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## DRAFT ENVIRONMENTAL IMPACT STATEMENT

# **MOUNTAIN RESERVOIRS LAND MANAGEMENT PLAN**

**Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoees 1, 2, and 3, Apalachia,  
and Fontana Reservoirs**

**Georgia, North Carolina, and Tennessee**

**PREPARED BY:**  
TENNESSEE VALLEY AUTHORITY

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**Draft Environmental Impact Statement**

**August 2008**

**Proposed project:** Mountain Reservoirs Land Management Plan  
Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoees 1, 2, and 3,  
Apalachia, and Fontana reservoirs  
Fannin, Towns, and Union Counties, Georgia; Cherokee, Clay,  
Graham, and Swain Counties, North Carolina; and Polk  
County, Tennessee

**Lead agency:** Tennessee Valley Authority

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**Comments must be  
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**Abstract:** Tennessee Valley Authority (TVA) proposes to develop a plan for managing a total of 6,222 acres of TVA land on nine mountain reservoirs on tributaries to the Tennessee River. The nine reservoirs are Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoees 1, 2, and 3, Apalachia, and Fontana and are located in northeast Georgia, southwest North Carolina, and southeast Tennessee. The proposed land plan would guide the use of the lands for the next 10-year period by allocating them into one of the following zones: Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial, Developed Recreation, and Shoreline Access.

This environmental impact statement addresses three alternatives: the No Action Alternative, under which TVA would not adopt a new land management plan, and two action alternatives that allocate TVA reservoir shorelands into one of six land allocation zones. Under the Proposed Land Use Plan Alternative, the zone allocations would generally be consistent with existing land uses. Under the Proposed Modified Land Use Plan Alternative, five tracts totaling 105.4 acres would be allocated to more development-oriented uses (Developed Recreation and Industrial) than under the Proposed Land Use Plan Alternative. Under all alternatives, the uses of TVA lands committed through land use agreements with other parties would not change.

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## SUMMARY

### PURPOSE OF AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) manages its lands to protect the integrated operation of the TVA reservoir and power systems, to provide for appropriate public use and enjoyment of the reservoir system, and to provide for continuing economic growth in the Tennessee Valley. As part of the implementation of these goals, TVA develops comprehensive plans for the management of lands associated with its reservoir projects. TVA is developing the *Mountain Reservoirs Land Management Plan* (MRLMP) to guide the management of its lands for the next 10-year period on the following reservoirs: Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoees 1, 2, and 3, Apalachia, and Fontana. All lands under TVA management on these nine reservoirs, a total of approximately 6,222 acres are included in this planning process. About three-fourths of this land area was previously planned under the Forecast System adopted in the 1960s. The remaining lands have never been planned.

TVA has prepared this environmental impact statement (EIS) to assess the impacts of implementing the MRLMP. Alternative approaches to allocating the TVA lands to various land use categories are analyzed in this EIS. Throughout the planning process, TVA has sought public input to identify public use patterns, define alternative uses, and define issues and concerns associated with the TVA lands. These topics are addressed in the development and analysis of the various alternatives and include concerns such as the conservation of natural resources and enhancement of recreation opportunities.

### ALTERNATIVES INCLUDING THE PROPOSED ACTION

TVA has identified three alternatives for analysis and comparison in this EIS:

1. The No Action/Forecast System Alternative (Alternative A), under which TVA would continue to use the existing Forecast System to manage 4,592 acres of its mountain reservoir lands
2. The Proposed Land Use Plan Alternative (Alternative B), under which TVA would allocate its lands to facilitate the management of reservoir lands and to be more consistent with existing uses of the reservoir lands
3. The Proposed Modified Land Use Plan Alternative (Alternative C), which differs from Alternative B by including consideration of some of the land use requests submitted to TVA during the public scoping process

Under all alternatives, TVA would continue to conduct environmental reviews prior to the approval of any proposed development or activity on public land to address site-specific issues.

**No Action/Forecast System Alternative (Alternative A)** - Under Alternative A, TVA would continue to use the Forecast System designations established by TVA in 1965 and applied to 4,592 acres (approximately 74 percent) of the mountain reservoir lands. Before 1979, when TVA began the comprehensive planning of its reservoir lands in a public forum, the Forecast System was used to guide land use decisions on most TVA reservoir lands. Under Alternative A, the approximately 1,630 acres of TVA mountain reservoirs lands

unplanned under the Forecast System, including all TVA lands on Fontana Reservoir, would continue to be managed according to existing land use agreements and TVA's Shoreline Management Policy and Land Policy. However, the unplanned parcels are not allocated to current land use zones; therefore, complete alignment with existing policies would not occur.

**Proposed Land Use Plan Alternative (Alternative B)** - TVA's recent comprehensive reservoir land planning efforts allocate land to the following seven land use zones: Non-TVA Shoreland (Zone 1), Project Operations (Zone 2), Sensitive Resource Management (Zone 3), Natural Resource Conservation (Zone 4), Industrial (Zone 5), Developed Recreation (Zone 6), and Shoreline Access (Zone 7). Under Alternative B, TVA would adopt a new land management plan based on the current reservoir land planning process and zone allocation definitions to guide future land use decisions over the next decade. Alternative B would include both the lands previously planned under the Forecast System and the remaining TVA lands not previously planned. The allocations for the 230 parcels that were previously unplanned would reflect existing land uses, the vast majority of which are committed due to land use agreements or deeded rights, and therefore not subject to potential changes in land use.

**Proposed Modified Land Use Plan Alternative (Alternative C)** - The Alternative C allocations are the same as the Alternative B allocations for 352 (of 357) parcels containing 6,115 (of 6,222) acres. Alternative C differs from Alternative B in that it allocates additional lands for Developed Recreation (Zone 6) and Industrial (Zone 5) uses on Chatuge and Hiwassee reservoirs. These allocations, developed in response to proposals received during the scoping process, affect 101 acres on three parcels on Chatuge Reservoir and 4.4 acres on two parcels on Hiwassee Reservoir. The Alternative C allocations are the same as the Alternative B allocations for Blue Ridge, Nottely, the Ocoees, Apalachia, and Fontana reservoirs.

## **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### ***Land Use***

Affected Environment - Existing land use patterns along the shoreline and back-lying land have been influenced by whether TVA acquired the land and whether TVA has subsequently sold, transferred, or retained the land. TVA originally acquired 104,837 acres of land above the full summer pool elevation on the nine mountain reservoirs. About 91 percent (95,462 acres) of this land has been transferred to other federal and state agencies for public use. Approximately 3,133 acres (3 percent) of the originally acquired land was sold for private uses. Approximately 20 acres were acquired for power assets (substations, etc.) subsequent to original project land acquisition and are not included in the acquisition total.

TVA retained a total 6,222 acres on the nine mountain reservoirs. Many of the parcels have existing land use agreements that commit them to a specific use. The majority of the land use agreements are for utilities, highways, and other public infrastructure. The acreage subject to these agreements is relatively small due to the narrow linear nature of many of the uses.

Most of the residential development along the reservoirs occurs on land TVA sold or on private land where TVA only acquired the right to flood to a certain elevation. The

proportion of shoreline available for residential development varies greatly by reservoir and ranges from 57 percent on Chatuge Reservoir to none on Apalachia Reservoir. The proportion of this residential shoreland that has already been developed also varies greatly and ranges from 44 percent on Nottely Reservoir to all of the available residential shorelands on the Ocoees, Hiwassee, and Apalachia. TVA's Land Policy does not allow for additional land to be provided for residential use, and therefore, the amount of shoreline available for residential use will not change as a result of the land planning process.

Prime farmland totaling 7 acres occurs on Parcel 52 on Chatuge Reservoir for which a change in use is proposed under Alternative C.

Environmental Consequences - Under all of the alternatives, no significant direct or indirect impacts to land use are anticipated. The amount of shoreline available for private residential water use facility development is based primarily on deeded access rights and land ownership patterns and would not change under any of the alternatives. The existing trends of increasing residential development in areas of the reservoir currently available for development are more related to broad socioeconomic trends and would be unaffected by selection of any of the land plan alternatives.

Alternatives A and B would not result in any parcels changing from an undeveloped land use to a developed use. Unplanned parcels are primarily committed to the existing use by transfer agreement covenants, deeded rights, or TVA land use agreements, and therefore, the land use of the unplanned committed parcels also would not change.

Alternative C would change five parcels (105.4 acres) from an undeveloped land use to a developed land use; however, at a minimum, only localized changes to land use patterns would result. When compared to the total scope of the MRLMP, these potential land use changes would be insignificant. Under Alternative C, impacts to prime farmlands are expected to be minimal due to surrounding land usage, urban buildup, and compatibility with existing agricultural use in the area.

### ***Recreation***

Affected Environment - A recreation analysis was completed with the two primary objectives being to (1) identify recreation needs on the nine mountain reservoirs and (2) identify specific parcels on the mountain reservoirs suitable for and capable of meeting unmet recreation needs. High-priority recreation needs were determined by analyzing the National Survey on Recreation and the Environment (NSRE 1999-2005) demand data and the comments received from the public during the scoping period. This information was then compared to existing recreation facilities on each reservoir. The comparison between recreation needs and existing facilities determined that most recreational needs could be met with expansion of facilities in existing developed recreation areas or enhancements to areas being currently utilized for dispersed recreation. Development of new facilities to support unmet needs identified on some reservoirs for stream access, reservoir access, and trails would be accomplished through partnerships with other public agencies or entities in order to meet projected recreation demands.

Shoreline development and boating density were analyzed to determine how trends in shoreline development might affect future boating density and thus capacity issues. No areas of concern regarding boating density were identified.

Environmental Consequences - Under Alternative A, potential environmental impacts to recreation would be insignificant as there would be no change in the use of lands presently used for recreation or allocated for Developed Recreation. Any future development of new recreation facilities would be limited to lands already forecast for this use.

Under Alternative B, all parcels that are currently committed to a Developed Recreation use would be allocated to Zone 6. These commitments include transfer agreement covenants and TVA licenses, leases, and easements. The parcels allocated to Zone 6 would include those previously allocated under Alternative A to Public Recreation as well as those parcels allocated to Reservoir Operations that have been utilized for Developed Recreation. In addition, the unplanned parcels under Alternative A that are committed to a Developed Recreation use would be allocated to Zone 6. Any future demand for developed recreational needs would have to be met by expansion of recreation facilities in these existing areas, and these areas are the same under Alternative B as under Alternative A. Therefore, the potential environmental impacts would be the same. Similar to Alternative A, potential impacts under Alternative B to dispersed recreation are expected to be insignificant.

Potential impacts to recreation under Alternative C are identical to Alternative B with the exception of five parcels, four of which would be allocated for Developed Recreation (two additional parcels on Hiwassee Reservoir and two additional parcels on Chatuge Reservoir). Allocation of these parcels to Zone 6 would shift the existing dispersed recreational use to recreational activities on these parcels associated with development of public recreational facilities, which could result in the elimination of dispersed recreational activities. However, these additional facilities would provide greater recreational opportunity on Chatuge and Hiwassee reservoirs. Under Alternative C, allocation of the fifth parcel (Parcel 10 on Chatuge Reservoir) to Zone 5 (Industrial) would eliminate dispersed recreation opportunities currently available on the parcel. Elimination of the dispersed recreational opportunity would be regionally insignificant due to the availability of other forest areas for similar activities.

### ***Terrestrial Ecology***

Affected Environment - The mountain reservoirs are in a heavily forested, biologically diverse region, and the major vegetative classes on and around the mountain reservoir lands are evergreen forest, evergreen-deciduous forest, deciduous forest, shrublands, and herbaceous vegetation. A few areas of old growths occur on the lands being planned and invasive plants are present on several parcels.

Several forest types occur on TVA lands although the diversity of forest types on these lands is somewhat limited due to the relatively low elevation of the TVA lands. Many of the TVA lands consist of narrow strips or small blocks of forest, and many of the narrow strips are adjacent to larger contiguous blocks of forest owned by other federal and state agencies, which provide important habitat for area-sensitive species of wildlife that favor interior woodland habitats.

Pasturelands and other early successional habitats are common around some reservoirs, notably Nottely and Chatuge reservoirs. All of the mountain reservoirs provide open water habitats and associated riparian zones that are used by a variety of wildlife. This open water habitat, however, is very limited on several of the reservoirs especially during the winter, and consequently, waterfowl numbers are relatively low. Shorebird use of the



mountain reservoirs is limited, as most reservoirs have steep, rocky banks and limited foraging areas comprised of mud flats.

Environmental Consequences - Under Alternatives A and B, there would be little change in the current land uses, and thus, there would be little effect on plant and wildlife communities. Without widespread action, invasive species would continue to proliferate, which would result in a decrease in forest productivity, forest use, and management activities, as well as the degradation of plant diversity and wildlife habitat.

Under Alternative C, the development of the five parcels allocated to industrial and developed recreational uses would affect plant and wildlife communities. These impacts would be minor on four of the tracts. The development to Parcel 10 on Chatuge Reservoir, however, would likely eliminate the old-growth forest, a rare community type and high-quality habitat for wildlife.

### ***Endangered and Threatened Species***

Affected Environment - Nineteen species listed as endangered or threatened under the Endangered Species Act and three candidate species for listing have been reported from the counties encompassing the nine mountain reservoirs. Fourteen of these federally listed or candidate species occur on or in the immediate vicinity of mountain reservoir lands. These listed species include five plants, one mammal, one bird, two fish, one land snail, and four mussels. Critical habitat for one threatened species, the spotfin chub, has been designated in the vicinity of Fontana Reservoir. Several additional species listed as endangered, threatened, or of other conservation concern by the States of Georgia, North Carolina, and/or Tennessee occur on or in the vicinity of mountain reservoir lands.

Parcel 10 on Chatuge Reservoir contains a population of American columbo, a North Carolina state rare species, and Parcel 77 on Chatuge Reservoir has a population of butternut and pink lady's slipper.

Environmental Consequences - Under Alternatives A and B, there would be no immediate change to land use, and therefore, adoption of these alternatives would not result in the cumulative loss of protected terrestrial animal or plant species or their habitat or cumulative impacts to listed aquatic animal species.

Under Alternative C, considering that this alternative would only result in changes in land use on five parcels, most of which have little suitable habitat for protected species, this alternative would not result in cumulative impacts to protected terrestrial plant or animal species or their habitats. Parcel 10 on Chatuge Reservoir contains suitable habitat for Indiana bats and bald eagles, which would be impacted by development on this parcel. Under Alternative C, no impacts to aquatic animal species are expected to occur.

### ***Wetlands***

Affected Environment - Wetlands on and near the mountain reservoirs are primarily riverine/floodplain forests located in the floodplains of rivers and streams and small (typically less than 0.10 acre) areas of emergent/scrub-shrub wetlands along reservoir shorelines. Emergent herbaceous wetlands and scrub-shrub wetlands are uncommon on the mountain reservoirs. Isolated wetlands such as bogs, seeps, and fens are relatively rare on the mountain reservoir lands.

Environmental Consequences - Under all of the alternatives, TVA would continue to protect wetlands in accordance with the requirements of the Clean Water Act and Executive Order (EO) 11990 on wetlands. With the exception of a narrow fringe riparian emergent wetland on Hiwassee Reservoir Parcel 34, no wetlands occur on the five tracts proposed to be allocated to developed uses under Alternative C, and none of the alternatives are expected to result in direct, indirect, or cumulative impacts to wetlands. Impacts to wetlands will be avoided under all alternatives.

### ***Floodplains***

Affected Environment - As a federal agency, TVA is subject to the requirements of EO 11988 (Floodplain Management). The EO is not intended to prohibit floodplain development in all cases but rather to create a consistent government policy against such development under most circumstances. The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

Environmental Consequences - Under all alternatives, the development and/or management of properties and evaluations of proposed actions would be done individually to ensure consistency with EO 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that would result in minor floodplain impacts. Under Alternatives A and C, floodplain impacts would be somewhat greater than those expected under Alternative B because more parcels of the available land on Chatuge and Hiwassee reservoirs would be allocated to zones allowing industrial and recreational development. Although there are impacts to floodplains of varying degrees under all alternatives, potential impacts to floodplain values would be insignificant.

### ***Cultural Resources***

Affected Environment - Several historic properties, including both archaeological sites and historic structures such as buildings and some of the dams, occur on or near mountain reservoir lands. Surveys conducted on or near reservoir lands have identified 602 archaeological sites. Archaeological surveys have been conducted on approximately one-quarter of the lands involved in this land planning process, and many of the reported archaeological sites have not been assessed for their eligibility for the National Register of Historic Places (NRHP).

Historic structures on or in the immediate vicinity of mountain reservoir lands that are listed in the NRHP include the Ocoee 1 hydroelectric station and the Ocoee 2 hydroelectric plant. Other dams and powerhouses are eligible for listing in the NRHP.

Environmental Consequences - TVA will continue the present case-by-case assessments of land-disturbing actions such as shoreline stabilization, construction of water use facilities, or public recreational development through phased identification and evaluation of historic properties. Archaeological resources within these areas would be avoided and protected whenever possible. If avoidance were not possible, then proper procedures would be implemented in the mitigation of the historic property. Under any alternative, the cumulative effects to significant archaeological resources would be minimized by avoidance and protection of the resource or by mitigation through data recovery excavations pursuant to 36 CFR Part 800.

Under Alternatives A and B, all proposed soil-disturbing activities that occur on TVA parcels that contain historic properties would be reviewed by a TVA archaeologist. Site-specific activities proposed in the future would be approved, mitigated, or denied according to the

significance of the resources recorded. If mitigation were required, appropriate archaeological investigation would be necessary and potentially impacted resources would be properly recorded and removed. The potential for such actions to affect historic structures would be similarly assessed. Resources would be protected in the course of complying with applicable regulations. Under Alternative C, not all parcels proposed for additional development have been systematically surveyed. Any cultural resources that may be adversely affected would need to be addressed to comply with applicable regulations.

### ***Managed Areas and Ecologically Significant Sites***

Affected Environment - A large portion of the TVA mountain reservoir lands adjoin managed areas such as national forests, state parks, and the Great Smoky Mountains National Park. The only TVA land formally designated as a managed area is the Raven Rock Small Wild Area on the Hiwassee Dam Reservation.

Environmental Consequences - No adverse effects to managed areas or ecologically significant sites would result from adoption of Alternative A. Under Alternatives B and C, because the proposed land use changes would not deviate substantially from current land uses, continued benefits to natural areas in the vicinity of these reservoirs are anticipated. Under Alternative C, no TVA natural areas occur on or adjacent to the five affected parcels.

### ***Visual Resources***

Affected Environment - All of the reservoir lands have distinctive scenic attractiveness and high scenic integrity. There are a variety of landforms, including rock, myriad vegetation, and other features that contrast with the reservoirs. Reservoir lands appear intact and unaltered, with minor deviations along the developed parcels. Most views from the water have high scenic visibility and are in the foreground and middleground of contrasting elements, such as scenic bluffs along the shoreline and prominent peaks at greater distances.

Environmental Consequences - The adoption of Alternative A or B would not affect visual resources, as there would be no noticeable change in the management of the affected TVA lands. Under Alternative A, the two parcels on Hiwassee Reservoir currently allocated for Industrial use could impact visual resources if developed. Although overall impacts would be insignificant, under Alternative C, development on Chatuge Reservoir would result in impacts on the visual landscape character. For these parcels and land within their viewshed, scenic value class and aesthetic sense of place would be reduced. However, scenic integrity would remain moderate or higher for the entire reservoir. The developments proposed on Hiwassee Reservoir are unlikely to cause adverse visual impacts.

### ***Water Quality and Aquatic Ecology***

Affected Environment - TVA has monitored the ecological health of the mountain reservoirs on an annual or biennial basis since the early 1990s. The ecological health scoring system is based on five indicators: dissolved oxygen, chlorophyll, sediment quality, benthic macroinvertebrates, and fish assemblage. The overall reservoir ecological health ratings for the mountain reservoirs are as follows: "poor" for Chatuge and Nottely reservoirs, "fair" for Hiwassee, Ocoee 1, and Fontana reservoirs, "fair-good" for Apalachia Reservoir, and "good" for Blue Ridge Reservoir. TVA does not routinely sample the reservoir ecological health of Ocoee 2 or Ocoee 3 reservoirs.

Environmental Consequences - Under any of the alternatives, due to the small amount of TVA land on the mountain reservoirs, in comparison to the overall area land base, the state and federal environmental regulations, and the use of any identified impact reduction methods including best management practices, development opportunities on TVA lands would have insignificant cumulative impacts to water quality and aquatic ecology. Cumulative impacts to water quality and aquatic life associated with Alternative C are anticipated to be insignificant, and the overall reservoir ecological health of Chatuge and Hiwassee reservoirs would most likely not change as a result of this alternative.

### ***Air Quality and Noise***

Affected Environment - All of the counties containing the mountain reservoirs are currently in attainment of the National Ambient Air Quality Standards except for the portion of Swain County, North Carolina, that is in the Great Smoky Mountains National Park, which is in nonattainment of the 8-hour ozone standard.

While there are many sources of noise, the greatest potential for noise impacts comes from industrial development. Potential noise impacts due to industrial development would largely depend on the type of industry recruited.

Environmental Consequences - Because the current uses of the great majority of the TVA lands on the mountain reservoirs would not change under any of the alternatives, impacts to air quality and noise would be minor. For Blue Ridge, Nottely, Fontana, Apalachia, and the Ocoees reservoirs, there is little to no difference in anticipated air quality and noise impacts among the various alternatives. There is a somewhat greater potential for air quality and noise impacts due to the land allocations for Industrial use on Hiwassee and Chatuge reservoirs.

### ***Socioeconomics***

Affected Environment - The primary drivers of the economy and population growth in the area are the housing and tourism sectors, which are dependent on the natural scenery associated with the reservoir and adjacent lands. Incomes tend to be lower and poverty rates higher than national averages because of fewer high-wage jobs such as manufacturing and professional services. Unemployment rates tend to be somewhat higher than national averages because of the decline of manufacturing jobs in recent years.

The counties are very rural, with low population densities and a few small towns. Most have high percentages of land in governmental ownership, particularly for national and state forests and the Great Smoky Mountains National Park. Populations of most of the counties have grown rapidly in recent years, especially for those counties with good roads connecting them to the Atlanta metropolitan area. On the other hand, populations have actually decreased in some of the counties with the poorest access to Atlanta or other nearby large population centers and the most land in governmental ownership and thus least available for second-home development. Minority populations are much lower than national averages except for Swain County, North Carolina, where many of the Eastern Band of Cherokee Indians live.

Environmental Consequences - Socioeconomic impacts of all of the alternatives are expected to be minor and insignificant. The overall TVA land base is small and the existing uses of the majority of the TVA land would not change. Under Alternatives A and B, the TVA parcels on all reservoirs would continue to be managed as they now are.

Under Alternative C, the allocation of Parcel 10 on Chatuge Reservoir to Zone 5 would create the potential for new jobs in the area that would be beneficial to the economy of the area. An additional benefit would be increased property taxes from private ownership of Parcel 10. Depending on the type of industrial development, this could have negative socioeconomic impacts by lowering the value of nearby property and interest in residential development of available nearby property, at least relative to other properties in the area. The change of Parcel 52 and Parcel 77 on Chatuge Reservoir to Zone 6 could enhance the attractiveness of the community and indirectly contribute to further population and economic growth. However, as noted above the reservoir and scenery are the main economic drivers in the area, and high-intensity developed recreational use on Parcels 52 and 77 could be incompatible with overall enjoyment of the reservoir and scenic quality. This could lower property values and interest in residential development of available nearby property.

Under Alternative C, the use of two parcels on Hiwassee Reservoir for Developed Recreation would enhance the attractiveness of the area, thus possibly indirectly contributing to further population and economic growth. Under Alternative C, the change of these parcels to developed recreation, which could include walking trails and public river access, would enhance the availability of parks in the area to all area residents, including low-income citizens.

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# TABLE OF CONTENTS

<b>1.0</b>	<b>PURPOSE OF AND NEED FOR ACTION .....</b>	<b>1</b>
1.1	Background.....	1
1.2	Purpose and Need .....	1
1.3	The Decision .....	4
1.4	Other Pertinent Environmental Reviews and Documentation.....	4
1.5	The Scoping Process .....	7
1.5.1	Summary of Public Participation.....	7
1.5.2	Scoping Response.....	7
1.5.3	Land Use Proposals.....	10
1.5.4	Issue and Resource Identification.....	10
1.6	Necessary Federal Permits, Licenses, and Consultations .....	11
<b>2.0</b>	<b>ALTERNATIVES INCLUDING THE PROPOSED ACTION .....</b>	<b>13</b>
2.1	The Allocation Process .....	13
2.2	Alternatives .....	20
2.2.1	Alternative A – The No Action/Forecast System Alternative .....	20
2.2.2	Alternative B – The Proposed Land Use Plan Alternative .....	22
2.2.3	Alternative C – The Proposed Modified Land Use Plan Alternative .....	23
2.3	Comparison of Alternatives .....	27
2.4	Impacts Summary .....	31
2.5	The Preferred Alternative .....	36
2.6	Summary of TVA Commitments and Proposed Mitigation Measures .....	37
<b>3.0</b>	<b>AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....</b>	<b>39</b>
3.1	The Mountain Reservoirs .....	39
3.1.1	Land Use.....	41
3.1.1.1	Affected Environment.....	41
3.1.1.2	Environmental Consequences .....	44
3.1.2	Recreation.....	45
3.1.2.1	Affected Environment.....	45
3.1.2.2	Environmental Consequences .....	46
3.1.3	Terrestrial Ecology.....	48
3.1.3.1	Plant Communities .....	48
3.1.3.1.1	Affected Environment.....	48
3.1.3.1.2	Environmental Consequences .....	50
3.1.3.2	Wildlife Communities.....	51
3.1.3.2.1	Affected Environment.....	51
3.1.3.2.2	Environmental Consequences .....	53

Mountain Reservoirs Land Management Plan

- 3.1.4 Endangered and Threatened Species ..... 53
  - 3.1.4.1 Affected Environment..... 53
  - 3.1.4.2 Environmental Consequences ..... 58
- 3.1.5 Wetlands ..... 59
  - 3.1.5.1 Affected Environment..... 59
  - 3.1.5.2 Environmental Consequences ..... 61
- 3.1.6 Floodplains..... 62
  - 3.1.6.1 Affected Environment..... 62
  - 3.1.6.2 Environmental Consequences ..... 63
- 3.1.7. Cultural Resources ..... 64
  - 3.1.7.1 Archaeological Resources ..... 64
    - 3.1.7.1.1 Affected Environment..... 64
    - 3.1.7.1.2 Environmental Consequences ..... 65
  - 3.1.7.2 Historic Structures ..... 66
    - 3.1.7.2.1 Affected Environment..... 66
    - 3.1.7.2.2 Environmental Consequences ..... 68
- 3.1.8 Managed Areas and Ecologically Significant Sites..... 69
  - 3.1.8.1 Affected Environment..... 69
  - 3.1.8.2 Environmental Consequences ..... 69
- 3.1.9 Visual Resources..... 70
  - 3.1.9.1 Affected Environment..... 72
  - 3.1.9.2 Environmental Consequences ..... 73
- 3.1.10 Water Quality and Aquatic Ecology ..... 74
  - 3.1.10.1 Affected Environment..... 74
  - 3.1.10.2 Environmental Consequences ..... 77
- 3.1.11 Air Quality and Noise ..... 78
  - 3.1.11.1 Air Quality..... 78
    - 3.1.11.1.1 Affected Environment..... 78
    - 3.1.11.1.2 Environmental Consequences ..... 79
  - 3.1.11.2 Noise ..... 80
    - 3.1.11.2.1 Affected Environment..... 80
    - 3.1.11.2.2 Environmental Consequences ..... 80
- 3.1.12 Socioeconomics..... 81
  - 3.1.12.1 Affected Environment..... 81
  - 3.1.12.2 Environmental Consequences ..... 82
- 3.2 Chatuge Reservoir ..... 84**
  - 3.2.1 Land Use..... 84
    - 3.2.1.1 Affected Environment..... 84
    - 3.2.1.2 Environmental Consequences ..... 85
  - 3.2.2 Recreation..... 88
    - 3.2.2.1 Affected Environment..... 88
    - 3.2.2.2 Environmental Consequences ..... 91
  - 3.2.3 Terrestrial Ecology ..... 92
    - 3.2.3.1 Plant Communities ..... 92
      - 3.2.3.1.1 Affected Environment..... 92
      - 3.2.3.1.2 Environmental Consequences ..... 94
    - 3.2.3.2 Wildlife Communities..... 95
      - 3.2.3.2.1 Affected Environment..... 95
      - 3.2.3.2.2 Environmental Consequences ..... 96



- 3.2.4 Endangered and Threatened Species ..... 97
  - 3.2.4.1 Affected Environment ..... 97
  - 3.2.4.2 Environmental Consequences ..... 99
- 3.2.5 Wetlands ..... 100
  - 3.2.5.1 Affected Environment ..... 100
  - 3.2.5.2 Environmental Consequences ..... 101
- 3.2.6 Floodplains ..... 101
  - 3.2.6.1 Affected Environment ..... 101
  - 3.2.6.2 Environmental Consequences ..... 101
- 3.2.7 Cultural Resources ..... 101
  - 3.2.7.1 Archaeological Resources ..... 101
    - 3.2.7.1.1 Affected Environment ..... 101
    - 3.2.7.1.2 Environmental Consequences ..... 102
  - 3.2.7.2 Historic Structures ..... 102
    - 3.2.7.2.1 Affected Environment ..... 102
    - 3.2.7.2.2 Environmental Consequences ..... 102
- 3.2.8 Managed Areas and Ecologically Significant Sites ..... 103
  - 3.2.8.1 Affected Environment ..... 103
  - 3.2.8.2 Environmental Consequences ..... 104
- 3.2.9 Visual Resources ..... 104
  - 3.2.9.1 Affected Environment ..... 104
  - 3.2.9.2 Environmental Consequences ..... 105
- 3.2.10 Water Quality and Aquatic Ecology ..... 106
  - 3.2.10.1 Affected Environment ..... 106
  - 3.2.10.2 Environmental Consequences ..... 109
- 3.2.11 Air Quality and Noise ..... 110
  - 3.2.11.1 Affected Environment ..... 110
  - 3.2.11.2 Environmental Consequences ..... 110
- 3.2.12 Socioeconomics ..... 110
  - 3.2.12.1 Affected Environment ..... 110
    - 3.2.12.1.1 Population and Economy ..... 110
    - 3.2.12.1.2 Environmental Justice ..... 112
  - 3.2.12.2 Environmental Consequences ..... 112
- 3.3 Hiwassee Reservoir ..... 115**
  - 3.3.1 Land Use ..... 115
    - 3.3.1.1 Affected Environment ..... 115
    - 3.3.1.2 Environmental Consequences ..... 116
  - 3.3.2 Recreation ..... 118
    - 3.3.2.1 Affected Environment ..... 118
    - 3.3.2.2 Environmental Consequences ..... 119
  - 3.3.3 Terrestrial Ecology ..... 121
    - 3.3.3.1 Plant Communities ..... 121
      - 3.3.3.1.1 Affected Environment ..... 121
      - 3.3.3.1.2 Environmental Consequences ..... 122
    - 3.3.3.2 Wildlife Communities ..... 123
      - 3.3.3.2.1 Affected Environment ..... 123
      - 3.3.3.2.2 Environmental Consequences ..... 123

Mountain Reservoirs Land Management Plan

- 3.3.4 Endangered and Threatened Species ..... 124
  - 3.3.4.1 Affected Environment..... 124
  - 3.3.4.2 Environmental Consequences ..... 127
- 3.3.5 Wetlands ..... 130
  - 3.3.5.1 Affected Environment..... 130
  - 3.3.5.2 Environmental Consequences ..... 131
- 3.3.6 Floodplains..... 131
  - 3.3.6.1 Affected Environment..... 131
  - 3.3.6.2 Environmental Consequences ..... 131
- 3.3.7 Cultural Resources ..... 131
  - 3.3.7.1 Archaeological Resources ..... 132
    - 3.3.7.1.1 Affected Environment..... 132
    - 3.3.7.1.2 Environmental Consequences ..... 132
  - 3.3.7.2 Historic Structures ..... 132
    - 3.3.7.2.1 Affected Environment..... 132
    - 3.3.7.2.2 Environmental Consequences ..... 133
- 3.3.8 Managed Areas and Ecologically Significant Sites..... 133
  - 3.3.8.1 Affected Environment..... 133
  - 3.3.8.2 Environmental Consequences ..... 134
- 3.3.9 Visual Resources..... 134
  - 3.3.9.1 Affected Environment..... 134
  - 3.3.9.2 Environmental Consequences ..... 134
- 3.3.10 Water Quality and Aquatic Ecology ..... 135
  - 3.3.10.1 Affected Environment..... 135
  - 3.3.10.2 Environmental Consequences ..... 139
- 3.3.11 Air Quality and Noise ..... 140
  - 3.3.11.1 Affected Environment..... 140
  - 3.3.11.2 Environmental Consequences ..... 140
- 3.3.12 Socioeconomics..... 141
  - 3.3.12.1 Affected Environment..... 141
    - 3.3.12.1.1 Population and Economy ..... 141
    - 3.3.12.1.2 Environmental Justice ..... 142
  - 3.3.12.2 Environmental Consequences ..... 142
- 3.4 Blue Ridge Reservoir..... 144**
  - 3.4.1 Land Use..... 144
    - 3.4.1.1 Affected Environment..... 144
    - 3.4.1.2 Environmental Consequences ..... 145
  - 3.4.2 Recreation..... 146
    - 3.4.2.1 Affected Environment..... 146
    - 3.4.2.2 Environmental Consequences ..... 147
  - 3.4.3 Terrestrial Ecology ..... 148
    - 3.4.3.1 Plant Communities ..... 148
      - 3.4.3.1.1 Affected Environment..... 148
      - 3.4.3.1.2 Environmental Consequences ..... 149
    - 3.4.3.2 Wildlife Communities..... 149
      - 3.4.3.2.1 Affected Environment..... 149
      - 3.4.3.2.2 Environmental Consequences ..... 149

3.4.4	Endangered and Threatened Species .....	149
3.4.4.1	Affected Environment .....	150
3.4.4.2	Environmental Consequences .....	151
3.4.5	Wetlands .....	152
3.4.5.1	Affected Environment .....	152
3.4.5.2	Environmental Consequences .....	152
3.4.6	Floodplains.....	152
3.4.6.1	Affected Environment .....	153
3.4.6.2	Environmental Consequences .....	153
3.4.7	Cultural Resources .....	153
3.4.7.1	Archaeological Resources .....	153
3.4.7.1.1	Affected Environment .....	153
3.4.7.1.2	Environmental Consequences .....	154
3.4.7.2	Historic Structures .....	154
3.4.7.2.1	Affected Environment .....	154
3.4.7.2.2	Environmental Consequences .....	154
3.4.8	Managed Areas and Ecologically Significant Sites.....	155
3.4.8.1	Affected Environment .....	155
3.4.8.2	Environmental Consequences .....	155
3.4.9	Visual Resources .....	155
3.4.9.1	Affected Environment .....	155
3.4.9.2	Environmental Consequences .....	156
3.4.10	Water Quality and Aquatic Ecology .....	156
3.4.10.1	Affected Environment .....	156
3.4.10.2	Environmental Consequences .....	159
3.4.11	Air Quality and Noise .....	159
3.4.12	Socioeconomics .....	160
3.4.12.1	Affected Environment .....	160
3.4.12.1.1	Population and Economy .....	160
3.4.12.1.2	Environmental Justice .....	161
3.4.12.2	Environmental Consequences .....	161
<b>3.5</b>	<b>Nottely Reservoir .....</b>	<b>162</b>
3.5.1	Land Use.....	162
3.5.1.1	Affected Environment .....	162
3.5.1.2	Environmental Consequences .....	163
3.5.2	Recreation.....	163
3.5.2.1	Affected Environment .....	163
3.5.2.2	Environmental Consequences .....	165
3.5.3	Terrestrial Ecology .....	166
3.5.3.1	Plant Communities .....	166
3.5.3.1.1	Affected Environment .....	166
3.5.3.1.2	Environmental Consequences .....	167
3.5.3.2	Wildlife Communities.....	167
3.5.3.2.1	Affected Environment .....	167
3.5.3.2.2	Environmental Consequences .....	167

## Mountain Reservoirs Land Management Plan

3.5.4	Endangered and Threatened Species .....	168
3.5.4.1	Affected Environment.....	168
3.5.4.2	Environmental Consequences .....	169
3.5.5	Wetlands.....	170
3.5.5.1	Affected Environment.....	170
3.5.5.2	Environmental Consequences .....	170
3.5.6	Floodplains.....	170
3.5.6.1	Affected Environment.....	170
3.5.6.2	Environmental Consequences .....	171
3.5.7	Cultural Resources .....	171
3.5.7.1	Archaeological Resources .....	171
3.5.7.1.1	Affected Environment.....	171
3.5.7.1.2	Environmental Consequences .....	171
3.5.7.2	Historic Structures.....	171
3.5.7.2.1	Affected Environment.....	171
3.5.7.2.2	Environmental Consequences .....	172
3.5.8	Managed Areas and Ecologically Significant Sites.....	172
3.5.8.1	Affected Environment.....	172
3.5.8.2	Environmental Consequences .....	172
3.5.9	Visual Resources.....	172
3.5.9.1	Affected Environment.....	172
3.5.9.2	Environmental Consequences .....	173
3.5.10	Water Quality and Aquatic Ecology .....	173
3.5.10.1	Affected Environment.....	173
3.5.10.2	Environmental Consequences .....	177
3.5.11	Air Quality and Noise .....	177
3.5.12	Socioeconomics.....	177
3.5.12.1	Affected Environment.....	177
3.5.12.1.1	Population and Economy .....	177
3.5.12.1.2	Environmental Justice .....	179
3.5.12.2	Environmental Consequences .....	179
<b>3.6</b>	<b>Ocoees (1, 2, and 3) Reservoirs.....</b>	<b>180</b>
3.6.1	Land Use.....	180
3.6.1.1	Affected Environment.....	180
3.6.1.2	Environmental Consequences .....	181
3.6.2	Recreation.....	181
3.6.2.1	Affected Environment.....	181
3.6.2.2	Environmental Consequences .....	184
3.6.3	Terrestrial Ecology .....	185
3.6.3.1	Plant Communities .....	185
3.6.3.1.1	Affected Environment.....	185
3.6.3.1.2	Environmental Consequences .....	186
3.6.3.2	Wildlife Communities.....	186
3.6.3.2.1	Affected Environment.....	186
3.6.3.2.2	Environmental Consequences .....	186

3.6.4	Endangered and Threatened Species .....	187
3.6.4.1	Affected Environment .....	187
3.6.4.2	Environmental Consequences .....	190
3.6.5	Wetlands .....	191
3.6.5.1	Affected Environment .....	191
3.6.5.2	Environmental Consequences .....	191
3.6.6	Floodplains.....	192
3.6.6.1	Affected Environment .....	192
3.6.6.2	Environmental Consequences .....	192
3.6.7	Cultural Resources .....	192
3.6.7.1	Archaeological Resources .....	193
3.6.7.1.1	Affected Environment .....	193
3.6.7.1.2	Environmental Consequences .....	193
3.6.7.2	Historic Structures .....	193
3.6.7.2.1	Affected Environment .....	193
3.6.7.2.2	Environmental Consequences .....	194
3.6.8	Managed Areas and Ecologically Significant Sites.....	195
3.6.8.1	Affected Environment .....	195
3.6.8.2	Environmental Consequences .....	195
3.6.9	Visual Resources .....	195
3.6.9.1	Affected Environment .....	195
3.6.9.2	Environmental Consequences .....	196
3.6.10	Water Quality and Aquatic Ecology .....	196
3.6.10.1	Affected Environment .....	196
3.6.10.2	Environmental Consequences .....	200
3.6.11	Air Quality and Noise .....	200
3.6.12	Socioeconomics .....	200
3.6.12.1	Affected Environment .....	201
3.6.12.1.1	Population and Economy .....	201
3.6.12.1.2	Environmental Justice .....	202
3.6.12.2	Environmental Consequences .....	202
<b>3.7</b>	<b>Apalachia Reservoir .....</b>	<b>203</b>
3.7.1	Land Use.....	203
3.7.1.1	Affected Environment .....	203
3.7.1.2	Environmental Consequences .....	204
3.7.2	Recreation.....	204
3.7.2.1	Affected Environment .....	204
3.7.2.2	Environmental Consequences .....	205
3.7.3	Terrestrial Ecology .....	205
3.7.3.1	Plant Communities .....	206
3.7.3.1.1	Affected Environment .....	206
3.7.3.1.2	Environmental Consequences .....	206
3.7.3.2	Wildlife Communities.....	206
3.7.3.2.1	Affected Environment .....	206
3.7.3.2.2	Environmental Consequences .....	207

Mountain Reservoirs Land Management Plan

- 3.7.4 Endangered and Threatened Species ..... 207
  - 3.7.4.1 Affected Environment..... 207
  - 3.7.4.2 Environmental Consequences ..... 211
- 3.7.5 Wetlands ..... 212
  - 3.7.5.1 Affected Environment..... 212
  - 3.7.5.2 Environmental Consequences ..... 212
- 3.7.6 Floodplains..... 212
  - 3.7.6.1 Affected Environment..... 212
  - 3.7.6.2 Environmental Consequences ..... 213
- 3.7.7 Cultural Resources ..... 213
  - 3.7.7.1 Archaeological Resources ..... 213
    - 3.7.7.1.1 Affected Environment..... 213
    - 3.7.7.1.2 Environmental Consequences ..... 213
  - 3.7.7.2 Historic Structures ..... 213
    - 3.7.7.2.1 Affected Environment..... 213
    - 3.7.7.2.2 Environmental Consequences ..... 213
- 3.7.8 Managed Areas and Ecologically Significant Sites..... 214
  - 3.7.8.1 Affected Environment..... 214
  - 3.7.8.2 Environmental Consequences ..... 214
- 3.7.9 Visual Resources ..... 215
  - 3.7.9.1 Affected Environment..... 215
  - 3.7.9.2 Environmental Consequences ..... 215
- 3.7.10 Water Quality and Aquatic Ecology ..... 215
  - 3.7.10.1 Affected Environment..... 215
  - 3.7.10.2 Environmental Consequences ..... 218
- 3.7.11 Air Quality and Noise ..... 218
- 3.7.12 Socioeconomics..... 218
  - 3.7.12.1 Affected Environment..... 218
    - 3.7.12.1.1 Population and Economy ..... 218
    - 3.7.12.1.2 Environmental Justice ..... 220
  - 3.7.12.2 Environmental Consequences ..... 221
- 3.8 Fontana Reservoir ..... 222**
  - 3.8.1 Land Use..... 222
    - 3.8.1.1 Affected Environment..... 222
    - 3.8.1.2 Environmental Consequences ..... 223
  - 3.8.2 Recreation..... 223
    - 3.8.2.1 Affected Environment..... 223
    - 3.8.2.2 Environmental Consequences ..... 225
  - 3.8.3 Terrestrial Ecology ..... 226
    - 3.8.3.1 Plant Communities ..... 226
      - 3.8.3.1.1 Affected Environment..... 226
      - 3.8.3.1.2 Environmental Consequences ..... 227
    - 3.8.3.2 Wildlife Communities..... 227
      - 3.8.3.2.1 Affected Environment..... 227
      - 3.8.3.2.2 Environmental Consequences ..... 227

3.8.4	Endangered and Threatened Species .....	227
3.8.4.1	Affected Environment .....	228
3.8.4.2	Environmental Consequences .....	231
3.8.5	Wetlands .....	232
3.8.5.1	Affected Environment .....	232
3.8.5.2	Environmental Consequences .....	233
3.8.6	Floodplains.....	233
3.8.6.1	Affected Environment .....	233
3.8.6.2	Environmental Consequences .....	233
3.8.7	Cultural Resources .....	233
3.8.7.1	Archaeological Resources .....	234
3.8.7.1.1	Affected Environment .....	234
3.8.7.1.2	Environmental Consequences .....	234
3.8.7.2	Historic Structures .....	234
3.8.7.2.1	Affected Environment .....	234
3.8.7.2.2	Environmental Consequences .....	235
3.8.8	Managed Areas and Ecologically Significant Sites.....	235
3.8.8.1	Affected Environment .....	235
3.8.8.2	Environmental Consequences .....	236
3.8.9	Visual Resources .....	236
3.8.9.1	Affected Environment .....	236
3.8.9.2	Environmental Consequences .....	237
3.8.10	Water Quality and Aquatic Ecology .....	237
3.8.10.1	Affected Environment .....	237
3.8.10.2	Environmental Consequences .....	241
3.8.11	Air Quality and Noise .....	241
3.8.12	Socioeconomics .....	241
3.8.12.1	Affected Environment .....	241
3.8.12.1.1	Population and Economy .....	241
3.8.12.1.2	Environmental Justice .....	243
3.8.12.2	Environmental Consequences .....	243
<b>3.9</b>	<b>Unavoidable Adverse Effects .....</b>	<b>244</b>
<b>3.10</b>	<b>Relationship Between Short-Term Uses and Long-Term Productivity.....</b>	<b>244</b>
<b>3.11</b>	<b>Irreversible and Irretrievable Commitments of Resources.....</b>	<b>244</b>
<b>3.12</b>	<b>Energy Resources and Conservation Potential.....</b>	<b>244</b>
<b>4.0</b>	<b>LIST OF PREPARERS.....</b>	<b>247</b>
<b>4.1</b>	<b>NEPA Project Management.....</b>	<b>247</b>
<b>4.2</b>	<b>Other Contributors .....</b>	<b>247</b>
<b>5.0</b>	<b>LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES ARE SENT.....</b>	<b>251</b>
<b>6.0</b>	<b>LITERATURE CITED .....</b>	<b>259</b>
<b>INDEX.....</b>		<b>415</b>

## LIST OF APPENDICES

Appendix A – TVA Land Policy .....	269
Appendix B – Scoping Document .....	275
Appendix C – Mountain Bike Trails Inventory in Mountain Reservoirs Region .....	329
Appendix D – Forecast System Definitions.....	333
Appendix E – Comparison of Alternative A (No Action) to Alternatives B and C, by Reservoir and Parcel Number.....	337
Appendix F – Suitability/Capability Analyses.....	365
Appendix G – Archaeology Programmatic Agreements .....	371
Appendix H – Flood Profiles.....	383
Appendix I – Common Species from Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoee 1, Apalachia, and Fontana Reservoirs .....	391
Appendix J – Scenic Value Criteria for Scenery Inventory and Management.....	395
Appendix K – Mountain Lakes Boating Capacity .....	403

## LIST OF TABLES

Table 1-1. Mountain Reservoirs Land Acquisition and Disposal Data .....	3
Table 1-2. Mountain Reservoirs Shoreline Ownership Data .....	5
Table 1-3. Land Use Preferences of Scoping Participants .....	9
Table 2-1. Land Use Zone Definitions .....	13
Table 2-2. Committed Parcels on the Mountain Reservoirs.....	18
Table 2-3. Alternative A – Area by Equivalent Current Land Use Designations by Reservoir.....	21
Table 2-4. Alternative A – Planned and Unplanned Parcels and Area by Reservoir .....	22
Table 2-5. Alternative B – Area by Current Allocation Zone by Reservoir .....	22
Table 2-6. Allocations Differences Between Alternative A and Alternative B .....	23
Table 2-7. Alternative C – Area by Current Allocation Zone by Reservoir .....	24
Table 2-8. Allocation Differences Between Alternative B and Alternative C .....	24
Table 2-9. Comparison of Land Uses (in Acres and Percent of Total) by Alternative.....	28
Table 2-10. Summary of Environmental Impacts of the Alternatives for Chatuge and Hiwassee Reservoirs .....	31
Table 2-11. Summary of Environmental Impacts of the Alternatives for Blue Ridge, Nottely, the Ocoees, Apalachia, and Fontana Reservoirs .....	35
Table 3-1. Reservoir Project Data .....	41
Table 3-2. Percent of Shoreline Open for Residential Development and Percent of Open Shoreline Developed.....	42



Table 3-3. Mountain Reservoirs Land Use Agreements by Category ..... 43

Table 3-4. Federally Listed as Endangered, Threatened, and Candidate Species Reported from the Mountain Reservoirs Area ..... 54

Table 3-5. Summary of Wetlands on TVA Mountain Reservoir Lands by Area and Type ..... 61

Table 3-6. Dam Operating Levels and Maximum Shoreline Contour for Mountain Reservoirs .... 63

Table 3-7. Summary of Archaeological Sites on Mountain Reservoirs Land Management Plan Lands Eligible for or Potentially Eligible for Listing in the NRHP ..... 65

Table 3-8. Large Managed Areas Adjacent to or in the Vicinity of TVA Mountain Reservoirs ..... 69

Table 3-9. Acres of Prime Farmland in Selected Parcels – Chatuge Reservoir ..... 85

Table 3-10. Developed Recreation Facilities on Chatuge Reservoir ..... 89

Table 3-11. Dispersed Recreation Areas on Chatuge Reservoir ..... 90

Table 3-12. Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known From the Vicinity of Chatuge Reservoir in Towns County, Georgia, and Clay County, North Carolina ..... 97

Table 3-13. Wetland Acreage - Chatuge Reservoir ..... 100

Table 3-14. Managed Areas Within 3 Miles of Chatuge Reservoir ..... 103

Table 3-15. Chatuge Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data, 1991-2006 ..... 107

Table 3-16. Recent (1999-2006) Benthic Community Ratings for Chatuge Reservoir ..... 108

Table 3-17. Sport Fishing Index Scores for Selected Sport Fish Species in Chatuge Reservoir, 2006 ..... 108

Table 3-18. Summary of Impaired Waters in the Immediate Watershed of Chatuge Reservoir ... 109

Table 3-19. Population – Towns County, Georgia, and Clay County, North Carolina ..... 111

Table 3-20. Recent and Projected Population Changes – Towns County, Georgia, and Clay County, North Carolina (Percentage Growth) ..... 111

Table 3-21. Employment, Unemployment, and Income – Towns County, Georgia, and Clay County, North Carolina ..... 112

Table 3-22. Minority Population, 2006, and Poverty, 2004 – Towns County, Georgia, and Clay County, North Carolina ..... 112

Table 3-23. Acres of Prime Farmland on Hiwassee Reservoir ..... 116

Table 3-24. Recreation Facilities on Hiwassee Reservoir ..... 119

Table 3-25. Dispersed Recreation Areas on Hiwassee Reservoir ..... 119

Table 3-26. Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known in the Vicinity of Hiwassee Reservoir in Cherokee County, North Carolina ..... 124

Table 3-27. Wetland Acreage - Hiwassee Reservoir ..... 130

Table 3-28. Managed Areas and Ecologically Significant Sites Within 3 Miles of Hiwassee Reservoir ..... 134

Table 3-29. Hiwassee Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data 1991-2006 ..... 137

Table 3-30. Recent (1994-2006) Biennial Benthic Community Ratings for Hiwassee Reservoir ..... 137

Mountain Reservoirs Land Management Plan

Table 3-31.	Sport Fishing Index Scores for Selected Sport Fish Species in Hiwassee Reservoir, 2006 .....	138
Table 3-32.	Summary of Impaired Waters in the Immediate Watershed of Hiwassee Reservoir .....	138
Table 3-33.	Population – Cherokee County, North Carolina .....	141
Table 3-34.	Recent and Projected Population Changes – Cherokee County, North Carolina (Percentage Growth).....	141
Table 3-35.	Employment, Unemployment, and Income – Cherokee County, North Carolina.....	142
Table 3-36.	Minority Population, 2006, and Poverty, 2004 – Cherokee County, North Carolina..	142
Table 3-37.	Recreation Facilities on or Near Blue Ridge Reservoir.....	147
Table 3-38.	Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known From the Blue Ridge Reservoir Area .....	150
Table 3-39.	Wetland Acreage - Blue Ridge Reservoir .....	152
Table 3-40.	Managed Areas and Ecologically Significant Sites Within 3 Miles of Blue Ridge Reservoir .....	155
Table 3-41.	Blue Ridge Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Program (Monitoring Data 1991-1995, 1997, 1999, 2001, 2003, 2005) .....	157
Table 3-42.	Recent (1994-2005) Biennial Benthic Community Ratings for Blue Ridge Reservoir .....	158
Table 3-43.	Recent (1994-2005) Biennial Reservoir Fish Assemblage Index Ratings for Blue Ridge Reservoir .....	158
Table 3-44.	Sport Fishing Index Scores for Selected Sport Fish Species in Blue Ridge Reservoir, 2006 .....	158
Table 3-45.	Impaired Waters in the Watershed of Blue Ridge Reservoir .....	159
Table 3-46.	Population – Fannin County, Georgia.....	160
Table 3-47.	Recent and Projected Population Changes – Fannin County, Georgia (Percentage Growth).....	160
Table 3-48.	Employment, Unemployment, and Income – Fannin County.....	161
Table 3-49.	Minority Population, 2006, and Poverty, 2004 – Fannin County.....	161
Table 3-50.	Recreation Facilities on Nottely Reservoir .....	164
Table 3-51.	Dispersed Recreation Areas on Nottely .....	165
Table 3-52.	Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known From the Nottely Reservoir Area .....	168
Table 3-53.	Wetland Acreage - Nottely Reservoir.....	170
Table 3-54.	Managed Areas and Ecologically Significant Sites Within 3 Miles of Nottely Reservoir.....	172
Table 3-55.	Nottely Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data 1991-2005 .....	175
Table 3-56.	Recent (1994-2005) Benthic Community Ratings for Nottely Reservoir.....	175
Table 3-57.	Sport Fishing Index Scores for Selected Sport Fish Species in Nottely Reservoir, 2004.....	176

Table 3-58. Impaired Waters in the Watershed of Nottely Reservoir ..... 176

Table 3-59. Population – Union County..... 178

Table 3-60. Recent and Projected Population Changes – Union County (Percentage Growth)... 178

Table 3-61. Employment, Unemployment, and Income – Union County, Georgia ..... 178

Table 3-62. Minority Population, 2006, and Poverty, 2004 – Union County..... 179

Table 3-63. Acres of Prime Farmland in Selected Parcels – Ocoee 1 Reservoir ..... 180

Table 3-64. Recreation Facilities on Ocoee 1 (Parksville) Reservoir ..... 182

Table 3-65. Recreation Facilities on Ocoee 2 Reservoir ..... 183

Table 3-66. Recreation Facilities on Ocoee 3 Reservoir ..... 184

Table 3-67. Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known From the Vicinity of the Ocoee Reservoirs in Polk County, Tennessee ..... 187

Table 3-68. Wetland Acreage - Ocoees Reservoirs ..... 191

Table 3-69. Managed Areas, Ecologically Significant Sites, and Nationwide Rivers Inventory Streams Within 3 Miles of Ocoee Reservoirs..... 195

Table 3-70. Ocoee 1 Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data 1991-2006..... 198

Table 3-71. Recent (1994-2006) Benthic Community Ratings for Ocoee 1 Reservoir ..... 198

Table 3-72. Recent (1999-2006) Reservoir Fish Assemblage Index Ratings for Ocoee 1 Reservoir ..... 199

Table 3-73. Sport Fishing Index Scores for Selected Sport Fish Species in Ocoee 1 Reservoir, 2006 ..... 199

Table 3-74. Summary of Impaired Waters in the Watershed of Ocoee River Basin in Tennessee..... 200

Table 3-75. Population – Polk County, Tennessee ..... 201

Table 3-76. Recent and Projected Population Changes – Polk County, Tennessee (Percentage Growth)..... 201

Table 3-77. Employment, Unemployment, and Income – Polk County, Tennessee..... 202

Table 3-78. Minority Population, 2006, and Poverty, 2004 – Polk County, Tennessee ..... 202

Table 3-79. Acres of Prime Farmland in Selected Parcel – Apalachia Reservoir ..... 204

Table 3-80. Recreation Facilities on Apalachia Reservoir..... 205

Table 3-81. Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Known From the Vicinity of Apalachia Reservoir in Polk County, Tennessee, and Cherokee County, North Carolina..... 207

Table 3-82. Wetland Acreage - Apalachia Reservoir ..... 212

Table 3-83. Managed Areas, Ecologically Significant Sites, and Nationwide Rivers Inventory Streams Within 3 Miles of Apalachia Reservoir and its Tailwaters (Hiwassee River) to Gee Creek Campground ..... 214

Table 3-84. Apalachia Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data 1997-2006..... 216

Table 3-85. Recent (1996-2006) Benthic Community Ratings for Apalachia Reservoir ..... 217

## Mountain Reservoirs Land Management Plan

Table 3-86.	Sport Fishing Index Scores for Selected Sport Fish Species in Apalachia Reservoir, 2006 .....	217
Table 3-87.	Population – Cherokee County, North Carolina, and Polk County, Tennessee .....	219
Table 3-88.	Recent and Projected Population Changes – Cherokee County, North Carolina, and Polk County, Tennessee (Percentage Growth).....	219
Table 3-89.	Employment, Unemployment, and Income – Cherokee County, North Carolina, and Polk County, Tennessee.....	220
Table 3-90.	Minority Population, 2006, and Poverty, 2004 – Cherokee County, North Carolina, and Polk County, Tennessee.....	221
Table 3-91.	Recreation Facilities on Fontana Reservoir .....	224
Table 3-92.	Dispersed Recreation Areas on Fontana .....	225
Table 3-93.	Federally and State-Listed as Endangered, Threatened, and Other Species of Conservation Concern Reported From the Vicinity of Fontana Reservoir.....	228
Table 3-94.	Wetland Acreage - Fontana Reservoir.....	232
Table 3-95.	Managed Areas, Ecologically Significant Sites, and Nationwide Rivers Inventory Streams Within 3 Miles of Fontana Reservoir.....	235
Table 3-96.	Fontana Reservoir Water Quality and Sediment Ratings, Reservoir Vital Signs Monitoring Data 1993-2006.....	238
Table 3-97.	Recent (1994-2006) Benthic Community Ratings for Fontana Reservoir.....	239
Table 3-98.	Recent (1994-2006) Reservoir Fish Assemblage Index Ratings for Fontana Reservoir.....	239
Table 3-99.	Sport Fishing Index Scores for Selected Sport Fish Species in Fontana Reservoir, 2006.....	239
Table 3-100.	Summary of Impaired Waters in the Immediate Watershed of Fontana Reservoir ...	240
Table 3-101.	Population – Graham and Swain Counties, North Carolina.....	242
Table 3-102.	Recent and Projected Population Changes – Graham and Swain Counties, North Carolina (Percentage Growth) .....	242
Table 3-103.	Employment, Unemployment, and Income – Graham and Swain Counties, North Carolina .....	243
Table 3-104.	Minority Population, 2006, and Poverty, 2004 – Graham and Swain Counties, North Carolina .....	243

# LIST OF FIGURES

Figure 1-1. Mountain Reservoirs (Chatuge, Hiwassee, Blue Ridge, Nottely, the Ocoees, Apalachia, and Fontana) Locator Map ..... 2

Figure 2-1. Chatuge Reservoir, Parcel 10 ..... 25

Figure 2-2. Chatuge Reservoir, Parcel 52 ..... 25

Figure 2-3. Chatuge Reservoir, Parcel 77 ..... 26

Figure 2-4. Hiwassee Reservoir, Parcel 34 ..... 26

Figure 2-5. Hiwassee Reservoir, Parcel 49 ..... 27

Figure 3-1. Viewing Distances ..... 72

Figure 3-2. Chatuge Reservoir Ecological Health Ratings, 1994-2006 ..... 106

Figure 3-3. Hiwassee Reservoir Ecological Health Ratings, 1994-2006 ..... 136

Figure 3-4. Blue Reservoir Ecological Health Ratings, 1994-2005 ..... 157

Figure 3-5. Nottely Reservoir Ecological Health Ratings, 1994-2005 ..... 174

Figure 3-6. Ocoee 1 Reservoir Ecological Health Ratings, 1994-2006 ..... 197

Figure 3-7. Apalachia Reservoir Ecological Health Ratings, 1997-2006 ..... 216

Figure 3-8. Fontana Reservoir Ecological Health Ratings, 1994-2006 ..... 238

## **POCKET MAPS**

- o Chatuge Reservoir Land Management Plan, Hiwassee Reservoir Land Management Plan
- o Blue Ridge Reservoir Land Management Plan, Nottely Reservoir Land Management Plan
- o Ocoee Projects Reservoir Land Management Plan, Apalachia Reservoir Land Management Plan
- o Fontana Reservoir Land Management Plan

## **GLOSSARY (TERMS, ABBREVIATIONS, AND ACRONYMS)**

§ - Section

**100-Year Floodplain** - The area inundated by the 1 percent annual chance (or 100-year) flood

**500-Year Floodplain** - The area inundated by the 0.2 percent annual chance (or 500-year) flood..

**Agricultural Licensing** - TVA land licensed to a private individual for the production of agricultural crops. The land use is an interim use of TVA land.

**Alcoa** - Aluminum Company of America

**APE** - Area of Potential Effect

**ARPA** - Archaeological Resources Protection Act

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

**ATV - All-Terrain Vehicle**

**Benthic** - Refers to the bottom of a stream, river, or reservoir

**BMP(s)** - Best Management Practice(s)

**BRMEMC** - Blue Ridge Mountain Electric Membership Cooperative

**CFR** - Code of Federal Regulations

**cfs** - Cubic Feet per Second

**Controlled Burn** - A managed fire to remove vegetation for the benefit of silviculture or wildlife management

**Cumulative Impacts** - Impacts which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future 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.

**DDE** - Dichlorodiphenyldichloroethylene

**Direct Impacts** - Effects that are caused by the action and occur at the same time and place (40 CFR § 1508.8)

**Dissolved Oxygen (DO)** - The oxygen dissolved in water, necessary to sustain aquatic life, usually measured in milligrams per liter or parts per million

**Drawdown** – The lowering of the reservoir pool elevation required to accomplish a variety of multi-purpose operational objectives

***E. coli*** - *Escherichia coli* bacteria

**EIS** - Environmental Impact Statement

**Emergent Wetland** - Wetlands dominated by erect, rooted herbaceous plants, such as cattails and bulrushes

**Endangered Species** - A species in danger of extinction throughout all or a significant portion of its range or territory; endangered species recognized by the Endangered Species Act or similar state legislation have special legal status for their protection and recovery.

**EO** - Executive Order

**ESA** - Endangered Species Act

**Flood Guide** – The reservoir elevation used to define the seasonally varying allocation of flood control storage. Typically the flood guide elevation is at a maximum on June 1 when the storage allocation is at a minimum and at a minimum on January 1 when the storage allocation is at a maximum.

**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

**G1** - Critically Imperiled. At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

**G2** - Imperiled. At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

**G2G3** - A G2G3 rank would indicate that there is a roughly equal chance of G2 or G3 and other ranks are much less likely.

**G3** - Vulnerable. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

**Ga.** - Georgia

**GAEPD** - Georgia Environmental Protection Division



**Globally Rare Plant Community** – A plant community consisting of a unique assemblage of species found almost nowhere else in the world that has been ranked by NatureServe providing a global conservation status rank (G-rank) that reflects an assessment of the condition of the species or ecological community across its entire range based on consideration of size, condition and landscape context.

**GSMNP** - Great Smoky Mountains National Park

**HRM** - Hiwassee River Mile

**Ibid** - Abbreviation for the Latin term, *ibidem*, meaning “in the same place”; refers to the immediately preceding work cited

**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 § 1508.8)

**June 1 Flood Guide** - The elevation required on June 1 to satisfy the minimum allocation of flood control storage for flood damage reduction.

**January 1 Flood Guide** - The elevation required on January 1 to satisfy the maximum allocation of flood control storage for flood damage reduction.

**L** - Left Bank

**L&N** - Louisville and Nashville Railroad

**LIP** - Lake Improvement Plan

**LTRM** - Little Tennessee River Mile

**Macroinvertebrates** - Bottom-dwelling aquatic animals without vertebrae, such as mollusks and arthropods

**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 if property owner has the appropriate land use rights and upon approval of plans by TVA

**Maximum Shoreline Contour (MSC)** - 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

**MGD** - Millions of Gallons per Day

**mg/L** - Milligrams per Liter

**MRLMP** - Mountain Reservoirs Land Management Plan

**msl** - Mean Sea Level

**NARSAL** - Natural Resources Spatial Analysis Laboratory

**National Ambient Air Quality Standards (NAAQS)** - Uniform, national air quality standards established by the USEPA 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.

**N.C.** - North Carolina

**NCDENR** - North Carolina Department of Environment and Natural Resources

**NCDOT** - North Carolina Department of Transportation

**n.d.** - Indicates “no date” or date that Web site was accessed is unknown

**NEPA** - National Environmental Policy Act

**NHPA** - National Historic Preservation Act

**NOI** - Notice of Intent

**NPDES** - National Pollutant Discharge Elimination System

**NPS** - National Park Service

**NRCS** - Natural Resources Conservation Service

**NRHP** - National Register of Historic Places

**NRI** - Nationwide Rivers Inventory

**NRM** - Nottely River Mile

**NSRE** - National Survey on Recreation and the Environment

**NWI** - National Wetlands Inventory

**ORM** - Ocoee River Mile

**Overstory** - The tallest and dominant community of trees of a forest

**PA(s)** - Programmatic Agreement(s)

**PCBs** – Polychlorinated Biphenyls

**Physiographic Province** - General divisions of land with each area having characteristic combinations of soil materials and topography

**Plan Parcel** - A numbered parcel of TVA fee-owned land

**PM<sub>2.5</sub>** - Particulate matter with a diameter less than or equal to 2.5 micrometers

**ppm** - Parts per Million

**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.

**PSD** - Prevention of Significant Deterioration

**R** - Right Bank

**Riparian** - Of, pertaining to, or situated adjacent to a stream, river, or reservoir

**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

**RLMP(s)** - Reservoir Land Management Plan(s)

**ROS** - Reservoir Operations Study

**RV** - Recreational Vehicle

**RVSMP** - Reservoir Vital Signs Monitoring Program

**SAMAB** - Southern Appalachian Man and the Biosphere

**SBRE** - Southern Blue Ridge Ecoregion

**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.

**Section 26a Permit** - Section 26a of the TVA Act requires TVA review and approval of plans for obstructions to navigation or flood control, such as docks, fills, bridges, outfalls, water intakes, and riprap, before they are constructed across, in, or along the Tennessee River and its tributaries.

**SFI** - Sport Fishing Index

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

**SHPO** - State Historic Preservation Officer

**SMI** - Shoreline Management Initiative

**SMI EIS** - *Shoreline Management Initiative Environmental Impact Statement*

**SMP** - Shoreline Management Policy

**SR** - State Route

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

**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

**TDEC** - Tennessee Department of Environment and Conservation

**Tenn.** - Tennessee

**TEPCO** - Tennessee Electric Power Company

**Threatened Species** - A species threatened with extinction throughout all or a significant portion of its range or territory; threatened species recognized by the Endangered Species Act or similar state legislation have special legal status for their protection and recovery.

**ToRM** - Toccoa River Mile

**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.

**TVA** - Tennessee Valley Authority

**TVARAM** - TVA Rapid Assessment Method for wetlands, a version of the Ohio Rapid Assessment Method designed specifically for the TVA region

**TWRA** - Tennessee Wildlife Resources Agency

**Understory** - The least dominant community of trees of a forest, consisting of shade-tolerant species

**US** - U.S. Highway

**U.S.** - United States

**USA** - United States of America

**USACE** - U.S. Army Corps of Engineers

**USDA** - U.S. Department of Agriculture

**USEPA** - U.S. Environmental Protection Agency

**USFS** - U.S. Forest Service

**USFWS** - U.S. Fish and Wildlife Service

**Wetlands** - As defined in *TVA Environmental Review Procedures*, wetlands are “those areas inundated by surface water 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.”

**Wildlife Management Area** - Land and/or water areas designated by state wildlife agencies, such as TWRA, for the protection and management of wildlife; these areas typically have specific hunting and trapping regulations as well as rules regarding appropriate uses of these areas by the public.

**Winter Drawdown** – The period of time in which the reservoir water level is lowered during fall to provide storage capacity for winter and spring floodwaters.

**WWTP** - Wastewater Treatment Plant

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