

CHAPTER 2

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. The Allocation Process

As part of the process of developing alternatives for the DNTRLMP, TVA reviewed existing and newly collected field data on the condition of and resources on the lands being planned. Each parcel of land was reviewed to determine its physical capability for supporting potential suitable uses. TVA also reviewed deeds of selected tracts previously sold to private entities to identify existing shoreline access rights. Based on this information, the TVA planning team “preallocated” land parcels to one of the seven allocation zones used in recent TVA reservoir land plans and described in Table 2.1-1. Information on public concerns obtained during the scoping process described in Section 1.5 and the scoping document (Appendix B) was incorporated into the zone allocations proposed in the RLMPs as well as any previous land planning effort such as forecasting (see Appendix C).

Table 2.1-1. Land Use Zone Definitions

Zone		Definition
1	Non-TVA Shoreland	<p>Shoreland that TVA does not own in fee or land never purchased by TVA. Non-TVA Shoreland allocations are based on deeded rights and, therefore, will not change as a result of the land planning process. This category is provided to assist in comprehensive evaluation of potential environmental impacts of TVA’s allocation decision. Non-TVA shoreland includes:</p> <ul style="list-style-type: none"> • Flowage easement land—Privately or publicly owned land where TVA has purchased the right to flood and/or limit structures. Flowage easement rights are generally purchased to a contour elevation. Since construction on flowage easement land is subject to TVA’s Section 26a permitting requirements, the SMP guidelines discussed in the definition of Zone 7 would apply to the construction of residential water use facilities fronting flowage easement land. SMP guidelines addressing land-based structures and vegetation management do not apply. • Privately owned reservoir land—This was land never purchased by TVA and may include, but is not limited to, residential, industrial, commercial, or agricultural land. This land, lying below the 500-year flood elevation, is subject to TVA’s Section 26a approvals for structures.
2	Project Operations	<p>All TVA reservoir land currently used for TVA operations and public works projects, including:</p> <ul style="list-style-type: none"> • Land adjacent to established navigation operations—Locks, lock operations and maintenance facilities, and the navigation work boat dock and bases. • Land used for TVA power projects operations—Generation facilities, switchyards, and transmission facilities and rights-of-way. • Dam reservation land—Areas acquired and managed for the primary purpose of supporting the operation and maintenance of TVA dams and associated infrastructure; secondary uses may also

	Zone	Definition
		<p>include developed and dispersed recreation, maintenance facilities, watershed team offices, research areas, and visitor centers.</p> <ul style="list-style-type: none"> • Navigation safety harbors/landings—Areas used for tying off commercial barge tows and recreational boats during adverse weather conditions or equipment malfunctions. • Navigation dayboards and beacons—Areas with structures placed on the shoreline to facilitate navigation. • Public works projects—Includes public utility infrastructure, such as substations and rights-of-way for sewer lines, water lines, transmission lines, and major highway projects. • Land planned for any of the above uses in the future.
3	Sensitive Resource Management	<p>Land managed for protection and enhancement of sensitive resources. Sensitive resources, as defined by TVA, include resources protected by state or federal law or executive order and other land features/natural resources TVA considers important to the area viewscape or natural environment.</p> <p>Recreational natural resource activities, such as hunting, wildlife observation, and camping on undeveloped sites, may occur in this zone, but the overriding focus is protecting and enhancing the sensitive resource the site supports. Areas included are:</p> <ul style="list-style-type: none"> • TVA-designated sites with potentially significant archaeological resources. • TVA public land with sites/structures listed in or eligible for listing in the National Register of Historic Places. • Wetlands—Aquatic bed, emergent, forested, and scrub-shrub wetlands as defined by TVA. • TVA public land under easement, lease, or license to other agencies/individuals for resource protection purposes. • TVA public land fronting land owned by other agencies/individuals for resource protection purposes. • Habitat Protection Areas—These TVA Natural Areas are managed to protect populations of species identified as threatened or endangered by the U.S. Fish and Wildlife Service, state-listed species, and any unusual or exemplary biological communities/geological features. • Ecological Study Areas—These TVA Natural Areas are designated as suitable for ecological research and environmental education by a recognized authority or agency. They typically contain plant or animal populations of scientific interest or are of interest to an educational institution that would utilize the area. • Small Wild Areas—These TVA Natural Areas are managed by TVA or in cooperation with other public agencies or private conservation organizations to protect exceptional natural, scenic, or aesthetic qualities that can also support dispersed, low-impact types of outdoor recreation. • River Corridor with sensitive resources—A River Corridor is a segment of a river and the adjacent land along the banks. River

	Zone	Definition
		<p>Corridors often consist of a linear green space of TVA land serving as a buffer to tributary rivers entering a reservoir. These areas will be included in Zone 3 when identified sensitive resources are present.</p> <ul style="list-style-type: none"> • Significant scenic areas—Areas designated for visual protection because of their unique vistas or particularly scenic qualities. • Champion tree site—Areas designated by TVA as sites that contain the largest known individual tree of its species in that state. The state forestry agency “Champion Tree Program” designates the tree, while TVA designates the area of the sites for those located on TVA public land. • Other sensitive ecological areas—Examples of these areas include heron rookeries, uncommon plant and animal communities, and unique cave or karst formations. • Land planned for any of the above uses in the future.
4	Natural Resource Conservation	<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 management to promote forest health, wildlife observation, and camping on undeveloped sites. Areas included are:</p> <ul style="list-style-type: none"> • TVA public land under easement, lease, or license to other agencies for wildlife or forest management purposes. • TVA public land fronting land owned by other agencies for wildlife or forest management purposes. • TVA public land managed for wildlife or forest management projects. • Dispersed recreation areas maintained for passive, dispersed recreation activities, such as hunting, hiking, bird watching, photography, primitive camping, bank fishing, and picnicking. • Shoreline Conservation Areas—Narrow riparian strips of vegetation between the water’s edge and TVA’s back-lying property that are managed for wildlife, water quality, or visual qualities. • Wildlife Observation Areas—TVA Natural Areas with unique concentrations of easily observed wildlife that are managed as public wildlife observation areas. • River Corridor without sensitive resources present—A River Corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails, and interpretive activities. River Corridors will be included in Zone 4 unless sensitive resources are present (see Zone 3). • Islands of 10 acres or less. • Land planned for any of the above uses in the future.

	Zone	Definition
5	Industrial	<p>Land managed for economic development, including businesses in distribution/processing/assembly and light manufacturing. Preference will be given for businesses requiring water access. There are two primary types of uses for TVA land allocated for Industrial: (1) Access for water supply or structures associated with navigation such as barge terminals, mooring cells, etc., or (2) Land-based development potential.</p> <p>Areas included are:</p> <ul style="list-style-type: none"> • TVA public land under easement, lease, or license to other agencies/individuals for purposes described above. • TVA public land fronting land owned by other agencies/individuals for industrial purposes described above. • Land planned for any of the above uses in the future. <p>In some cases, TVA land allocated to industrial use would be declared surplus and sold at public auction.</p> <p>Types of development that can occur on this land are:</p> <ul style="list-style-type: none"> • Light Industrial—TVA waterfront land that would support businesses and light manufacturing activities. Industrial parks should not include retail, service-based businesses like assisted living, retirement centers, or walk-in-type businesses (excluding retail use). • Industrial Access—Access to the waterfront by back-lying property owners across TVA property for water intakes, wastewater discharge, or conveyance of commodities (i.e., pipelines, rail, or road). Barge terminals are associated with industrial access corridors. • Barge Terminal Sites—Public or private facilities used for the transfer, loading, and unloading of commodities between barges and trucks, trains, storage areas, or industrial plants. • Fleeting Areas—Sites used by the towing industry to switch barges between tows or barge terminals that have both offshore and onshore facilities. • Minor Commercial Landing—A temporary or intermittent activity that takes place without permanent improvements to the property. These sites can be used for transferring pulpwood, sand, gravel, and other natural resource commodities between barges and trucks.
6	Developed Recreation	<p>The designations below are based on levels of development and the facilities available to the public. Parcel descriptions should describe the primary type of use and identify access potential for infrastructure and potential for development:</p> <p>Water Access—Small parcels of land, generally less than 10 acres, and typically shoreline areas conveyed to public agencies for public access.</p> <p>Public—More recreational opportunities, some facilities, more than a parking lot and boat ramp. This includes areas conveyed for public recreation.</p>

Zone	Definition
	<p>Commercial—Property suitable and capable to support commercial water-based operations. This includes areas conveyed for commercial recreation.</p> <p>Land managed for concentrated, active recreational activities that require capital improvement and maintenance, including:</p> <ul style="list-style-type: none"> • TVA public land under easement, lease, or license to other agencies/individuals for recreational purposes. • TVA public land fronting land owned by other agencies/individuals for recreational purposes. • TVA public land developed for recreational purposes, such as campgrounds, day use areas, etc. • Land planned for any of the above uses in the future. <p>Types of development that can occur on this land are:</p> <ul style="list-style-type: none"> • Water access, e.g., areas that tend to have limited development and can include a launching ramp, courtesy piers, canoe access, parking areas, picnic areas, trails, etc. • Public Recreation—recreation on publicly owned land. These areas typically have facilities or uses developed by a public agency and provide amenities open to the general public. Facilities at “public recreation” areas could include playgrounds/play structures, picnic facilities, tennis courts, horseshoe areas, play courts, recreation centers, athletic fields, trails, natural areas, amphitheaters, food concessions (vending, snack bar), access to water for fishing and boating, swimming areas and swimming pools, marina facilities owned by the public entity, parking, and campgrounds. <p>Public recreation, time-forward, will not include residential use, cabins, or other overnight accommodations (other than campgrounds), except if a recreation area is owned by a state or state agency and operated as a component of a state park system, in which case cabins and other overnight accommodations will be permitted.</p> <p>Public recreation uses typically include areas and facilities owned and operated by the federal, state, county, or local government (municipalities/communities). However, private entities may operate recreation facilities on public property as concessionaires under agreement with the public entity controlling the property. The use of the facilities may be offered free or for a fee. This does not allow for public-private partnership where facilities are owned by private investors. All structures and facilities should be owned by the agreement holder.</p> <ul style="list-style-type: none"> • Commercial Recreation—is defined as recreation amenities that are provided for a fee to the public intending to produce a profit for the owner/operator. These primarily water-based facilities typically include marinas and affiliated support facilities like restaurants and lodges; campgrounds; cabins; military vessel attractions; and excursion tour vessels (restaurant on the water). These uses and activities can be accommodated through changes in existing conveyance agreements. These areas do not include residential

Zone		Definition
		<p>use, long-term accommodations or individually owned units. Where applicable, TVA will request appropriate compensation for the use of the property.</p> <ul style="list-style-type: none"> • Greenways—Linear parks or developed trails located along natural features, such as lakes or ridges, or along man-made features, including abandoned railways or utility rights-of-way, which link people and resources together.
7	Shoreline Access	<p>TVA-owned land where Section 26a applications and other land use approvals for residential shoreline alterations are considered. Requests for residential shoreline alterations are considered on parcels identified in this zone where such use was previously considered and where the proposed use would not conflict with the interests of the general public. Types of development/management that may be permitted on this land are:</p> <ul style="list-style-type: none"> • Residential water use facilities, e.g., docks, piers, launching ramps/driveways, marine railways, boathouses, enclosed storage space, and nonpotable water intakes. • Shoreline access corridors, e.g., pathways, wooden steps, walkways, or mulched paths that can include portable picnic tables and utility lines. • Shoreline stabilization, e.g., bioengineering, riprap and gabions, and retaining walls. • Shoreline vegetation management.

Committed Land

For planning purposes, land is considered committed if it is under lease, easement, license, or contract; is a developed TVA project critical to the operation of the integrated reservoir system such as a dam reservation or power lines; has known sensitive resources present; has a unit plan; fronts land transferred or sold for public recreational use; or is a TVA-developed recreation area. Agricultural licenses are not considered committed uses because they are an interim use of TVA public land. It is anticipated that land currently committed to a specific use would be allocated to a land use zone compatible with that current use unless there is an overriding need to change the use. Possible reasons to change allocations would be ongoing adverse impacts resulting from the actions of a licensee, lessee, or easement holder. The DNTRLMP does not propose to change any committed land uses. Approximately 2,783 acres (87 percent) of the TVA public land surrounding the Douglas and Nolichucky tributary reservoirs are committed. Table 2.1-2 summarizes the committed and uncommitted lands on the Douglas and Nolichucky reservoirs. The individual RLMPs (Volumes II and III) describe the committed parcels reasoning in more detail. The conversion tables (Appendix D) summarize these allocations by alternative.

Table 2.1-2. Committed and Uncommitted Parcels on the Douglas-Nolichucky Tributary Reservoirs

Reservoir	Committed		Uncommitted	
	Parcels	Acres	Parcels	Acres
Douglas	49	1,740	14	315
Nolichucky	27	1,043	12	93
Total	76	2,783	26	408

If sensitive resources were identified on a committed parcel (with an existing lease, license, easement, etc.), that parcel would remain allocated to a zone appropriate for that committed use unless an ongoing adverse impact is found. However, TVA approval would be required prior to future activities that could impact the identified sensitive resources.

On Douglas Reservoir, TVA transferred several hundred acres of land to other federal and state agencies, primarily to TWRA. TVA typically retained the fee interest of the land below the maximum shoreline contour (MSC) elevation on Douglas Reservoir. However, the transfer agreements allowed other agencies to manage TVA-retained land below the transfer contour in a manner consistent with the objectives exercised on the back-lying public land. The width of this strip of TVA-retained land located between summer operating pool and the transfer tracts varies for Douglas Reservoir, and it is only about 1 percent of the total acreage. Although TVA does not have exact acreages for Douglas Reservoir, planning objectives are not impacted because these lands are committed to the back-lying land use via the transfer agreement covenants and provisions. The committed use is either Zone 4 (Natural Resource Conservation) or Zone 6 (Developed Recreation) and is primarily dependent on the level of recreation use of the marginal strip in association with the back-lying land (i.e., developed or dispersed recreation).

Uncommitted Land

The balance of TVA land on the Douglas and Nolichucky tributary reservoirs (408 acres or 13 percent) is not committed to a specific use through an easement, lease, license, or other legal documentation. Field data were collected on many uncommitted parcels by technical specialists to identify areas containing sensitive resources. Representatives from different TVA organizations including power generation, land and shoreline management, recreation, and economic development met to allocate the parcels of TVA public land into the seven planning zones. Using maps that identified the location of known and potential sensitive resources (e.g., cultural resources, wetlands, threatened and endangered species, and areas of high scenic quality), the capability and suitability for potential uses of each parcel were considered. The proposed allocations reflect the consensus of the planning team members.

Property Administration

The proposed DNTRLMP identifies the suitable uses for each tract of TVA-managed land around Douglas and Nolichucky reservoirs, consistent with TVA policy and guidelines and applicable laws and regulations. As administrators of the public land entrusted to it, the Holston-Cherokee-Douglas Watershed Team will use the DNTRLMP along with TVA policies and guidelines to manage resources and to respond to requests for the use of TVA public land. All inquiries about or requests for the use of TVA public land on either reservoir should be made to TVA's Environmental Information Center at 1-800-882-5263.

Pursuant to the TVA Land Policy (Appendix A), TVA would consider changing a land use designation outside of the normal planning process only for water-access purposes for

industrial or commercial recreation operations on privately owned back-lying land or to implement TVA's SMP.

There are no non-Zone 7 parcels in the DNTRLMP over which the private back-lying property owners currently have deeded access rights. Under the planning process, if parcels of this kind did exist, they would be allocated consistent with the current back-lying land use. If the private back-lying land were to become residential, a request for a change of allocation of the TVA shoreline parcel to Zone 7 (Shoreline Access) would be subject, with appropriate environmental review, to action by the TVA Board or its designee or to Board-approved policy.

Public works/utility projects such as easements for pipelines, power or communication wires, roads, or other public infrastructure proposed on any TVA public land that do not affect the zoned land use or sensitive resources would not require an allocation change so long as such projects are compatible with the use of the allocated zone. For example, a proposed construction of a water intake structure would be compatible with a reservoir parcel allocated for Zone 4 (Natural Resource Conservation) provided natural resource conservation activities could continue. Proposed public works/utility projects would be subject to a site-specific environmental review. Any other requests involving a departure from the planned uses would require the approval of the TVA Board or its designee.

Proposals consistent with TVA's policies and the allocated use, and otherwise acceptable to TVA, will be reviewed in accordance with NEPA and must conform to the requirements of other applicable environmental regulations and other legal authorities.

2.2. Alternatives

TVA proposes to develop individual RLMPs to guide land use approvals, private water use facility permitting, and resource management decisions on the Douglas and Nolichucky tributary reservoirs. This EIS examines the effects of the No Action Alternative (Alternative A), under which TVA would continue to use the Forecast System to manage Douglas Reservoir. The Nolichucky Reservoir, which has not been planned, would continue to be subject to management in accordance with existing commitments and land use agreements as well as the TVA SMP and Land Policy.

TVA has decided to develop two action alternatives: Alternative B – Proposed Land Use Alternative and Alternative C – Modified Land Use Alternative. Alternative B is based on the management of natural resources as proposed during scoping. Alternative C is a result of the public comments and other opportunities identified during scoping and would lead to slightly increased natural resource conservation and sensitive resource protection opportunities on public lands. The amount of land allocated for TVA Project Operations (Zone 2) and Shoreline Access (Zone 7) would likely remain the same under each action alternative. While Alternative A – No Action Alternative would provide a baseline for the analysis of likely environmental impacts, Alternatives B and C would frame the environmental issues identified during scoping.

Under each of the action alternatives, the plans would identify land use zones in broad categories. As explained above, land currently committed to a specific use would be allocated to that current use unless there is an overriding need to change the use. These commitments include transfers, leases, licenses, contracts, power lines, outstanding landrights, and TVA-developed recreation areas.

Regardless of the alternative selected, the following conditions would apply:

- Any proposed development or activity on public land will be subject to TVA approval pending the completion of a site-specific environmental review to evaluate the potential environmental effects of the proposal. As necessary, TVA would impose any necessary mitigative measures as conditions of approval for the use of public lands to minimize adverse environmental effects.
- Future activities and land uses will be guided by the TVA Land Policy.
- TVA land use allocations are not intended to supersede deeded landrights or land ownership (see Section 2.1, the Allocation Process, for more information).

2.2.1. Alternative A – No Action Alternative

Douglas Reservoir was previously planned utilizing a Forecast System developed in 1965. 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. The Forecast System was an in-house process that documented actual and prospective uses for all TVA public land around a reservoir using a somewhat variable set of Forecast System designations (see Appendix C). The Forecast System allocated land into 13 categories. Of these 13 categories, the following four were used to classify TVA land surrounding Douglas Reservoir: dam reservation, public recreation, reservoir operations for mainland, and reservoir operations for islands. Under the Forecast System, 33 of the 63 parcels on Douglas Reservoir were designated as “unplanned” rather than identified as one of the categories above (Appendix D, Table D-4). The Nolichucky Reservoir has never been forecasted or planned. TVA presently manages 2,055 acres on the Douglas Reservoir utilizing the Forecast System and 1,136 acres on the Nolichucky Reservoir that are unplanned.

Under Alternative A – the No Action Alternative, TVA would continue to use the Forecast System designations established by TVA in 1965 to manage Douglas Reservoir, and the Nolichucky Reservoir would remain unplanned and without forecast designations. The Nolichucky Reservoir would continue to be subject to management in accordance with existing commitments and land use agreements as well as the TVA SMP and Land Policy. There are approximately 408 acres of uncommitted lands surrounding these reservoirs that would be managed under the Forecast System and TVA’s SMP and Land Policy. There are 2,783 acres of committed lands that would continue to be managed according to existing land use agreements. Approximately 1,740 acres on Douglas Reservoir would be managed according to existing land use agreements. The 1,043 acres surrounding the Nolichucky Reservoir that are committed lands would be managed according to existing land use agreements. However, the committed lands surrounding the two tributary reservoirs would not be allocated to a current land use zone (see Table 2.1-1); therefore, complete alignment with existing policies would not occur. Proposed land use requests received from external applicants or internal TVA organizations would be evaluated for consistency with the existing land use agreement, TVA policies, and/or the Forecast allocation defined in 1965, which may not incorporate current data on land conditions, adjacent uses, etc. If the request were not consistent with the previously planned land use, formal approval by the TVA Board or its designee, following appropriate review, would be required to change the land use designation.

To facilitate the comparison of alternatives in this EIS, the Forecast System designations for Douglas Reservoir have been converted to the equivalent designation in one of the seven proposed land use zones (see Table 2.2-1). For example, a parcel with a Forecast

System designation of Dam Reservation would be converted to Project Operations, a Zone 2 allocation. In situations where a Forecast System designation could be converted to more than one zone allocation, existing land use determined which zone allocation was selected. In some cases, a parcel with multiple land uses was split in order to allocate the varying uses to the compatible zones. Additionally, some adjacent parcels with similar land uses were combined and allocated to the compatible zone. When parcels were designated unplanned under the Forecast System (Appendix D, Tables D-4 and 5), the nature of the existing land use agreement was used to determine the compatible zone. When parcels were unplanned under the Forecast System and were also uncommitted (i.e., no land use agreement exists), the equivalent zones were based upon the primary function or current use of the parcel and adjacent land (saddle dams became Project Operations, public recreation areas became Developed Recreation, etc.). The conversions are identified for individual parcels on each reservoir in Appendix D, and the converted designations are used in many of the discussions below.

Zone 1 – Non-TVA Shoreland is not represented in the following tables because the parcels are private land (in which TVA holds certain rights) and will not change as a result of the land planning process.

Table 2.2-1. Alternative A – Area by Equivalent Current Land Use Designations by Reservoir

Equivalent Allocation Designation	Land Area in Acres by Reservoir		
	Douglas	Nolichucky	Total
Project Operations	1,022	56	1,078
Sensitive Resource Management	0	0	0
Natural Resource Conservation	646	713	1,359
Industrial	0	3	3
Developed Recreation	375	363	738
Shoreline Access	13	0	13
TOTAL	2,055	1,136	3,191

2.2.2. Alternative B – Proposed Land Use Alternative

TVA’s recent comprehensive reservoir land planning efforts allocate land to seven land use zones (Table 2.1-1). Under this alternative, TVA would create and implement individual RLMPs for the Douglas and Nolichucky tributary reservoirs to guide future land use decisions over at least the next decade. The lands managed by TVA would be placed into one of the seven land use zones that best fits the existing land use. TVA would promote conservation of natural resources and developed recreation by allocating about 621 acres of the land surrounding the two reservoirs to Sensitive Resource Management (Zone 3), 980 acres to Natural Resource Conservation (Zone 4), and 496 acres to Developed Recreation (Zone 6). The land areas for each of the proposed zone allocations are summarized by reservoir in Table 2.2-2, and the zone allocation for each individual parcel is identified in Appendix D.

Table 2.2-2. Alternative B – Area by Allocation Zone by Reservoir

Allocation Designation	Land Area in Acres by Reservoir		
	Douglas	Nolichucky	Total
Zone 2	1,022	56	1,078
Zone 3	1	620	621
Zone 4	869	110	980
Zone 5	0	3	3
Zone 6	150	346	496
Zone 7	13	0	13
TOTAL	2,055	1,136	3,191

Under Alternative B, new allocations for the 2,055 acres (63 parcels) on Douglas Reservoir that were previously forecasted would reflect the existing land uses. A majority of the TVA-managed land on Douglas and Nolichucky, 2,783 acres (76 parcels), is committed due to land use agreements or deeded rights. Committed lands are not expected to be subject to potential changes in land use due to the existing agreements or deeded rights. In addition to the 2,783 acres previously committed to a specific use, this alternative plans the remaining 408 acres or 26 parcels that have not been committed to a specific use. The proposed allocations are the result of the allocation process described above in Section 2-1.

2.2.3. Alternative C – Modified Land Use Alternative

This alternative would provide additional opportunities for the conservation of natural resources with an emphasis on the management of sensitive resources. Under this alternative, TVA would create and implement individual RLMPs for the Douglas and Nolichucky tributary reservoirs. The lands managed by TVA would be placed into land use zones that best represent the existing land use and reflect public comments and other opportunities identified during scoping. As a result of the scoping process, Alternative C, as compared to Alternative B, represents changes in land use zones for 16 parcels of TVA-managed land. Specifically, seven additional parcels would be placed into Sensitive Resource Management (Zone 3). The other eight parcels would be placed in either Natural Resource Conservation (Zone 4) or Developed Recreation (Zone 6). The land areas for each of the proposed zone allocations are summarized by reservoir in Table 2.2-3, and the zone allocation for each individual parcel is identified in Appendix D.

Similar to Alternative B, this alternative plans the remaining 408 acres or 26 parcels that have not been committed to a specific use. The proposed allocations are the result of the allocation process described above in Section 2-1.

Table 2.2-3. Alternative C – Area by Allocation Zone by Reservoir

Allocation Designation	Land Area in Acres by Reservoir		
	Douglas	Nolichucky	Total
Zone 2	1,022	56	1,078
Zone 3	65	648	713
Zone 4	828	143	971
Zone 5	0	3	3
Zone 6	127	286	413
Zone 7	13	0	13
TOTAL	2,055	1,136	3,191

2.3. Comparison of Alternatives

This section compares the environmental impacts of the three alternatives based on the information and analyses provided in Chapters 3 and 4, Affected Environment and 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. TVA believes that all alternatives would be consistent with this policy, and TVA has interpreted the regulations and laws governing it so as to be consistent with this policy, as required by Section 102(1). Because of the environmental safeguards in each alternative, a wide range of beneficial uses of the environment could be obtained without degradation or unintended consequences under each alternative.

The parcels that would be allocated differently under the three alternatives are identified in Table 2.3-1. While Alternative A – No Action Alternative provides a baseline for the analysis of likely environmental impacts, Alternatives B and C frame the environmental issues identified during scoping.

Compared to the No Action Alternative, the two action alternatives (B and C) allocate more Douglas and Nolichucky reservoir lands to Zone 4 (Natural Resource Conservation) and Zone 3 (Sensitive Resource Management) combined (Table 2.3-2). The amount of land allocated to Developed Recreation (Zone 6) under the action alternatives would be about a third less than under the No Action Alternative. The parcels designated for Industrial (Zone 5) and Shoreline Access (Zone 7) are the same under all three alternatives and amount to less than 1 percent of the total land. Therefore, under the assumption that potential future development is more likely on Zones 2 and 6 than Zones 3 and 4, there is greater potential for future land development under the No Action Alternative than under the action alternatives.

Compared to Alternative B, Alternative C includes slightly less land in Zone 6 and slightly more in Zones 3 and 4. Therefore, under the assumption that development would be more likely to occur in Zone 6 than in Zones 3 and 4, Alternative C would result in slightly fewer opportunities for development than Alternative B. However, as stated above, the differences between Alternatives B and C affect only 16 parcels totaling 149 acres. Therefore, the difference between the two action alternatives is minor.

Table 2.3-1. Allocation Differences Between Alternatives A, B, and C

Parcel Number	Acres	Alternative A*	Alternative B	Alternative C	Description
Douglas					
2	0.01	Zone 4	Zone 6	Zone 6	Improve recreation opportunities
12	2.6	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; provides good quality riparian buffer for river corridor and shoreline management
21	1.2	Zone 4	Zone 3	Zone 3	Sensitive resource
22	5.4	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; provides good quality riparian buffer for river corridor and shoreline management
25	1.0	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; provides good quality riparian buffer for river corridor and shoreline management
26	1.7	Zone 6	Zone 2	Zone 2	Easements for highway and railroad
28	10.2	Zone 4	Zone 4	Zone 3	High-quality wetlands
33	16.7	Zone 4	Zone 4	Zone 3	High-quality wetlands
37	0.1	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; provides good quality riparian buffer for river corridor and shoreline management
39	2.3	Zone 6	Zone 2	Zone 2	Highway easement and fronting land transferred for the highway
45	30.8	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; moderate-quality wildlife habitat and moderate-quality pocket wetlands
46	4.0	Zone 2	Zone 4	Zone 4	Islands, better suited for Zone 4
47	36.3	Zone 4	Zone 4	Zone 3	High-quality wetlands
48	20.0	Zone 6	Zone 6	Zone 4	No developed recreation facilities exist; better suited for dispersed recreational opportunities
49	0.3	Zone 6	Zone 3	Zone 3	Sensitive resource
51	29.8	Zone 6	Zone 4	Zone 4	No developed recreation facilities exist; scattered wetlands present
52	111.7	Zone 6	Zone 4	Zone 4	Presence of quality wetland pockets in coves and excellent wildlife habitat
53	2.5	Zone 4	Zone 6	Zone 4	Some limited developed recreational facilities possible; better use for riparian buffer to back-lying development in Alternative C
55	3.0	Zone 6	Zone 4	Zone 4	Provides good quality riparian buffer to back-lying development
62	2.2	Zone 6	Zone 4	Zone 4	Consists of two islands that are beneficial for wildlife and water quality; better suited for dispersed recreational opportunities; no developed recreation facilities exist
Nolichucky					
5	22.5	Zone 4	Zone 3	Zone 3	Sensitive wetlands
6	42.51	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
8	62.00	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
9	63.50	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
11	43.3	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities

Parcel Number	Acres	Alternative A*	Alternative B	Alternative C	Description
12a	2.8	Zone 4	Zone 4	Zone 3	New parcel; sensitive resource
18	33.5	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
19	102.2	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
20	64.8	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
22	80.7	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
23	94.7	Zone 4	Zone 3	Zone 3	Sensitive river corridor and wetland species, as well as unique scenic qualities
25	15.3	Zone 6	Zone 6	Zone 3	Sensitive resource
26	7.6	Zone 6	Zone 6	Zone 4	Better suited for dispersed recreational opportunities
27	3.6	Zone 6	Zone 6	Zone 3	Sensitive resource
28	7.3	Zone 6	Zone 3	Zone 3	New parcel; sensitive resource
29	3.1	Zone 6	Zone 3	Zone 3	Sensitive resource
30	6.9	Zone 6	Zone 4	Zone 4	Provides quality wildlife habitat and riparian buffer
31	1.3	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer
32	6.7	Zone 6	Zone 6	Zone 3	Wetlands
33	4.2	Zone 6	Zone 6	Zone 6	New parcel; potential future use as a developed water-based recreation site
34	1.8	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer
35	5.7	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer
36	12.3	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer
37	1.9	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer
38	4.5	Zone 6	Zone 6	Zone 4	Provides quality wildlife habitat and riparian buffer

*Land use zone equivalent to the allocation in the Forecast System or original use

Table 2.3-2. Allocation of Acres by Zone Under Alternatives A, B, and C

Zone	Alternative					
	A		B		C	
	Acres	Percent	Acres	Percent	Acres	Percent
2	1,078	33.8	1,078	33.8	1,078	33.8
3	0	0.0	621	19.5	713	22.3
4	1,359	42.6	980	30.7	971	30.4
5	3	0.1	3	0.1	3	0.1
6	738	23.1	496	15.5	413	12.9
7	13	0.4	13	0.4	13	0.4

2.4. Summary of Impacts

Under the No Action Alternative, the total number of acres of Douglas and Nolichucky reservoirs land collectively designated to Industrial, Developed Recreation, and Project

Operations uses (which have the greatest potential for impacts) is greater than under either of the action alternatives. Under the No Action Alternative, no land is allocated to Sensitive Resource Management. Compared to Alternative A, the action alternatives allocate fewer acres to Developed Recreation and greater acreage to the combination of Natural Resource Conservation and Sensitive Resource Management. Generally, the No Action Alternative has greater potential for environmental impacts than does either of the action alternatives. Alternative C has slightly less potential for adverse impacts than Alternative B.

Impacts to each resource under each of the three alternatives are summarized in Table 2.3-3 below. Mitigation measures designed to avoid or minimize impacts are included in Section 4.20.

Table 2.3-3. Summary of the Environmental Impacts of the Three Alternatives

Resource	Potential Impacts	Alternative		
		A – No Action	B – Proposed	C – Modified
Land Use	Changes to land uses	Minor direct adverse effects. Minor indirect effects due to absence of comprehensive land plans.	No adverse direct or indirect effects. Minor beneficial effects of long-term, comprehensive land plans.	
Recreation	Availability of developed (Zone 6) and dispersed recreational opportunities.	Overall insignificant Impacts. Greatest Zone 6 land – beneficial to developed recreation. Least land available for dispersed recreation.	Overall insignificant Impacts. Minor indirect impacts from loss of 242 acres of Zone 6 land. Minor beneficial effects from increase in dispersed recreation opportunities.	Overall insignificant Impacts. Minor indirect impacts from loss of 325 acres of Zone 6 land. Greatest but still minor beneficial effects from increase in dispersed recreation opportunities.
Prime Farmland	Conversion of prime farmland. A farmland rating required before development.	Greatest number of acres potentially affected, adverse impacts minor.	Slightly less acres potentially affected than under Alternative A; adverse impacts minor.	Lowest number of acres potentially affected; adverse impacts minor.
Terrestrial Ecology	Loss and fragmentation of terrestrial vegetation and wildlife habitat from clearing and ground-disturbing activities; indirect effects associated with dispersed recreation and spread of invasive plants.	Greatest area potentially affected; minor potential impacts to common plant species. Minor adverse impacts by spread of invasive species. Insignificant impacts to terrestrial wildlife.	Smallest area potentially affected; minor potential impacts to common plant species. Lesser but minor adverse impacts by spread of invasive species. Insignificant impacts to terrestrial wildlife.	Area potentially affected smaller than under Alternative A; minor potential impacts to common plant species. Lesser but minor adverse impacts by spread of invasive species. Least impacts to terrestrial wildlife.

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Resource	Potential Impacts	Alternative		
		A – No Action	B – Proposed	C – Modified
Threatened and Endangered Plants	Direct impacts associated with clearing and ground disturbance; indirect impacts from habitat fragmentation, human visitation, spread of invasive species.	No federally listed plants affected. No significant direct or indirect impacts to known state-listed species.	No federally listed plants affected. Lower potential for effects to state-listed plants. No significant impacts to known state-listed species.	No federally listed plants affected. Most protective of state-listed plants. No significant impacts to known state-listed species.
Threatened and Endangered Terrestrial Animals	Clearing and ground disturbance affecting individual animals or altering habitat suitability.	May, but not likely to, impact gray or Indiana bats. No negative impacts to state-listed species.	No federally listed terrestrial animals affected. More protective of the state-listed species. No negative impacts.	No federally listed terrestrial animals affected. Slightly more protective of state-listed species. No negative impacts.
Wetlands	Adverse effects to or destruction of wetlands from land clearing and ground disturbance.	No direct impacts with protection under EO 11990; minor indirect impacts associated with dispersed recreation.	No adverse impacts with protection under EO 11990. Greater preservation of natural habitat including wetlands; minor indirect impacts associated with dispersed recreation.	No adverse impacts with protection under EO 11990. Greatest preservation of natural habitat including wetlands; minor indirect impacts associated with dispersed recreation.
Floodplains	Adverse impacts to floodplain values.	Minor impacts.	Lowest potential for impacts due to increase in conservation lands	
Cultural Resources	Damage to archaeological and historic properties.	Greatest potential for impacts; effects avoided or mitigated through compliance with the programmatic agreement (PA) and Section 106 of the NHPA.	Lesser potential for impacts; effects avoided or mitigated through compliance with the PA and Section 106 of the NHPA.	Lowest potential for impacts, effects avoided or mitigated through compliance with the PA and Section 106 of the NHPA.
Managed Areas and Sensitive Ecological Sites	Incompatible land use on adjacent areas. Impacts on sensitive resources.	No direct or indirect adverse effects.		

Resource	Potential Impacts	Alternative		
		A – No Action	B – Proposed	C – Modified
Visual Resources	Effects on scenic quality. Gradual degradation of visual resources.	Decline in visual resources on uncommitted lands over the long term.	Lower potential for adverse effects to visual resources; long-term beneficial effect of greater percentage of acres in Zones 3 and 4.	Lowest potential for adverse effects to visual resources; long-term beneficial effect of greatest percentage of acres in Zones 3 and 4.
Water Quality	Impacts from runoff of pollutants and soil erosion.	Greatest potential for adverse effects; minor impacts.	Lower potential for ground disturbance; minor impacts.	Lowest potential for ground disturbance; minor impacts.
Aquatic Ecology	Alteration of aquatic habitat primarily from shoreline modification.	Greatest potential for ground disturbance; minor impacts.	Lower potential for ground disturbance; no impact. Beneficial cumulative effects.	Lowest potential for ground disturbance; no impact. Beneficial cumulative effects.
Air Quality	Emissions from construction and development activities.	Very low potential for impacts; minor effects.		
Noise	Noise generated by facilities associated with Industrial, Project Operations, or Developed Recreation.	Greatest potential for noise generation; insignificant impacts.	Lower potential for noise generation; insignificant impacts.	Lower potential for noise generation; insignificant impacts.
Socioeconomic Impacts and Environmental Justice	Effects to the local economy and populations.	Little impact. No noticeable effect on local economy. No disproportionate impacts to disadvantaged populations.		

2.5. The Preferred Alternative

The preferred alternative is Alternative C, the Modified Land Use Alternative, which provides suitable opportunities for developed recreation, conservation of natural resources, and management of sensitive resources. The environmentally preferred alternative is also Alternative C, under which all parcels with identified sensitive resources would be allocated to the most protective land use zone; only some of those parcels would be zoned for sensitive resource management under Alternatives A and B.

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