residential, commercial, or other man made development which could degrade the water quality and detract from the natural beauty of Tim's Ford Lake and the Elk River below its dam. Be it resolved, that the Elk/Duck River Chapter of Trout Unlimited urges these government agencies to decide in favor of the option of most limited future development of the Tim's Ford Lake shoreline. Comment by: Elk/Duck River Chapter of Trout Unlimited*

**Response: This comment is noted for the record. The natural beauty of the Elk River below Tims Ford Dam would remain unaffected under any of the alternatives.**

- *In our scoping comments for the Tims Ford Reservoir Land use and Disposition Plan, this agency stressed the importance of the protection of public recreational lands and wildlife habitat as the recommended primary policy determinant at Tims Ford Reservoir. The negative effects of urban sprawl are becoming well recognized as that phenomenon relates to losses in fish and wildlife habitat, prime farmland, and the aesthetic qualities associated with open space. As Tennessee continues to develop, decisions such as those made here on Tims Ford will be seen as critical to the question of whether adequate public recreation has been provided. These factors should be especially considered when considering the disposition of public lands on a popular reservoir. The Tennessee Wildlife Resources Agency cannot support alternatives which significantly develop the property for private purposes. Significant amounts of land (17%) and shoreline (19%) have already been 'committed' to private subdivisions. The ability of private residential development to expand cannot be argued as dependent on the sale of publicly owned reservoir property. We therefore do not support*

significant increases in land and shoreline allocation to this development component.

**Comment by:** Tennessee Wildlife Resources Agency (Aubrey D. McKinney)

**Response:** The comment has been noted for the record.

- We are particularly concerned with significant tracts on the lower (less developed) end of the reservoir designated for additional residential development. These are tracts 7, 14, 31, 36, and 46. Numerous other narrow shoreline strips of land also designated for additional residential development are not significant to the land base, but are significant in terms of the shoreline development which would be allowed by current SMI standards. The demand for future public use of Tims Ford Reservoir is well documented in this DEIS. It appears to follow, then, that all possible efforts should be made to preserve lands and shoreline for the public including maximizing consumptive and non-consumptive fish and wildlife purposes. The Tennessee Wildlife Resources Agency recommends that either Alternative B or D be altered in such a way as to allow tracts 7, 14, 31, 36, and 47 to remain open to public use. If shoreline strips of now uncommitted lands are bounded by committed subdivision land, we would not object to residential designation if SMI standards are strengthened. At a minimum, this should include a 100' vegetative buffer and boat docks restricted to community facilities only. **Comment by:** Tennessee Wildlife Resources Agency (Aubrey D. McKinney)

**Response:** As a result of public comment, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Under Alternative B1, the proposed allocation for Parcel 14 would be changed to Zone 4, Natural Resource Conservation. Justification for the allocation change are that the parcel is adjacent to sensitive resource area and natural resource conservation lands, is well forested, contains several small openings, which managed properly could provide exceptional wildlife habitat, is located directly opposite Tims Ford State Park to maintain the viewshed of the State Park. The other parcels suggested did not meet these characteristics. In cases where TVA owns more than 50 feet of shoreline above the 895-foot contour, this property would serve as a vegetative buffer. Any alterations would require a vegetation management plan approved by TVA. Typically, these areas have existing individual docks. Because some of the areas already have existing private docks, private docks would be consistent with the general character of the area.

- TVA and TDEC propose a 7-fold increase in the area and a 2-fold increase in the shoreline mileage of reservoir lands dedicated to residential development. Nowhere in the DEIS and Plan, however, is any need for increased lakefront housing described, aside from the opinions of a small minority of the people involved in your public opinion polling. The population growth rate, unemployment rate, and median house value in the affected counties are all below state averages. These data, and other information in the DEIS and Plan, fail to support the need for more lakefront housing. **Comment by:** Tennessee Ornithological Society

**Response:** As shown in Figure 2.1-1 of the Draft EIS, 17 percent of the existing project land is residential development and 19 percent of the shoreline is occupied by residential development. Under Alternative B, (Figure 2.2-2), 25 percent of the land would be residential and 24 percent of the shoreline miles would be residential. Demand for lakefront property for residential development purposes continues to be strong. Public Chapter 816 directed TDEC to dispose of TERDA's remaining land interests that were suitable for development.

- Because the DEIS and Plan propose a large increase in shoreline residential development, we request that the final EIS and Plan explain how TVA will stay within its self-imposed system-wide 38% cap on shoreline residential development. Where will the compensatory lands be made unavailable for residential development? **Comment by:** Tennessee Ornithological Society

**Response:** According to the Shoreline Management Initiative (SMI) Final EIS, the level of residential development on Tims Ford Reservoir would be determined by the Land Plan. The SMI Final EIS states: "TVA has long-standing contractual arrangements with other agencies, providing for economic development of project lands on Tims Ford, Bear Creek, Tellico, and Beech River Reservoirs. This determination will be made as land management plans are developed for these reservoirs. These plans will be prepared with environmental and public review and will take into account decisions made as a result of the FEIS to the extent allowed by terms and conditions of existing contracts."

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## 22. Support Development

- Additional development of the property adjacent to Tims Ford Lake would be acceptable if the developers provide the necessary infrastructure improvements in conjunction with the development. **Comment by:** Wallace, Jon Paul

**Response:** Your comment is noted for the record. Developers would be responsible for establishing the appropriate infrastructure for the property.

- I favor more development of Tims Ford, consistent with the area's ability to properly manage sewage. **Comment by:** Carrington, Ken

**Response:** Your comment is noted for the record.

- I believe that there should be more development on Tims Ford Lake. I am for keeping a balance between natural and development, but there is a lot more property that could be developed. I also believe that property owners, besides TERDA, TVA, and State, should be allowed to have docks and should not be forced to let "sensitive areas" grow up as "eyesores" between them and the lake. This is absolutely insane. **Comment by:** Mason, Keith

**Response:** The comment regarding additional development is noted. Under all alternatives, sensitive resources would be protected. The agencies would restrict vegetation management and water use facilities to areas allocated to Zone 7. Please be advised that in response to public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Please refer to the Final EIS for additional information about Alternative B1 and Zone 8, Conservation Partnership.

- The land in question should be divided up in a 50/50 split of private and public ownership. **Comment by:** Jackson, Scott

**Response:** Under Alternative C, the maximum development alternative, the agencies have designated all developable lands for private ownership. Adoption of this alternative would accomplish close to a 50/50 split. All the alternatives will be given due consideration in making the final decision.



- *The quality of development has been maintained at a high level—I appreciate this. I think some additional subdivisions could be accomplished without damage to the area.*  
**Comment by:** Kennedy, Mike; Hatchett, Nelson

**Response:** The comment is noted for the record.

- *Metro voices its support to allow and encourage development of additional land for taxable purposes within Moore County.* **Comment by:** Moore County Government
- *More land should be set aside for development than the proposed 938 acres.* **Comment by:** Warren, Davis; Moore County Government (Billy Thomas)

**Response:** These comments have been noted.

- *Continued development and the selling of current excess land for residential and/or commercial uses should be a huge priority of TVA, TDEC, and local officials.* **Comment by:** Stubblefield, Mike

**Response:** The comment is noted for the record. **Alternative B1 of the Draft EIS calls for allocating five new parcels for residential development. Six parcels would be allocated for residential development under Alternative B.**

- *It was the intent of the General Assembly to sell most of TERDA land to get it to profitable use and on county tax rolls. To do otherwise will fully create a tax burden on Moore and Franklin County tax payers. They are responsible for services without being able to collect property taxes on the land.* **Comment by:** Nolen, John S.

**Response:** **Public Chapter 816 does not state the “intent” of the General Assembly. Public Chapter 816 encourages TDEC to maintain any lands which are not deemed suitable for development as natural habitats. Residential development, if implemented, would create infrastructure costs but would also generate tax revenue. Additional information on Economic Benefits and Costs has been added to the Final EIS.**

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### **23. Support Residential Development**

- *I would like to see a few additional developments (residential) with private docks over the next few years. I am in favor of more land around the lake made available for residential development. I think the best use for the land around the lake area would be for residential use mostly with some of the areas used for conservation purposes. This would put property back on the tax rolls.* **Comment by:** Guess, Linda; Smith, Thomas E.; Sanders, Ted J.; Sons, Charles; Franklin County Government (Mark H. Dudley)

**Response:** The comment is noted for the record. **Alternatives B, B1 and C would accommodate additional development with provisions for community docks. Consistent with TVA’s Shoreline Management Initiative Final EIS, the agencies have proposed opening up additional lands on Tims Ford reservoir for residential development in order to be consistent with existing contracts and State legislation. However, to reduce the environmental impacts associated with residential development, we are proposing community docks rather than individual docks for water access. Please see the tax equivalent payment section on mentioned in Category 10, Dissatisfied with EIS Draft.**

- *I believe that land can be developed and the environment (all biomes) can be protected and improved at the same time. There is a demand for housing in Franklin County, which*

*translates to a demand for developable properties.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response:** Both agencies sought to balance the three competing land use interests (residential, recreation and conservation) in developing the preferred alternative. In response to public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Parcels in Franklin County being considered for residential development and access under this alternative totaling 640.1 acres, which is 78 percent of the total proposed residential access and development for the reservoir. An additional 32.4 acres and 8.5 miles of shoreline are being considered for lake access in Zone 8 (for both counties).

## 24. Hotels & Restaurants

- *...I do think we have more than enough unusual TVA property that somehow would allow this area to cultivate some very nice accommodations for a motel or two, maybe even some restaurants. I know the environment is important, but I feel that we can all work together if done correctly.* **Comment by:** Cambron, Kathy L.
- *Going along with our beautiful new golf course we could really use condos, a restaurant, and perhaps a nice lake side hotel.* **Comment by:** Bouwkamp, Doug
- *Would like to see some controlled new development around Tims Ford Lake. The lake could certainly support...some water accessible restaurants.* **Comment by:** MacDonald, Donald A., Faulk, W. R.
- *I do feel that a restaurant/lodge type place is needed (maybe at State Park), not just a deli sandwich place but rather exclusive dining with access to lake, willing to pay membership fee to have one in the area.* **Comment by:** Fentress, Dr. & Mrs. Vance

**Response:** These comments have been noted for the record. Under Alternatives B, B1, C and D, parcels allocated to Zone 6 (Recreation) and State Park lands would be suitable uses for these type facilities (e.g., hotels, restaurants, lodges, etc.).

## 25. Recreation

- *I would like to see a partnership formed in the Tims Ford area between local hiking, biking, and horse groups to provide and maintain multi-purpose trails in the areas not planned for residential development similar to what has been done at Cordell Hull Lake.* **Comment by:** Carter, W. Chris

**Response:** Both agencies have programs in place that encourage and assist with partnerships for these purposes. For more information, please contact the TVA Wheeler Watershed Team at (256) 386-2560 and the Tims Ford State Park at (931) 962-1184.

- *There is no need to expand the Tims Ford Dam reservation boundary – leave as is – Remove all around dam reservation “no hunting” TVA signs. People have been hunting that land by federal and state laws without problems for over 20 years. Also, these No Hunting Signs have been placed on lands proposed for dam reservation expansion.* **Comment by:** Burgoyne, Caleb

**Response:** The dam reservation is not being proposed for expansion. The current boundaries indicated for Parcel 1 are the original project boundaries. The existing boundaries were retained because of the history of rim leakage at Tims Ford Reservoir and

**its potential for future adverse effects to the property. It is standard TVA practice to prohibit hunting near dams for safety and security reasons. TVA personnel periodically measure leakage and inspect the rim along the western slope. TVA restricts hunting on the Tims Ford Dam Reservation because of the potential danger to personnel. The newly posted signs are due to a recent construction project to repair rim leakage for the Tims Ford Dam.**

- *There are not enough camp sites around the lake area for people who would like to fish during fishing tournaments. It would be desirable to have more public swimming beach access. We need to develop more access areas with room for truck and trailer parking. Lately, the demand for space at Tims Ford State Park and the marinas has been too great. Remaining undeveloped lands surrounding Tims Ford Lake should be kept as open spaces to provide recreational opportunities to the general public. It would be acceptable to provide public facilities that enhance those recreational opportunities. It would be desirable to have more public swimming beach access. We need to develop more access areas with room for truck and trailer parking. Lately the demand for space at TFSP and the marina has been too great. Comment by: Mocierbacher, Josef; Rouse, Marcia; McAnally, Ed; Strohmeier, Clint; McAnally, Ed; White, James R.; Maglothin, Richard L. II*

**Response: The comment is noted. Adoption of Alternatives B, B1 and C would accommodate expansion of existing recreation areas. Under these two alternatives, there are parcels allocated for such compatible uses.**

- *We love the lake and wildlife, and recreation it provides. Comment by: Dammann, Lisa and David*
- *...Please to see a portion of Dry Creek zoned for recreation. If the county and city recreational council members could work together, they may be able to develop a successful plan for a community recreational center. Comment by: Beitzer, Cheryl*
- *I am a lifetime resident of Franklin County and presently live in Bell Acres Subdivision on Tims Ford. My wife and I have two children and all of us love Tims Ford. We fish, ski, swim, boat, and enjoy the beauty of Tims Ford and we are very thankful to TVA for providing us with this wonderful resource. I consider myself a moderate conservationist and in no way want Tims Ford damaged/polluted. Comment by: Spaulding, Charles*

**Response: These comments have been noted for the record.**

- *Why not concentrate on developing the lake into a world class fishery that in turn would create revenue from visiting fishermen? Comment by: Maglothin, Richard L. II*

**Response: The Plan calls for a combination of residential, natural resource conservation, formal and informal recreational uses. All alternatives identify areas for formal and informal recreation uses, including fishing.**

- *I hope that primitive camping will be allowed "off the beaten path," with the understanding that it would be done in a manner respectful and protective of the environment. Comment by: Ayers, Floyd*

**Response: Camping on state-owned lands is limited to designated camping areas. Generally, camping is currently allowed on undeveloped TVA public lands. However, stays may not exceed 14 days unless otherwise posted.**

- *Without a doubt, expansion of the State Park and Devils Step campground are the lands that need to be developed for campers. However, Devils Step is the parcel that needs developing immediately.* **Comment by:** Bean, Raymond H. (Franklin County Commission)

**Response:** After a final Land Management and Disposition Plan is approved by the TVA Board of Directors and the Tennessee State Building Commission, any improvements to the recreational areas incorporated into Tims Ford State Park will be addressed in the strategic planning process for the Park.

- *Concerning existing access areas, bootleg camping is a problem at Moore County. Campers at some of the lake access areas do not have adequate sanitation facilities and pose health hazards. Not to mention the fact that they take up room for trucks and trailers needing to utilize the ramps. Squatters need to be routed to formal park camping spaces where they can be policed and made to pay camping fees.* **Comment by:** McAnally, Ed

**Response:** As stated in the response to a previous comment, camping on state owned property is limited to designated camping areas. Undeveloped TVA lands complement developed recreation facilities by offering opportunities for informal and dispersed recreation. Generally, the public may use undeveloped land for activities such as boat landing, shoreline fishing, hunting, swimming, hiking, nature observation, and primitive camping. TVA Resource Stewardship has guidelines for recreation use of undeveloped TVA lands. The following regulations apply to informal use of TVA lands unless otherwise posted:

1. Camping stays are limited to 14 days.
2. Consumption of alcohol on undeveloped TVA land is governed by local ordinances unless otherwise posted.
3. Cutting, damaging, pulling up, or driving nails into trees, shrubs, or other vegetation is prohibited.
4. Hanging lanterns on trees is prohibited. (The heat from the lantern will eventually kill the tree.)
5. Leaving trash or litter on TVA property is prohibited.
6. Recreational use of motorized vehicles on undeveloped TVA land, including those within reservoir drawdown zones, is prohibited.
7. Campfires must be completely extinguished before leaving the area.
8. The operation or use of any noise-producing device in such a manner as to unreasonably disturb, annoy, or endanger persons is prohibited.
9. The excavation, removal, damage, alteration, or defacement of archaeological resources is a felony offense prohibited by federal law.
10. Hunting and fishing are permitted in accordance with applicable federal, state, and local laws. Unless posted otherwise, hunting is prohibited on TVA dam reservations, power plant reservations, and power substations. Hunting is also prohibited in developed recreation areas such as campgrounds and day-use areas and wildlife sanctuaries.

TVA conducts maintenance such as litter cleanup at sites that receive regular informal use. Cooperative partnerships with other public agencies, citizen groups, or other stakeholders are also encouraged to help maintain areas used for informal recreation.

Some undeveloped areas that receive heavy informal use may become problems as a result of adverse impacts on the land and shoreline (soil compaction, erosion, damage to vegetation), unsanitary conditions, or persistent unruly behavior. Options for addressing such problems may include:

- Increased effort to provide basic maintenance such as litter pickup.

- **Seeking partnerships with other agencies or citizen groups to help maintain areas or correct undesirable conditions.**
  - **Seeking support from TVA Police and/or local law enforcement agencies to control undesirable activities.**
  - **Establishing and posting use restrictions to address specific issues or problems such as night use, discharge of firearms, dumping of household trash, etc.**
  - **Physical closure of areas to restrict public use.**
- *As private docks proliferate with residential development, a de facto privatization of the associated shoreline occurs detracting from the quality of the fishing experience. Demand is also increased in developed areas for no-wake zones which interfere with boating activity.*  
**Comment by:** Tennessee Wildlife Resources Agency (Aubrey D. McKinney)

**Response: The comment is noted for the record. We agree that recreation opportunities for bank fishers could be diminished by the presence of residences on property adjoining the shoreline, but boat fishing would likely be improved by the presence of additional underwater dock structures. The agencies are willing to work with TWRA to identify appropriate no wake zones.**

- *Recreation – Under the category Recreation, Table 2.3-3 states that there would be “297 acres available for recreation.” Will TVA institute any controls to limit various pollutants introduced by recreators such as limiting the use of jet skis (which have substantive air emissions) for the area, number of hours per person, etc.?* **Comment by:** U.S. Environmental Protection Agency (Heinz Mueller)

**Response: Section 3.10 of the Draft EIS (Table 3.10-1) indicates there is adequate surface area per boat from a safety standpoint. Additional information has been added to the Final EIS concerning air emissions from jet skis.**

- *Personal watercraft exclusion zones—In this last decade, personal watercraft use on Tennessee reservoirs has exploded. These watercraft, while providing recreational opportunities for many, often negatively impact recreational opportunities for those seeking more serene settings. Public concern over the proliferation of watercraft has also steadily grown. In response to this concern and the need for areas that provide recreational opportunities incompatible with personal watercraft use, the League recommends that Kitchens Creek (encompassed by Parcel 15), Tims Ford Reservoir Cove (encompassed by Parcel 41), and Little Hurricane Creek (encompassed by Parcels 34 and 37) be designated as No Personal Watercraft Zones. We believe that, if designated as recommended, these inlets could provide exceptional recreational opportunities for several categories of reservoir recreational users.* **Comment by:** Tennessee Conservation League

**Response: Neither TVA nor TDEC currently has regulations in place to address this issue. Personal watercraft impacts are discussed in the Section 3.10 of the EIS as part of the discussion of cumulative recreational boating impacts. TWRA is responsible for regulating watercraft operations on State waters.**

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## 26. Marinas

- *Some land should be sold to develop another marina—Holiday marina is not viable competition to Tims Ford marina because of accessible low water months. I would like to see some controlled new development around Tims Ford Lake. The area could certainly support several more marinas.* **Comment by:** MacDonald, Donald A.; Silver, Robert C.

**Response: Under Alternatives A, B and C, consideration is given to parcels suitable for additional marinas, as well as expansion opportunities for the existing marinas.**

- *Although your study indicates there is only one marina on the lake, someone overlooked Holiday Marina, the oldest marina on the lake.* **Comment by:** Edens, Jim

**Response: The Parcel description for Parcel 30 includes the Holiday Marina. The Holiday Marina is also mentioned in Sections 3.8 (Land Use) and 3.10 (Recreation) of the EIS.**

- *Consideration should be given to development of a marina on the Winchester end of the lake in order to reduce congestion around the existing Tims Ford marina.* **Comment by:** Moore, Mac

**Response: Proposed parcel allocations under Alternatives B, B1 and C include recreation allocations (i.e., Parcel 76) compatible with this comment.**

## 27. Wildlife/Fish

- *Due to the loss of farm land in our area for residential purposes, I see no need to intrude on what is left of wildlife habitat and other natural resources. Least impact please.* **Comment by:** Carothers, Kathy

**Response: Your comment is noted for the record.**

- *We love the lake and the wildlife, and recreation it provides. Please keep Tims Ford a clean and enjoyable place to raise our children and grandchildren. There are quite a few species of animal that use the lake as their home. Every time I go fishing, I see turkey, deer, raccoons. I know these animals are not the only animals that reside on the lake but they are the most prevalent.* **Comment by:** Dammann, Lisa and David; Maglothin, Richard L. II
- *Since I grew up in Franklin County, most of our wooded areas have fallen victim to development and destructive forestry practices, which have eliminated much of the wildlife habitat and most of the mature forests. It is essential to the Native tradition to have wild and natural places to visit and to hunt and fish in order to maintain personal harmony and to teach our children.* **Comment by:** Ayers, Floyd
- *Too many houses now, please give wildlife a chance.* **Comment by:** Bandy, Don F.

**Response: These comments have been noted.**

- *More development will result in declining fish population in particular and a reduction in diversity of all species in general.* **Comment by:** Pollock, Wayne

**Response: A decline in fish population is a natural occurring sequence in any newly formed body of water and is not necessarily due to development. Benthic (i.e., bottom-dwelling) organisms in a newly formed lake are an important link in the life cycle of aquatic organisms in the lake. Bottom formation in a newly formed body of water progresses rapidly due to pre-impoundment vegetation and associated organic debris providing food sources for these organisms. The decomposition of these materials, combined with erosion-redeposition processes along the newly formed shoreline, produce rapid changes in the benthic community. Unless some natural vegetative growth occurs, the fish population will exhibit a gradual decline from that present when the reservoir was new.**

**This will continue until a balance is reached where the reservoir is providing the nutrients necessary to sustain the resident aquatic community. A reduction of species diversity is also a natural occurrence as a reservoir gets older, as siltation covers some habitat types necessary for certain species of fish, and benthic organisms are depleted and food sources disappear. The agencies feel that with the proposed mitigation measures, the impacts to fish population and diversity of species would be insignificant.**

- *I would like to see Tims Ford Lake restocked with gizzard shad. I feel the reason they have been depleted was because in the early years of the lake there was too much fluctuation of the water level at spawning time. Would like to see study on food source for rockfish and bass, such as the gizzard shad. I reside on Tims Ford at the mouth of Winchester Springs Branch. Comment by: Gregory, Donald; Voorhies, Jessie W.*

**Response: Stocking is the responsibility of State agencies and is performed only as necessary. Water level fluctuations in Tims Ford Reservoir are dictated by need for flood control. In recent years, TVA has tried, to the extent possible, to hold water levels as high as possible during spring spawning season while minimizing the perils of flood waters to downstream landowners.**

- *Wildlife habitat can be protected by safe zones and access avenues. Comment by: Franklin County Planning and Zoning Department (Mark H. Dudley)*

**Response: We agree. Much of the land allocated to Zone 3 (Sensitive Resource Management) and Zone 4 (Resource Protection) serves as safe zones to protect sensitive natural resources and to provide travel corridors for wildlife.**

- *Beautiful subdivisions, nice recreation areas could all be built by private industry if you would just sell some of the land. It will not harm the natural beauty or destroy the habitat to develop this land. Building around the lake doesn't harm the fish or land wildlife because they have plenty of room. Comment by: Hatchett, Nelson*

**Response: Shoreline development of any type will likely result in the removal of some shoreline vegetation. Activities that usually directly impact fish and wildlife include activities such as road construction, clearing vegetation for water use facilities, and converting forests to lawns. These activities can lead to changes in species composition and structure of shoreline vegetation and can increase the amount of pollutants entering the reservoir. These can significantly affect terrestrial and aquatic life. Alternatives B and B1 allow some additional residential and recreation development in addition to the existing development without compromising the conservation and protection of terrestrial and aquatic resources.**

- *The endangered species are of no importance—bats, snakes, and frogs. Comment by: Sons, Charles E.*

**Response: The comment has been noted. State and Federal Agencies are required by the Endangered Species Act to protect federally-listed species and their habitats. Consequently, the agencies have assessed potential impacts of each alternative on state- and federally-listed species.**

- *What is the cost of habitat fragmentation in terms of wildlife loss? If wildlife are lost, what would be the impact to local economies? As land becomes more and more developed, what will be the value of a pristine view in terms of tourism? At what rate can this generation*

*borrow natural resources from future generations?* **Comment by:** Tennessee Conservation League

**Response: Some of these issues deal with intangible resources, and potential effects cannot be quantified easily in conventional economic terms. A weighing and balancing of risks and benefits is the purpose of this EIS and the associated decision-making process. A range of alternatives that would impact these resources are being considered by the agencies.**

- *As noted above in #4, the DEIS and Plan omits much relevant information on the land being planned, and, in addition, it contains very little information on the natural resources of the other reservoir lands, and of the surrounding area. Consequently, it is difficult to determine the significance of many of the anticipated impacts. There is, for example, virtually no information on regional trends in forest resources and game and non-game wildlife populations.* **Comment by:** Tennessee Ornithological Society

**Response: Additional information concerning forest resources and wildlife has been provided in Section 3.5 of the Final EIS.**

- *Section 3.5.2 notes that 3 of the alternatives would impact terrestrial ecological resources. It also states (p. 3-26) that the impacts under the preferred Alternative B could be reduced by restrictions on home size and vegetation management. We agree with this conjecture. However, no such restrictions are proposed in the DEIS and Plan, and based on our observations of recent TVA actions on other reservoirs, we believe neither TVA nor the State have any intentions of implementing such stricter standards. Therefore, we believe that Alternative B, as well as Alternatives A and C, would result in unacceptable, unneeded, regionally significant impacts on public lands and terrestrial ecological resources.*  
**Comment by:** Tennessee Ornithological Society

**Response: TDEC and TVA will identify development restrictions during the implementation phase of the adopted alternative. Both agencies feel reasonable mitigation measures have been identified that can be implemented. These proposed mitigation measures are listed in Section 3.18 of the Final EIS.**

## 28. Unfair Fees

- *My taxes are higher because I live on the lake, and I pay taxes on my dock and sea wall improvements made to the land. This is unfair. I think in the case of these areas, adjustments have to be made to protect the homeowner.* **Comment by:** Simpson, Norman W.

**Response: Your comment is noted for the record. Tax rates and appraisals are controlled by the local government.**

- *I was told at the meeting that you were reinstating the land use fee formerly charged by TERDA of \$25 per year. This is unfair...there is no fairness to property owners displayed in your proposal.* **Comment by:** Simpson, Norman W.
- *The new land use plan must reflect a sense of fairness to the existing landowners. Land owners in subdivisions like Lost Creek Heights and Heatherwood who do not own the land down to the waterline should be permitted to pay a nominal annual rental fee or be allowed to purchase the land at a nominal price.* **Comment by:** Price, Earl A., Jr.



**Response: Please refer to the responses in the next section (Comment Category 29 - Dock Access/Residential Access). Approvals of existing permitted water use facilities will continue to be honored. TVA is currently looking at various alternatives for adjoining landowners to obtain necessary landrights. TVA normally conveys land and land rights for public purposes. Lake access rights will be made available to eligible property owners, that own land adjoining TVA shoreline property similar to property patterns in Lost Creek Heights and Heatherwood subdivisions.**

## **29. Dock Access/Residential Access**

- *The four alternatives offered in the DEIS have one common thread which the members of my family find particularly disturbing. There are hundreds of back lying property landowners along the shoreline which under the preferred "Alternative B," would not be allowed lake access or permitted water use facilities. These landowners are located next to shoreline labeled Zone 4, "Natural Resource Conservation." Under ANY Alternative, almost all of the back lying property owners will **LOSE** rights for private water use facilities primarily because parcels of 20 acres or less, and those acres not accessible from public land were not considered to be developable! These rights to obtain lake access were available to these landowners right up to the point that TERDA had to be shut down in 1996. Since that time, any resident requesting a permit for a boat dock was told of a moratorium. It is a further insult to those of us hundreds of property owners like my family, to arbitrarily allocate portions of the TVA/TDEC property for NEW residential development. The Zone 7, includes 122 acres with 171.1 miles of shoreline and will grant lake rights to the NEW subdivisions. However, NONE will be granted to existing landowners who have been waiting for the moratorium to be lifted. **Comment by:** Butchko, Tom*

**Response: Alternative B has been modified and is presented as Alternative B1 in the Final EIS. Alternative B1 reflects changes resulting from public comments and modifies the management strategy on certain specific lands previously allocated to Zone 4 in the Draft EIS. Certain public lands will be identified and allocated to a new Zone 8, Conservation Partnership. Property owners with land abutting these new Zone 8 areas will be given the option to partner with TVA in an effort to manage and sustain the integrity of the reservoir shoreline. Requests for community water use facilities will be considered. Please refer to the Final EIS for a more detailed description of Zone 8 and for the definition of community water use facilities. Also, please see the response the last comment in Category 9 (Satisfied with EIS Draft).**

- *What's the point at living on the lake? I think it is a shame people are denied the pleasure of having a dock on their property when it joins the lake. No one should be discriminated against because they own land in a private development. **Comment by:** Burch, Wayne and Shirley; Perry, Alton; Pastorial, John R. (Golf Shores Subdivision); Parrish, James; Sansom, Herman,*
- *People should have the right to docks if their property joins TVA and the lake. They have worked hard for this right. **Comment by:** Pardin, Edith*
- *I understand that we must protect our environment, but I think you are going a little too far when property owners on the lake are denied the right to have a dock. Some control of water use facilities is necessary, but a total denial of water use to provide land owners is too dictatorial. This land was taken for use for the general benefit of the public and by controlling the water use with such a heavy hand is not what the original mandate of the Tennessee State government and TVA agreed to do. I believe this issue should be reconsidered and a plan implemented that would allow docks with certain restrictions that*

would enhance the beauty of the lake as well as allow the citizens of Franklin county the opportunity to enjoy Tims Ford Lake. **Comment by:** Hill, Sue (Franklin County Commission); Stubblefield, Mike; Sansom, Lanelle; Singer, David A., Jr.; Smith, Edgar D.; Kennedy, Mike; Mason, Keith; Jackson, Scott

- *I see no reason for denying people the privilege of having docks on their property. Why pay such a high price for property and then be denied the right to enjoy it.* **Comment by:** Lowery, Kay; Smith, Thomas E.; Rowland, Mike; Williams, Leon; Sanders, Frank; Moore County Government (Billy Thomas); Mercer, Ronald D.; Carden, Jim
- *I do feel that future developments would benefit the community and the lake if you allow docks. The land owners do not want them because they want their values to be higher, but I feel this would create a problem for Tims Ford Lake in the future because people will not be able to afford those higher prices and will stop visiting this area and move on to another area to fish and enjoy the lake.* **Comment by:** Peck, Pam; Gipson, Shirley; Guess, Linda; Shasteen, A. L., Jr.; Hansen, John and Gail
- *I object to the limitation placed upon water use facilities along lake frontage acreage of potential residential use and where the back acreage is of potential residential use. Preserve and maintain the forested/vegetative buffers with limitations and regulation on water use facilities. Water use facilities and forested shorelines can be compatible uses. With reasonable, defined, and enforced restrictions on tree removal, dock size limitation, mandatory erosion control procedures during construction and erosion control practices, and limits on the dock densities, both uses could be understandably accommodated and coexistent. All future dock locations should be regulated, with direct contractual costs to the owner of the restrictions and limitation listed above.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)
- *How is it that most of the high rent subdivisions have their own launching ramps? Most have their own personal boat storage. Also, all of these areas have a gate with locks on them. Who pays taxes on these properties: Hopkins Point, Leatherwood, Pine Bluff, Ridgeville?* **Comment by:** Baker, Butch
- *Allow docks for people owning waterfront not additional slips for marinas—look at the mess.* **Comment by:** Simms, James R. (Tims Ford Council)
- *All we want is what we were promised, which was lake access and docking privileges in compliance with the other land-owner rights during the time that TERDA was in effect.* **Comment by:** Ingle, Donnie A. ; Smith-Howard, Melanie; Smith, Bobby Ray
- *We are asking for authorization to construct a dock either from the initial TVA rules at the time of purchase (1971, 1973) or any other approved means. Since construction of numerous docks is approved on property yet to be sold by the State of Tennessee to new land owners, it would be unjust to deny this same privilege to land owners of 26 years.* **Comment by:** Smith, Martha P.
- *With the limited additional residential development (Zone 7), allow individual docks. Private docks are preferred. These areas will not adversely affect the lake or the environment.* **Comment by:** Hurst, Hugh; McClure, Larry D.; McAnally, Ed; Shasteen, A. L., Jr.
- *An issue of great importance to many lake dwellers, as well as developers, is boat docks, which I agree is a good thing. It gives access to the lake for many back lot owners. I do take issue with the elimination of individual docks. This was not TERDA's intention, and I feel some allowance should be made to give lake access to those folks on waterfront property. Minimum standards could be adopted to allow for safety and consistency of the structures.* **Comment by:** Franklin County Government (Montgomery F. Adams, Jr.)
- *Clustered floating docks look like a great idea to conserve shoreline in future development of possible for non-TERDA existing developments. They too would increase property values. Recommend TVA use a dock-a-minimum concept and sell slips rather than building too much community pier for later TVA maintenance and expense.* **Comment by:** McWhorter, Jim

- *Private boat docks should not be allowed as the plan recommends.* **Comment by:** Gray, Frank; Pollock, Wayne
- *What will be the policy for additional building sites and docks?* **Comment by:** Martin, Bill
- *Highland Acres Subdivision was started and almost completed when TVA took over in April of 1996. We had our final in May and finalized in June 1996. It is located on Long Branch of Tims Ford Lake. We have asked to be able to get boat docks. We think we should be grandfathered and also we ask for the use of the abandoned road beside Highland Acres which is the end of Highland Ridge Road. We were not mentioned in the Draft at all. We were not consulted at all. We have been asking since March 1996 for the above.*  
**Comment by:** Wright, Jerry and Joann (Highland Acres Subdivision)
- *Metro encourages and supports the modification of the TDEC plan to grandfather one boat dock per plot for homes that have been in existence for more than six years.* **Comment by:** Moore County Government

**Response:** All these comments have been noted for the record. Under all the alternatives, private water use facilities would continue to be permitted in TERDA-developed subdivisions. Deeded lake access rights were conveyed with the purchase of the lots in TERDA subdivisions. Permits issued by TERDA for water use facilities in private subdivisions without deeded lake access rights will continue to be honored (i.e., 'grandfathered'). TVA is currently examining various alternatives for these adjoining landowners to obtain the necessary landrights. In both situations, approvals of future water use facilities will be considered. However, water use facilities would not be permitted in areas where it has been determined that such facilities could negatively impact sensitive resources or in cases where there are other land use commitments. Permits for previously-approved facilities (e.g., docks) in Zone 4 areas would be 'grandfathered.' There would be no individual water use facilities for parcels allocated for new development (i.e., Parcels 7, 31, 36, 46, and 51).

Parcels identified for new residential development must be large enough to support subdivisions, must not be landlocked by backlying properties, must be near existing utilities, and must be capable of being developed without adversely affecting sensitive and natural resources. Both agencies believe that the amount of residential development determined by the proposed plan would maintain a balance between natural resource conservation and development. New residential development in Zone 7 would not be allowed to have private water-use facilities. However, TVA may approve community docks in these areas.

As stated in responses to previous comments, Alternative B has been modified and is presented as Alternative B1 in the Final EIS. The management strategy on certain specific lands allocated to Zone 4 in the Draft EIS has been altered under the modified alternative. Specifically, within Zone 4, there are numerous locations where the public land above the 895-foot contour is very narrow. The narrow strips do not provide a sufficient conservation buffer to protect water quality, conserve shoreline habitat, protect shorelines from long term erosion, or retain shoreline aesthetics. These specific areas will be identified and allocated to a new zone -- Zone 8, Conservation Partnership. The primary objective within this zone is to establish a wider shoreline buffer zone through specific conservation considerations and shoreline protection partnerships with the adjacent private property owners. Please refer to the Final EIS for a more detailed description of Zone 8, Conservation Partnership, and for the definition of community water use facilities.

TVA and TDEC believe that unrestricted construction of individual private water use facilities on Tims Ford would upset the balance between natural resources and development, a feature that makes the reservoir so attractive. Likewise, indiscriminate residential access on the majority of the shoreline could have significant adverse affects

**on local natural resources, including wildlife, visual quality, aquatic resources, wetlands, etc. Neither TVA nor TDEC exercise control or jurisdiction over the amount of development that may occur on backlying private properties. To protect sensitive natural resources, TVA and TDEC propose to limit residential access across public lands as a means to reduce potential impacts from adjacent residential development.**

- *Metro opposes the current TDEC plan regarding private water use facilities in Moore County and encourages an expansion of that use; Comment by: Moore County Government*

**Response: To reduce the potential environmental impacts associated with residential development, we are proposing community docks for water access rather than granting deeded access rights to individual landowners. Please refer to the Final EIS for a description of Alternative B1 (a modification of Alternative B) and a new allocation zone – Zone 8, Conservation Partnership.**

- *I agree completely with all comments regarding private water use facilities and the adoption of community docks in new residential zones. Comment by: Robbins, Steve*

**Response: Your comment has been noted.**

- *Residential Access areas designated in parcel descriptions as numbers 5, 17, 21, 25, 38, 48, 54, 56, 84A, and 84B should be deeded to adjoining property owners so land would be put on tax rolls of respective counties. Comment by: Kirk, Larry D.*

**Response: This public land will remain in TVA ownership to serve as a shoreline buffer. TVA is examining various alternatives for adjoining property owners to obtain necessary landrights for permitted water use facilities. Please see the discussion of Alternative B1 and Zone 8 in the Final EIS.**

- *There seems to be no one in control over residential development on the lake at the present time. Shorelines are cleared to the water – docks are installed. Has there been any consideration for landowners who have lots in deeded access TERDA subdivisions who watch private land owners treat the TVA shoreline as if they owned it? I feel that we paid considerable sums for this deeded access and land use rights. And these people are having a free ride. Comment by: Edens, Jim*

**Response: TVA will continue to monitor the reservoir shoreline to detect any violations or encroachments on TVA property. TVA works with the responsible parties to correct damages.**

- *Grandfathering – In addition to the 6,453 acres of plannable lands, current land use includes 1,519 acres already sold to other parties. We assume such land includes waterfront property sold by TVA to private citizens for residential development. We further assume that TVA nevertheless maintained some general control over these lands, but that their management is grandfathered relative to new TVA management policy such as discussed in the TVA SMI EIS. In an effort to maintain the water quality and habitat value of the Tims Ford Reservoir, we suggest that any such grandfathering ultimately have an end if grandfathered practices (shoreline maintenance, etc.) are substantively degrading the reservoir. Comment by: U.S. Environmental Protection Agency (Heinz Mueller)*

**Response: Under all alternatives, TVA would ‘grandfather’ existing permitted private water use facilities. TVA decided to do this valley-wide as a result of the Shoreline Management Policy decision in 1999. For those ongoing permitted activities that are affecting water quality and shoreline habitat, incentive programs have been established to encourage**

**shoreline stabilization and proper shoreline vegetation management. TVA is encouraging shoreline protection easements to further minimize ongoing and potential impacts.**

**Water quality of Tims Ford Reservoir is monitored as part of the TVA Reservoir Vital Signs Monitoring Program. Currently, residential permitting is not adversely affecting water quality in the reservoir. When approving private water use facilities or land use actions related to new subdivisions, TVA will consider the impacts of these additional activities on water quality. If adverse water quality thresholds are reached, such permits would be denied or conditioned to avoid additional adverse impacts.**

### 30. Agricultural Issues

- *By not speaking of them at all, it appears to me that total elimination of agricultural leases is the plan. Let's face it, farmers and ranchers were here before the lake.*  
**Comment by:** Franklin County Government (Montgomery F. Adams, Jr.)
- *I would like to see that land that is used for pasture left alone...I think it is a shame that I have to pay rent on land that used to belong to me to be able to use it. Please leave the farmers land to farm.* **Comment by:** Sells, Minnie Sue; Scarborough, J. R.
- *Perhaps some land might be made available to be leased for agricultural purposes.*  
**Comment by:** Murphy, Frank; Shasteen, A. L., Jr.

**Response: Language has been added to Section 3.8 of the Final EIS and to the Land Plan to clarify the use of agricultural licenses during the extension period and after the plan has been approved.**

- *The sentiment of all the TVA and TDEC representatives seemed to be that current use of rented land for cattle grazing was detrimental to lake quality and not a wise use of this resource.* **Comment by:** McCain, Phillip; Yarbrough, Tommy

**Response: Direct access of livestock to the water can cause potential water quality and erosion problems. TVA's policy is addressed in comments regarding Water Quality and Erosion. TDEC currently administers agriculture licenses on Tims Ford.**

### 31. Safety

- *We already have an overcrowded lake, to the point that boat traffic is very dangerous on summer weekends and holidays. Who will be responsible for increased boat accidents and nasty water?* **Comment by:** Jackson, Ray D.; Wilson, Bill; Burgoyne, Caleb; Linton, J. K.; Champion, Archie J., Jr.; Howell, Toby; Crossno, Dawn
- *I do not believe your study realistically considered the recreational load on the lake during any summer weekend. As it is now, you can not go out in a small boat on these weekends because of the chopped up water and volume of traffic on the lake. To add to this problem is simply not fair to current home owners.* **Comment by:** Champion, Archie J., Jr.

**Response: These comments have been noted. For more information, please refer to Section 3.10.2 in the Final EIS. During high use periods such as weekends and holidays, some overcrowding could occur. TWRA regulates watercraft operation on State waters.**

- *A little more attention should be given to keeping hazard markers in place.* **Comment by:** Smith, Edgar D.

**Response:** There are boat hazard markers at the following locations:

- Elk River Mile 145.2L; Peninsula at end of Fanning Bend (2 danger pipes)
- Elk River Mile 160R; Island at THE LOOP (2 finger boards and 5 danger pipes)
- Boiling Fork Creek Mile 1.5R; Peninsula downstream of Red Mill Bridge (3 boat hazard buoys)
- Lost Creek Mile 3.3R; Jack Daniel's Distillery Water Intake (2 boat hazard buoys)

**If hazard markers are missing, the public should contact the Wheeler Watershed Team Office (256/386-2560). The hazard markers are inspected once a year by TVA River Operations, Navigation and Structures Engineering, and replaced as needed or when requested by the Watershed Team. Each area is marked to prevent damage to recreational watercraft.**

- *I believe there should also be speed limits posted and jet skis tagged and taxed. I agree boating has increased and for this would like to see inlets like Cooper B ranch and others with houses and docks have no wake zones. There is enough open water for personal water craft and skiers without using populated area. It is possible to fish, swim or just sit on your dock. Why should these people have all the rights? Let's make it safe and enjoyable for everyone.* **Comment by:** Rouse, Marcia; Faulk, W. R.
- *Need enforcement of the jet ski laws, especially for children. They are a nuisance and a danger to swimmers and fishermen.* **Comment by:** Torrell, Carolyn M.
- *I agree boating has increased and for this would like to see inlets like Cooper Branch and others with houses and docks have no wake zones. There is enough open water for personal watercraft and skiers without using populated area. It is possible to fish, swim or just sit on you dock. Why should these people have all the rights? Let's make it safe and enjoyable for everyone.* **Comment by:** Faulk, W. R.
- *My second comment concerns boating congestion and boating safety in the same 6.5 miles between Elk River mile 145 and Elk River mile 138.5. Tims Ford Marina located just north of Elk River mile 142.4 has 350 boat slips of which 95% stay rented the year round. This number of boats added to 354 residential boats makes summertime navigation between Elk River mile 138.5 and Elk River mile 145 truly a great adventure on holidays and weekends due to the boating congestion in this area. One reason for the congestion is there are only three places on the lake where you can purchase fuel at a boat dock. They are the State Park dock, Tims Ford Marina and Holiday Marina. The State Park and Tims Ford Marina are located in close vicinity of each other within the 6.5 mile high residential/high boat density area between Elk River mile 138.5 and mile 145.* **Comment by:** Otterbein, W. G.
- *Highly object to item 14, for safety reasons. It's right in between the narrows, Cline Ridge, Leatherwood, and Heatherwood and right across from the state park. You got so many boats in there now. I can't see any way to put some more houses in there with more boats—it's so crowded up there on the weekends—it's dangerous.* **Comment by:** Burgoyne, Caleb

**Response:** Please see Section 3.10 of the EIS for recreational boat congestion projections. TWRA regulates watercraft operation on State waters, including the designation of no-wake zones. Jet skis are required to be registered.

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### 32. Taxes, Revenue, Socioeconomics

- *I think it would be fair and respectable if some of the land could be donated to the county and the benefits could go towards our educational fund and towards a new high school, in each of the surrounding areas.* **Comment by:** Rouse, Marcia

**Response:** Each of the counties in the Elk River watershed will benefit from the sale of the properties in the Tims Ford project. Proceeds from sales will be distributed between TDEC and the ten counties of the Elk River watershed.

- *Private water use facilities are a valuable portion of the use of Tims Ford Lake and premiums can be realized by the County, in form of property taxes, to pay for some of the expenses that will be incurred as a result of either Plan B, C, or D being implemented by others.*

**Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley )

**Response:** According to the Franklin and Moore County Tax Assessor's offices, water use facilities are taxed as real property. Therefore, additional water use facilities on the reservoir would generate additional recurring tax revenue for both counties.

- *Where is the money for these counties? I am also in agreement with Franklin County Executive Monty Adams that we must find a way to put land on tax rolls and expand the tax base. Comment by:* Tennessee General Assembly (The Honorable Jerry W. Cooper)
- *It was the intent of the General Assembly to sell most of TERDA land to get it to profitable use and on county tax rolls. To do otherwise will fully create a tax burden on Moore and Franklin County tax payers. They are responsible for services without being able to collect property taxes on the land. Comment by:* Nolen, John S.; Franklin County Government (Montgomery F. Adams, Jr.); Moore County Government (Billy Thomas)

**Response:** Public Chapter 816 of the 1996 Tennessee General Assembly terminated and ceased all activities of the Tennessee Elk River Development Agency (TERDA) and transferred its functions, duties, and contractual obligations to the Department of Environment and Conservation (TDEC). The legislation distinguished between current allotted funds and net proceeds from land sales.

Current allotted funds are first to be used to satisfy all TVA contractual obligations and other agency contractual obligations. Second, current allotted funds are to be used to pay all administrative costs of the Department for carrying out the provisions in the act. Any remaining current allotted funds after all contractual obligations and administrative costs are satisfied may then be distributed to the ten counties in the Elk River watershed. Since 1996, TDEC has satisfied over \$2 million dollars in acquired contractual obligations and continued the maintenance and operation of eight public recreational areas and over 6,000 acres of project lands. In order to equalize cumulative funding provided to the ten counties in the Elk River watershed and to show that the department is focused on meeting the legislative requirements, approximately \$800,000 was distributed to the applicable counties in November of 1998. The department was not bound by the statute to issue funds at that time or prior to satisfying all contractual obligations acquired by the legislation.

**Before any additional current allotted funds may be distributed, remaining TERDA obligations will need to be satisfied along with the disposal of the remaining Tims Ford project lands. This cannot be accomplished until after a Final Land Management and Disposition Plan is approved and implemented.**

- *Allowing more development will bring in more property and sales tax revenues, and provide more jobs. Comment by:* Gottfried, Robert
- *The TDEC study, if implemented, would have a significant negative economic impact on some citizens, the current and future Metropolitan tax base, and further land developments*

within the Metropolitan area surrounding the Tims Ford reservoir. **Comment by:** Moore County Government (Billy Thomas)

**Response: New information regarding economic benefits and costs has been added to the Final EIS.**

- Further, by putting the majority of land into "Natural Conservation" and "Sensitive Management," a lesser percentage is projected for development. Basically, most of the former TERDA land would remain off the tax rolls, thus depriving Franklin County of potential revenue at a time when the Federal and State Government are shifting the tax burden on to the locals. **Comment by:** Franklin County Government (Montgomery F. Adams, Jr.)

**Response: These public lands are not on the county tax rolls. However, TVA makes tax equivalent payments to both Franklin and Moore counties to compensate for this situation. In 1999, Franklin County received \$606,207 in such funds. Additional information has been added to the Final EIS.**

- How many more boat docking manufacturing operations can the country support? How will the boat dock manufacturing companies bring in more people to the country? **Comment by:** Maglothin, Richard L. II
- Will developing the lake into a 'residential lake' increase the revenue for the surrounding counties that much? **Comment by:** Maglothin, Richard L. II

**Response: Both county governments foresee long-term benefits in tax revenue. According to the Franklin and Moore County Tax Assessors offices, the value of real property is assessed based upon sales of comparable properties. Water use facilities are taxed separately as real property in both counties. In response to public comments, new information regarding Economic Benefits and Costs has been added to the Final EIS.**

- The long term benefits associated with the preservation of the land in question far outweigh the benefits of allowing it to be developed for tax reasons. Please consider the future generations of Tennesseans and prevent the development of the land surrounding Tims Ford. The contention of the Moore County Executive that they need to develop land in order to have money to pay for roads and services is specious; it is established that development increases costs for services and that increasing the tax base does not begin to pay for the increased costs. **Comment by:** Pepper, J. Ross; Wood, Adelle
- As a federal taxpayer, I own a vested interest in the Tims Ford Reservoir and adjacent lands. My local newspaper has reported that Franklin and Moore Counties support more development to increase their tax tables. Perhaps they have forgotten that ten times more revenue was returned to their tax base in the short period that TERDA developed the property than was taken out when the land was purchased. Also, that TVA paid annual payments to each of these counties in lieu of taxes during those years. Please do not be fooled by the recent tactics employed to have more lands placed in private hands for development of public lands. Neither county has lost land tax revenue nor sales tax revenue, in fact, they are ahead of the rest of us because we purchased a lake and Dam for them. **Comment by:** Fitzpatrick, Peggy
- The County Executives who want the lake developed for the increased tax revenues are thinking only of themselves and their development and business constituents. Most of their constituents want the beauty of the land preserved – in its virgin condition. The County Executive say they need the tax revenue for the roads and services they will have to maintain- they won't have new roads and increased services if the land is left as it is. If they need to provide more services for the existing residents they should increase their taxes- not develop the virgin land – that will only produce a need for more services- it's a divergent



process. The near term desire for more money, more revenue and more services is a foolish, greedy reaction by folks who want the latest, modern conveniences now. The county Executives who want a bigger tax base are also greedy. A bigger tax role increases their power for a select constituency. They are misguided- making short sighted decisions to enhance their own power bases. **Comment by:** Kistenbroker, John

- The local political argument, likely driven at least in part by development interests, of needing to "put land on the tax rolls" seems short sighted and not in the interest of the general public. Development often does not pay for itself in taxes, and only benefits a few. Although there are obviously pressures against conservation, it is likely that this point of view is not representative of the population at large, but of those who can afford to be involved and stand to profit from public lands. Please stand against this pressure to turn over our lands for development, and if possible, conserve all the land. **Comment by:** Sulkin, Barry (Tennessee PEER)

**Response: These comments have been noted.**

- Before commenting, however, I would like to discuss two myths about the Tims Ford Project which I am afraid may be influencing your work. The first is that the lake and adjacent land belong to Franklin and Moore Counties. The second is that by placing private land in public ownership the land property tax base has been diminished. These two issues are related. The Tims Ford Reservoir and adjacent lands belong to the people of the United States, not to the two counties within which the project is located. The land acquisition and the cost of constructing the dam were funded by federal money acquired from taxpayers in all 50 states. The people in Franklin and Moore Counties did not pay anything more for the Tims Ford project than did people in Montana or any other state. The entire nation has an equal interest in the development of the property around the lake, just as the residents of Franklin and Moore Counties have an interest in any of the national parks or other federally owned land. Therefore, contrary to what local officials in Franklin and Moore Counties would have you believe, the two counties are not "entitled" to additional tax revenue from development. Prior to its termination, TERDA calculated that the residential developments on the lake in Franklin County were already returning more property tax revenue than if the reservoir had never been constructed and the land was still in agricultural production. On top of that, the sales taxes which are returned in boat sales and other recreational expenditures were never included in our calculations, and they are substantial. Any position taken by Franklin and Moore Counties that their tax base has somehow been diminished by the Tims Ford project is simply not true. TVA and TDEC are recommending Alternative B which attempts to strike a balance between development and conservation of the remaining developable land. This appears to me to be an attempt to appease the interests of the developers who would prefer maximum development, and the environmentalists who would prefer no additional development, as opposed to a bold statement about what is in the public's best interest. **Comment by:** McGuire, Michael E.

**Response: Your comment has been noted.**

- In conclusion, the League understands that the issue of whether to develop or not to develop public lands on Tims Ford is very controversial. Public sentiment appears to be polarized on this particular issue. We believe that our recommendations, while not belonging to either extreme, represent a common sense approach to land-use designations on Tims Ford Reservoir. In Middle Tennessee public lands make up a very small percentage of the landscape, and they provide extensive and valuable public benefits. As growth pressures continue to expand on private lands, those benefits grow exponentially. From reading the papers, one could conclude that the economic survivability of the Tims Ford area is

dependent upon development of some 2,500 acres of public lands. Common sense and our experience with conservation planning argues that unplanned development will likely make the opposite a reality. Many counties are discovering that increasing their tax base through development actually ends up costing them money when the taxes are not enough to pay the needed increase in services. Moore and Franklin County also realize significant tax income from recreational use of the reservoir. Unplanned development runs the risk of diminishing the resource, possibly killing the "goose laying the golden egg." Protection of public lands and public land values on the Tims Ford Reservoir can enhance the quality of life, the environment, and the economy of Middle Tennessee. We ask that your Department and TVA stand firm on the conservation principles expressed by both of your agencies, and maintain the benefits of these public lands for the millions of Tennesseans who will use and enjoy them for generations to come. **Comment by:** Tennessee Conservation League

**Response: The comment has been noted for the record.**

- *The EIS does not adequately address the economic impacts or social loss resulting from development. No allowance was made for the economic impact of passive recreation, hiking, birding, and photography.* **Comment by:** Tennessee Conservation League

**Response: To the extent possible, the agencies have recognized these impacts in the analysis. An analysis of economic benefits and costs has been added to the Final EIS to address potential economic impacts from such activities. However, these impacts are not generally quantifiable in the same way that development impacts are.**

- *How much does it cost TVA, state, county, and city governments--and ultimately the taxpayer--to compensate for air, land, and water quality loss as a result of development? Specifically, how much does it cost TVA to oxygenate the water coming out of the dam to compensate for low dissolved oxygen as a result of nutrient and sediment loading? How much does it cost TWRA to stock fish in the tailwaters to compensate for fish loss? How much does the state spend on environmental clean up? How much does the county spend on solid waste and wastewater treatment?* **Comment by:** Tennessee Conservation League

**Response: TVA spends approximately \$220,000 per year on tailwater oxygenation at Tims Ford. Low dissolved oxygen is due to a variety of factors. Reservoirs with comparatively low levels of development, such as Norris and South Holston, also require oxygenation.**

**TDEC environmental cleanup budgets and county solid waste budgets will likely be impacted by additional development, regardless of where it occurs. Please be aware that most development is population-induced, and it would likely occur elsewhere in the watershed or in general area if it did not take place on TVA or TDEC land. The additional development proposed is likely to displace this development. Therefore, the proposed actions in the land allocation plan would not likely create additional wildlife, environmental cleanup, or solid waste costs compared to what can normally be expected.**

**TWRA stocks the stream with trout because they do not reproduce naturally, due to water temperature. This is not related to the water quality of the discharges because TVA maintains a 6.0 mg/L dissolved oxygen level. TWRA annually spends approximately \$18,000 to stock Tims Ford tailrace. This is strictly a sport fishery like Normandy and others.**

**Neither county has a landfill. Franklin County has a transfer station operated by BFI, and waste is transported to the BFI landfill north of Murfreesboro at Waltherhill. Both Franklin and Moore Counties transport their solid waste to BFI landfills outside the counties.**

- *At the present rate how long before development and resulting water quality loss begins to bring significant financial impact to citizens in the Elk River? At what rate does the development in this EIS escalate water quality loss and cost? Who benefits? How much will development add to the cost of doing business in this area? How much would be saved if these lands were not developed and allowed to buffer water quality for the reservoir and downstream? Comment by: Tennessee Conservation League*

**Response: Potential water quality effects are addressed in Section 3.3 of the EIS. The agencies concluded that water quality thresholds would not be exceeded, provided TDEC requirements are met. The impacts of less development are considered in Alternative D. At this time, the agencies believe these financial impacts would be difficult to quantify, but we agree that such impacts would exist. The Plan and EIS call for a 50-foot buffer above the 895-foot contour line for new residential development. The agencies have provided a range of alternatives and have analyzed the potential environmental effects resulting under each alternative. All the alternatives will be considered during the decision making process.**

- *What is the cost to the rate and taxpayers of running utilities to the properties slated for development? Is this cost less or greater than the property and income taxes received? How long before taxes will increase? Who gains and what was gained? Comment by: Tennessee Conservation League*

**Response: Because specific development plans do not currently exist, specific costs cannot be calculated at this time. However, both Franklin and Moore Counties have commented that there would be net financial benefits over the long term from these proposed developments, and governmental leaders from both counties support additional development.**

- *How much can innovative site planning and design reduce the cost of infrastructure and possible tax hikes? Comment by: Tennessee Conservation League*

**Response: The agencies believe that innovative site planning and design could reduce the cost of infrastructure, and they will encourage this in any development proposals. Because no concepts have been proposed by developers, cost comparisons cannot currently be made.**

- *A discussion of suburban/urban sprawl, which TVA and TDEC would be promoting through encouraging the development of subdivisions in rural areas, is conspicuously missing. The "Managing Natural Resources" report mentioned above cites studies showing that the costs of providing utilities and services to residential developments such as TVA and TDEC are proposing for Tims Ford frequently exceed the increased property tax revenues over the long term. One of the cited studies is from Franklin County. Comment by: Tennessee Ornithological Society*

**Response: The agencies do not believe that the availability of lakefront lands for residential use or residential access would necessarily lead to significantly more urban sprawl than would occur otherwise. Should no lakefront property be made available, people likely would locate in the rural areas or near the edge of one of the cities or towns in Franklin or Moore Counties. There may be some increase in sprawl due to the relocation of retirees who move to the area from elsewhere due to the attraction of the lake. The issue of increased costs and increased tax revenues is discussed in Economic Benefits and Costs, which has been added to the FEIS in response to comments on this subject.**

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### 33. Access Rights

- We purchased our property (lot#4, Beech Hill Estates) directly through a TERDA auction, and were guaranteed water property rights. We have not yet built our house. When we do, do we still have those water use rights? **Comment by:** Garner, Billy D.

**Response: Beech Hill Estates is a developed TERDA subdivision. Landowners there possess deeded reservoir access rights to request TVA approval for construction of water use facilities. Those rights will be recognized by TVA. Requests for water use facilities require approval from TVA prior to construction. Please contact the Wheeler Watershed Team at (256) 386-2560 for an application.**

- I own Lot #101, Phase II, Waters edge subdivision in Estill Springs, TN. This is a non-TERDA development. An area map and plat information are furnished for reference. Please note that the lot joins TVA (formerly TERDA) property for a distance of 100 feet and has direct access to the waters of Tims Ford Lake. My request for a dock permit is based upon the following:
  1. In 1994, prior to purchasing the lot, I resided outside the area and was not familiar with TERDA procedures. I phoned the TERDA office and informed the man responsible for permits that I was interested in the lot for a retirement home and dock. He reviewed the lot location and recommended that I apply for the permit prior to building. He did not indicate that there would be a problem. (We were both aware that the other immediate lots with direct lake access across (TERDA) TVA property had been issued dock permits).
  2. In 1996, I went to the TERDA office and was advised that TERDA was no longer responsible for dock permits. The man with whom I spoke, said that TVA was assuming the responsibility and that the lake was undergoing a "Lake Use" study and TVA was not issuing any new permits at the present time. I am now retired and very interested in getting a permit. Please understand that I do not claim that I was intentionally treated unfairly. However, since the TERDA representative had left the impression in 1994, before I purchased the lot, that there would be no problem, and then to be advised by TERDA in 1996 that TVA had placed a moratorium on permits, I feel that the time required for the transfer of responsibility and the moratorium have affected the purpose and retirement plans for the lot. **Comment by:** Bryant, R.G.

**Response: The proposed allocation of shoreline fronting Waters Edge subdivision is for Residential Access under all alternatives presented in the Draft EIS.**

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### 34. Energy Requirements and Conservation Potential

- If there are more lake front homes won't they create a higher energy usage? How does Alternative D create a higher energy usage? How can additional industrial/commercial development keep from increasing the energy usage? **Comment by:** Maglothlin, Richard L. II

**Response: The commenter is correct that adoption of Alternatives B and C would lead to higher energy use. Under Alternative D, there would be no increase in energy usage for Zone 2 (Project Operations), Zone 5 (Industrial/Commercial Development), Zone 6 (Recreation), or Zone 7 (Residential Access and Development). However, as stated in the Draft EIS, there would be an increase in energy usage under Alternative D with respect to**

those areas allocated to Zone 4 (Natural Resource Conservation) and Zone 3 (Sensitive Resource Protection). There would be some short-term energy use for fuel to conduct prescribed activities such as mowing, timber management, controlled burning, disking, planting of small grain crops, etc.

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### 35. Moore County

- *The report groups the remaining shoreline properties into fourteen (14) parcels (4 through 10 and 21 through 26). These 14 parcels contain 618.3 acres above the 895 foot contour line and 96.5 acres below this line. The report proposes to permit private water use facilities for only 3.5% or 23.9 acres of the land above the 895-foot contour. It proposes to include another parcel (10) in a Tims Ford Park expansion in the year 2000. The report contains no grandfather clause recognizing that long term residences on land bordering the lake properties (before the Public Chapter transferred responsibility to TDEC in 1996) should be permitted a private water use facility. Stated negatively, the report would not allow private water use facilities on 96.5% of the acreage contained within the fourteen (14) parcels.*

**Comment by:** Moore County Government (Billy Thomas)

**Response:** Of the original 1,046 acres of project land in Moore County, 438 acres (43 percent) of the land has already been developed. Landowners within those subdivisions developed by TERDA received deeded water access rights. There are property owners with deeded water access rights who have not yet requested approval for water use facilities.

Parcels 5, 9, 21, and 25 contain 23.9 acres above the 895-foot contour line. Landowners in the subdivisions comprising these parcels do not have deeded water access rights. Due to prior permitting practices in these areas, private water use facilitates in these subdivisions are being "grandfathered." Likewise, there are property owners in subdivisions without deeded access rights who may be able to receive approval for a water use facility after acquiring the access rights.

The allocation of Parcel 7 is Residential Development. This parcel contains 162 acres above the 895-foot contour line. As with all other new residential development parcels, TVA may consider requests from adjoining landowners for community water use facilities. This addition of residential property would bring the level of development of project lands in Moore County to approximately 58 percent.

Parcel 10 and the immediately adjoining State Park property is an existing TERDA-developed public use area that TDEC proposed to manage as part of the State Park. These comments were considered prior to the 1997 decision to include the land into the State Park. Parcel 10 would remain allocated to Zone 6 (Recreation) due to established recreational use. TDEC could coordinate ongoing long term management of the public recreation area with local government.

- *The report does not mention the contract the City of Lynchburg signed on August 1, 1979, to obtain up to 500,000 gallons of water per day from the Tims Ford Lake. Comment by:* Moore County Government (Billy Thomas)

**Response:** There was an agreement between Moore County and TERDA as part of the Jack Daniels water withdrawal agreement. TVA and TDEC will continue to honor this agreement.

- Last Wednesday (November 17, 1999) the Tennessee Department of Environment and Conservation (TDEC) held a meeting for "local decision making officials" (per Curtis Hopper of TDEC) for the purpose of discussing the Tims Ford Land Management and Disposition Plan. Sharon Williams said during this meeting "that all land could be developed if we wanted to."  
**Comment by:** Moore County Government (Billy Thomas)

**Response:** The comment does not adequately disclose Ms. Williams' response at the November 17, 1999, meeting. Mrs. Williams comment in full was: "...that if environmental impacts and costs were not considered, anything is developable." The TERDA 1991 plan also stated:

"As additional development occurs, however, residences and other structures are constructed, and the character of the lake changes from a rural to a suburban environment. The TERDA board desires to prevent pollution in Tims Ford and the Elk River and its tributaries and to minimize the loss of the rural character of the reservoir area, while at the same time providing max. benefits for the watershed produced from the development revenues... To a certain extent, these are a misnomer because all land can be developed if costs are of no concern. However, since TERDA is primarily interested in the profit from its developments, costs are a very important part of the development decision. It seems appropriate, therefore for land use categories to be determined on the development potential of the land."

- During the days of TERDA, Moore County was slighted in TERDA developments with only 20 lake front lots in Holiday Hide-A-Way and 8 lake front lots in Moor-Lin subdivisions. There are approximately 900 private boat docks on the 10,700 acre Tims Ford Lake and only about 50 (5.5%) being in Moore County. **Comment by:** Moore County Government (Billy Thomas)
- A further reason for expanding development opportunities in Moore and Franklin Counties is that the distribution of funds from the lands around the lake is to be equal among 8 Tennessee and 2 Alabama counties. Yet, Moore and Franklin Counties must use their own funds to repair roads and utilities around the lake. Therefore, the tax base needs to be increased by allowing additional lands be developed. **Comment by:** Moore County Government (Billy Thomas)

**Response:** Our review indicates that Moore County also includes the Ridgeville Subdivision, a TERDA development, which consists of 161 waterfront lots. Including privately-developed subdivisions, we estimate that there are 253 lots eligible for consideration for individual water-use facilities in Moore County.

The acreage of original project lands in Franklin County is approximately 8 times as great as the acreage in Moore County. Our review indicates that approximately 14 percent of the acreage in Franklin County has been developed, while approximately 43 percent of the acreage has been developed in Moore County. Under Alternative B, the percentage of development in Franklin County would increase to approximately 22 percent, and the percentage of development in Moore County would increase to approximately 58 percent. Under Alternative B1, the percentage of development in Franklin County would increase to approximately 20 percent, and the percentage in Moore County would remain the same as under Alternative B. There are 251 miles of shoreline in Franklin County, and only 24 miles of shoreline in Moore County. Consequently, there are significantly more water use facilities in Franklin County.

Regarding additional land for residential development in Moore County, the agencies have sought to achieve a balance between development and conservation that will protect the quality of the reservoir for residents and visitors.

Our review indicates that the project land of 1,046 acres in Moore County represents 1.3 percent of the land in Moore County. The project land of 8,720 acres in Franklin County

represents 2.7 percent of the land in Franklin County. Therefore, these properties represent a small percentage of the available county tax base. For properties that will be held by TVA in natural or sensitive resource conservation, the counties will receive payments in lieu of taxes. Our information indicates that in 1999, Moore County received \$102,449 in payment in lieu of taxes. The amount of land to be developed in Moore County was increased by the inclusion of TVA-owned lands in the scope of the planning project.

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### 36. Cultural Resources

- *Alternative D would provide the most protection for Native American cultural resources. Protection of cultural resources and preservation of natural areas is vital to Native American spiritual beliefs and cultural values. For the Indian people who expressed an opinion, these cultural needs override the immediate economic advantages that may be provided by Alternatives B and C. They also suggested that preservation of cultural sites and natural areas may provide even more economic benefits to the area in the long run, in the form of increased tourism and recreation. Comment by: Tennessee Commission of Indian Affairs (Toye Heape)*

**Response: We agree that adoption of Alternative B, B1 or C would likely result in more development than the adoption of Alternative D. However, even under Alternatives B, B1 and C, lands containing historic properties and cultural resources will be protected, as they have been allocated to Zone 3. All alternatives provide natural areas and protection of cultural resources.**

- *The EIS is grossly inadequate in terms of cultural resource documentation. There needs to be a detailed or current survey done before any further development. Comment by: Karhu, Vicky*

**Response: Additional cultural resources information has been added to the Final EIS. As stated on page 3-19 of the Draft EIS, there are 19 sites on the plannable parcels that are potentially eligible for inclusion on the National Register of Historic Places. Future disposal or ground disturbance on parcels not examined by cultural surveys will require an archeological examination prior to land transfer or ground disturbance.**

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### 37. Wetlands

- *Wetlands – Under the category of Wetlands, Table 2.3-3 states that Alternative B “[i]ncreases preservation of wetlands by placing a majority of wetlands in the protective zones.” We concur and add that such wetlands would not only thereby remain intact and functional but also would be a visual, water quality and wildlife habitat benefit to the area for all reservoir visitors and existing/prospective nearby residents, as opposed to being of direct benefit to only a few residents who potentially would have been allowed to develop their residences in these wetland areas. Table 2.3-3 further states that: “Further, mitigation commitments would apply to Parcels containing wetlands that are in the development zones.” While we concur with wetland mitigation that is properly coordinated with the U.S. Army Corps of Engineers (COE) and EPA, we wish to emphasize that mitigation is only appropriate if and when a COE permit is issued, which may or may not be the case for Parcels designated as developable by TVA. As such, the passage prematurely assumes that wetland permits will be issued, construction may occur, and that impacts can be compensated. Comment by: U.S. Environmental Protection Agency (Heinz Mueller)*

**Response:** This comment has been noted for the record. TVA or private applicants will obtain appropriate Section 404 permits. TVA also will comply with Executive Order 11990, Protection of Wetlands, in its approval process for projects on federal land.

### 38. Implementation

- *If the proposed Alternative B prevails, the timing of the disposition of land for residential development becomes important. If TVA and TDEC sells all the property at one time two things will happen. First, the total amount of money received from the sale will be less than if the tracts were sold over a period of time (say one every year or two). It is the old law of supply and demand. By flooding the market with several hundred acres you will decrease the overall revenue from the sales. Second, selling several hundred acres at one time will have the effect of depressing the value of existing lake property for several years. This is unfair to those who purchased property from TERDA in good faith that there would not be a wholesale dumping of land on the market, and that development would occur over a longer period of time which would maintain property values.* **Comment by:** McGuire, Michael E.

**Response:** The State, subject to approval by the Tennessee State Building Commission, will handle the disposal of surplus lands during the implementation stages of the plan.

- *As a former TERDA board member (and chairman for five years), I am acutely aware of the tremendous profits which can be made by residential development of the Tims Ford project lands. Unfortunately, the greed of developers, Realtors, and others who would share in the booty of residential development has little place for a consideration of public benefit. The mantle of responsibility to protect the public's interest in the Tims Ford project has been passed from TERDA to TVA and TDEC. I feel very strongly it is not your responsibility to present a plan of compromise and appeasement. It is your responsibility to be an advocate for the public's interest in this public investment. I submit to you that my Alternative B1 or Alternate D accomplishes this to a much greater extent than does Alternative B.* **Comment by:** McGuire, Michael E.
- *One final word of commendation. TERDA prepared a long range plan which identified (I think) 11 additional residential developments which would be constructed around the lake which would have included more acreage than your Alternative B. TERDA would have encouraged development by constructing streets and water service. We would also have allowed private boat docks for those purchasing land in the new developments. While I prefer Alternative D, or my B1, I must admit that Alternative B is a better plan in that it restricts development and does a better job of protecting the lake environment. Thank you very much for the opportunity to comment.* **Comment by:** McGuire, Michael E.

**Response:** The comments have been noted.

- *Proceeds from land sales should be used to fund a GIS and land use planning program for the counties of the watershed.* **Comment by:** Tennessee Conservation League

**Response:** Proceeds from the land sales would be distributed according to applicable state laws and regulations.

### 39. Site Soils



- *We question why Section 3.2.2 shows lower impacts to prime farmland under Alternative B than under Alternative D. Under Alternative D, virtually no prime farmland would be converted to uses which would preclude farming.* **Comment by:** Tennessee Ornithological Society

**Response:** Under Alternative D, 139 acres of prime farmland would be converted to residential and recreational uses. Likewise, under Alternative B, 248 acres would be converted. However, the soils in those parcels to be converted under Alternative D are considered to be of higher quality than those affected under Alternative B. Thus, the Impact Rating (see Impact Rating Form, Appendix H) is higher for Alternative D. Section 3.2-2 states that overall, Alternative D would have the least potential to impact prime farmland.

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#### **40. Public Land**

- *... it appears that your agency is attempting to maximize the amount of public land kept in conservation. We strongly support your position, and urge that all public lands be kept as such.* **Comment by:** Sulkin, Barry (Tennessee PEER)

**Response:** The comment is noted for the record.

- **Public land mitigation**—*The League is aware that Public Chapter 816 specifies where proceeds from the sale of former TERDA public lands must go. However, Public Chapter 816 does not specify the recipient of proceeds derived from the sale of TVA public lands. We recommend that a portion of the proceeds from the sale of TVA public lands, and deeded-reservoir access, be used to purchase 932 acres of new public lands in the Tims Ford Reservoir area. Additionally, these new lands should be located adjacent to proposed and existing natural resource conservation and sensitive resource management lands. In considering this recommendation, please note that new public lands purchases would have to be purchased away from reservoir shoreline (i.e., all reservoir shoreline will be planned). If these lands are purchased adjacent to existing public lands (e.g., Tracts 33 pr 79 A-B) costs for backing property should be significantly less than shoreline properties.* **Comment by:** Tennessee Conservation League

**Response:** The sale of a portion of the lands for development is consistent with the original intent of the Tims Ford project and compliant with Public Chapter 816. Therefore, purchase of replacement property is not being considered.

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#### **41. Water supply**

- *How much water is available to support development in this area? What is the cumulative impact of development in this EIS on water supply? How much development could be done on private land rather than sell this already conserved public land? Who would gain? Who does it cost?* **Comment by:** Tennessee Conservation League

**Response:** Please bear in mind that development is in response to population growth. As such, development could occur elsewhere. However, the agencies recognize that waterfront property is considered more desirable by some property buyers. This particular segment of the market would not likely be met by development elsewhere. The agencies

**do not anticipate that the proposed amount of development would affect available water supply.**

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### **Other**

- *Adjacent to our lots where the Old Lockmiller road dead ends, there have been many incidents involving illegal drug trafficking and alcohol abuse. The area is trashed most of the time. This is TVA land. Comment by: Hansen, John and Gail; Bowling, Janice*

**Response: This comment has been forwarded to the TVA Wheeler Watershed for action. In the future, please contact the Wheeler Watershed Team at (256) 386-2560 or the TVA Police at (256) 386-2444.**

- *There needs to be someone in control of this lake in a local capacity, and not tied to any Realtor, developer, or contractor, where questions could be found to questions regarding the lake and surroundings lands. Comment by: Edens, Jim*

**Response: TVA's Wheeler Watershed Team has shoreline management responsibilities for Tims Ford reservoir. TVA staff routinely monitor activities that occur around the reservoir. They also meet with local residents to answer questions and provide assistance as needed.**

- *When TVA came through condemning land to build Tims Ford they took our farm and we had to move. We brought another farm and they assured us they would only take the hollows, but when they came through they cut out 68 acres all the way across our farm. We had no money to fight back but my husband acquired a job with TVA to build the dam, we would not have survived. I feel the land they took should be returned to the owners. I have paid rent on this land for pasture. Comment by: Caldwell, Mae Pearl*

**Response: When the Tims Ford project began, it was determined that certain land and land rights purchased for the project would be retained by the Tennessee Elk River Development Agency (TERDA) and TVA to provide adequate protection, full development and optimum use of the water control system. Generally, land purchased for the project was limited to only that property that was necessary for successful completion of the project. Land for the project was purchased in various shapes and configurations. On occasion, TVA was required to purchase small remnants of land that otherwise would have been left without access once the reservoir was filled. In other cases TVA agreed with wishes of property owners to purchase an entire parcel of their land even though it was not necessarily needed for the project. This was usually done to relieve a property owner of a small remnant of land that became surplus to the owner's needs once severed from a larger parcel.**

**Land acquired by TVA, whether through voluntary sale or eminent domain, is subject to Section 31 of the TVA Act. This Section requires a public auction sale to the highest bidder. State properties are required to be sold by advertised sealed bids, Thus, in both situations, a landowner wishing to repurchase property would have to be the highest bidder. Project lands currently retained by the Tennessee Department of Environment and Conservation (TDEC) are available for future public development and use.**

- *I have leased this land since the lake came in. The main TVA trunk crosses this property. I have kept the land clean. I would hate to see it grow up, I wish to lease this land. I was told when I made the deal with TVA that if this land wasn't developed in ten years I could buy it*

*back at the price they gave me.* Comment by: Vann, Jim

**Response: Areas leased for agricultural purposes will be evaluated to determine compatibility with the approved land management and disposition plan. If this use is determined compatible with the existing land use, the area would continue to be available for agricultural use.**

- *I do not like the corridor (20 strip) idea.* Comment by: Gipson, Shirley

**Response: Your comment is noted for the record.**

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References to Parcels

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### Parcel 3

- Parcel number 3 is shown as Proposed State Park Expansion on the Map, but listed as Zone 6 Recreation in the Plan. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)
- Anderson Branch near Parcel 3, there is property that's owned by a Mr. Jim Carden and there are two other property owners there. They would like dock permits, which would be a grandfathering of permits that were already issued up that same branch. **Comment by:** Bowling, Janice; Camden, Jim

**Response: Parcel 3 is defined as Zone 6, Recreation. The parcels proposed for inclusion in the State Park are also in Zone 6. Existing permitted facilities on this parcel would be 'grandfathered.' However, requests for additional residential water use facilities would not be compatible with the existing allocation and would not be considered.**

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### Parcel 4

- There appears to be a complete disregard for Majors Point Subdivision since it is not mentioned in the plan or located on the map. I would request that Parcel 4 be re-zoned as 7—residential access as ordinarily identified on our 1996 county plot. When we purchased the land we understood that we would be allowed water use facilities. Our taxes to Moore County have been based on waterfront property value for the past two years and again this year. The area is not large enough to provide significant "valuable wildlife habitat" nor does it provide a wildlife corridor between any non-developed parcels of significant size. It is located across from Ridgeville, one of the largest developments on the lake, and is next door to Lost Creek Heights so the addition of another few residential access lots will not change the character of the area to any great degree. Though the terrain is described as having "slopes ranging from steep to moderate", the terrain is not much, if any, different than that fronting the development next door. **Comment by:** Thompson, Jimmy; Bruner, John J. and Lois; Edmonson, Clinton; Bowling, Janice
- Being the owner of the Old Majors homestead and a large portion of the Old Majors Cemetery Road farm dating back as early as 1800, we are requesting your consideration for allowing us water access. The property is adjacent to number 4, the small point that is also proposed as State Park Expansion. The reason for the request is, there is a very narrow strip of land in the cove for the public to access through. When we bought the farm about five years ago, the property was sold, priced and taxed as waterfront property and is recorded as such, paying \$10,000 – 20,000 an acre for a hillside farm with water view is too high without any water access. And being denied water access will decrease the value of property. The property will not bear the value that has been paid for it. We are requesting that you strongly consider selling us this small portion of the land in front of the farm, even with restrictions. We were told when we bought the property that there was only a temporary moratorium on water access and building docks because they sold it to us as waterfront. You don't pay ten to twenty thousand dollars for something that isn't. **Comment by:** Matzkiw, Gudridur H. (Peggy)

**Response: These comments are noted. Tax rates and appraisals are controlled by the local government. As noted in the Land Management and Disposition Plan, there is no public access to this parcel by land. Also, this parcel serves as a buffer between adjacent State Park property and Lost Creek Heights Subdivision. This request, along with numerous other requests for private water use facilities in Zone 4 areas, were reviewed by both agencies. As a result of public comments, Alternative B was modified and is**

presented as Alternative B1 in the Final EIS. This modified alternative changes the management strategy on certain specific lands allocated to Zone 4 in the Draft EIS. Please refer to the Final EIS for a more detailed description of Alternative B1.

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### **Parcel 5**

- While not in the Franklin County Planning and Zoning Department jurisdiction, Parcel 5 is a great example of where the Plan is correctly assessing and allowing water access and use facilities, if I read this correctly. Private docks should be allowed with the locations being regulated, with direct contractual costs to the owner of the restrictions and limitations listed above. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: This comment has been noted for the record.**

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### **Parcel 7**

- Parcel 7 should be allowed access to the lake, these dock locations should be regulated, with direct contractual costs to the owner of the restrictions and limitations listed above. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Under Alternative D, this parcel would not be available for development. However, under Alternatives A, B, B1 and C, this parcel could be considered for residential development. In order to reduce the environmental impacts associated with residential development, we are willing to entertain proposals for community docks with deeded rights for lake access rather than granting deeded access rights to individual landowners. Community docks will require approval from TVA.**

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### **Parcel 8**

- Reference is made to the draft Environmental Impact Statement for the Tims Ford Reservoir. Parcel 8 referred to in the above plan, the west area of Lost Creek access, is adjacent to my farm and is an area subject to hunting, target shooting with fire arms, and occasionally 4-wheel vehicles and motorcycles as they have access thereto from Ray Burton Road Lake access. I would like to lease or buy this part of the parcel next to my farm and home so as to prevent this use of land for firearms shooting, I would erect a fence along its lower boundary next to the public access and post it with signs to prevent the use thereof for hunting and shooting. **Comment by:** Wofford, Leon D., Jr.

**Response: TVA normally makes public land available for use by the general public. The agency has, at a few locations around Tims Ford, entered into short term agreements with parties to use TVA land for legitimate agricultural purposes. TVA does not provide exclusive use of public land solely to restrict use by members of the general public. If illegal activities are observed, the TVA Police should be contacted at 1-800-839-0003 or 423-751-3783 or you may contact your local police. Hunting violations should be reported to the Tennessee Wildlife Resources Agency at 1-800-624-7406.**

- I own the majority of a 50-acre tract immediately north of the causeway on the Lost Creek side of the lake...I am requesting for this parcel to be listed as Planned Residential and Access, Zone 7. I am willing to place reasonable restrictions on the property to comply with

sound planning principles and lake front management practices. **Comment by:** Littlejohn, James H.

**Response:** This request, along with numerous other requests for private water use facilities in Zone 4 areas, were reviewed by both agencies. In response to public comments, Alternative B has been modified and is presented as Alternative B1 in the Final EIS. Under Alternative B1, the management strategy for certain lands previously allocated to Zone 4 has been modified.

Specific areas of narrow public shoreline within Zone 4 were identified and allocated to a new zone -- Zone 8, Conservation Partnership. The primary objective within this zone is to establish a wider shoreline buffer zone through specific protective easements and shoreline protection partnerships with the adjacent private property owners. In Zone 8 public lands, TVA may approve requests for limited community water use facilities in exchange for protective easements transferred from adjacent private property owners.

### **Parcel 10**

- *I believe poor planning is evidenced by the very small portion of the State Park north of Parcel 10. This remote extension will probably be forgotten as far as the Park personnel are concerned. My guess is that, as planned, this property will be utilized as either an extension addition to the existing Lost Creek Public Use Area to the south or as an extension to the Zone 4, Natural Resource Conservation area to the north.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response:** Parcel 10 would remain allocated to Zone 6 (Recreation) due to the established recreational use. TDEC could coordinate ongoing long term management of the public recreation area with local government.

- *I would like to see the Lost Creek area developed into a type of city park for Lynchburg/Moore County. It's the least you can do after restricting so much of her land to new waterfront development.* **Comment by:** McAnally, Ed

**Response:** This comment is noted for the record. Under all Alternatives, Parcel 10 would be allocated for recreational use. Use of this parcel as a city park is compatible with that allocation.

### **Parcel 11**

- *You have added Parcel 11 to the State Park system. I purchased Parcel 11 and it was not a part of the State Park system. For the life of me, I can't understand why you want to add the small strips behind the Golf Shores development, to the State Park System. If these small strips are added to the State Park, it would devalue the lot I have developed. If you put Parcel 11 in the State Park, why not put Parcel 19 into the State Park System (no difference)?* **Comment by:** Sanders, Ted J.
- *The land that I purchased to build my dream home (Parcel 11) has been zoned to never develop the shoreline because it was inadvertently left out of State Park expansion. Why are my family and I held accountable for mistakes made by planners a long time ago?* **Comment by:** Pastorial, John R. (Golf Shores Subdivision)
- *My husband and I have purchased ¾ of an acre in Gulf Shores development and hope to retire soon. I feel we were misinformed and led to assume that dock permits would be*

granted in the future. No one mentioned that Parcel 11 was left out of the original State Park expansion plan. Some consideration should be given to those who have used the lake since before TERDA was dissolved. **Comment by:** Pastorial, Susan

**Response:** This parcel was intended to be included in the 1997 Tims Ford State Park Expansion. Unfortunately, an error was made in recording the tract numbers during the transfer. Parcel 11 affords a contiguous shoreline for the State Park, whereas Parcel 19 is separated from the State Park by Mansford Road and abuts the privately-owned Tims Ford Marina. Parcel 11 is currently owned by TVA and there are no outstanding private access rights. A contiguous boundary for the State Park is necessary as a greenway. Property owners in the Golf Shores Subdivision do not have deeded lake access rights. By zone definition, private residential water use facilities would not be considered on parcels fronting State Park properties.

- Charles Parker, Danny McClure, Ted Sanders, and Frank Sanders purchased the tract of land known now as Golf Shores Subdivision and in connection with Cecil Shelton joining our road to a cul-de-sac – we developed 19 lots. We have sold all but six lots at a reduced price because we did not have lake access. We most certainly think this is unfair since we are only 100 feet from the lake behind some of these lots. We purchased this land thinking maybe we would work something out with TVA but then the park expansion came into play; which happened after we purchased the land. So now we must work with TDEC and TVA and we most certainly will build a pier to your specifications, with no launching ramp, just a golf cart lane to a community docking facility with 19 slips for the 19 lots. This would be back of lot 8 and would in no way be a detriment to the park. **Comment by:** Sanders, Ted J.
- The planning for Parcel 11 and the attached State Park expansion, do not make sense to me. On Golf Shores Drive is residential development that 1) should have the option for lake access and 2) should pay to acquire that access. These existing developments could produce large amounts of additional tax revenue for Franklin County by allowing private dock access. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response:** Approvals of all currently permitted water use facilities will continue to be honored. However, requests for additional private water use facilities will not be considered for parcels allocated to Zone 6 (Recreation) or on State Park waterfront properties.

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### Parcel 13

- I recommend that Parcel 13 be changed to residential access to allow private docks, regulated and limited per the above, with the developer of the private acreage paying for this exclusive access rights. The potential exists for large amounts of additional tax revenue to Franklin County. This Parcel is located between existing residential and proposed residential properties. The Plan lists adjacent residential use as supporting reasons for developing residential uses. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)
- A single new dock CAN prevent further development if a landowner is willing to consider deed restrictions, conservation easements, land donation, reforestation, other wildlife programs, or other maneuvers to prevent subdivision. A single new dock will be of no added environmental impact if the shoreline area has been cleared already by years of past farming. Also, if the shoreline area abuts a large TERDA subdivision with numerous existing water use facilities.



For five years, it has been difficult to experience a “will not be considered” mentality and attitude. Refreshing it was to hear a call for those feeling “denied access to dock areas unfairly.” It seems only fair that before TVA/TDEC creates new water access areas/new property owners, that TVA/TDEC should first listen to previously undecided water access issues/existing property owners. Listening to persons with vested interests has been a sham. TVA/TDEC document my name among those “consulted.” And, I have spent hundreds of hours following this situation—at each public meeting, talking to many involved, visiting offices, making phone calls, reviewing each word of SMI and EIS, and trying to work something out within the context of these documents. But, at no time have I, nor will I ever have the opportunity to present my individual case for water access.

I am a residential user, without access, backlying 85% of Parcel 13. TVA, with good reason denied or refused to consider 28 water use permits requested for a new subdivision on this farm. Then, the 35 acres, with a small house, were offered at auction. I paid \$250,000.

Please realize that it was only AFTER discussions with TERDA that I became confident in making this purchase in the first place. Mr. Bill Davis explained that a private water use facility would, in all likelihood, be available through an enhancement fee, or some value-added maneuver. Very importantly, availability of water access was NOT at issue.

Furthermore, TERDA had a long and favorable track record of working with citizens having a stake in property adjacent to the lake.

Instead, the focus was on arriving at some fair COST of access—something taking into account the value added on to a private property because of its location next to a public lake. I saw TERDA fair-minded and trustworthy. They said it might be expensive, but I felt could work with any arrangement they might desire. I continue to receive hope from TVA. Mr. Terry Howard, previous project manager, thought “we should be able to work something out.” In good faith, I gave a detailed interview to The Huntsville Times commending TVA/TDEC on their in depth efforts to effect a quality lake for years to come. I see nothing short of a miracle needed to attain a water use facility. Had I known this 5 years ago, I would have been spared a huge amount of time, an awful emotional roller-coaster, and big money which may be difficult to recoup. I feel misled—not intentionally, as these persons have been well meaning and just trying to help. Nonetheless, their forecasts will prove costly to me.

There is no future here for us without a dock, as even now, we cannot get our aging parents down-the-slope-up-onto-the boat operation we presently use. I prefer to sell to a single landuser, rather than a developer. But I may not have the choice. I now have \$350,000 in the property and do not know if, with no water access potential, I will find a single buyer. There is interest in developing my 35 “waterview” acres. Even with no docks, I’m told that because of the flat terrain the easy walk to the water’s edge and good views would attract 15-20 homesite buyers. This degree of physical and human activity would obviously have far greater environmental impact than a single new dock. **Comment by:** Wright, Tom

**Response:** This request, along with numerous other requests for private water use facilities in Zone 4 areas, have been reviewed by both agencies. In response to public comments, Alternative B has been modified and is presented as Alternative B1 in the Final EIS. This alternative modifies the management strategy on certain specific lands allocated to Zone 4 in the Draft EIS and incorporates a new zone – Zone 8, Conservation Partnership. Please refer to the Final EIS for a more detailed description of Alternative B1 and Zone 8.

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### Parcel 14

- We feel like the development of Parcel F-14 would reduce the value of our property. Who wants to look out over the water and see houses and docks dotted along the shoreline

instead of beautiful scenery? We request that Parcel F-14 remain undeveloped for residential use. **Comment by:** Moody, Donald and Ann

- I am against Parcel 14. This area of Tims Ford is already over built (Cline Ridge, Narrows, Leatherwood, Heatherwood, etc.). Wouldn't the state park prefer a view that doesn't have homes? **Comment by:** Green, John and Louise
- Highly object to item 14, for safety reasons. It's right in between the narrows, Cline Ridge, Leatherwood, and Heatherwood and right across from the state park. You have got so many boats in there now. I can't see anyway to put some more houses in there with more boats—it's so crowded up there on the weekends—it's dangerous. **Comment by:** Burgoyne, Caleb
- **Parcel 14** (Jolly's Rock/Wiseman's Branch) 118.6 acres, and **Parcel 36** (Fanning Bend) 204.6 acres, should not be developed since there is already a greater population shoreline density in this area than anywhere else in the remaining shoreline acreage of Tims Ford reservoir. Parcel 42 (Maple Bend) 366.3 acres would be a better choice for residential development and could be substituted for both Parcels 14 and 36 thus equalizing the shoreline residential density in the above described 16.5 mile stretch of the reservoir shoreline. Wildlife habitat within this same 6.5 mile area is already suffering a loss of habitat acreage due to the 18 hole golf course at Wiseman's Bend, and the proposed 100 site RV Park at Big Hollow, and now Jolly's Rock and Fanning Bend Parcels 14 and 36 are to be developed removing another 323 acres that would otherwise be available as wildlife habitat acreage. A quick check of the scoping reports under Pollution (water quality), Recreation Issues (conflicting uses), Safety (crowding issues) more than justify not developing Parcels 14 and 36. It is for the above stated reasons that I am against residential development of Parcels 14 (Jolly's Rock/Wiseman Branch) and 36 (Fanning Bend) as listed and described in Alternative B of the Tims Ford Reservoir Land Management Plan. **Comment by:** Otterbein, W. G.
- Change for proposed designated use for Parcel 14—After detailed review, the League recommends that Parcel 14 be given a "Natural Resource Conservation" designation. We base this recommendation upon the following facts: the parcel is adjacent to sensitive resource and natural resource conservation lands; is well forested; contains several small openings, which if managed properly could provide exceptional wildlife habitat.; is located directly opposite Tims Ford State Park. Development of this Parcel would further negatively impact the viewshed of the park. **Comment by:** Tennessee Conservation League

**Response:** This comment has been noted for the record. In response to public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. One of the modifications involves changing the proposed allocation of Parcel 14 from Zone 7 (Residential) to Zone 4 (Natural Resource Conservation). Additional information about Alternative B1 can be found in the Final EIS.

- We note that the preferred alternative would result in the development of subdivisions adjoining narrow areas zoned for sensitive resource management (parcels 14 and 36). We feel that the narrow buffer strip offered up as mitigation is totally inadequate to protect the sensitive resources. Adequate mitigation should include a much wider buffer strip, an outright ban on the use of invasive exotic species in the subdivisions, and an enforced ban on pets running loose. **Comment by:** Tennessee Ornithological Society

**Response:** Based on the Record of Decision for the Shoreline Management Initiative Final EIS, TVA believes the 50-foot buffer is adequate. TVA's current policy does not allow the planting of invasive exotic plants on TVA property. As a result of public comments, Alternative B has been modified. This new alternative is presented as Alternative B1 in the Final EIS. Under this alternative, the proposed allocation for Parcel 14 would be changed to Zone 4, Natural Resource Conservation. Although we understand your concern about

**loose pets, neither TVA nor TDEC has adequate jurisdiction to control pets as you suggest.**

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### **Parcel 15**

- *I feel it is unjust that we have to cease keeping the land between our residence and the lake clear (Parcel 15). We clear approximately 200' in order to maintain the view we had when we purchased this property in 1986, which is taxed as lakefront. It is not only more attractive, it benefits wildlife. Deer, turkey, and other wildlife enjoy grazing there.*  
**Comment by:** Green, John and Louise

**Response: Parcel 15 was placed in Zone 3 to protect state-listed rare species, wetlands, and its high scenic qualities. The agencies believe that allowing private access or 'view corridors' is not compatible with protecting these resources.**

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### **Parcel 17**

- *Parcel 17, if I read this correctly will be allowed residential access. I recommend access be granted, subject to restrictions and limitations and that rights to access be paid for by the individual property owners.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Under all the alternatives, this parcel is considered for residential access due to the existing private water use facilities and historical permitting practices on this parcel.**

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### **Parcel 20**

- *I own one of the existing leased structures in Parcel 20. I am most concerned about what I am allowed to do under the grandfathering rules. For 14 years, I have been mowing all the shore adjacent to my private property and want to be able to continue that.* **Comment by:** Best, Tom

**Response: As described in TVA's Shoreline Management Policy, existing vegetation management practices would be allowed to continue, provided they do not impact sensitive natural resources. Generally, all current permits for improvements on the public shoreline of Tims Ford Reservoir would be 'grandfathered.' This would include mowing to the extent that it is reasonable to provide access across public land to the waters of the reservoir. For more information about vegetation management plans, please contact the Wheeler Watershed Team at (256) 386-2560.**

- *I recommend major portions of Parcel 20 be planned residential and allowed water access with limitations and that rights to access be paid for by the property owner. This property is accessible, developable and has the potential to produce large additional tax revenue for Franklin County.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Please refer to the parcel description of the Plan for an explanation of the reasons for placing this land in Zone 4. Under Alternatives A, B, B1 and C, additional shore lands elsewhere on the reservoir would be made available for development. Under Alternative C, 112 acres of Parcel 20 are considered developable.**

As a result of public comment, all parcels allocated for Zone 4 were reevaluated for dock access. Also, Alternative B has been modified and is presented as Alternative B1 in the Final EIS. Alternative B1 modifies the management strategy on certain specific lands allocated to Zone 4 in the Draft EIS. It also incorporates a new zone, Zone 8 (Conservation Partnership). The primary objective within this new zone is to establish a wider shoreline buffer zone through specific protective easements and shoreline protection partnerships with the adjacent private property owners. TVA may approve requests for limited community water use facilities fronting Zone 8 public lands in exchange for protective easements transferred from private property owners. Parcels 20-1, 20-2 and 20-3 are now in Zone 8. Please refer to the Final EIS for a more detailed description of Zone 8, and Alternative B1.

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### **Parcel 22**

- *We purchased two lots (Nos. 3 and 4) that were surveyed by Mr. James Trott and known as the Shasteen Brothers Subdivision properties in September 1990. This property is located above the flood plain adjacent to TVA Marker 8-11, located in Moore County, Tennessee just off Hurricane Creek Road across an arm of Tims Ford Lake and confluent of Hurricane Creek. Prior to the purchase of the lots, Mr. Thomas of TERDA assured us of the approval of lake access and docking privileges and reaffirmed this on several occasions while TERDA/Elk River Development Program was in effect... The lots Nos. 3 and 4 ingress/egress road was completed approximately September 1990. Lake access and docking privileges have been granted to many, many landowners on Tims Ford Lake that were not in a TERDA developed subdivision, one in particular being within three lots (approximately 150 yards) of our property. Comment by: Smith, Bobby Ray*

**Response:** As a result of public comments, all parcels allocated to Zone 4 were reevaluated for dock access. Also, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Alternative B1 modifies the management strategy on certain specific lands allocated to Zone 4 in the Draft EIS. It also incorporates a new zone, Zone 8 (Conservation Partnership). Portions of Parcel 22 (i.e., 22-1, 22-2, 22-3 and 22-4) are now in Zone 8. The primary objective within this new zone is to establish a wider shoreline buffer zone through specific protective easements and shoreline protection partnerships with adjacent private property owners. In Zone 8 public lands, TVA may approve requests for limited community water use facilities in exchange for protective easements transferred from private property owners. Please refer to the Final EIS for a more detailed description of Alternative B1 and Zone 8, Conservation Partnership.

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### **Parcel 26**

- *I recommend major portions of Parcel 26 be planned residential and allowed water access with limitations and that rights to access be paid by the property owners on the exiting developments and future developments. This property is accessible, developable and has the potential to produce large additional tax revenue for Franklin County. Comment by: Franklin County Planning and Zoning Department (Mark H. Dudley)*

**Response:** Please refer to the parcel description in the Plan for an explanation of the reasons for placing this land in Zone 4. Under Alternatives A, B, B1 and C, additional shore lands elsewhere on the reservoir would be made available for development. Under Alternative C, 86.8 acres of Parcel 26 are considered developable. Please be aware that

**Alternative B has been modified and is presented as Alternative B1 in the Final EIS. Under Alternative B1, certain lands allocated to Zone 4 in the Draft EIS were allocated to a new zone, Zone 8 (Conservation Partnerships). The management objective within this new zone is to create a wider shoreline buffer zone through specific protective easements and to establish shoreline protection partnerships with the adjacent private property owners. TVA may approve requests for limited community water use facilities in Zone 8 in exchange for protective easements transferred from private property owners. With this modification, Alternative B1 now places a certain portion of Parcel 26 (which was previously in Zone 4) into Zone 8. This portion is shown as Parcel 26-1 on the map. Additional details about Alternative B1 and Zone 8 are presented in the Final EIS.**

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### **Parcel 29**

- *Parcel 29, if I read this correctly, will be allowed residential access. I recommend access be granted, subject to restrictions and limitations and that rights to access be paid for by the individual property owners.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Under all the alternatives, this parcel is considered eligible for residential access due to the existing private water use facilities and the previous permitting practices on this parcel.**

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### **Parcel 30**

- *If Parcel 30 is not leased again for a marina, then I recommend that this Parcel be reviewed as potential residential development. As residential, I would recommend access be granted, subject to restrictions and limitations and that rights to access be paid for by the individual property owners.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Under all Alternatives, Parcel 30 is zoned for Recreation to reflect existing uses. Because of its topography, it has low suitability for residential development.**

- *During the preparation of the Draft Environmental Impact Statement, your organization collected survey data from a large number of citizens and recreational users of Tims Ford Lake. A significant number of those who responded to your surveys expressed a clear need to either maintain or increase those recreational facilities and services listed below:*
  - *Overnight lodging*
  - *Year-round boat ramps with parking*
  - *Dock, piers, and covered boat slips*
  - *Marina areas*
  - *Places to purchase gas for boats*
  - *Clean restrooms*
  - *Restaurants*

*All of the above listed recreational facilities and services are available at Holiday Landing & Resort. The owners of Holiday Landing and our many recreational users strongly encourage TVA and the Tennessee Department of Environment and Conservation (TDEC) to retain the Holiday Landing marina facilities at the current location. This marina is important to the overall quality and availability of recreational resources on Tims Ford Lake. This marina has served TVA, the State of Tennessee, our local communities, and recreational users in a very*

positive and beneficial way over the past 25 years. In addition, the current operators of Holiday Landing have maintained a cooperative and open relationship with both TERDA and TDEC over the past ten years, which is the duration of their involvement in this marina operation.

A great deal of attention has been given to the Holiday Landing site due to 1997-98 TVA activities associated with locating and repairing a significant leak near the dam. Along with our marina facilities, many other recreational facilities on the lake were either severely degraded or made completely unusable by the extreme water level drawdowns during this activity. In addition, for Holiday Landing this resulted in significant unrecoverable loss of revenue during the two years mentioned.

Approximately 30 years ago, TVA's Land Use Committee studied and deemed that our site was suitable for building a marina. Over this time, Holiday Landing marina site has caused little or no harm to the surrounding land environment and water quality. Thus, it seems most unfair to now decide that this marina site no longer serves the best interest of TVA, TDEC, and the community at large.

We urge TVA and TDEC to allow Holiday Landing to continue its business operation where it is presently located. During the past three years, the owners and management of Holiday Landing have talked with a large number of our recreational users and fisherman who have expressed great concern over this marina being closed down or relocated. All of the recreational users that we have talked with believe that our marina is in an excellent and accessible location.

The owners and many faithful Holiday Landing users would appreciate the above comments being considered by TVA and TDEC during their formulation of the new and comprehensive Tims Ford Reservoir Land Management and Disposition Plan.

If you wish to personally discuss any aspects of this letter please contact me at 770-644-8482(days). Thank you for your consideration. **Comment by:** McCosh, Burl (Holiday Landing and Resort, Inc.)

**Response:** The marina is a State-owned facility that is operated through a license agreement. Holiday Landing and Resort, Inc. is the current licensee. When State facilities are to be operated through a license agreement, the State is ordinarily required to open the license arrangement to competitive bidding.

As part of the development of the Tims Ford State Park Strategic Management Plan, it is anticipated that there will be a review of whether the current marina location is the most appropriate one. Should the State conclude that the development of a marina at another site is preferable, that may become a long-term goal. In the meantime, the State expects to continue operation at the current location, so services will continue. The current license expires later this year. The licensing for this operation will be open to competitive bidding.

### **Parcel 31**

- *Parcel 31 –What utilities are available to Tullahoma? This property is in the Center Grove-Winchester Springs Utility District.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response:** The sentence in the parcel description: “This parcel was placed in Zone 7 due to its location, access, topography, and utilities which are available to Tullahoma”, has been revised and now states: “This parcel was placed in Zone 7 due to its location, access, topography, utilities, and accessibility to Tullahoma.”

### Parcel 32

- *Parcel 32 should be considered for a private marina facility. Long term lease to a well capitalized company with performance bonds of adequate amounts to ensure that a first-class facility is developed and maintained.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Under Alternative B1, Parcel 32 would become a part of Tims Ford State Park, and its future use would be determined in the strategic management planning process for the Park. Under Alternatives A and C, the parcel would be allocated for recreation, and a marina would be a compatible use. Under Alternative D, the parcel would be allocated as Natural Resource Conservation. Your preference for use of Parcel 32 for a marina is reflected in Alternatives A, B, B1 and C, which will be given consideration in the Final EIS.**

### Parcel 34

- *Portions of Parcel 34 should be allowed residential access to allow private docks, regulated and limited per the above, with the developer of the private acreage paying for this exclusive access rights. The potential exists for large amounts of additional tax revenue to Franklin County. This portion of Parcel 34 that I am referring to is located between existing residential, proposed residential, and the lake. The Plan lists adjacent residential use as supporting reasons for developing residential uses.* **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response: Please be advised that Alternative B was modified and is presented as Alternative B1 in the Final EIS. Additional information about Alternative B1 is presented in the Final EIS. With this modification, portions of Parcel 34 which were previously in Zone 4 are now in Zone 8. These are parcels 34-1 and 34-2. Also, please see previous responses to Comment Category 9 (Satisfied with EIS Draft) and Comment Category 29 (Dock Access/Residential Access).**

- *My family has 90 acres at Long Branch Area off Little Hurricane Creek. We would like to build a boat dock, just one would serve our family well. Our place is in green, the natural resource area. This is unfair to have one owners acres, on all sides designated natural resource conservation area.* **Comment by:** Sansom, Lanelle

**Response: The comment is noted for the record. Please see the response to the previous comment above.**

- *We developed Highland Acres Subdivision in early spring of 1996. We have been writing letters to somebody at TVA ever since asking for boat docks and use of the end of Highland Ridge Road for use for subdivision only to launch boats. We would be happy with just three boats docks permits for lots 4,5, and 6. The man next door to lot 4 has a boat dock. He had his dock 2 years before we developed the subdivision so we thought sure we could someday get boat dock permits. If I had something to trade for permits we would. Our subdivision is in Parcel 34 on Tims Ford Lake.* **Comment by:** Wright, Jerry and Joann (Highland Acres Subdivision)

**Response: The area within Parcel 34 (after excluding Parcels 34-1 and 34-2, which are now in Zone 8) was reviewed by the Land Team, and it was determined this area should remain allocated to Zone 4. The use of the road in Parcel 34 by all members of the public as an informal recreation access site is a use compatible with the Zone 4 allocation.**

**Improvements to this road and surrounding area would not be considered. Existing dock permits in areas allocated to Zone 4 will be grandfathered. However, no new facilities will be considered in these areas.**

- *North Lakes Estate Development*

*REC Development, Inc., is the developer of North Lake Estates, and currently owns all of the lake lots located within that subdivision. Any land use plan ultimately adopted by TVA and TDEC will have an immediate impact upon our development.*

*North Lake Estates is located along the westerly side of Little Hurricane Creek, adjacent to Parcel 34 as described in the Draft Environmental Impact Statement dated October 1999. (Exhibit "C"). Parcel 34 is a 462.4 acre Parcel of land, which is classified as "Zone 4." (Exhibit "D"). There are three agricultural leases on this Parcel. According to the Draft Environmental Impact Statement, this particular Parcel was placed in "Zone 4" to protect wildlife and shoreline vegetation. There are no sensitive resources present in "Zone 4" or within North Lake Estates... Although North Lake Estates does not appear on Table 87 of the Draft Environmental Impact Statement as a private development adjacent to Tims Ford Subdivision, it has existed as a subdivision adjacent to TVA property since final plat approval by the Franklin County Planning Commission. Since its development, North Lake Estates has been unable to sell any of the lake lots, with the inability to obtain dock permits being the single most detrimental factor. Despite the inability to obtain dock permits, and the uncertainty of access to the lake, some of these lake front lots have been appraised by the Franklin County Tax Assessor as having values of \$65,700.00. The inflated evaluations mentioned in the preceding sentence remained even following appeals, and reflect the desperation of Franklin County for tax revenues. Lots in the Tullahoma area of Franklin County, Tennessee, would justify values in that amount only if the lots did in fact provide lake access. Some of the reasons for granting dock permits to North Lake Estates are the following:*

- 1. North Lake Estates is not in close proximity to any other residential development. Highland Ridge, which is a TERDA deeded development that allows individual docks, is the closest development, and it is several miles away by shoreline, being located at the junction of Fanning Bend and Hurricane Creek.*
- 2. Two private subdivisions were developed after North Lake Estates. Neither of those subdivisions is now owned by the original developers, with both having been liquidated under distress sales circumstances. North Lake Estates is the only subdivision denied dock permits which is owned by the original developers.*
- 3. North Lake Estates is one of the few, if not the only residential subdivision located on Tims Ford Lake in close proximity to the Tullahoma area of Franklin County, Tennessee. Many Tullahoma citizens have expressed an interest in acquiring a home on Tims Ford Reservoir. The current site of North Lake Estates was selected primarily because of the interest expressed by the Tullahoma community.*
- 4. North Lake Estates is located within a "Zone 4" area, which by definition provides that there are no sensitive resources present on that portion of the river corridor.*
- 5. The shoreline between North Lake Estates and the Tims Ford Reservoir is a rock shoreline, and is therefore less susceptible to erosion.*

#### **CONCLUSION**

*It is our position that a land use plan should be adopted immediately without further delays. Further delays or uncertainty will place a tremendous economic burden on North Lake Estates, and will adversely affect the economic and community benefits of Tims Ford, which were among the projects' original purposes. Any plan that is adopted, should involve a balancing of economic and community benefit, with the concern for adverse environmental impact. To choose a plan which allows unfettered development without concern for our environment, or to choose a plan which prohibits all development and*



docks, would be untenable and totally contrary to the original purposes of the Tims Ford project.

It is our hope that a balanced plan will be immediately implemented, and that the plan will allow for the issuance of limited dock permits, when the environmental impact as a result of those docks is minimized. We believe that North Lake Estates is a residential subdivision which uniquely meets the criteria of providing economic benefit and minimal environmental impact.

It is our hope that a favorable decision will be made in the immediate future. **Comment by:** Hill, Randy J. (North Lakes Estates); REC Development, Inc.; Lester, Joe (North Lake Estates); Harton Realty Company

**Response:** As a result of public comments such as these, Alternative B has been modified. The modified alternative is presented as Alternative B1 in the Final EIS. A discussion of Alternative B1 and a new zone – Zone 8 (Conservation Partnership) is provided in the Final EIS. Also, please refer to responses to previous comments in Comment Category 9 (Satisfied with EIS Draft) and Comment Category 29 (Dock Access/Residential Access).

### **Parcel 35**

- Parcel 35 should remain a small public access boat ramp, with the addition of restroom facilities into the future development plan. **Comment by:** Franklin County Planning and Zoning Department (Mark H. Dudley)

**Response:** Under all Alternatives, Parcel 35 would be allocated for recreation. The construction of restroom facilities would be compatible with the intended use of this parcel for recreation.

### **Parcel 36**

- Hopkins Point Subdivision and other subdivisions now have many vacant lots for residential access. Most vacant lots held by contractors, developers, and speculators. Why open up and destroy natural beauty endangered species in areas like Parcel 36. **Comment by:** Connelly, Robert G. (Tims Ford Council)

**Response:** No endangered species were found on Parcel 36 during the field surveys carried out during the preparation of the plan. Under Alternatives A, B, B1 and C, this parcel was considered for Zone 7 because of its location, access, topography, and because it is a platted development previously approved by TERDA for residential development. Consistent with the Shoreline Management Initiative Final EIS, the agencies have proposed opening up additional lands on Tims Ford Reservoir for residential development in order to be consistent with our existing contracts and State legislation. However, in order to reduce potential environmental impacts, we are proposing to entertain requests for community docks for water access rather than granting deeded access rights to individual owners. Under Alternative D, this parcel would be allocated for Natural Resource Conservation, i.e., Zone 4.

- A major issue exists in the state parks, Tims Ford marina, Hopkins Point, Highlands Ride, Leatherwood, and the planned development of acre 36 on the planned use map. Because of the concentrated, high density of development in this area and the high volume marina boat storage, the water craft traffic is already beyond acceptable, safe usage. Addition of

36 acres will make the problem much worse for safety and bank erosion. **Comment by:** Daniel, James A.

**Response: We are unclear as to which area the comment refers, but believe it pertains to Parcel 36. Impacts associated with recreational carrying capacity are addressed in Section 3.10.2 of the EIS. During high use periods such as weekends and holidays, some overcrowding could occur. TWRA regulates watercraft operation on State waters.**

- *I had some concerns with Area 36 on the Tims Ford map. You're showing that as a plot for development, proposed development. It's got 204 acres. My concerns in that particular area were that there is an eagle that flies around in that general area. Also, Goose Island is relatively close to it and there could be some environmental impact there. Mud Island is on the tip of the peninsula of Area 36, which is one of the best fishing spots on the lake that I know of. A development might impact the fishing there, as well. So, I would go with no development in Area 36. **Comment by:** Holmes, Cliff*
- *"B" only if development spread out on rest of lake! Otherwise "D." If more development includes the area of Hopkins Point and Highland Ridge then "NO." As they are completely developed in this central, integral part of the lake traffic flow any added development would be unattractive to the natural beauty... **Comment by:** Linton, J. K.*

**Response: We assume both comments refers to Parcel 36, which is known as Fanning Bend. This parcel was placed in Zone 7 because of its location, access, topography, and because it was a platted development previously approved by TERDA for Residential Development.**

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### **Parcel 37**

- *My home and TERDA approved dock #146 (formerly #92) is located on Parcel 37. They have been there since 1976. I believe this Parcel should be included with the other Parcel in the proposed mitigation measures and the existing water use facility grandfathered. **Comment by:** Shasteen, James E.*

**Response: The parcel description has been revised to reflect the existing water use facility. Because this existing facility has been permitted, that permit will be honored, i.e., it will be 'grandfathered.'**

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### **Parcels 37, 38, 39, 40**

- *I cannot see placing the entire north shore from Big Hurricane to Winchester Springs under restrictions except for Mr. Farris's land (who fought TVA aggressively for what access rights he had). **Comment by:** McClure, Larry D.*

**Response: Your comment is noted. Please refer to the response to the preceding comment concerning the creation of a new alternative, Alternative B1. This modification places portions of Parcel 39 (i.e., Parcel 39-1 and 39-2) into Zone 8, thereby allowing community water access if certain conditions are met.**

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### **Parcels 36, 44, 46, 51, 52, 66, 75**

- *Parcels 36, 44, 46, 51, 52, 66, 75 should be developed for the reasons stated in the Plan. I recommend individual water use facilities to be allowed with regulation/limitation as described previously. This property is accessible, developable and has the potential to produce large additional tax revenue for Franklin County. Comment by: Franklin County Planning and Zoning Department (Mark H. Dudley)*

**Response: Because multiple parcels are mentioned in the comments, responses are provided below by parcel number.**

- **Parcel 36** - Please see the response provided previously for Parcel 36.
- **Parcel 44** - Under Alternatives A and C, this parcel could be considered for Residential Development (i.e., Zone 7). Under Alternatives B, B1 and D, this parcel was allocated as Natural Resource Conservation. The agencies believe that residential development under Alternatives B and B1 is incompatible with the adjacent public use area and the sensitive resources in nearby Parcel 43.
- **Parcels 46 and 51** - Under all alternatives except D, these parcels would be available for residential development. Consistent with TVA's Shoreline Management Initiative Final EIS, the agencies have proposed opening additional lands on Tims Ford Reservoir for residential development in order to be consistent with our existing contracts and State legislation. However, in order to reduce the environmental impacts associated with residential development, we are not proposing to grant deeded access rights to the owners and are instead proposing community docks for water access.
- **Parcels 52 and 66** - These parcels are not considered developable under any of the alternatives in the Draft EIS (see Appendix D in the Draft EIS). Under Alternatives B and D, these parcels were allocated for Natural Resource Conservation. In order to minimize impacts to natural resources on these parcels, individual water use facilities were not considered. Please refer to the responses in Comment Category 29 regarding the creation of Alternative B1. With the creation of Alternative B1, certain portions of Parcels 52 and 66 (i.e., 52-1, 52-2, 52-3, 52-4, and 66-1, respectively) are now in Zone 8, allowing community water-access facilities if certain conditions are met. Additional information about Alternative B1 and Zone 8 can be found in the Final EIS.
- **Parcel 75** - Under Alternatives A and C, 102 acres could be considered developable. Under Alternatives B and D, this parcel was allocated for Natural Resource Conservation.

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### **Parcel 42**

- *I recommend individual water use facilities to be allowed with regulation/limitation as described previously. This property is accessible, developable and has the potential to produce large additional tax revenue for Franklin County. TERDA had performed previous studies and had planned, for good reason, to develop this property, known as the Maple Bend property. Buffers should be established for the portions abutting the Sensitive Resource Management Areas to the east and west. Comment by: Franklin County Planning and Zoning Department (Mark H. Dudley)*
- *The Maplebend area is an example. The location is just off of Highway 50 between the Tims Ford State Park and Winchester, and is close enough to the City of Winchester to allow for wastewater treatment. With water quality a main issue, any developable "Residential Access" acreage with treatment available should be included. Comment by: Franklin County Government (Montgomery F. Adams, Jr.)*

**Response:** Additional language has been added to the parcel description in the Land Management and Disposition Plan to further clarify the importance of this parcel remaining allocated to Zone 4, Natural Resource Conservation.

- *There is a parcel of property at the end of Maple Bend Road that has an Eagle's nest in it. I think that this area should be preserved for camping and wildlife.* **Comment by:** Rouse, Marcia

**Response:** This area is located in Parcel 42 and is allocated for Zone 4, Natural Resource Conservation under Alternatives B, D, and the new Alternative B1. Under these alternatives, development would not be considered and would therefore be compatible with preservation of wildlife habitat and with other purposes such as informal recreation. Park Rangers from Tims Ford Park recently examined this nest and determined it was a hawk's nest. Thank you for your concern.

### **Parcels 46 and/or 51**

- *I would prefer slightly less zone 7 uses when one considers the traffic impacts of Highway 130 and the environment areas. Parcels 46 and/or 51 should be considered zone 4.* **Comment by:** Robbins, Steve

**Response:** In Table 3.12-2 of the Draft EIS, a 27 percent increase in traffic is projected for Highway 130 under Alternative B. These potential impacts were assessed in Section 3.12.3. Under Alternative B1, a similar 27 percent increase in traffic on Highway 130 is expected. Potential traffic impacts to Highway 130 were determined not to be adverse because the level of service would not be subjected to major change. Additional site reviews were conducted by the Land Team, and both parcels were recommended to remain allocated to Zone 7 for Residential Development.

### **Parcel 61**

- *One change in the public in the last one and one-half years has been driving vehicles of all types through the area [the TVA property between Schwartz Road and Eastbrook Road]. Access has been made in the most dangerous area possible, an area of blind visibility on a main thoroughfare, Eastbrook Road. The public's camping, dumping and other activities has created environmental damage to the area which to restore may result in considerable expenditures. Until the plan has been approved, would it be possible to erect barriers to stop vehicular traffic and prevent further damage and possible injuries?* **Comment by:** Town of Estill Springs (Alderman Robert Dean)

**Response:** This activity was confirmed on February 3, 2000. The area was posted with signs on February 8, 2000, and the TVA Police will patrol this area in the future. City Hall has been informed of these actions. To report such matters, please contact TVA's Wheeler Watershed Team Office (256-386-2560) or the TVA Police.

- *As an Alderman in the Town of Estill Springs, I have been authorized by the Board to send the enclosed material relating to Parcel #61 for your consideration. You will find this is described on page F-53 of Tims Ford Draft Environmental Impact Statement. The City of Estill Springs requests that a TVA license agreement be consummated with the City for the TVA property between Schwartz Road and Eastbrook Road. The City proposes to improve this land which is adjacent to Tims Ford Lake, to make it more accessible as a natural area with walking*

paths, and broad open areas. Those areas being requested are depicted on the enclosed map. Currently all of this land is administered by TVA; however, it adjoins one parcel which has been previously licensed to Estill Springs by TVA (TER12355DA) and which will be included in the Taylor Creek Greenway and Natural Area. **Comment by:** Town of Estill Springs (Alderman Robert Dean)

**Response: Your comment has been noted. The use contemplated in the proposal is compatible with the proposed allocation (i.e., Recreation).**

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### **Parcel 71**

- *It appears that there is no good reason to have the Zone 4 on the area #71 around Bell Acres Subdivision. There are no place for wildlife to go to use this as safe passage. The area is 20 to 50 feet in width depending on slope and has Murray Lake Estates with out safe passage at the south end and has riprap at the north end. Recommend that this area be zoned Zone 7.* **Comment by:** Glasner, Glen

**Response: This predominantly forested parcel serves many purposes, including providing travel lanes for wildlife. We agree that in some places along Parcel 71, this riparian zone is very narrow and steep, but many birds and small mammals nevertheless utilize these areas. These narrow shoreline corridors serve many purposes. They improve water quality by filtering sediments and pollutants; their shoreline vegetation cools the water temperature and enhances aquatic life. They provide food and shelter for both aquatic and terrestrial wildlife. They also enhance the beauty of the land and retard shoreline erosion. In addition, several wetland areas were identified along the shoreline of Parcel 71. TVA is obligated by federal executive order to protect and preserve wetlands. The allocation of Parcel 71 to Zone 4 was based on all of these factors, not just the importance as a travel lane for wildlife. However, as a result of public comment and additional review of these areas, Alternative B has been modified and a new zone has been developed that would allow for consideration of water use facility access in areas that meet certain criteria. Under this modified alternative, (Alternative B1), portions of parcel 71 (71-1, 71-2 and 71-3) have been placed in Zone 8, thereby allowing community water access facilities if certain conditions are met. Please refer to the Final EIS for more detailed information on Alternative B1 and Zone 8.**

- *This is in response to the manual regulations being proposed. We purchased two lakefront lots on Tims Ford Lake, Wilder Lane, Parcel #71, last year. There are five lots along this road. One of them has an existing boat dock. What we do not understand is why additional docks cannot be erected.* **Comment by:** Hansen, John and Gail
- *I would like to get permission to build and construct a small fixed pier at Lot 57 Bell Acres Estate Subdivision.* **Comment by:** Parrish, James
- *Petition—Bell Acres Subdivision*  
*Enclosed you will find a petition of the residents of Bell Acres Subdivision. This area is in Zone 4 – Natural Resource Conservation. There is only approximately a fifty-foot area that is zoned and we the people of Bell Acres Subdivision feel that this area should be deleted from this zone and should have the right to construct boat docks and other water-use facilities. Your prompt response in this matter will greatly be appreciated. If you have any further questions please do not hesitate to call.*

PETITION OF THE RESIDENTS OF BELL ACRES SUBDIVISION

We, the residents of Bell Acres Subdivision, in Winchester, Tennessee, sign this petition to request that Tennessee Valley Authority allow us the opportunity to obtain permits for construction of boat docks, boat houses, and other water-use facilities, as has been provided to other residences located on Tims Ford Lake in Franklin County, Tennessee. We believe that we are being unfairly discriminated against due to the refusal of the Tennessee Valley Authority to issue permits, or otherwise grant permission for the construction of boat docks and other water-use facilities on the lake adjoining our properties in Bell Acres Subdivision.

**Response: In response to public comments such as these, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Please see the previous response to comments in Comment Category 9 and Comment Category 29. Also, additional information about Alternative B1 and a new allocation zone, Zone 8, is presented in the Final EIS.**

- *I realize rules must be established and enforced to protect Tims Ford and I have no problem with that as long as they are established/enforced fairly and equally. I guess this is where TVA/TDEC and myself begin to disagree on some things and that's what this letter is about. We bought our lot in October 1997 and started our house in March 1998. We knew at that time no dock privileges came with this property but were told by TVA that it may be granted sometime in the future. What we didn't know was that we had no rights at all to do anything on TVA property adjoining our property. We were never told this until sometime during the summer of 1999. I was told the grass I had planted on TVA property and the rip-rap that I paid for all to prevent erosion on TVA property were encroachments. I honestly thought I was doing the right things because I had observed this in other subdivisions. Later while studying the Impact Statement I find out part of TVA property adjoining our lot was zoned sensitive because of Indian Artifacts. I personally feel TVA has a problem with Bell Acres subdivision and I don't understand why! Comment by: Spaulding, Charles*

**Response: You are correct in your understanding that TVA was not permitting construction of new water use facilities pending the completion of the Tims Ford Plan by TDEC and TVA. Unfortunately, you did not realize that TVA approval is required for any structures or appurtenances (including boat docks and riprap) that may affect flood storage, navigation, etc. Likewise, use of TVA property for private purposes is also subject to TVA approval. Actions on TVA property that have not been expressly approved by TVA are considered encroachments. We request that you please contact the Wheeler Watershed Team Office at 256-386-2560 to discuss this situation. The Team is willing to work with you to resolve this issue. Also, please be advised that a new alternative has been developed that would allow community docks in specified areas in exchange for shoreline conservation considerations by adjacent landowners. Please refer to the Final EIS for details on this new alternative.**

- *Why was Bell Acres never considered for any residential access? Bell Acres was developed in my opinion in a very environmentally friendly way.*
  - A) Sewer system not septic tanks were used for waste disposal.*
  - B) All drainage ditches were rip-rapped to prevent erosion.*
  - C) Curb streets which also help prevent erosion. The developers didn't have to do these things!***Comment by: Spaulding, Charles**

**Response: Development of Bell Acres Subdivision included various environmental features that you mentioned. The developers of Bell Acres subdivision were not provided with deeded access rights when the property was acquired. Consequently, subsequent landowners do not possess deeded access rights. The existing water use facility is not a**

part of the Bell Acres Subdivision and existed prior to the sale of this property to the developers. Portions of TVA public land fronting Bell Acres were placed in Zone 3, Sensitive Resource Management, to protect sensitive resources. All project lands, including the land fronting Bell Acres subdivision were evaluated for varying uses including potential for residential development and for residential access to allow private water use facilities.

- *Why are privately developed subdivisions treated differently than TVA/TDEC/TERDA subdivisions? Comment by: Spaulding, Charles*

**Response:** The distinction between TERDA-developed subdivisions and privately-developed subdivisions is that property owners in TERDA-developed subdivisions have deeded lake access rights. These rights allow access across public land below the 895 contour for the purpose of constructing private water use facilities. These property owners purchased the access rights with the lots. Privately-developed subdivisions are backlying subdivisions (located on private property) wherein the developers did not acquire deeded access rights. Allowing access to construct private water use facilities from private subdivisions was a practice that TERDA applied on a case-by-case basis.

- *Why is TVA land set aside for residential development in the Draft Proposal getting dock access (i.e., community docks, etc.)? Comment by: Spaulding, Charles*

**Response:** Under Alternative B, six parcels are proposed for residential development, and there are five proposed for residential development under Alternative B1. Of these parcels, which comprise a total of 816.0 acres, only 387.6 acres are TVA land. The parcels proposed for new residential development will have deeded access rights. However, these access rights will be limited to community water use facilities.

- *I think this is a misuse of power by TVA. After all TVA condemned this property during the development of Tims Ford and compensated the property owners very little. Now TVA is padding their pockets by increasing the value of this property with dock privileges. Comment by: Spaulding, Charles*

**Response:** Your comment has been noted.

- *Why is this property more suitable for dock access than any other privately developed subdivision? Comment by: Spaulding, Charles*

**Response:** The TVA and TDEC lands were screened using the development potential model criteria outlined in Appendix D of the Draft EIS. The tracts designated for residential development were carefully evaluated for potential environmental impacts and suitability with the surrounding topography, amount of public land present, previous permitting practices, and proximity to utilities. Presence of any sensitive resources, including cultural resources were factors in deciding which lands could be developed without potential adverse impacts. Sensitive resources were identified in numerous areas around the reservoir. The criteria for acquiring dock access (i.e., deeded access rights) by backlying residential property owners have been addressed in various previous responses.

- *Also it seems odd that no Indian Artifacts or endangered species were discovered on this property or for that matter on any other old TERDA subdivisions. Comment by: Spaulding, Charles*

**Response:** A cultural survey was conducted by TDEC archeologists as part of the planning effort. Likewise, TVA staff biologists conducted surveys for other sensitive resources such as rare plants and animals and wetlands. If sites were found, they were placed in Zone 3 (Sensitive Resource Protection) and considered unsuitable for development.

- *As I said before I know rules must be established but I just don't think these rules are fairly distributed. TVA seems to be against any private developments. Now having said that here is my proposal for Bell Acres Subdivision.* **Comment by:** Spaulding, Charles

**Response:** The agencies share your concern about the fairness of rules. Neither agency is opposed to private developments. Your comment is noted for the record.

- *1<sup>st</sup> Choice: Shared Docks-There are approximately 30 lots adjoining TVA property with no residential access. If docks were placed on property lines with 1 slip per lot this would require only 15 docks. I would be in favor of strict rules regarding maintenance of all docks.*  
**Comment by:** Spaulding, Charles

**Response:** In an effort to minimize potential impacts from residential development, TVA and TDEC are considering only community water use facilities for all new residential areas.

- *2<sup>nd</sup> Choice: Community Dock/Launching Ramp - TVA could grant access for a community dock. Some TERDA subdivisions have both private docks and a community ramp (i.e. Hopkins Point).* **Comment by:** Spaulding, Charles

**Response:** Alternative B has been modified in response to public comments, and the revised alternative is presented as Alternative B1 in the Final EIS. Please refer to the Final EIS for a detailed description of Alternative B1 and the new Zone 8. Requests for community docks would be entertained under this new alternative if certain criteria are met.

- *Bell Acres needs permission for rip-rap. Everywhere I see erosion there is no shoreline protection. I see no erosion in subdivisions with rip-rap (i.e., Hopkins Point, Lee Ford, Waters Edge).* **Comment by:** Spaulding, Charles

**Response:** In cases where erosion is extreme and TVA deems it suitable, a permit could be issued for placement of riprap along the shoreline regardless of whether or not the landowner possesses the necessary rights. TVA can consider requests from adjoining property owners who wish to partner in protecting eroding shorelines. Riprap can be an effective shoreline protection measure. Likewise, in many places, allowing the growth of adequate natural shoreline vegetation can protect the bank from erosion and also provide multiple benefits such as enhancing fish and wildlife habitat and improving visual quality.

- *In closing I would like to say this has been a stressful situation for myself and I'm sure for the employees of TVA/TDEC. I consider myself a reasonable person and I'm sure we can co-exist on Tims Ford. I look forward to working with TVA to resolve any problems we currently have. I would like to meet with the TVA people at Bell Acres to discuss my personal situation. Resolution of any encroachments I have is of utmost importance to me. As I said my family enjoys Tims Ford and we want to have a good understandable, long lasting relationship with TVA. We also look forward to enjoying Tims Ford for many years to come and plan on doing our part to ensure that its here for future generations. If there's anything I can do please call. Below are phone numbers and addresses I can be reached. Thanks for hearing me!*  
**Comment by:** Spaulding, Charles



**Response: Thank you for your comments. They have been noted for the record.**

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### **Parcel 73**

- *For portions of Parcel 73, along Riva Lake Camp, I recommend individual water use facilities to be allowed with regulation/limitation as described previously. This property is accessible, developable and has the potential to produce large additional tax revenue for Franklin County. Comment by: Franklin County Planning and Zoning Department (Mark H. Dudley)*

**Response: The Land Team reviewed this parcel during another site visit and consequently placed part of Parcel 73 (i.e., Parcels 73-1 and 73-2) into Zone 8 under Alternative B1.**

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### **Parcels 79, 79A, 79B**

- *Winchester City Park—After careful consideration, the League recommends that Parcels 79, 79A, and 79B be put into a designation compatible with the creation of a greenway and nature park for the city of Winchester, Tennessee. The field identified in Figure 1 could be purchased with proceeds from the sale of ex-TERDA lands. This additional acreage would be ideal for the location of greenway trails, a nature park and other recreational pursuits. Further, a greenway buffer should be included along parcels 78 and 81. Narrow parcels near residential areas, such as 84, 84A, 54, and 54A could accommodate greenways as well as water use facilities. Greenways and nature parks are increasingly popular and affordable amenities counties can provide their citizens. They are also valuable tools for preserving water quality. Comment by: Tennessee Conservation League*

**Response: The request received from City of Winchester concerning the city park has been incorporated. This use is compatible with the zone allocations for Parcels 79 (Recreation), 79a (Natural Resource Conservation), and 79b (Industrial/Commercial Development). If a request is made, the agencies could consider a contiguous greenway connecting Parcels 79, 79a, 79b and 81. Parcel 54A does not exist. Parcels 84, 84A, and 54 were allocated to Zone 7 (Residential Access), due to existing private water use facilities and previous permitting practices. According to the Land Use Zone Definitions (see page F-29 in the Draft EIS), greenways are not a compatible use within Zone 7.**

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### **Parcel 79B**

- *It seems odd that the industrial commercial use identified for Parcels 78, 79B, and 83 are all concentrated on one peninsula. In effect 1% of the land use is inordinately concentrated. It would seem that 83 and 78 are logical, industrial/commercial sites but 79B would be better suited to recreational (including marinas) educational, or camping. Comment by: Panzarella, Philip P.*

**Response: Under Alternatives A, B, B1 and C, Parcels 78 and 79B are assigned to Zone 5 (Industrial Commercial). This zone allocation was due mainly because of their location and anticipated demands for commercial sites. Parcel 83 is allocated for industrial use under all alternatives in order to accommodate existing uses. Because of the size and terrain constraints, the potential types of industrial and commercial development would be limited.**

- *The Foundation for Educational Excellence, Franklin County, Tennessee, has made a request for Parcel #79B to be used to construct a two-year community college/technology learning center. This would be ideal as it would serve for the betterment of all citizens from the original TERDA counties. Comment by:* Huerkamp, Henry (Franklin County Industrial Development Board); Taylor, Judy (Franklin County Chamber of Commerce); Bowling, Janice
- *Our site committee has reviewed several sites and we all agree that this is the site with the most potential for growth and expansion as the various needs arise in Franklin County. We realize that you have considered all different attributes of the property and those requesting the land. Comment by:* Foundation for Educational Excellence (FEE)

**Response: These comments have been noted. Generally, these requests are compatible with the allocation of Parcel 79B. Specific requests will be considered when the plan is adopted.**

- *I would ask that Parcel 79-B, along and near Dry Creek and State Highway 50 be set aside for use as a community based higher education facility location. Comment by:* Franklin County Government (Montgomery F. Adams, Jr.); Watson, Tom G.; Panzarella, Philip P.

**Response: This comment has been noted.**

- *The F/C Recreation Committee would like to support "Alternative B" and your suggestion that Parcel #79 should be expanded further to its full potential of "high use recreation activities." Currently F/C recreation is limited in expansion with lease restrictions and have long range plans to expand with adding concessions, extending beach, building, walking and bike trails, etc. Parcel #79 would be perfect. Comment by:* Cowan, Honorable Ronnie O. (Franklin County Recreation Committee)

**Response: Your comment is noted.**

### **Parcel 80**

- *We attended the public open house on November 30, 1999 and were surprised to find that the land between our property line and the lakeshore was proposed "recreation." The area in question is the Eastern-most portion of parcel #80. We would prefer that this narrow parcel of land fronting our house (approximately 150') be zoned as Natural Resource Conservation. Comment by:* Foster, Graham and Eva

**Response: The allocation of this section of Parcel 80 was reviewed and reconsidered. Due to the backlying property use, this section of Parcel 80 has been reallocated to Zone 4 in the Land Plan. This section will be included with the adjacent parcel to the east (i.e., Parcel 86), which is also allocated as Zone 4.**

### **Parcel 81**

- *I have also, within the last couple of months, purchased property that's described as, I believe R.H. Whitman, which is further to the left looking North on the map. I don't know if that's, I guess that's downstream. It looks like it might already be dock property. If not, I would like the option there also. And I would also like that extended. Although it may be but it looks like it's actually part of Parcel 86 but if it goes across the lake, it looks like that we*

could have docks there, although I can't see the yellow marking on my map. But it's across from Winchester Village there. I think it's probably more easily identified on the map the gentlemen showed me as being R.H. Whitman, I'd like it down there, too. **Comment by:** Ewell, Gerald

**Response:** After checking TVA map records and city street maps, we believe the comment refers to Parcel 81.

Please be advised that as a result of public comments, Alternative B was modified and is presented as Alternative B1 in the Final EIS. Also, a new allocation zone, Zone 8 (Conservation Partnership) has been established. Under this alternative (i.e., Alternative B1), portions of Parcel 81 (81-1) is now allocated to Zone 8, allowing community water-use facilities if certain conditions are met. Please refer to the Final EIS for a discussion of this alternative. Under Alternative B1, TVA would consider requests for community docks along certain narrow shoreline areas formerly assigned to Zone 4.

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### **Parcel 88**

- *I would request that you extend the dock area to include my property. I am the owner of the parcel that they have told me is part of Parcel 88, which would be, I guess, West and North of Dinah Shore Boulevard, which would be slightly south of what's been described to me as the cut line of Parcel 87. I would request that that cut line be moved down to my property, such that I could construct a dock from that property. There are docks within sight of my property.  
But there's just a slight gap between the bridge and where the docks begin. And I would just like the availability of a dock down on my property, which would entail moving that cut line slightly East or South or Southeast, I guess probably 200 feet. I can't see how that would hurt the aesthetics since I can see docks within sight of my property. It is located just downstream on Dinah Shore Blvd. It is within sight and probably 300' of existing docks and is more integrated with the areas already identified with dock construction than anything else.*  
**Comment by:** Ewell, Gerald

**Response:** In response to public comments such as yours, all parcels allocated to Zone 4 were reevaluated for dock access. Also, Alternative B has been modified and is presented as Alternative B1 in the Final EIS. The management strategy for certain specific lands previously allocated to Zone 4 in the Draft EIS is modified under Alternative B1. This alternative also incorporates a new allocation zone – Zone 8 (Conservation Partnership). The primary objective for creating this new zone is to establish a wider shoreline buffer zone through specific protective easements and shoreline protection partnerships with the adjacent private property owners. Under Alternative B1, TVA would consider requests for limited community water use facilities in Zone 8 in exchange for protective easements transferred from private property owners. Portions of parcel 88 (i.e., 88-1 and 88-2) have been placed in Zone 8, thereby allowing water access facilities if certain conditions are met. Please refer to the Final EIS for a more detailed description of Zone 8 and Alternative B1.

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## Zone 4

- According to the recent land use proposal, the property contiguous with our acreage would be Zone 4—natural conservation (Parcel 8). We believe that Zone 7 would be the correct “grandfathering” category. **Comment by:** Smith, Martha P.; Smith-Howard, Melanie

**Response: Please be advised that Alternative B has been modified and is presented as Alternative B1 in the Final EIS. Modified Alternative B1 places portions of previous Parcel 8 (8-1 and 8-2) into Zone 8. Community water access may be allowed if certain criteria are met. Please refer to the Final EIS for a more detailed description of Alternative B1 and the new Zone 8, Conservation Partnership.**

## Zone 5

- On page F-61 under parcel 79B, it states that the parcel has been assigned to Zone 5 “Industrial/Commercial Development.” It goes on to further state that “future uses such as educational facilities and supporting structures as defined in zone definitions for Zone 5 in Table 2” is the intended use for this parcel. Referring to Table titled Land Use Zone Definitions found on page F-28, which I assume is what was referred to as Table 2 on page F-61, it states that types of development that can occur on this land are: Business Parks, Industrial Access, Barge terminal sites, Fleeting areas and minor commercial landing... where does it state in the definitions that educational facilities, which I agree would be both an excellent use of the parcel as well as an environmentally responsible use of the parcel is allowed? If it is included I think it should be made more obvious, if not, it should be included... The other uses in the definition such as: Business parks, Industrial access, Barge terminal, Fleeting areas, etc., do not appear to be environmentally responsible. **Comment by:** Panzarella, Philip

**Response: Under Alternatives A, B, B1 and C, parcels proposed for allocation to Zone 5 would have limited industrial use because of the lack of navigation access for industry. Likewise, there are size and terrain constraints. Compatible industrial/commercial uses for Tims Ford Reservoir include business parks and minor commercial landings. In this case, education facilities were considered to be comparable to business parks due to similar impacts that both might have.**

- There is another issue which, as a resident of a TERDA development, I think is very important. There is an implied trust which now resides in TVA and TDEC to do nothing which would result in the diminution of property values and aesthetics of the lake environment. Those of us who live on the lake now had an implicit (although unofficial) understanding with TERDA that there would be no developments which would detract from the value of our property nor from the aesthetics of the lake environment which caused us to build there in the first place. TERDA honored this trust in the past, and TVA and TDEC should honor this trust now. There is no place on the lake for industrial uses. Recreational uses should be compatible with existing residential developments. The fact that Winchester permits a race track to exist in the middle of town shows that local officials cannot be entrusted with this responsibility. In the past, TERDA turned down requests for land for a shooting range, landfill, and an amphitheater for rock concerts on the basis of compatibility with adjacent residential areas. This trust now resides with TVA and TDEC, and both agencies should remain diligent that the trust is maintained. **Comment by:** McGuire, Michael E.

**Response: The agencies recognize the value of public trust and have developed a plan that balances the aesthetic and economic values with environmental protection. The**

**proposed industrial uses for this plan include environmental education facilities and an area suitable for the manufacture of water use facilities. Recreation allocations were made in areas with existing recreation uses and in certain areas to accommodate expansion of existing camping and marina facilities.**

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### **Zone 7**

- *I would prefer slightly less Zone 7 uses when one considers the traffic impacts of Highway 130 and the environment in these areas.*      **Comment by:** Robbins, Steve

**Response: As described in Section 3.12 of the Final EIS, the maximum traffic increase under any of the alternatives is 41 percent. Traffic increases would occur slowly over a long period of time. Thus, traffic conditions would not change suddenly and would not be perceived by the user as changing significantly.**

- *With the limited additional residential development (Zone 7) allow individual docks. These areas will not adversely affect the lake or the environment.*      **Comment by:** Hurst, Hugh

**Response: In order to reduce potential environmental impacts associated with residential development, we are proposing community docks for water access instead of granting deeded access rights to individual landowners.**

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## APPENDIX C – Land Use Zone Definitions

These are standard definitions for all TVA reservoirs. Some of the described uses in these definitions may not be applicable to Tims Ford. Zones 7 and 8 have been customized to reflect unique contractual agreements applicable only to Tims Ford.

Zone	Definition
<p><b>1 Non-TVA/TDEC Shoreland</b></p>	<p>Shoreland located above summer pool elevation that TVA or TDEC does not own in fee or land never purchased by TERDA or TVA. TVA and TDEC are not allocating private or other non-project land. This category is provided to assist in comprehensive evaluation of potential environmental impacts of TVA and TDEC's allocation decision. Non-project shoreline includes:</p> <ul style="list-style-type: none"> <li>• <b>Flowage easement land</b>—e.g., privately or publicly owned land where TVA has purchased the right to flood and/or limit structures. Flowage easements are generally purchased to a contour elevation. Shoreline management policy (SMP) guidelines discussed in the definition of Zone 7 apply to the construction of water use facilities fronting flowage easement residential development. SMP Guidelines addressing land based structures and vegetation management do not apply.</li> <li>• <b>Privately owned reservoir land</b>—Including, but not limited to, residential, industrial/commercial, or agricultural.</li> </ul>
<p><b>2 TVA Project Operations</b></p>	<p>All project land currently used for TVA operations and public works projects includes:</p> <ul style="list-style-type: none"> <li>• <b>Land adjacent to established navigation operations</b>—Locks, lock operations and maintenance facilities, and the navigation workboat dock and bases.</li> <li>• <b>Land used for TVA power projects operations</b>—Generation facilities, switchyards, and transmissions facilities and rights-of-way.</li> <li>• <b>Dam reservation land</b>—Areas used for developed and dispersed recreation, maintenance facilities, Watershed Team offices, research areas, and visitor centers.</li> <li>• <b>Navigation safety harbors/landings</b>—Sites used for tying off commercial barge tows and recreational boats during adverse weather conditions or equipment malfunctions.</li> <li>• <b>Navigation dayboards and beacons</b>—Areas with structures placed on the shoreline to facilitate navigation.</li> <li>• <b>Public works projects</b>—Includes fire halls, public water intakes, and public treatment plants, etc. (These projects are placed in this category as a matter of convenience and may not relate specifically to TVA projects.)</li> <li>• <b>Land planned for any of the above uses in the future.</b></li> </ul>
<p><b>3 Sensitive Resource Management</b></p>	<p>Land managed for protection and enhancement of sensitive resources. Sensitive resources, as defined by TVA and TDEC, include resources protected by state or federal law or executive order and other land features/natural resources TVA and TDEC consider important to the area viewscape or natural environment. Natural resource activities such as hunting, wildlife observation, and camping on</p>

	Zone	Definition
3	<b>Sensitive Resource Management (cont'd)</b>	<p>undeveloped sites can occur in this zone; but the overriding focus is protecting and enhancing the sensitive resource the site supports. Areas included are:</p> <ul style="list-style-type: none"> <li>• TVA/TDEC-designated sites with potentially <b>significant archeological resources</b>.</li> <li>• Project lands with <b>sites/structures listed on or eligible for listing on the National Register of Historic Places</b>.</li> <li>• <b>Wetlands</b>, i.e., aquatic bed, emergent, forested, and scrub-shrub wetlands as defined by TVA and TDEC.</li> <li>• <b>Project land under easement, lease, or license to other agencies/individuals for resource protection purposes</b>.</li> <li>• <b>Project land fronting land owned by other agencies/individuals</b> for resource protection purposes.</li> <li>• <b>Habitat Protection Areas</b>—These are areas managed by TVA and TDEC to protect populations of species identified as threatened or endangered by the U. S. Fish and Wildlife Service (USFWS), state-listed species, and any unusual or exemplary biological communities/geological features.</li> <li>• <b>Ecological Study Areas</b>—These are designated areas that are suitable for ecological research and environmental education by a recognized authority or agency. Areas typically containing plant or animal populations of scientific interest or are of interest to an educational institution that would utilize the area.</li> <li>• <b>Small Wild Areas</b>—These are areas managed by TVA or TDEC 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.</li> <li>• <b>River corridor with sensitive resources</b>—A river corridor is a linear greenspace along both streambanks 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.</li> <li>• <b>Significant scenic areas</b>—These are areas designated for visual protection because of their unique vistas or particularly scenic qualities.</li> <li>• <b>Champion tree site</b>—These are designated by TVA or TDEC as sites that contain the largest known individual tree of its species in that state.</li> <li>• <b>Other sensitive ecological areas</b>—Examples of these areas include heron rookeries, nest colonies, and unique cave or karst formations.</li> <li>• <b>Land planned for any of the above uses in the future.</b></li> </ul>
4	<b>Natural Resource Conservation</b>	<p>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 harvest, wildlife observation, and camping on undeveloped sites. Areas included are:</p> <ul style="list-style-type: none"> <li>• <b>Project land under easement, lease, or license</b> to other agencies for wildlife or forest management purposes.</li> <li>• <b>Project land fronting land owned by other agencies</b> for wildlife or forest</li> </ul>

	Zone	Definition
4	<b>Natural Resource Conservation (cont'd)</b>	<p>management purposes.</p> <ul style="list-style-type: none"> <li>• <b>Project land</b> managed for wildlife or forest management purposes.</li> <li>• <b>Informal recreation areas</b> maintained for passive, dispersed recreation activities such as hunting, hiking, bird watching, photography, primitive camping, bank fishing, and picnicking.</li> <li>• <b>Shoreline Conservation Areas</b>—Narrow riparian strips of vegetation between the water's edge and TVA/TDEC's backlying property that are managed for wildlife, water quality, or visual qualities.</li> <li>• <b>Wildlife Observation Areas</b>—Areas with unique concentrations of easily observed wildlife that are managed as public wildlife observation areas.</li> <li>• <b>River corridor without sensitive resources present</b>—A river corridor is a linear greenspace along both streambanks 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).</li> <li>• <b>Islands of 10 acres or less.</b></li> <li>• <b>Land planned for any of the above uses in the future.</b></li> </ul>
5	<b>Industrial/ Commercial Development</b>	<p>Land managed for economic development purposes. Areas included are:</p> <ul style="list-style-type: none"> <li>• <b>Project land under easement, lease, or license to other agencies/individuals</b> for industrial or commercial purposes.</li> <li>• <b>Project land fronting land owned by other agencies/individuals</b> for industrial or commercial purposes.</li> <li>• <b>Sites planned for future industrial use.</b></li> </ul> <p>Types of development that can occur on this land are:</p> <ul style="list-style-type: none"> <li>• <b>Business parks</b> — Project waterfront land which supports industrial or commercial development.</li> <li>• <b>Industrial access</b> — Access to the waterfront by backlying 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.</li> <li>• <b>Barge terminal sites</b> — Public or private facilities used for the transfer, loading, and unloading of commodities between barges and trucks, trains, storage areas, or industrial plants.</li> <li>• <b>Fleeting areas</b> — Sites used by the towing industry to switch barges between tows or barge terminals which have both off-shore and on-shore facilities.</li> <li>• <b>Minor commercial landing</b> — 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.</li> </ul> <p>(Commercial recreation uses, such as marinas and campgrounds, are included in Zone 6.)</p>

	Zone	Definition
6	<b>Recreation and State Park Expansion</b>	<p>All reservoir land managed for concentrated, active recreation activities that require capital improvement and maintenance, including:</p> <ul style="list-style-type: none"> <li>• <b>Project land under easement, lease, or license to other agencies/individuals</b> for recreational purposes.</li> <li>• <b>Project land fronting land owned by other agencies/individuals</b> for recreational purposes.</li> <li>• <b>Project land developed for recreational purposes</b> such as campgrounds, day use areas, etc.</li> <li>• <b>Project planned for any of the above uses in the future.</b></li> </ul> <p>Types of development that can occur on this land include:</p> <ul style="list-style-type: none"> <li>• <b>Commercial recreation</b>, e.g., marinas, boat docks, resorts, campgrounds, and golf courses.</li> <li>• <b>Public recreation</b>, e.g., local, state and federal parks, and recreation areas.</li> <li>• <b>Greenways</b>—Linear parks located along natural features such as lakes or ridges, or along manmade features including abandoned railways or utility rights-of-way, which link people and resources together.</li> <li>• <b>Water access sites</b>, e.g., boat ramps, courtesy piers, canoe access, fishing piers, vehicle parking areas, picnic areas, trails, toilet facilities, and information kiosks.</li> </ul>
7	<b>Residential Access or Residential Development</b>	<p><b>Access</b></p> <p>Project lands 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. Under the Plan, residential access would be divided into three categories based on the presence of navigation restrictions and sensitive ecological resources such as endangered or threatened species, wetlands, and archaeological and historic sites. The categories are: (1) Shoreline Protection*, for shoreline segments that support sensitive ecological resources, such as federally-listed threatened or endangered species, high priority state-listed species, wetlands with high function and value, archaeological or historical sites of national significance, or which contain navigation restrictions; (2) Residential Shoreline Mitigation, for shoreline segments where resource conditions or navigation conditions would require special analysis and perhaps specific mitigation measures, or where additional data are needed; and (3) Managed Residential Shoreline, where no known sensitive resources exist.</p> <p>Types of development/management that could occur on this land are:</p> <ul style="list-style-type: none"> <li>• <b>Residential water-use facilities</b>, e.g., docks, piers, launching ramps/driveways, marine railways, boathouses, enclosed storage space, and nonpotable water intakes.</li> <li>• <b>Residential access corridors</b>, e.g., pathways, wooden steps, walkways, or mulched paths which can include portable picnic tables and utility lines.</li> <li>• <b>Shoreline stabilization</b>, e.g., bioengineering and riprap.</li> </ul>

Zone	Definition
	<ul style="list-style-type: none"> <li>• <b>Shoreline vegetation management</b> on TVA-owned residential access shoreland.</li> <li>• <b>Conservation partnership easements</b> for protection of the shoreline.</li> <li>• <b>Other activities</b>, e.g., fill, excavation, grading, etc.</li> </ul> <p>*Docks and other shoreline development are not permitted on land that is verified as Shoreline Protection subsequent to TVA review.</p> <p><b>Residential Development</b>            Project lands available for residential development. TVA will retain a 50-foot buffer above the 895-foot contour fronting these lands to benefit water quality, shoreline habitat, and shoreline aesthetics while minimizing shoreline erosion. Only community water use facilities may be considered. Requests for community water use facilities must be submitted to TVA for Section 26a review either by a developer (provided lots have not been sold) or by a state-chartered home owners association. Under the Plan, shoreline fronting residential development would be divided into three categories based on the presence of navigation restrictions and sensitive ecological resources such as endangered or threatened species, wetlands, and archaeological and historic sites. The categories are: (1) Shoreline Protection*, for shoreline segments that support sensitive ecological resources, such as federally-listed threatened or endangered species, high priority state-listed species, wetlands with high function and value, archaeological or historical sites of national significance, or which contain navigation restrictions; (2) Residential Shoreline Mitigation, for shoreline segments where resource conditions or navigation conditions would require special analysis and perhaps specific mitigation measures, or where additional data are needed; and (3) Managed Residential Shoreline, where no known sensitive resources exist. Types of development/management that could occur, subject to prior TVA approval are:</p> <ul style="list-style-type: none"> <li>• <b>Community water-use facilities</b>, e.g., docks, boatslips, courtesy piers, launching ramp, and nonpotable water intakes.</li> <li>• <b>Community access corridors</b>, e.g., pathways, wooden steps, walkways, or mulched paths which can include portable picnic tables and utility lines.</li> <li>• <b>Shoreline stabilization</b>, e.g., bioengineering and riprap.</li> <li>• <b>Conservation partnership easements</b> for protection of the shoreline.</li> <li>• <b>Other activities</b>, e.g., fill, excavation, grading, etc.</li> <li>• <b>Vegetation management</b> consistent with SMP on the TVA land.</li> <li>• <b>View corridor management</b> on TVA-owned residential development land as described below:               <ul style="list-style-type: none"> <li>– Clearing of trees and other vegetation would be considered to create and maintain a view corridor that could be up to 20 feet wide. The corridor extends from the common boundary between TVA and the adjacent landowner to the water at normal summer pool.</li> <li>– The view corridor is located in a way that minimizes removal of trees or other vegetation with high quality wildlife value on TVA land.</li> </ul> </li> </ul>

	Zone	Definition
		<ul style="list-style-type: none"> <li>- Grass may be planted and mowed within the view corridor.</li> <li>- Stone, brick, mulch or wooden path, walkways, and/or steps are allowed within an approved view corridor.</li> <li>- Within the view corridor, clearing of understory plants specified by TVA (such as poison ivy, Japanese honeysuckle, kudzu) would be considered.</li> <li>- Planting of native trees, shrubs, wildflowers, and ground covers would be allowed to improve or enhance the vegetative cover.</li> <li>- Pruning of side limbs of trees to enhance the view of the lake would be considered within the view corridor.</li> <li>- Application of fertilizers and herbicides would not be allowed within 50 feet of the normal summer pool.</li> </ul> <p>*Docks and other shoreline development are not permitted on land that is verified as Shoreline Protection subsequent to TVA review.</p>
8	<b>Conservation Partnership</b>	<p>Narrow strips of public shoreland that could be used to help establish a wider shoreline buffer zone to benefit the environment. This would be accomplished through establishment of conservation partnerships with adjacent private property owners resulting in conservation partnership easements. Increasing the shoreline buffer area would benefit water quality, shoreline habitat, and shoreline aesthetics while reducing shoreline erosion.</p> <p>To ensure long-term maintenance and enhancement of the riparian zone, a 100-foot-deep conservation partnership easement (from the 895-foot contour) would be conveyed to TVA from the Shoreline Protection Partners in exchange for TVA consideration of requests for limited community water-use facilities on public land. The easement would run with the land making the subsequent sale of the private property containing the shoreline buffer subject to TVA's easement interest in the land as long as a Section 26a permit for a water-use facility exists. The conservation partnership easement will be recorded at the county courthouse.</p> <p>This area would have harbor limits established consistent with SMP and could contain, depending on site restrictions, facilities associated with community facilities (excluding parking areas). A maximum of 2,000 square-foot (footprint) of facility (dock) area would be allowed. The facility would be located in such a manner as to avoid any sensitive areas if identified during the Section 26a review process. Examples of community facilities/activities that could be considered in Zone 8 are:</p> <ul style="list-style-type: none"> <li>• courtesy pier</li> <li>• boatslip</li> <li>• dock</li> <li>• shoreline stabilization where needed to reduce erosion (such as bioengineering and riprap)</li> </ul>

## Appendix D – Tims Ford Reservoir Development Potential Model Criteria (Coarse Screen)

#	Data Type	Data Source	Location Consideration	Criteria		
				Best Potential (Value 2)	Good Potential (Value 1)	Poor Potential (Value 0)
1	Topographic Slope	USGS Digital Elevation Models (DEM) -10' contour interval data	On-site	≤ 10% slope	> 10% slope and ≤ 15% slope	> 15% slope
2	Utility - Water	Local government	Proximity	≤ ½ mile	> ½ mile and ≤ 1 mile	> 1 mile
3	Utility - Gas	Local government	Proximity	≤ ½ mile	> ½ mile and ≤ 1 mile	> 1 mile
4	Utility - Sewer	Local government	Proximity	≤ ½ mile	> ½ mile and ≤ 1 mile	> 1 mile
5	Existing Paved Roads	CWI Elk River Watershed database - USGS DLGs and air photo interpretation	Proximity	≤ ¼ mile	> ¼ mile and ≤ ½ mile	> ½ mile
6	Existing Land Use - Residential	CWI database - air photo interpretation	Proximity	≤ ½ mile	> ½ mile and ≤ 1 mile	> 1 mile
7	Existing Land Use - Industrial	CWI database - air photo interpretation	Proximity	≥ 1 mile	< 1 mile and ≥ ½ mile	< ½ mile
8	Existing Land Use - Commercial	CWI database - air photo interpretation	Proximity	≤ 1 mile	> 1 mile and ≤ 2 mile	> 2 mile
9	Existing Parks and Recreation Areas	TDEC inventory	Proximity	≥ 1 mile	< 1 mile and ≥ ½ mile	< ½ mile
10	TVA - and TDEC - Owned Land	ALIS	On-site	TVA or TDEC land must be present.		

Note: The location of existing residential, industrial, and commercial land uses; parks and recreation areas; and Tims Ford Reservoir are considered committed areas and will be eliminated (constrained) from the analysis results.

## APPENDIX E – Rating and Ranking Criteria

### Visual Resources Criteria

The capability and suitability ratings used for the visual category were based on a visual management methodology and descriptions taken from *National Forest Landscape Management Volume 2*, Chapter 1, "The Visual Management System", Agricultural Handbook Number 462, prepared by the U. S. Forest Service, Department of Agriculture. In accordance with the methodology, each tract was assigned a rating based on two components, *variety classes* and *sensitivity levels*.

**Capability Criteria** *Variety classes* are obtained by classifying the landscape into different degrees of variety. Variety classification is used to determine those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality.

Variety classification is based on the premise that while all landscapes have some value, *those with the most variety or diversity have the greatest potential for high scenic value*. There are three variety classes that identify the scenic quality of the natural landscape:

*Class A —Distinctive*. Those areas where features of landform, vegetative patterns, water forms, and rock formations are of unusual or outstanding visual quality and not common in the character type.

*Class B —Common*. Those areas where features contain variety in form, line, color, and texture or combinations thereof, but which tend to be common throughout the character type and are not outstanding in visual quality.

*Class C —Minimal*. Those area where features have little change in form, line, color, or texture. Includes all areas not classified as A and B.

The capability ratings of excellent, good, fair, and poor are based on these classifications and the perceived level of human disturbance to the site which interfered with the natural viewscape.

*Excellent (1)* — A tract rated excellent for visual quality would have exceptionally varied and or unique landscape that should be preserved in its current state. It would be rated "Distinctive" for variety. Only ecological changes should be allowed on a tract rated excellent. Management activities, except for very low visual-impact recreation facilities should be prohibited.

*Good (2)* —A tract rated good for visual quality would contain a varied, high-quality visual aspect, but no unique or distinctive features. Only slight evidence of human influence on the viewscape should be apparent. It would be rated "Common" for variety. Some management activity would be appropriate on such a tract, but care should be given to maintain or improve the integrity of the existing viewscape.



*Fair* (3) —A tract rated fair for visual quality shows clear evidence of human activity and/or little variety or interesting features in the original viewscape. Sites may contain roads, signs, and buildings, or disturbed vegetation. It would be rated "Minimal" under variety. Such a tract could be enhanced or rehabilitated to improve visual harmony with the surrounding natural viewscape, but will continue to support some development and should be managed to minimize further visual degradation.

*Poor* (4) —A tract rated poor may be highly disturbed by human activity, such as a mining site or a clear cut, or may be visually undisturbed. It would be rated minimal or would be unrated on the variety scale. These tracts would require much enhancement or rehabilitation to restore visual quality.

**Suitability Criteria** Suitability is based on the site sensitivity. Sensitivity levels are a measure of concern for the scenic quality of the TVA land, viewed from the reservoir and from the land. Sensitivity levels are determined for land areas viewed 1) from the reservoir, 2) from primary travel routes, and 3) from secondary travel routes. In this way, some degree of site sensitivity was established for the entire land base.

Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment.

Level 1 —Includes all areas seen from the reservoir where there is major concern for the scenic qualities.

Level 2 —Includes all areas seen from primary travel routes and use areas where there is major concern for scenic qualities.

Level 3 —Includes all areas seen from secondary travel routes and use areas. Level 3 does not include any areas seen from the reservoir or primary routes.

## NATURAL AREA CRITERIA FOR LAND USE PLANS

**Small Wild Areas** are sites with exceptional natural, scenic, or aesthetic qualities, which are suitable for low-impact public use. (Walking, hiking, interpretive, handicapped.) Examples include concentrations of wildflowers, high bluffs with long views, geologic feature (not caves), waterfalls or dripping rock ledges, mature or "undisturbed" forests. Should have access by public road.

**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. Should have potential benefit to the local educational community.

**Habitat Protection Areas** are established to protect populations of species that have been identified as threatened or endangered by the U. S. Fish and Wildlife Service or that are rare to the State in which they occur. Unusual or exemplary biological communities or unique geological features also receive protection in this category. These areas typically require buffer zones. (Examples are bat caves, rare plant/animal habitat).

**Wildlife Observation Areas** are sites that have concentrations of viewable wildlife - shorebirds, songbirds, white-tailed deer, migratory hawks or monarch butterflies, turkey, raccoons, etc. (Draw down zones, dam reservations, urban wetlands, bluffs.) Can be seasonal. Need public access to site.

## CRITERIA FOR CONSERVATION PARTNERSHIP

Each area proposed for Zone 8 was reviewed by boat for compatibility with the criteria listed below. Parcel descriptions were drafted and included in the land plan describing vegetation, erosion, slope, etc.

### **Criteria Used to Allocate Lands to Zone 8**

- Only those areas that were previously classified as Zone 4 in the draft EIS were considered for allocation to Zone 8.
- The boundary separating TVA land from private land must be within 50 feet of the 895-foot contour for at least 100 linear feet along the shoreline.
- The water depth must be at least 5 feet at normal summer pool.
- The slope of the shoreline in areas designated Zone 8 must be less than 35 % slope (32 degrees).
- An area at the back of a cove must not be allocated to Zone 8 unless the area is part of a larger parcel such that water-use facilities can be situated at a more suitable location.

### **Criteria to be Used to Evaluate 26a Applications for Community Facilities in Zone 8**

TVA will accept Section 26a applications for community docks facilities. These applications will be accepted subject to the conditions described below.

- No more than one community facility will be allowed in a discrete contiguous Zone 8 parcel, except for parcels 26-1, 34-1, 40-3, 57-2, 71-1, and 73-2. On these parcels, TVA may consider an additional community facility depending on suitability of the proposed facility with respect to the shoreline.
- A Section 26a application for a community facility in a particular stretch of the shoreline in Zone 8 may be considered only if all property owners behind that discrete stretch grant TVA a conservation easement to the shoreline strip adjoining TVA land. The width of the shoreline strip granted to TVA when added to the width of TVA's adjoining land must be no less than 100 feet. The 100-foot depth is to be counted from the 895-foot contour line.
- Community facilities will be no larger than 2,000 square feet in area and must be of a type described in the Tims Ford Reservoir Land Management and Disposition Plan, Zone 8 definition.
- Community facilities that exceed the 1,000 square foot footprint are subject to the harbor limit requirements for commercial marinas.
- Community facilities will not be allowed in those Zone 8 areas where sensitive resources are identified.
- The number of slips in a community facility shall not exceed the number of lots adjacent to the 1,500-foot stretch of the shoreline for which a Section 26a permit is being issued. Launching ramps at a community facility would be considered only if TVA determines that the operation of the ramp would not adversely impact water quality.

- When a discrete stretch of land in Zone 8 fronts more than one lot, the 26a permit application for a community facility must be submitted on behalf of all lot owners in that 1,500-foot stretch of the shoreline. In the event that only one lot is adjacent to the discrete stretch of land in Zone 8, the community dock will be restricted to a maximum footprint of 1000 square feet. Should lots be subdivided and sold, TVA may reconsider a revised application for expanded facilities, not to exceed a maximum size of 2,000 square feet.
- The 26a application for a community facility must be accompanied by a vegetation management plan. The vegetation management plan, once approved by TVA, will be implemented by the lot owners along the entire width of the 100-foot wide (or greater) shoreline including both the TVA fee strip as well as the adjacent strip over which an easement has been granted to TVA.

Requests would be submitted to TVA by developers prior to lot sales or by state chartered homeowners associations (HOA). The developer or HOA would design the facility to provide maximum benefit to the environment and their neighborhood. That would help establish adequate land base (green space) for the community area. Everyone behind Zone 8 would be granted access to the community facility but would not be guaranteed slips, as many sites are not suitable for large multiple-slip facilities.

Land Use Specialists will review the area and work with the adjacent property owners to determine what actions are necessary within the easement area to establish a wider shoreline buffer. This could include, but would not be limited to, recommendations for riprap if there is sufficient erosion, native tree/shrub plantings, and in general restoring the area to a more natural setting.

**RECREATION CAPABILITY/SUITABILITY CRITERIA**

Zones	Land Base	Forest-ation	Shoreline	Harbor Area	Reservoir Drawdown	Location	Road Access	Outside Interest	Land Use	Aesthetics	Land Ownership
<b>ZONES 3, 4, 6, and 7</b>  <b>River Corridors</b>	Not Applicable (NA)	NA	NA	NA	NA	NA	NA	NA	NA	High rating: visual appeal very pleasing	High rating: >5 miles public land ownership
	NA	NA	NA	NA	NA	NA	NA	NA	NA	Medium rating: visual appeal slight	Medium rating: 3-5 miles of uninterrupted public land
	NA	NA	NA	NA	NA	NA	NA	NA	NA	Low rating: visual appeal very poor	Low rating: < 3 miles public land ownership
<b>ZONE 4</b>  <b>Informal Recreation</b> (Recreation pursuits on undeveloped land)	High rating: > 5 acres; < 15% slope	NA	High rating: easy access; use capability diverse	NA	NA	NA	NA	NA	High rating: adjoining land use compatible	NA	NA
	Medium rating: 2-5 acres; 15-20% slope	NA	Medium rating: fair access; use capability limited	NA	NA	NA	NA	NA	Medium rating: adjoining land use questionable	NA	NA
	Low rating: < 5 acres; > 20% slope	NA	Low rating: poor access and use capability	NA	NA	NA	NA	NA	Low rating: adjoining land use detracts	NA	NA
<b>ZONE 6</b>  <b>Public Parks</b> (Local, state, or federal parks)	High rating: >20 acres; 1-10% slope	High rating: >50% cover	High rating: <15% slope underwater; no water hazards	NA	High rating: minimal visual aesthetic impact	High rating: major area of need	High rating: road to the site	High rating: Use requested	NA	NA	NA
	Med. rating: 10-20 acres; 10-15% slope	Med. rating: 25-50% cover	Med. rating: 15-20% slope underwater; correctable hazards	NA	Med. rating: moderate visual aesthetic impact	Med. rating: may be needed	Med. rating: road within 1/2 mile	Med. rating: Potential exists	NA	NA	NA
	Low rating: <5 acres; >15% slope	Low rating: < 25% cover	Low rating: > 20% slope underwater; prohibitive hazards	NA	Low rating: major visual aesthetic impact	Low rating: duplicates or is questionable	Low rating: road > 1/2 mile away	Low rating: Unlikely	NA	NA	NA
<b>Commer- cial</b> (Camp-	High rating: >10 acres; 1-5% slope	High rating: <25% cover	High rating: <15% slope underwater; no water hazards	High rating: >10 acres; wind-protected	High rating: minimal visual aesthetic impact	High rating: major area of need	High rating: road to the site	High rating: Use requested	NA	NA	NA
	Med. rating: 5-10 acres;	Med. rating:	Med. rating: 15-20% slope	Med. rating: 5-10 acres;	Med. rating: moderate	Med. rating: may be	Med. rating: road within 1/2	Med. rating: Potential	NA	NA	NA

Zones	Land Base	Forest-ation	Shoreline	Harbor Area	Reservoir Drawdown	Location	Road Access	Outside Interest	Land Use	Aesthetics	Land Ownership
grounds, marinas, and resorts)	5-10% slope	25-50% cover	underwater; correctable hazards	partial protection	visual aesthetic impact	needed	mile	exists			
	Low rating: minimum 5 acres; >10% slope	Low rating: > 50% cover	Low: > 20% slope underwater; prohibitive haz.	Low rating: < 5 acres; no natural protection	Low rating: major visual aesthetic impact	Low rating: duplicates or is questionable	Low rating: road > ½ mile away	Low rating: Unlikely	NA	NA	NA
<b>Water Access</b> (Lake or river access sites)	High rating: >3 acres	NA	High rating: <15% slope underwater; no water hazards	NA	NA	High rating: major area of need	High rating: road to the site	High rating: Use requested	NA	NA	NA
	Med. rating: 1-3 acres	NA	Med. rating: 15-20% slope underwater; correctable hazards	NA	NA	Med. rating: may be needed	Med. rating: road within ½ mile	Med. rating: Potential exists	NA	NA	NA
	Low rating: <1 acre	NA	Low rating: > 20% slope underwater; prohibitive hazards	NA	NA	Low rating: duplicates or is questionable	Low rating: road > ½ mile away	Low rating: Unlikely	NA	NA	NA

**INDUSTRIAL DEVELOPMENT CRITERIA**

<b>Capability</b>	<b>Land Base</b>	<b>Land Slope</b>	<b>Shape</b>	<b>Height Above Water</b>	<b>Flooding</b>	<b>Barge Accessibility</b>	<b>Miles to Major State or Federal Highway</b>	<b>Miles To Railroad</b>	<b>Availability of Utilities</b>	<b>Road Access</b>
<b>Industrial Site</b>	High rating: over 100 acres; Medium rating: 25 to 100 acres; Low rating: less than 25 acres	High rating: 1 to 5%; Medium rating: 5 to 15%; Low rating: greater than 15%	High rating: fairly rectangular; Medium rating: square; Low rating: irregular	High rating: less than 20 feet; Medium rating: 20 to 40 feet; Low rating: greater than 40 feet	High rating: majority above structure profile; Medium rating: 50% above structure profile; Low rating: majority below structure profile	High rating: minor or no dredging required; Medium rating: some dredging required; Low rating: major dredging required or no barge available	High rating: less than 2; Medium rating: 2 to 5; Low rating: more than 5	High rating: less than 1; Medium rating: 1 to 2; Low rating: more than 2	High rating: all utilities available; Medium rating: some utilities available; Low rating: no utilities available	High rating: road to the site; Medium rating: road within ½ mi. of site; Low rating: road greater than ½ mi. of site
<b>Industrial Access</b>	High rating: more than 10 acres; Medium rating: 5 to 10 acres; Low rating: minimum of 5 acres	High rating: 1 to 5%; Medium rating: 5 to 15%; Low rating: greater than 15%	High rating: long, linear rectangle; Medium rating: short, linear rectangle; Low rating: short and irregular	High rating: less than 20 feet; Medium rating: 20 to 40 feet; Low rating: greater than 40 feet	High rating: majority above structure profile; Medium rating: 50% above structure profile; Low rating: majority below structure profile	High rating: minor or no dredging required; Medium rating: some dredging required; Low rating: major dredging required or no barge available	High rating: less than 2; Medium rating: 2 to 5; Low rating: more than 5	High rating: less than 1; Medium rating: 1 to 2; Low rating: more than 2	High rating: all utilities available; Medium rating: some utilities available; Low rating: no utilities available	High rating: road to the site Medium rating: road within ½ mi. of site; Low rating: road greater than ½ mi. of site

**CRITERIA FOR NATURAL RESOURCE STEWARDSHIP**

<b>Overland Access</b>	<b>Ecological Diversity</b>	<b>Habitat Management</b>	<b>Cost Recovery</b>	<b>Compatibility of Adjacent Land Use</b>	<b>Multiple Use Potential</b>	<b>Intensity of Current Use</b>	<b>Natural Resources Partnerships</b>
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
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
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
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
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
Overland Access Unavailable	N/A	N/A	Low	Adjacent Land Use Could Prevent Resource Management/Utilization	Single Use Potential	< 2 Season Use	N/A
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
Overland Access Possible	N/A	Could Be Managed	Medium	Adjacent Land Use Could Preclude Some Management Options Adjacent Land Use	1 To 3 Potential Uses	N/A	1 or 2 Potential Partners or 1 or 2 Partnerships In Place
Overland Access Unavailable	N/A	Difficult To Manage	Low	Could Prevent Resource Management/Utilization	Single Use Potential	N/A	No Potential for Partnerships and No Partnerships in Place
> \$5000	N/A	> 2 Prior Investors	High	N/A	N/A	N/A	2 or More Partners Have Invested
\$0 to \$5000	N/A	1 To 2 Prior Investors	Medium	N/A	N/A	N/A	1 To 2 Partners Have Invested
No Prior Investment	N/A	No Prior Investors	Low	N/A	N/A	N/A	No Prior Investments

## **APPENDIX F— Tims Ford Reservoir Land Management and Disposition Plan**

**(Refer to Volume II)**



## APPENDIX G – Listing of Parcels and Land Use Zone Allocations by Alternative

Parcel	Miles	Total Acres	TVA acres	TDEC Acres	Land Use Allocation Zone				
					Alt. A	Alt. B	Alt. B1	Alt. C	Alt. D
1	1.6	386.4	386.4	0.0	2	2	2	2	2
2	2.5	134.5	13.9	120.6	4	4	4	4	4
3	3.0	110.4	15.8	94.5	6	6	6	6	6
4	1.0	26.8	0.0	26.8	4	4	4	4	4
5	0.9	12.7	11.0	1.7	7	7	7	7	7
6	0.6	10.3	0.3	10.0	4	4	9.9 ac. - 4	4	4
6-1	0.2	0.4	0.0	0.4	n/a*	n/a	8	n/a	n/a
7	1.8	156.5	101.0	55.5	Developable	7	7	7	4
7A	0.0	0.2	0.2	0.0	5	5	5	5	5
8	4.0	188.3	0.0	188.3	153.8 Ac. Developable	4	186.5 ac. - 4	153.8 ac. - 7 35.9 ac. - 4	4
8-1	0.2	1.2	0.0	1.2	n/a	n/a	8	n/a	n/a
8-2	0.1	0.6	0.0	0.6	n/a	n/a	8	n/a	n/a
9	0.2	1.1	0.0	1.1	7	7	7	7	7
10	0.1	3.4	3.4	0.0	6	6	6	6	6
11	0.4	9.3	9.3	0.0	6	6	6	6	6
12	1.9	79.9	46.1	33.8	Developable	4	4	7	4
13	1.5	23.9	6.1	17.8	4	4	4	4	4
14	2.5	118.6	55.0	63.6	Developable	7	4	7	4
15	6.9	198.6	2.9	195.7	3	3	3	3	3
16	0.7	14.0	0.0	14.0	4	4	4	4	4
17	1.3	15.4	15.4	0.0	7	7	7	7	7
18	1.6	18.0	0.4	17.6	4	4	17.2 ac. - 4	4	4
18-1	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
18-2	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
19	0.9	45.8	0.0	45.8	Developable	6	6	6	4
20	14.4	497.9	171.6	326.3	111.2 Ac. Developable	4	497.3 ac. - 4	111.2 ac. - 7 386.7 - 4	4
20-1	<0.1	0.1	0.0	0.1	n/a	n/a	8	n/a	n/a
20-2	0.2	0.3	0.1	0.2	n/a	n/a	8	n/a	n/a
20-3	0.1	0.3	0.3	0.0	n/a	n/a	8	n/a	n/a
21	0.8	3.8	0.0	3.8	7	7	7	7	7
22	3.0	46.7	0.5	46.2	4	4	44.3 ac. - 4	4	4
22-1	0.1	0.3	0.0	0.3	n/a	n/a	8	n/a	n/a
22-2	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
22-3	0.2	0.8	0.0	0.8	n/a	n/a	8	n/a	n/a
22-4	0.1	0.3	0.0	0.3	n/a	n/a	8	n/a	n/a
22-5	0.1	0.6	0.0	0.6	n/a	n/a	8	n/a	n/a
23	0.8	23.6	0.0	23.6	6	6	6	6	6
24	1.3	66.9	0.0	66.9	Developable	4	4	7	4

Parcel	Miles	Total Acres	TVA acres	TDEC Acres	Land Use Allocation Zone				
					Alt. A	Alt. B	Alt. B1	Alt. C	Alt. D
25	0.4	6.3	0.0	6.3	7	7	7	7	7
26	2.8	140.3	71.4	68.9	86.8 Ac. Developable	4	138.9 ac. - 4	86.8 Ac. - 7 53.5 Ac. - 4	4
26-1	0.4	1.4	0.0	1.4	n/a	n/a	8	n/a	n/a
27	1.0	61.0	0.0	61.0	6	6	6	6	4
28	5.8	276.2	8.0	268.2	183.3 Ac. Developable	4	274.9 ac. - 4	183.3 Ac. - 7 92.9 Ac. - 4	4
28-1	0.2	1.0	0.0	1.0	n/a	n/a	8	n/a	n/a
28-2	0.1	0.3	0.0	0.3	n/a	n/a	8	n/a	n/a
29	0.4	1.7	0.0	1.7	7	7	7	7	7
30	1.0	32.4	0.0	32.4	6	6	6	6	6
31	1.7	176.1	56.3	119.8	Developable	7	7	7	4
32	1.1	89.3	13.8	75.5	Developable	6	6	6	4
33	7.2	298.6	71.7	226.9	140.9 Ac. Developable	4	297.8 ac. - 4	140.9 Ac. - 7 157.7 Ac. - 4	4
33-1	0.8	0.8	0.0	0.8	n/a	n/a	8	n/a	n/a
34	13.5	419.5	96.5	323.0	64.2 Ac. Developable	4	418.0 ac. - 4	64.2 Ac. - 7 355.3 Ac. - 4	4
34-1	0.5	1.4	0.0	1.4	n/a	n/a	8	n/a	n/a
34-2	<0.1	0.1	0.0	0.1	n/a	n/a	8	n/a	n/a
35	0.3	1.7	0.0	1.7	6	6	6	6	6
36	4.4	204.6	149.3	55.3	Developable	7	7	7	4
37	10.6	376.6	61.5	315.1	334.2 Ac. Developable	4	4	334.2 Ac. - 7 42.4 Ac. - 4	4
38	0.8	5.7	3.3	2.4	7	7	7	7	7
39	2.0	46.4	18.1	28.3	28.7 Ac. Developable	4	45.8 ac. - 4	28.7 Ac. - 7 17.7 Ac. - 4	4
39-1	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
39-2	<0.1	0.2	0.0	0.2	n/a	n/a	8	n/a	n/a
40	5.2	85.5	15.1	70.4	55.4 Ac. Developable	4	82.0 ac. - 4	55.4 Ac. - 7 30.1 Ac. - 4	4
40-1	0.1	0.6	0.0	0.6	n/a	n/a	8	n/a	n/a
40-2	0.1	0.3	0.0	0.3	n/a	n/a	8	n/a	n/a
40-3	0.6	1.9	0.0	1.0	n/a	n/a	8	n/a	n/a
40-4	0.1	0.2	0.0	0.2	n/a	n/a	8	n/a	n/a
40-5	0.1	0.5	0.0	0.5	n/a	n/a	8	n/a	n/a
41	10.6	461.7	5.7	456.0	3	3	3	3	3
42	2.7	366.3	201.3	165.0	Developable	4	4	7	4
43	2.4	83.3	0.0	83.3	3	3	3	3	3
44	0.3	57.7	0.0	57.7	Developable	4	4	7	4
45	0.3	0.3	0.3	0.0	4	4	4	4	4
46	1.5	111.2	6.8	104.4	Developable	7	7	7	4

Parcel	Miles	Total Acres	TVA acres	TDEC Acres	Land Use Allocation Zone				
					Alt. A	Alt. B	Alt. B1	Alt. C	Alt. D
47	0.4	8.3	0.0	8.3	4	4	4	4	4
48	0.5	4.2	0.0	4.2	7	7	7	7	7
49	0.7	3.1	0.0	3.1	7	7	7	7	7
49A	0.1	0.7	0.7	0.0	4	4	4	4	4
50	1.0	9.4	2.4	7.0	4	4	8.3 ac - 4	4	4
50-1	0.2	0.7	0.0	0.7	n/a	n/a	8	n/a	n/a
50-2	0.2	0.4	<0.1	0.4	n/a	n/a	8	n/a	n/a
51	1.2	48.9	19.2	29.7	Developable	7	7	7	4
52	2.8	27.4	2.8	24.6	4	4	24.6 ac. - 4	4	4
52-1	0.2	0.6	0.0	0.6	n/a	n/a	8	n/a	n/a
52-2	0.2	0.8	0.0	0.8	n/a	n/a	8	n/a	n/a
52-3	0.2	0.5	0.0	0.5	n/a	n/a	8	n/a	n/a
52-4	0.2	0.9	0.0	0.9	n/a	n/a	8	n/a	n/a
53	1.3	29.5	0.0	29.5	3	3	3	3	3
54	1.8	14.0	0.0	14.0	7	7	7	7	7
55	0.3	7.7	1.6	6.1	6	6	6	6	6
56	2.1	14.5	8.3	6.2	7	7	7	7	7
57	2.8	41.4	0.0	41.4	4	4	4	4	4
57-1	0.3	1.2	0.0	1.2	n/a	n/a	8	n/a	n/a
57-2	0.4	1.5	0.0	1.5	n/a	n/a	8	n/a	n/a
58	1.1	6.0	5.3	0.7	7	7	7	7	7
59	1.4	19.7	16.1	3.6	4	4	4	4	4
59A	0.4	0.9	0.0	0.9	7	7	7	7	7
60	0.7	4.7	0.2	4.5	7	7	7	7	7
61	0.7	3.1	1.0	2.1	Developable	6	6	6	4
62	0.8	3.7	0.0	3.7	4	4	4	4	4
63	6.6	80.8	7.5	73.3	3	3	3	3	3
64	1.1	18.7	18.6	0.1	4	4	4	4	4
65	0.2	3.7	0.0	3.7	3	3	3	3	3
66	0.8	14.3	0.8	13.5	4	4	13.8 ac. - 4	4	4
66-1	0.1	0.5	0.0	0.5	n/a	n/a	8	n/a	n/a
67	1.5	14.5	0.0	14.5	3	3	3	3	3
68	0.7	5.4	0.4	5.0	7	7	7	7	7
69	1.4	12.7	6.9	5.8	4	4	12.5 ac. - 4	4	4
69-1	0.1	0.2	0.2	0.0	n/a	n/a	8	n/a	n/a
70	0.6	4.2	0.0	4.2	3	3	3	3	3
71	2.6	17.1	9.9	7.2	4	4	13.2 ac. - 4	4	4
71-1	0.4	1.2	1.2	0.0	n/a	n/a	8	n/a	n/a
71-2	0.1	0.5	0.5	0.0					
71-3	0.3	1.4	1.4	0.0	n/a	n/a	8	n/a	n/a
71-4	0.2	0.5	0.0	0.5	n/a	n/a	8	n/a	n/a
71-5	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
72	0.9	4.7	1.2	3.5	3	3	3	3	3

Parcel	Miles	Total Acres	TVA acres	TDEC Acres	Land Use Allocation Zone				
					Alt. A	Alt. B	Alt. B1	Alt. C	Alt. D
73	1.6	13.3	11.0	2.3	4	4	11.7 ac. - 4	4	4
73-1	0.3	0.9	0.0	0.9	n/a	n/a	8	n/a	n/a
73-2	0.3	0.7	0.0	0.7	n/a	n/a	8	n/a	n/a
73A	0.2	2.3	0.0	2.3	6	6	6	6	6
74	1.8	11.8	0.9	10.9	7	7	7	7	7
75	3.8	112.0	0.1	111.9	102.0 Ac Developable	4	4	102.0 Ac. - 7 9.6 Ac. - 4	4
76	2.2	131.5	20.9	110.6	Developable	6	6	6	4
77	4.1	60.8	11.4	49.4	20.3 Ac. Developable	4	59.3 ac. - 4	20.3 Ac. - 7 40.4 Ac. - 4	4
77-1	0.1	0.2	0.2	0.0	n/a	n/a	8	n/a	n/a
77-2	0.3	1.1	1.1	0.0	n/a	n/a	8	n/a	n/a
77-3	0.1	0.2	0.0	0.2	n/a	n/a	8	n/a	n/a
78	0.4	12.8	0.0	12.8	Developable	5	5	5	4
79	0.6	27.6	0.0	27.6	6	6	6	6	6
79A	0.7	8.3	8.3	0.0	Developable	4	4	6	4
79B	0.8	48.8	33.0	15.8	Developable	5	5	6	4
80	1.3	26.4	11.5	14.9	Developable	6	23.7 ac. - 6	6	4
81	1.2	19.4	4.8	14.6	4	4	18.6 ac. - 4	4	4
81-1	0.2	0.8	0.2	0.6	n/a	n/a	8	n/a	n/a
82	0.3	2.0	1.8	0.2	7	7	7	7	7
83	0.6	5.5	1.3	4.2	5	5	5	5	5
84	0.2	1.0	0.0	1.0	7	7	7	7	7
84A	0.4	2.7	2.7	0.0	7	7	7	7	7
84B	0.5	2.1	2.1	0.0	7	7	7	7	7
85	1.0	8.7	0.0	8.7	4	4	4	4	4
86	0.7	11.0	3.6	7.4	4	4	9.7 ac. - 4	4	4
86-1	0.1	0.2	0.2	0.0	n/a	n/a	8	n/a	n/a
86-2	0.2	1.1	0.7	0.4	n/a	n/a	8	n/a	n/a
87	0.6	3.1	1.6	1.5	7	7	7	7	7
88	6.2	25.1	1.8	23.3	4	4	23.5 ac. - 4	4	4
88-1	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
88-2	0.1	0.4	0.0	0.4	n/a	n/a	8	n/a	n/a
89	1.0	1.0	0.3	0.7	7	7	7	7	7

\*n/a - These parcels are not applicable to Alternatives A, B, C, or D.



## Appendix H – Supporting Technical Data and Tables for Chapter 3

<b>Table H-1 Description of soil mapping units occurring in the Franklin County, Tennessee area of the Tims Ford Project Lands with corresponding acreage</b>					
<b>Soil/Parent Material*</b>	<b>Map Symbol*</b>	<b>Slope %*</b>	<b>Drainage *</b>	<b>Consistence *</b>	<b>Acres**</b>
Baxter cherty silt loam Residuum, cherty limestone Hilly phase	Bf	12-25	Good	Firm	9.4
Eroded hilly phase	Bg	12-25	Good	Firm	79.1
Baxter cherty silty clay loam Residuum, cherty limestone severely eroded hilly phase	Bn	12-25	Good	Firm	74.5
Baxter cherty silt loam Residuum, cherty limestone Rolling phase	Bd	5-12	Good	Firm	70.3
Eroded rolling phase	Be	5-12	Good	Firm	674.2
Baxter cherty silty clay loam Residuum, cherty limestone severely eroded rolling phase	Bm	5-12	Good	Firm	73.4
Baxter cherty silt loam Residuum, cherty limestone Undulating phase	Bb	2-5	Good	Firm	17.6
Eroded undulating phase	Bc	2-5	Good	Firm	64.2
Steep phase	Bh	25-60	Good	Firm	209.4
Eroded steep phase	Bk	25-60	Good	Firm	236.3
Baxter cherty silty clay loam Residuum, cherty limestone severely eroded steep phase.	Bo	25-60	Good	Firm	175.3
Bodine cherty silt loam Residuum, cherty limestone Steep phase	Bp	25-60	Excessive	Friable	107.1
Eroded steep phase	Br	25-60	Excessive	Friable	720.5
Severely eroded steep phase.	Bs	25-60	Excessive	Friable	108.1
Bruno Alluvium, mainly sandstone, some limestone	Bu	0-3	Excessive	Loose	6.9

<b>Table H-1 Description of soil mapping units occurring in the Franklin County, Tennessee area of the Tims Ford Project Lands with corresponding acreage</b>					
<b>Soil/Parent Material*</b>	<b>Map Symbol*</b>	<b>Slope %*</b>	<b>Drainage *</b>	<b>Consistence *</b>	<b>Acres**</b>
Cumberland and Etowah silty clay loams Old mixed alluvium, chiefly limestone eroded undulating phases	Cp	2-5	Good	Firm	176.2
eroded rolling phases	Cr	5-12	Good	Firm	161.1
Cumberland silty clay loam Old mixed alluvium, chiefly limestone Severely eroded rolling phase	Cf	5-12	Good	Firm	38.5
Eroded hilly phase	Cg	12-25	Good	Firm	25.5
Severely eroded hilly phase.	Ch	12-25	Good	Firm	3.5
Cumberland and Etowah loams Old mixed alluvium, chiefly limestone Eroded undulating phases.	Cm	2-5	Good	Firm	54.9
Eroded rolling phases	Cn	5-12	Good	Firm	13.2
Cumberland clay loam Old mixed alluvium, chiefly limestone severely eroded rolling phase	Cd	5-12	Good	Firm	14.4
Decatur silty clay loam Residuum, high-grade limestone Eroded rolling phase	Dd	5-12	Good	Very firm	0.5
Undulating phase	Da	2-5	Excessive	Very firm	0.9
Dellrose cherty silt loam Creep material from cherty limestone, moderately phosphatic limestone influence Eroded hilly phase	Df	12-25	Excessive	Friable	47.6
Steep phase	Dg	25-60	Excessive	Friable	5.4
Eroded steep phase	Dh	25-60	Excessive	Friable	121.3
Severely eroded steep phase	Dk	25-60	Excessive	Friable	21.7
Eroded rolling phase	De	5-12	Excessive	Friable	0.9
Dewey silty clay loam Residuum, high-grade limestone Eroded undulating phase	Dw	2-5	Good	Firm	12.2
Eroded rolling phase.	Dx	5-12	Good	Firm	6.1
Dewey cherty silty clay loam Residuum, high-grade limestone Eroded rolling phase	Dp	5-12	Good	Firm	22.0

<b>Table H-1 Description of soil mapping units occurring in the Franklin County, Tennessee area of the Tims Ford Project Lands with corresponding acreage</b>					
<b>Soil/Parent Material*</b>	<b>Map Symbol*</b>	<b>Slope %*</b>	<b>Drainage *</b>	<b>Consistence *</b>	<b>Acres**</b>
Dewey cherty silty clay Residuum, high-grade limestone Severely eroded rolling phase Severely eroded hilly phase	Dn Do	5-12 12-25	Good Good	Firm Firm	8.8 6.7
Dickson silt loam Residuum, loess over cherty limestone Undulating phase Eroded undulating phase Eroded rolling phase	Dy Dz D3	2-5 2-5 5-12	Moderately good Moderately good Moderately good	Friable Friable Friable	28.1 62.6 11.9
Emory silt loam Colluvium or local alluvium, chiefly high-grade limestone material	Ec	2-5	Good	Moderately friable	12.3
Emory cherty silt loam Colluvium or local alluvium, moderately cherty limestone material	Eb	2-7	Good	Moderately friable	19.1
Ennis cherty silt loam Alluvium, chiefly cherty limestone material	Ed	0-3	Good	Friable	1.6
Greendale silt loam Colluvium, chiefly cherty limestone material	Gb	2-7	Moderately good	Friable	4.5
Gullied land, limestone material. A land type on which erosion has formed an intricate pattern of gullies	Gc	5-60			15.3
Hermitage silt loam Old colluvium, chiefly high-grade limestone Eroded undulating phase	Hc	2-5	Good	Firm	3.5
Holston loam Old mixed alluvium, chiefly sandstone and shale materials Eroded undulating phase	Hg	2-5	Good	Friable	15.4



<b>Table H-1 Description of soil mapping units occurring in the Franklin County, Tennessee area of the Tims Ford Project Lands with corresponding acreage</b>					
<b>Soil/Parent Material*</b>	<b>Map Symbol*</b>	<b>Slope %*</b>	<b>Drainage *</b>	<b>Consistence *</b>	<b>Acres**</b>
Humphreys cherty silt loam Alluvium, cherty limestone material	Hk	1-5	Good	Friable	2.3
Huntington fine sandy loam Mixed alluvium, chiefly limestone and sandstone material	Hm	0-3	Good	Friable	1.1
Lindside fine sandy loam Alluvium, chiefly limestone and sandstone material	Lb	0-3	Imperfect to moderately good	Friable	4.3
Melvin silt loam Alluvium, chiefly limestone material	Mb	0-3	Poor	Friable	4.1
Mimosa silty clay Residuum, phosphatic clayey limestone material Severely eroded hilly phase. Mines, pits, and dumps	Mc Me	12-25 —	Good —	Very plastic —	7.6 37.0
Mountview silt loam Residuum, loess over cherty limestone material Undulating phase Eroded undulating phase	Mf Mg	2-5 2-5	Good Good	Friable Friable	15.1 63.4
Riverwash A land type consisting of stony gravelly and sandy alluvium	Ra	0-3			1.6
Rockland, limestone A land type that has numerous ledges and outcroppings of limestone Hilly and Rolling Steep and very steep	Rc Rd	3-25 25-60+			0.5 75.3
Sequatchie fine sandy loam Old mixed alluvium, chiefly sandstone but some limestone Undulating phase	Sa	2-5	Good	Friable	4.5
Waynesboro loam Old mixed alluvium, chiefly sandstone but some limestone Eroded undulating phase	Wd	2-5	Good	Firm	3.6

\*Source: USDA-SCS, 1958. Soil Survey of Franklin County, Tennessee

\*\*ArcInfo Soils Coverage. Jimmie J. Kelsoe. 1999

<b>Table H-2 Description of mapped soils which occur in the Moore County, Tennessee area of the Tims Ford Project Lands</b>				
<b>Soil</b>	<b>Map Symbol*</b>	<b>Material</b>	<b>Drainage</b>	<b>Permeability</b>
Barfield-Ashwood-Rock outcrop complex	94	Loamy surface layer Plastic, clay subsoil	Well	Slow
Bodine	61	Variable amount of rock fragments in surface layer Large amount of fragments in subsoil	Well to excessively	Moderately rapid
Dellrose	74	Loamy with significant amount of rock fragments in surface layer and subsoil	Well	Good
Fullerton	63	Loamy surface layer Clayey subsoil	Well	Moderate to moderately slow
Mimosa	41	Loamy surface layer Plastic clay subsoil	Well	Slow

\*Source: USDA-NRCS staff in Lynchburg, Tennessee

# Impact Rating Form

## IMPACT RATING FORM

U.S. Department of Agriculture

### FARMLAND CONVERSION IMPACT RATING

**PART I (To be completed by Federal Agency)**

Use of Land Conversion Project: May 28, 1999  
 Federal Agency Involved: Tennessee Valley Authority  
 Project Land Use: Recreational or Residential Development  
 County And State: Franklin and Moore Counties, TN  
 Date Request Received By SCS: \_\_\_\_\_

**PART II (To be completed by SCS)**

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: NA Average Farm Size: 133 AC.

Major Cropland: CORN Farmland In Govt. Jurisdiction: Acres: 214052 % 59 Acreage Of Farmland As Defined in FPPA: Acres: 114906 % 32

Name Of Land Evaluation System Used: FRANKLIN CO. LAND EVALUATION Name Of Local Site Assessment System: \_\_\_\_\_ Date Land Evaluation Returned By SCS: 6-17-99

**PART III (To be completed by Federal Agency)**

	Aggregate Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		1687	3275	357
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site		1687	3275	357

**PART IV (To be completed by SCS) Land Evaluation Information**

	Site B	Site C	Site D
A. Total Acres Prime And Unique Farmland	248	402	139
B. Total Acres Statewide And Local Important Farmland	NA	NA	NA
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.002	0.003	0.001
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	57	52	57

**PART V (To be completed by SCS) Land Evaluation Criterion**

Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	Site B	Site C	Site D
	20	54	35

**PART VI (To be completed by Federal Agency)**

Site Assessment Criteria (These criteria are explained in 7 CFR 658.519)	Maximum Points	Site B	Site C	Site D
1. Area In Nonurban Use	15	15	15	5
2. Presence In Nonurban Use	10	5	5	5
3. Percent Of Site Being Farmed	20	2	2	10
4. Protection Provided By State And Local Government	20	0	0	0
5. Distance From Urban Buildup Area	15	10	10	5
6. Distance To Urban Support Services	15	10	10	10
7. Size Of Present Farm Unit Compared To Average	10	0	0	0
8. Creation Of Nonfarmable Farmland	10	2	2	2
9. Availability Of Farm Support Services	5	5	5	5
10. On Farm Investments	20	2	2	2
11. Effects Of Conversion On Farm Support Services	10	0	0	0
12. Compatibility With Existing Agricultural Use	10	5	5	5
<b>TOTAL SITE ASSESSMENT POINTS</b>	<b>180</b>	<b>56</b>	<b>56</b>	<b>49</b>

**PART VII (To be completed by Federal Agency)**

	100	Site B	Site C	Site D
Relative Value Of Farmland (From Part V)	100	20	54	35
Total Site Assessment (From Part VI above or a local site assessment)	100	56	56	49
<b>TOTAL POINTS (Total of above 2 lines)</b>	<b>200</b>	<b>76</b>	<b>110</b>	<b>84</b>

Site Selected: \_\_\_\_\_ Date Of Selection: \_\_\_\_\_ Was A Local Site Assessment Used? Yes  No

Reason For Selection: \_\_\_\_\_

## Supporting Technical Data for Section 3.3 Surface Water Quality

### Tennessee Water Quality Permitting

TDEC has permitting and inspection rules in place that require wastewater treatment systems to be constructed and operated in such a manner that water quality should not be adversely affected. TDEC also has permitting rules in place that require control of storm water discharges from construction sites.

There are two divisions within TDEC which permit various wastewater treatment systems. The Division of Ground Water Protection permits septic systems serving single family homes and other small flow facilities. The Division of Water Pollution Control (WPC) permits wastewater treatment systems which discharge to waters of the State, which utilize spray irrigation or shallow drip irrigation for effluent disposal or which transport wastewater to another facility for treatment and disposal. WPC also regulates storm water from construction and industrial sites, as well as, other water quality issues.

The Water Quality Control Act, as amended in 1977, allowed the State of Tennessee to receive delegated authority of the National Pollutant Discharge Elimination System (NPDES) permit program. This law provides the permitting and enforcement powers of the Tennessee Division of Water Pollution Control.

In 1992, WPC issued the General NPDES Permit for Storm Water Discharges from Construction Activity to cover water quality problems such as erosion, during the construction phase of a project. This would apply to industrial, residential, recreation, or any other construction project. Coverage under this general permit is required for all projects which will disturb a total of five or more acres of land. Projects less than five acres are not required to get coverage under this permit, but are still required to comply with the Water Quality Control Act.

The General NPDES Permit for Storm Water Discharges from Construction Activity expired September 26, 1997. It is to be replaced with the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities, TNR 10000. Coverage under this new permit will be the same with the exception that sites disturbing less than five acres will also be required to get coverage when the WPC determines it to be necessary to protect water quality. WPC conducts inspections and carries out enforcement activities when necessary to achieve compliance.

Larger subdivision developments are likely to cause more severe erosion problems than construction by individual lot owners. The overall site grading and installation of streets and utilities is likely to cause the vegetation to be removed from much of the site. Revegetation as a means of controlling erosion is usually not considered an option because construction on the individual lots will destroy much of any grass that has been planted. Regular periodic inspection throughout the construction phase would be needed to prevent erosion problems in larger developments.

TDEC also issues Aquatic Resource Alteration Permits (ARAP) for any activity which involves the alteration of waters of the State. These may be issued as a general permit or individual permit. General ARAPs cover the following activities:

- Construction of launching ramps
- Alteration of wet weather conveyances
- Minor road crossings
- Utility line crossings
- Bank stabilization
- Sand and gravel dredging
- Debris removal

Under certain situations, some of the above activities may be required to be permitted under an individual permit. WPC reviews the permit application (when required) and may conduct a site visit prior to the activity taking place.

Once the construction of a project is complete, a permanent wastewater treatment system will be needed. Systems permitted by the Division of Ground Water Protection are described in the rules promulgated by that division. These systems include conventional septic systems and alternative systems, such as low pressure pipe (LPP) and

mound systems. These rules also have provisions that allow variances from the standards where circumstances warrant. The division also approves plats for subdivisions with lots smaller than five acres. Strict adherence to the division's rules in siting, (including reserve area), design and installation of these systems should allow for development to proceed without water quality being compromised by wastewater.

Systems permitted by WPC must be designed according to rules promulgated by that division and, where applicable, following published design criteria. All domestic wastewater systems permitted by WPC must be operated by an appropriately certified operator. Division policy dictates that certain wastewater treatment systems be considered and found to be unsuitable before other systems will be considered. The alternatives to be considered and the order of consideration are as follows:

1. Connection to a municipal/public sewer system or subsurface onsite disposal as regulated by the Division of Ground Water Protection.
2. Onsite disposal by spray or drip irrigation as regulated by WPC.
3. Direct discharge to a waters of the State.

Direct discharge may not be an available option if a stream is classified as an Outstanding National Resource Water (ONRC) or as a high quality water (Tier 2) or if the stream is listed on the 303(d) list. A 303(d) listed stream is water quality limited and not fully meeting its designated uses. Discharges to any of these streams would not be allowed under the WPC Antidegradation Policy. The 1998 303(d) list includes Dry Creek, Rock Creek, Elk River from Tims Ford Reservoir to Woods Reservoir Dam, and Woods Reservoir. Currently no streams in this portion of the Elk-Shoal Basin appear on the ONRC list. Streams must still have a "tier" determination conducted prior to consideration for a discharge. Again, strict adherence to the division's rules in siting, design, installation, and operation of these systems would allow for development to proceed without water quality being compromised by wastewater. Unless an appropriate wastewater treatment system can be approved by one of these divisions, the proposed development cannot proceed regardless of how that particular parcel is designated.

Wastewater treatment systems can cause pollution either in the form of excessive nutrient loading, or fecal coliform bacteria if they are not properly designed, constructed, and maintained. Because wastewater treatment systems, including any future upgrades, must comply with all state requirements as defined in its NPDES permit, adverse water quality impacts would be minimized.

Table H-3 Listing of terrestrial/wetland wildlife species, by community types, that may occur in the vicinity of Tims Ford Reservoir				
Species By:		Forest Lands	Managed Open Lands (Old fields & Ag. fields)	Wetland & Riparian Communities
Common Name	Scientific Name			
<b>Amphibians</b>				
Bullfrog	<i>Rana catesbeiana</i>			X
Eastern Narrowmouth Toad	<i>Gastrophryne carolinensis</i>			X
Green Frog	<i>Rana clamitans</i>			X
Wood Frog	<i>Rana sylvatica</i>	X		X
Spring Peeper	<i>Pseudacris crucifer</i>			X
Woodhouse's Toad	<i>Bufo woodhousei</i>	X		
Spotted Salamander	<i>Ambystoma maculatum</i>	X	X	
Dusky Salamander	<i>Desmognathus fuscus</i>	X		X
Mountain Dusky Salamander	<i>Desmognathus ochrophaeus</i>	X		X
Blackbelly Salamander *	<i>Desmognathus quadramaculatus</i>	X		X
Longtail Salamander	<i>Eurycea longicauda</i>	X		
Spring Salamander	<i>Gyrinophilus porphyriticus</i>			X
Northern Slimy Salamander	<i>Plethodon glutinosus</i>	X		
Ravine Salamander	<i>Plethodon richmondi</i>	X		
Red Salamander	<i>Pseudotriton ruber</i>			X
<b>Reptiles</b>				
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>	X		
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>	X	X	X
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>	X		
Northern Water Snake	<i>Nerodia sipedon sipedon</i>			X
Northern Fence Lizard	<i>Sceloporus undulatus hyacinthinus</i>	X		
Five-lined Skink	<i>Eumeces fasciatus</i>	X	X	
Broadhead Skink	<i>Eumeces laticeps</i>	X		
Common Snapping Turtle	<i>Chelydra serpentina serpentina</i>			X
Painted Turtles	<i>Chrysemys picta spp.</i>			X
Red-eared Slider	<i>Trachemys scripta elegans</i>			X
Eastern Box Turtle	<i>Terrapene carolina carolina</i>	X	X	
<b>Birds</b>				
Bald Eagle *	<i>Haliaeetus leucocephalus</i>			X

<b>Table H-3 Listing of terrestrial/wetland wildlife species, by community types, that may occur in the vicinity of Tims Ford Reservoir</b>				
<b>Species By:</b>		<b>Forest Lands</b>	<b>Managed Open Lands (Old fields &amp; Ag. fields)</b>	<b>Wetland &amp; Riparian Communities</b>
<b>Common Name</b>	<b>Scientific Name</b>			
Osprey *	<i>Pandion haliaetus</i>			X
Cooper's Hawk *	<i>Accipiter cooperii</i>	X	X	
Red-shouldered Hawk		X		X
Red-tailed Hawk	<i>Buteo jamaicensis</i>	X	X	
American Kestrel	<i>Falco sparverius</i>		X	
Great Horned Owl	<i>Bubo virginianus</i>	X	X	X
Barred Owl	<i>Strix varia</i>	X		X
Common Screech Owl	<i>Otus asio</i>	X	X	
Barn Owl *	<i>Tyto alba</i>		X	
Turkey Vulture	<i>Cathartes aura</i>	X		
Black Vulture	<i>Coragyps atratus</i>	X		
American Crow	<i>Corvus brachyrhynchos</i>	X	X	
Hairy Woodpecker	<i>Picoides villosus</i>	X		X
Pileated Woodpecker	<i>Dryocopus pileatus</i>	X		X
Yellow-shafted Flicker	<i>Colaptes auratus</i>	X	X	
Downy Woodpecker	<i>Picoides pubescens</i>	X		X
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	X	X	
Belted Kingfisher	<i>Megaceryle alcyon</i>			X
Great Blue Heron	<i>Ardea herodias</i>			X
Black-crowned Night Heron				X
Green Heron	<i>Butorides striatus</i>			X
Spotted Sandpiper	<i>Actitis macularia</i>			X
Killdeer	<i>Charadrius vociferus</i>		X	X
Wild Turkey	<i>Meleagris gallopavo</i>	X	X	
Bobwhite Quail	<i>Colinus virginianus</i>		X	
Ruffed Grouse	<i>Bonasa umbellus</i>	X		
Mourning Dove	<i>Zenaida macroura</i>		X	
Canada Goose	<i>Branta canadensis</i>		X	X
Wood Duck	<i>Aix sponsa</i>			X
Mallard	<i>Anas platyrhynchos</i>			X
Blue-winged Teal				X

<b>Table H-3 Listing of terrestrial/wetland wildlife species,                      by community types, that may occur in the vicinity                      of Tims Ford Reservoir</b>				
Species By:		Forest Lands	Managed Open Lands (Old fields & Ag. fields)	Wetland & Riparian Communities
Common Name	Scientific Name			
American Black Duck				X
Pied-bill Grebe				X
Northern Cardinal	Cardinalis cardinalis	X	X	
Eastern Bluebird	Sialia sialis		X	
American Goldfinch	Carduelis tristis	X	X	
Grasshopper Sparrow *	Ammodramus savannarum		X	
Blue Jay	Cyanocitta cristata	X		
Carolina Chickadee	Parus carolinensis	X	X	
Red-winged Blackbird	Agelaius phoeniceus		X	X
Rufous-sided Towhee	Pipilo erythrophthalmus	X	X	
American Robin	Turdus migratorius	X	X	
Northern Mockingbird	Mimus polyglottos		X	
Carolina Wren	Thryothorus ludovicianus	X	X	
Indigo Bunting	Passerina cyanea		X	
Tufted Titmouse	Parus bicolor	X		
White-breasted Nuthatch	Sitta carolinensis	X		X
Yellow-billed Cuckoo	Coccyzus americanus	X	X	
Black-and-white Warbler	Mniotilta varia	X		
Wood Thrush	Hylocichla mustelina	X		
Eastern Wood Pewee	Contopus virens	X		
Red-eyed Vireo	Vireo olivaceus	X		
Pine Warbler	Dendroica pinus	X		
Great Crested Flycatcher	Myiarchus crinitus	X		
<b>Mammals</b>				
Whitetail Deer	Odocoileus virginianus	X	X	X
Gray Squirrel	Sciurus carolinensis	X		
Southern Flying Squirrel	Glaucomys volans	X		
Eastern Chipmunk	Tamias striatus	X	X	
Raccoon	Procyon lotor	X		X
Eastern Cottontail Rabbit	Sylvilagus floridanus	X		
Bobcat	Lynx rufus	X		X



<b>Table H-3 Listing of terrestrial/wetland wildlife species, by community types, that may occur in the vicinity of Tims Ford Reservoir</b>				
<b>Species By:</b>		<b>Forest Lands</b>	<b>Managed Open Lands (Old fields &amp; Ag. fields)</b>	<b>Wetland &amp; Riparian Communities</b>
<b>Common Name</b>	<b>Scientific Name</b>			
Red Fox	<i>Vulpes vulpes</i>		X	
Gray Fox	<i>Urocyon cinereoargenteus</i>	X	X	
Coyote	<i>Canis latrans</i>		X	
Mink	<i>Mustela vison</i>			X
Muskrat	<i>Ondatra zibethicus</i>			X
Opossum	<i>Didelphis virginiana</i>	X	X	
Striped Skunk	<i>Mephitis mephitis</i>	X	X	
Groundhog	<i>Marmota monax</i>	X	X	
White-footed Mouse	<i>Peromyscus leucopus</i>	X	X	
Woodland Jumping Mouse *	<i>Napaeozapus insignis</i>	X	X	X
Meadow Jumping Mouse *	<i>Zapus hudsonius</i>	X	X	X
Deer Mouse	<i>Peromyscus maniculatus</i>	X	X	
Allegheny Woodrat *	<i>Neotoma magister</i>	X		
Southern Bog Lemming *	<i>Synaptomys cooperi</i>	X		X
Eastern Mole	<i>Scalopus aquaticus</i>	X	X	
Least Shrew	<i>Cryptotis parva</i>		X	X
Southeastern Shrew *	<i>Sorex longirostris</i>	X		X
Short-tailed Shrew	<i>Blarina brevicauda</i>	X		X
Gray Bat *	<i>Myotis grisescens</i>			X
Indiana Bat *	<i>Myotis sodalis</i>	X		X
Eastern Small-footed Myotis *	<i>Myotis leibii</i>	X		X

\* Species listed as endangered, threatened, or in need of management federally, by the state of Tennessee, or recommended by the Tennessee Wildlife Resources Agency.

<b>Table H-4 Populations of listed plants and animals and uncommon habitats found on Tims Ford Lands Planning Parcels</b>			
<b>Category</b>	<b>Quadrangle (Dot Number)*</b>	<b>Parcel No.</b>	<b>Description</b>
State-listed Plant Populations	Capitol Hill (2)	63	<b>Spreading false-foxglove</b> ( <i>Aureolaria patula</i> ), listed as threatened in Tennessee, and <b>southern rein-orchid</b> ( <i>Platanthera flava</i> var. <i>flava</i> ), listed as special concern in Tennessee, were found at multiple sites within this parcel.
State-listed Plant Populations	Belvidere (2)	15	<b>Butternut</b> ( <i>Juglans cinerea</i> ), listed as threatened in Tennessee, and a plant listed as special concern in Tennessee, were found within this parcel.
State-listed Plant Population	Tullahoma (3)	37	A plant listed as special concern in Tennessee was found at several sites within this Parcel
State-listed Plant Population	Lynchburg East (1)	8	A plant listed as special concern in Tennessee was found at several sites within this Parcel
State-listed Plant Population	Lynchburg East (2)	8	A plant listed as special concern in Tennessee was found at several sites within this Parcel
State-listed Plant Population	Lynchburg East (3)	24	A plant listed as special concern in Tennessee was found at this site.
State-listed Animal Populations	Capitol Hill (2)	63	<b>Southeastern shrews</b> ( <i>Sorex longirostris</i> ) and <b>mole salamanders</b> ( <i>Ambystoma talpoideum</i> ), both listed as in need of management in Tennessee, were captured at multiple sites within this parcel.
State-listed Animal Population	Belvidere (12)	44	<b>Southeastern shrews</b> were in this Parcel
Uncommon Habitat	Capitol Hill (1)	63	Extensive Wetland Complex
Uncommon Habitat	Capitol Hill (2)	63	Bottomland Hardwood Forest and Limestone Outcrop
Uncommon Habitat	Tullahoma (1)	33	Mature Deciduous Woodland
Uncommon Habitat	Tullahoma (2)	34	Rock Seepage in Mature Deciduous Woodland
Uncommon Habitat	Tullahoma (3)	37	Rock Seepage in Mature Deciduous Woodland
Uncommon Habitat	Tullahoma (4)	37	Shale Barren
Uncommon Habitat	Belvidere (1)	15	Rock Seepage in Mature Deciduous Woodland
Uncommon Habitat	Belvidere (2)	15	Mature Deciduous Woodland
Uncommon Habitat	Belvidere (3)	20	Limestone Outcrop
Uncommon Habitat	Belvidere (4)	34	Rock Seepage in Forested Riparian Corridor
Uncommon Habitat	Belvidere (5)	37	Rock Seepage in Mature Deciduous Woodland
Uncommon Habitat	Belvidere (6)	36	Mature Deciduous Woodland
Uncommon Habitat	Belvidere (7)	41	Mature Deciduous Woodland

<b>Table H-4 Populations of listed plants and animals and uncommon habitats found on Tims Ford Lands Planning Parcels</b>			
<b>Category</b>	<b>Quadrangle (Dot Number)*</b>	<b>Parcel No.</b>	<b>Description</b>
Uncommon Habitat	Belvidere (8)	42	Mature Deciduous Woodland
Uncommon Habitat	Belvidere (9)	42	Forested Riparian Corridor and Mature Deciduous Woodland
Uncommon Habitat	Belvidere (10)	42	Forested Riparian Corridor and Mature Deciduous Woodland
Uncommon Habitat	Belvidere (11)	43	Shrub Community
Uncommon Habitat	Belvidere (12)	43	Shrub Community
Uncommon Habitat	Belvidere (13)	76	Mature Deciduous Woodland
Uncommon Habitat	Belvidere (14)	76	Little Blue Stem Grass Opening
Uncommon Habitat	Belvidere (15)	75	Shrub Community
Uncommon Habitat	Belvidere (16)	76	Forested Riparian Corridor
Uncommon Habitat	Belvidere (17)	45	Shrub Community and Mature Deciduous Woodland
Uncommon Habitat	Belvidere (17)	46	Shrub Community and Mature Deciduous Woodland
Uncommon Habitat	Belvidere (17)	47	Shrub Community and Mature Deciduous Woodland
Uncommon Habitat	Lynchburg East (1)	8	Mature Deciduous Woodland
Uncommon Habitat	Lynchburg East (2)	8	Mature Deciduous Woodland
Uncommon Habitat	Lynchburg East (3)	24	Rock Seepage in Deciduous Woodland
Uncommon Habitat	Lynchburg East (4)	26	Rock Seepage in Deciduous Woodland
Uncommon Habitat	Lynchburg East (5)	26	Forested Riparian Corridor and a 12-foot Waterfall
Uncommon Habitat	Lois (1)	14	Mature Deciduous Woodland
Uncommon Habitat	Lois (1)	15	Mature Deciduous Woodland

<b>Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999</b>						
<b>Wetland ID<sup>a</sup></b>	<b>Class<sup>b</sup></b>	<b>Approx. Area (acres)</b>	<b>Description</b>	<b>Dominant Vegetation<sup>c</sup></b>	<b>Probable Functions<sup>d</sup></b>	<b>National Wetland Inventory Review</b>
4-1	PFO/SS1C	0.17	Fringe wetland ahead of cove	Bw; Sg; El; Sc; Bc	WH, SR, VD	NWI indicates a PSS1A in the riparian zone of a tributary stream that extends off of the parcel. However, the wetland is at head of cove and does not extend into the upstream riparian zone.
4-2	PFO/SS1C	0.14	Fringe wetland at head of cove	Bw; Sg; El; Sc; Bc	WH, SR, VD	NWI indicates a PSS1A in the riparian zone of a tributary stream that extends off of the parcel. However, the wetland is at head of cove and does not extend into the upstream riparian zone.
4-3	PFO/SS1C	0.23	Fringe wetland at head of cove	Bw; Sy	WH, SR, VD	No wetlands indicated
6-1	PSS1C	0.19	Fringe wetland at head of cove	Ga; Bb; Ca; Ja	WH, SR, VD	No wetlands indicated
6-2	PEM2C	0.07	Small area of water willow near shore	Ja	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.
8-1	PFO1C	0.60	PFO1C at head of cove	Bw; Ga; Sy	WH, SR, CR, NC, VD	NWI indicates a PFO1A in the riparian zone of the tributary stream. However, the wetland does not extend upstream beyond stream mouth cove head.
9-1	PSS/EM1C	0.52	Fringe wetland at head of cove	Bw; Sy; Ja	WH, SR, CR, NC, VD	NWI indicates a PFO1A in the riparian zone of a tributary stream; However, the wetland does not extend upstream beyond stream mouth at head of cove.

<b>Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999</b>						
<b>Wetland ID<sup>a</sup></b>	<b>Class<sup>b</sup></b>	<b>Approx. Area (acres)</b>	<b>Description</b>	<b>Dominant Vegetation<sup>c</sup></b>	<b>Probable Functions<sup>d</sup></b>	<b>National Wetland Inventory Review</b>
10-1	PSS1C	1.19	Large wetland filling the head of a wide cove	Bw; Sg; Sy; Rb; Ca	SS, WH, SR, CR, NC, VD	No wetlands indicated
10-2	PEM2C	0.02	Small area of water willow near shore	Ja	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.
10-3	PSS1C	0.09	Fringe wetland at head of cove	Ga; Ja	WH, SR, VD	No wetlands indicated
10-4	PSS1C	0.11	Fringe wetland at head of cove	Bw; Wo; Bb; Ja; Ju	WH, SR, VD	No wetlands indicated
15-1	PSS1C	1.75	Shoreline fringe wetland, backed by cleared land.	Bw; Bb; Wg; Je; Hb	SS, WH, SR, CR, NC, VD	No wetlands indicated
16-1	PSS1C	1.86	Narrow, discontinuous fringe of wetlands around point	Bw; Bb; Ja; Ju; Wg; Hy; Lu	SS, WH, SR, CR, VD	No wetlands indicated
16-2	PSS1C	1.52	Shoreline fringe, backed by cleared areas	Bw; Bb; Wg; Ja; Ju	SS, WH, SR, CR, NR, VD	The PSS1C area corresponds to a PEM1C area indicated on the NWI
16-3	PSS1C	0.19	Fringe wetland at the outlet of a roadside swale	Bb	SS, SR, CR, VD	No wetlands indicated
19-1	PSS1C	7.01	Wide shoreline fringe wetland	Bw; Ga; Sy; Cw; Sm; Bb	SS, WH, SR, CR, NR, VD	NWI indicates a small PEM1A at shoreline and PFO1A along stream. Both of these areas fall within the PSS1C identified in the field.
20-1	PSS1C	0.48	Shoreline fringe in one area only. Remaining shoreline is overgrazed pasture land	Bw; Bb	SS, WH, SR, CR, NR, VD	No wetlands indicated

Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999						
Wetland ID <sup>a</sup>	Class <sup>b</sup>	Approx. Area (acres)	Description	Dominant Vegetation <sup>c</sup>	Probable Functions <sup>d</sup>	National Wetland Inventory Review
21-1	PSS1C	6.39	Shoreline fringe, backed by higher elevation agric. land	Bw; Bb; Wg; Ju	SS, WH, SR, CR, NR, VD	NWI indicates a PFO1A along a stream, but does not indicate a wetland in location of PSS1C identified in field.
21-2	PEM1C	0.46	Shoreline fringe at head of cove	Wg; Ju; Bb; Bw	SS, WH, SR, CR, NR, VD	NWI indicates PFO1A in riparian zone of inflowing stream. However, the wetland does not extend upstream beyond stream mouth at head of cove.
22-1	PSS1C	15.85	Shoreline fringe	Bw; Sg; Sm; Cw; Bb	SS, WH, SR, CR, NR, VD	PSS1C area corresponds to PEM1A area indicated on NWI.
Parcel 23	See NWI map		Extensive wetland complex that includes PFO1, PSS1, and PEM1 wetlands		WH, SR, CR, NR, FA, VD	The NWI boundary mapping is essentially accurate, except that the wetland classes, in some areas, have changed (i.e. PEM1 to PSS1). Areas that showed some deviation (other than a classification change) from NWI are included here as 23-1 through 23-5.
23-1	PFO1A	16.35	Elk River floodplain; Wooded and cleared cattle pasture	Ha; El; Ga; Sx; <i>Vernonia</i> sp.; <i>Bidens</i> sp.; <i>Eupatorium coelestinum</i>	SR, CR, NR, FA	NWI indicates narrow PFO1A along stream in this area. This area in the floodplain of the Elk River is flooded during some storm events and provides some of the same functions as wetlands, although it is not a jurisdictional wetland. There are jurisdictional wetlands adjacent to it.
23-2	PFO1C	18.53	In an area of "pits" and mounds resulting from past sand quarry. Wet areas are in the "pit" areas.	Sy; Wo	WH, SR, CR, NR, FA, VD	NWI indicates two PFO1A and one PSS1A within the area identified in field survey as a PFO1C.

<b>Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999</b>						
<b>Wetland ID<sup>a</sup></b>	<b>Class<sup>b</sup></b>	<b>Approx. Area (acres)</b>	<b>Description</b>	<b>Dominant Vegetation<sup>c</sup></b>	<b>Probable Functions<sup>d</sup></b>	<b>National Wetland Inventory Review</b>
23-3	PFO1A	30.56	Elk River floodplain; Relatively undisturbed forested floodplain; Not jurisdictional wetland	Sg; Sy; Wo; Mv; Rm; Liriodendron tulipifera	WH, SR, CR, NR, FA, VD	NWI indicates a PFO1A in southern portion of the area identified as PFO1A in field survey. This area may be occasionally flooded during large storm events and provides some of the same functions as wetlands, although it is not a jurisdictional wetland. There are jurisdictional wetlands adjacent to it.
23-4	PFO1C	3.78	Area occasionally used for cattle grazing. Merges with PFO1A wetland (23-5)	El; Wo; Rb; Rm; Sx	SS, WH, SR, CR, NR, FA, VD	See text in 23-5.
23-5	PFO1A	2.70	Area occasionally used for cattle grazing. Merges with PFO1C wetland (23-4)	El; Wo; Rm; Sx; Mv	WH, SR, CR, NR, FA, VD	NWI indicates a PFO/SS1A along the shoreline in the general area of the PFO1C/PFO1A identified in field survey.
24-1	PFO1A	13.20	Level floodplain; merges into PSS1C shoreline wetland 24-2	Wo; Sm; Bw	WH, SR, CR, NR, VD, FA	No wetlands indicated
24-2	PSS1C	3.05	Shoreline fringe that merges into PFO1A on landward side (24-1)	Bw; Bb; Al	SS, WH, SR, CR, NR, VD	No wetlands indicated
26-1	PFO1C	3.05	On landward side of shoreline PSS1C (26-2), and backed inland by agric. field	Bw; Ga; Sg; Wo; Ca	SS, WH, SR, CR, NR, VD	No wetlands indicated
26-2	PSS1C	2.50	Shoreline fringe PSS1C merges into PFO1C (26-1) on landward side	Bw; Bb; Ca	SS, WH, SR, CR, NR, VD	No wetlands indicated

Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999						
Wetland ID <sup>a</sup>	Class <sup>b</sup>	Approx. Area (acres)	Description	Dominant Vegetation <sup>c</sup>	Probable Functions <sup>d</sup>	National Wetland Inventory Review
29-1	PFO/SS1C	0.99	Shoreline fringe around a stream embayment upstream of road culvert.	Sg; El; Bw; Ja	WH, SR, CR, NR, VD	NWI indicates PFO1A in riparian zone of stream at head of embayment. Only a short section of this stream is on the parcel. The PFO/SS1C wetland does not extend upstream into the riparian zone.
29-2	PFO1A	0.39	In riparian zone of stream that flows into the Winchester Springs Branch embayment	Sg; Be; Ga; Bw; Cc	WH, CR, NR, VD	No wetlands indicated.
30-1	PEM2C	0.02	Small area of water willow in standing water at head of cove.	Ja	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.
30-2	PEM1C	0.19	Fringe wetland at head of embayment. Disturbed by cattle. Reduced functions due to impacts.	Sf; Lu; Ju; Ph; Eo	Potential functions: SS, WH, SR, CR, NR, VD	No wetlands indicated
30-3	PEM2C	0.01	Small area of water willow in water near head of cove	Ja	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.
30-4	PEM2C	0.07	Small area of water willow in water along shoreline	Ja	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.



<b>Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999</b>						
<b>Wetland ID<sup>a</sup></b>	<b>Class<sup>b</sup></b>	<b>Approx. Area (acres)</b>	<b>Description</b>	<b>Dominant Vegetation<sup>c</sup></b>	<b>Probable Functions<sup>d</sup></b>	<b>National Wetland Inventory Review</b>
30-5	PEM2C	0.06	Small area of water willow in water along shoreline	Ja; Bw	WH, VD	No wetlands indicated. These monotypic water willow areas occur within the summer pool elevation and may leave no evidence of their existence in the winter.
30-6	PSS1C	0.07	Fringe wetland at head of cove	Bw; Bb; Ja; Ju	WH, SR, VD	NWI indicates a PFO1A in the riparian zone of stream upstream of cove head. However, the wetland does not extend upstream of the stream mouth at cove head.
33-1	PSS1C	0.22	Fringe wetland at head of cove	Bw; El; Bb	WH, SR, VD	No wetlands indicated
<b>33 B-1<sup>e</sup></b>	PSS1C	1.57	Fringe wetland on side and at head of cove	Bw; Bb	SS, WH, SR, CR, NC, VD	No wetlands indicated.
<b>34-1</b>	PFO/SS1C	1.17	Located on cove shoreline. Only a portion of this wetland, on south side of cove, is on the parcel.	Bw; Ga; El; Sy; Be; Ja	SS, WH, SR, CR, NC, VD	No wetlands indicated.
34-2	PSS1C	0.05	Fringe wetland in cove	Bw	WH, VD	No wetlands indicated
35-1	PFO1A	0.18	Forested wetland in narrow stream bottom at base of road bank. Previously disturbed area	Bw; Sy; Bc; Mv; Lc; Ls; Lv	SR, CR, VD	No wetlands indicated
<b>35-2</b>	PFO1C	0.59	Fringe wetland at head of Lost Creek embayment. Merges with 35-3 PFO1A wetland	Bw; Sy; Cw; Be; El; Je	SS, WH, SR, CR, NC, VD	NWI does not indicate this PFO1C, but does indicate a PFO1A wetland in riparian zone of Lost Creek upstream. The PFO1A wetland does not extend as far upstream as indicated on the NWI.

Table H-5 Wetlands identified during field surveys of selected land management parcels at Tims Ford, 1998-1999						
Wetland ID <sup>a</sup>	Class <sup>b</sup>	Approx. Area (acres)	Description	Dominant Vegetation <sup>c</sup>	Probable Functions <sup>d</sup>	National Wetland Inventory Review
<b>35-3</b>	PFO1A	0.37	Wetland in riparian zone of Lost Creek upstream of the embayment. Merges with 35-2	Be; Ha; Bc	WH, SR, CR, NC, VD	NWI indicates PFO1A in riparian zone of Lost Creek in area corresponding to the PFO1A/PFO1C identified in field survey. The PFO1A wetland does not extend as far upstream as indicated on the NWI.
36-1	PSS1C	0.40	Fringe wetland on the edge and at the head of a small cove adjacent to a road bank.	Bw	SS, WH, SR, CR, VD	NWI indicates a PEM1A area that corresponds to the PSS1C area identified in field survey.
38-1	PSS1C	0.022	Very small fringe wetland at head of cove	Bw, Je	VD	No wetlands indicated.
<b>39-1</b>	PSS1C	0.22	Fringe wetland encircling head of cove	Bw, Je	SS, WH, SR, CR, NC, VD	No wetlands indicated.
<b>41A-1<sup>e</sup></b>	PSS1C	0.44	Long, fringe wetland at head and side of cove	Bw, Je	WH, VD	No wetlands indicated
<b>45-1</b>	PEM/SS1C	1.09	Wetland is on a wide, level alluvial bench adjacent to stream at head of cove	Je, Bb, Rb, Sy	SS, WH, SR, CR, NC, VD	PFO1A indicated in riparian zone of stream upstream of cove. The wetland identified at the head of the cove does not extend upstream.

a: Bold type indicates a category 1 wetland.

b: Cowardin et. al (1979)

PFO1 - Palustrine forested broad-leaved deciduous

PSS1 - Palustrine scrub-shrub broad-leaved deciduous

PEM1 - Palustrine emergent persistent vegetation

A - Temporarily flooded

C - Seasonally flooded

footnotes continued on next page

- c: Al - Alder (*Alnus* sp.)
  - Bb - Buttonbush (*Cephalanthus occidentalis*)
  - Bc - False nettle (*Boehmeria cylindrica*)
  - Be - Box elder (*Acer negundo*)
  - Bw - Black willow (*Salix nigra*)
  - Cc - Ironwood (*Carpinus caroliniana*)
  - Cw - Cottonwood (*Populus deltoides*)
  - EI - Elm (*Ulmus* sp.)
  - Eo - Spikerush (*Eleocharis* sp.)
  - Ga - Green ash (*Fraxinus pennsylvanica*)
  - Ha - Hackberry (*Celtis occidentalis*)
  - Hb - Hibiscus (*Hibiscus* sp.)
  - Hy - St. John's wort (*Hypericum* sp.)
  - Je - Soft rush (*Juncus effusus*)
  - Ju - Rush (*Juncus* sp.)
  - Ls - Great Lobelia (*Lobelia siphilitica*)
  - Lu - Seedbox (*Ludwigia* sp.)
  - Lv - Bugleweed (*Lycopus virginicus*)
  - Mv - Nepal grass (*Microstegium vimineum*)
  - Ph - Water-pepper (*Polygonum hydropiperoides*)
  - Rb - River birch (*Betula nigra*)
  - Rm - Red maple (*Acer rubrum*)
  - Sc - Sedges (*Scirpus* spp.)
  - Sd - Silky dogwood (*Cornus amomum*)
  - Sf - Sweetflag (*Acorus calamus*)
  - Sg - Sweetgum (*Liquidambar styraciflua*)
  - Sy - Sycamore (*Platanus occidentalis*)
  - Sm - Silver maple (*Acer saccharinum*)
  - Sx - Greenbriar (*Smilax* sp.)
  - Wg - Woolgrass (*Scirpus cyperinus*)
  - Wo - Water oak (*Quercus phellos*)
  - Ww - Water willow (*Justicia americana*)
- d: Functions most likely to be performed in the wetland
- SS = Shoreline stabilization
  - WH = Wildlife habitat
  - SR = Sediment retention
  - CR = Contaminant removal
  - NC = Nutrient cycling
  - FA = Floodflow alteration functions
  - VD = Vegetation species and community diversity

Table H-6 Existing Agricultural Licenses					
Parcel No.	Acres	Type Use	Parcel No.	Acres	Type Use
1	104	Pasture	40	10	Pasture
2	20	Pasture	41	31	Rowcrop
6	3	Pasture	41	8	Pasture
7	60	Pasture	42	59	Rowcrop
8	8	Pasture	42	82	Pasture
12	10	Pasture	44	16	Rowcrop
14	12	Rowcrop	44	14	Pasture
14	20	Pasture	46	19	Pasture
19	10	Pasture	46	6	Rowcrop
20	15	Pasture	46	11	Pasture
20	38	Rowcrop	51	21	Rowcrop
20	14	Pasture	51	4	Pasture
20	5	Pasture	57	14	Rowcrop
20	7	Pasture	57	7	Pasture
22	9	Pasture	63	5	Rowcrop
22	5	Pasture	63	10	Rowcrop
26	5	Pasture	63	8	Pasture
26	3	Pasture	64	6	Pasture
28	3	Pasture	67	30	Rowcrop
28	4	Pasture	70	5	Rowcrop
28	3	Pasture	70	3	Rowcrop
28	34	Pasture	71	3	Pasture
28	25	Pasture	72	5	Pasture
28	25	Pasture	75	20	Rowcrop
31	25	Rowcrop	75	7	Pasture
31	55	Pasture	75	3	Pasture
31	8	Pasture	75	7	Rowcrop
32	5	Acres	76	63	Rowcrop
33	17	Pasture	78	10	Rowcrop
33	15	Pasture	79	4	Rowcrop
34	25	Pasture	80	3	Pasture
34	19	Rowcrop	80	3	Pasture
34	9	Rowcrop	81	10	Pasture
37	8	Pasture	88	2	Pasture
39	3	Pasture	88	1	Pasture
39	4	Pasture			

Table H-7 Subdivisions Adjacent to Tims Ford Reservoir					
TERDA-Deeded Rights			Private Development		
Subdivision	County	Miles	Subdivision	County	Miles
Beech Hill	Franklin	2.2	Argyle Estates	Franklin	0.6
Cline Ridge	Franklin	2.0	C. A. Harriman	Franklin	0.6
Dripping Springs	Franklin	2.1	Flower Point	Franklin	0.6
Dry Creek	Franklin	0.4	Heatherwood	Franklin	1.1
Elklore	Franklin	1.3	Hickory Hills	Franklin	0.5
Highland Ridge	Franklin	3.5	Hillwood	Franklin	0.4
Hopkins Point	Franklin	3.8	Holly Hills	Franklin	0.4
Leatherwood	Franklin	1.7	Joe Hawk	Franklin	1.5
Lee Ford	Franklin	1.3	Kim Donna	Franklin	0.6
Loop Cabin Sites	Franklin	0.6	Lake Haven	Franklin	0.4
Moor-Lin	Franklin	0.6	Lakeview	Franklin	0.4
Moor-Lin	Moore	0.2	Lynch	Franklin	0.4
Murray Lake	Franklin	0.7	M and R Estates	Franklin	0.4
Narrows	Franklin	1.7	Oscar Farris	Franklin	0.5
Pine Bluff	Franklin	1.8	Pineview Peninsula	Franklin	0.5
Robinson Hollow	Franklin	0.8	Elk Acres	Franklin	0.3
Taylor Creek East	Franklin	0.8	Rock Creek Estates	Franklin	0.3
Taylor Creek West	Franklin	1.5	Rogers Haven	Franklin	0.4
Rock Creek West	Franklin	0.4	Shelly Heights	Franklin	0.3
Waters Edge 2	Franklin	0.5	Springbrook	Franklin	0.3
Holiday Hideaway	Moore	0.4	Timberlake	Franklin	0.3
Ridgeville	Moore	5.2	Waters Edge 1	Franklin	0.5
<b>Total</b>		<b>33.1</b>	Westwood Shores	Franklin	0.5
<b>Private Licenses</b>			Wild Geese Landing	Franklin	0.3
Boiling Fork Creek Mile 3.0 L	Franklin	0.2	Winchester Village	Franklin	0.4
ERM 154.2 L	Franklin	0.2	Burkhalter	Moore	0.2
ERM 158.0 to 158.7 L	Franklin	0.1	Holiday Hideway	Moore	0.3
ERM 159.8 R	Franklin	0.4	Lakehaven Shasteen	Moore	1.0
ERM 162.5 L	Franklin	0.1	Lee Gray	Moore	0.7
Graves Branch	Franklin	0.0	Lost Creek Height Estates	Moore	0.8
Hurricane Creek Mile 1.0 R	Franklin	0.0	<b>Total</b>		<b>16.1</b>
Little Hurricane Creek	Franklin	0.1			
Red Mill Bridge, BFCM 3.5 L	Franklin	0.1			
Taylor Creek	Franklin	0.1			
Winchester Springs Branch	Franklin	0.2			
Lost Creek	Moore	0.1			
Turkey Creek	Moore	0.0			
<b>Total</b>		<b>1.7</b>			

Table H-8 Listing of Parcels with Proposed Land-Use Changes						
Parcel	Shoreline Miles	Acres	Land-Use Allocation			
			Alternative A	Alternative B	Alternative B1	Alternative C
6-1	0.2	0.4	n/a	n/a	8	n/a
7	1.8	156.5	Developable	7	7	7
8	4.0	189.7	153.8 Ac. Developable	4	4 3	153.8 ac. - 7 5.9 ac. - 4
8-1	0.2	1.2	n/a	n/a	8	n/a
8-2	0.1	0.6	n/a	n/a	8	n/a
12	1.9	79.9	Developable	4	4	7
14	2.5	118.6	Developable	7	4	7
18-1	0.1	0.4	n/a	n/a	8	n/a
18-2	0.1	0.4	n/a	n/a	8	n/a
19	0.9	45.8	Developable	6	6	6
20	14.4	497.9	111.2 Ac. Developable	4	4	111.2 ac. - 7 386.7 - 4
20-1	<0.1	0.1	n/a	n/a	8	n/a
20-2	0.2	0.2	n/a	n/a	8	n/a
20-3	0.1	0.3	n/a	n/a	8	n/a
22-1	0.1	0.3	n/a	n/a	8	n/a
22-2	0.1	0.4	n/a	n/a	8	n/a
22-3	0.2	0.8	n/a	n/a	8	n/a
22-4	0.3	0.9	n/a	n/a	8	n/a
24	1.3	66.9	Developable	4	4	7
26	2.8	140.3	86.8 Ac. Developable	4	4	86.8 Ac. - 7 53.5 Ac. - 4
26-1	0.4	1.4	n/a	n/a	8	n/a
28	5.8	276.2	183.3 Ac. Developable	4	4	183.3 Ac. - 7 92.9 Ac. - 4
28-1	0.2	1.0	n/a	n/a	8	n/a
28-2	0.1	0.3	n/a	n/a	8	n/a
31	1.7	176.1	Developable	7	7	7
32	1.1	89.3	Developable	6	6	6
33	7.2	298.6	140.9 Ac. Developable	4	4	140.9 Ac. - 7 157.7 Ac. - 4
33-1	0.8	0.8	n/a	n/a	8	n/a
34	13.5	419.5	64.2 Ac. Developable	4	4	64.2 Ac. - 7 355.3 Ac. - 4
34-1	0.5	1.4	n/a	n/a	8	n/a
34-2	<0.1	0.1	n/a	n/a	8	n/a
36	4.4	204.6	Developable	7	7	7
37	10.6	376.6	334.2 Ac. Developable	4	4	334.2 Ac. - 7 42.4 Ac. - 4
39	2.0	46.4	28.7 Ac. Developable	4	4	28.7 Ac. - 7 17.7 Ac. - 4
39-1	0.1	0.4	n/a	n/a	8	n/a
39-2	<0.1	0.2	n/a	n/a	8	n/a

Table H-8 Listing of Parcels with Proposed Land-Use Changes						
Parcel	Shoreline Miles	Acres	Land-Use Allocation			
			Alternative A	Alternative B	Alternative B1	Alternative C
40	5.2	85.5	55.4 Ac. Developable	4	4	55.4 Ac. - 7 30.1 Ac. - 4
40-1	0.1	0.6	n/a	n/a	8	n/a
40-2	0.1	0.3	n/a	n/a	8	n/a
40-3	0.8	2.7	n/a	n/a	8	n/a
42	2.7	366.3	Developable	4	4	7
44	0.3	57.7	Developable	4	4	7
46	1.5	111.2	Developable	7	7	7
50-1	0.2	0.7	n/a	n/a	8	n/a
50-2	0.2	0.4	n/a	n/a	8	n/a
51	1.2	48.9	Developable	7	7	7
52-1	0.2	0.6	n/a	n/a	8	n/a
52-2	0.2	0.8	n/a	n/a	8	n/a
52-3	0.2	0.5	n/a	n/a	8	n/a
52-4	0.2	0.9	n/a	n/a	8	n/a
57-1	0.3	1.2	n/a	n/a	8	n/a
57-2	0.4	1.5	n/a	n/a	8	n/a
61	0.7	3.1	Developable	6	6	6
66-1	0.1	0.5	n/a	n/a	8	n/a
69-1	0.1	0.2	n/a	n/a	8	n/a
71-1	0.5	1.7	n/a	n/a	8	n/a
71-2	0.2	0.5	n/a	n/a	8	n/a
71-3	0.3	1.4	n/a	n/a	8	n/a
71-4	0.1	0.4	n/a	n/a	8	n/a
73-1	0.3	0.9	n/a	n/a	8	n/a
73-2	0.3	0.7	n/a	n/a	8	n/a
75	3.8	111.6	102.0 Ac. Developable	4	4	102.0 Ac. - 7 9.6 Ac. - 4
76	2.2	131.5	Developable	6	6	6
77	4.1	60.7	20.3 Ac. Developable	4	4	20.3 Ac. - 7 40.4 Ac. - 4
77-1	0.1	0.2	n/a	n/a	8	n/a
77-2	0.3	1.1	n/a	n/a	8	n/a
77-3	0.1	0.2	n/a	n/a	8	n/a
78	0.4	12.8	Developable	5	5	5
79A	0.7	8.3	Developable	4	4	6
79B	0.8	48.8	Developable	5	5	6
80	1.3	26.4	Developable	6		6
81-1	0.2	0.8	n/a	n/a	8	n/a
86-1	0.1	0.2	n/a	n/a	8	n/a
86-2	0.2	1.1	n/a	n/a	8	n/a
88-1	0.1	0.4	n/a	n/a	8	n/a
88-2	0.1	0.4	n/a	n/a	8	n/a

## 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.

**autogenic** - Source of groundwater recharge from the soil infiltration of surface water.

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

**carbon dioxide** - A colorless, odorless, nonpoisonous gas that is normally a part of the ambient air.

**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.

**deciduous trees** - trees which shed their leaves at the end of the growing season.

**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 measure 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.

**fecal coliform** - common intestinal bacteria in human and animal waste.

**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).

**level of service** - a qualitative measure that incorporates the collective factors of speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating volume condition.

**macroinvertebrates** - aquatic insects, snails, and mussels whose species, genus, etc., can be determined with the naked eye.

**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 (NAAQS)** - 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.

**National Environmental Policy Act** - legislation signed into law in 1970 which, among other provisions, requires U.S. government agencies to prepare environmental reviews on proposed policies, procedures, plans, approvals, and other proposed federal actions. Approval of a private water-use facility or sale of an easement to use federal land are examples of federal actions subject to NEPA.

**neotropical migrant birds** - birds which nest in the United States or Canada and migrate to spend the winter in Mexico, Central America, the Caribbean, or South America.

**parent material** - the unconsolidated mass of rock material from which the soil profile develops.

**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.

**SMZ (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.

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

**SMZ (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.