

CHAPTER 2

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. Development of Alternatives

TVA proposes to develop individual RLMPs to guide land use approvals, private water use facility permitting, and resource management decisions on seven NTRs. TVA developed two action alternatives: Alternative B – Proposed Land Use Plan Alternative and Alternative C – Modified Proposed Land Use Plan Alternative. Alternative B is based on the management of resources as described in the scoping document (Appendix B). Alternative C is a result of the public comments and other opportunities identified during scoping (Summary of Public Participation, Appendix B). Under each of the action alternatives, RLMPs would be developed to identify land use zones in broad categories. Land currently committed to a specific use would be allocated to that current use unless there is an overriding need to change the use. Land use commitments include transfers, leases, licenses, contracts, power lines, outstanding land rights, and TVA-developed recreation areas. Adoption of either action alternative would lead to increased natural resource conservation and sensitive resource protection opportunities on public lands. However, the two action alternatives vary in the amount of land allocated to Sensitive Resource Management, Natural Resource Conservation, and Developed Recreation. The action alternatives also differ in the allocation of individual parcels on which TVA identified opportunities for sensitive resources management and developed recreation.

This EIS also includes analysis of environmental effects anticipated under the No Action Alternative (Alternative A). Under Alternative A, TVA would continue to use the Forecast System to manage 3,749 acres on Fort Patrick Henry, South Holston, Watauga, and Wilbur reservoirs. The 1999 Boone Reservoir Land Management Plan would be used to manage 880 acres on Boone Reservoir. The remaining 304 acres of land around Clear Creek and Beaver Creek reservoirs, which were not planned under the Forecast System and do not have a previous RLMP, would be subject to management in accordance with existing commitments and land use agreements as well as the TVA SMP and Land Policy.

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

- Any proposed development or activity on TVA-managed public land would be subject to TVA approval pending the completion of a site-specific environmental review to evaluate the potential environmental effects of the proposal. TVA would impose any necessary mitigative measures as conditions of approval for the use of public lands to prevent adverse environmental effects or to reduce potential effects.
- Future activities and use of TVA-managed public land will be guided by the TVA Land Policy.
- TVA land use allocations are not intended to supersede deeded land rights or land ownership.

2.2. Property Administration

In the proposed NTRLMP, each tract of TVA-managed land around the seven NTRs is categorized based upon a suitable use that is consistent with TVA policy and guidelines and applicable laws and regulations. As administrators of TVA public land, the TVA

Holston-Cherokee-Douglas Watershed Team will use the NTRLMP, 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 the NTRs should be made to the TVA 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 (preparation of RLMPs) only for the purpose of water access for industrial or commercial recreation operations on privately owned back-lying land, or to implement TVA's SMP.

Additionally, there are a small number of TVA parcels in the Tennessee Valley that have deeded access rights for shoreline access that are currently utilized for uses such as commercial recreation. Should the private back-lying land 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 to Board-approved policy. On the NTRs, there is one non-Zone 7 parcel (South Holston Parcel 8) over which the private back-lying property owners currently have deeded access rights.

Consistent with the TVA Land Policy, those parcels or portions of parcels that have become fragmented from the reservoir may be declared surplus and sold at public auction under certain circumstances. Parcel 9 on Fort Patrick Henry Reservoir, which is approximately 0.3 acre in size, is fragmented from the reservoir.

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 as long as such projects are compatible with the use of the allocated zone. For example, proposed construction of a water intake structure on Wilbur Reservoir Parcel 5 (Volume VI) would be compatible with the Zone 4 allocation of this parcel. Proposed public works/utility projects would be subject to a project-specific environmental review. Any other requests involving a departure from the planned uses would require the approval of the TVA Board of Directors.

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.

2.3. Alternative A – No Action Alternative

Four of the seven reservoirs involved in this land planning effort—Fort Patrick Henry, South Holston, Watauga, and Wilbur reservoirs—previously were planned in 1965 utilizing the Forecast System. Boone Reservoir was planned in 1999 (TVA 1999). Beaver Creek and Clear Creek reservoirs have never been forecast or planned.

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 (Appendix E). Using the Forecast System, TVA allocated land into 13 categories. Of these 13 categories, the following six were used to classify TVA land surrounding the Fort Patrick Henry, South Holston, Watauga, and Wilbur reservoirs: Dam Reservation, Public Recreation, Agriculture Research, Industry, Reservoir Operations,

and Commercial Recreation. Under the Forecast System, many parcels on Fort Patrick Henry, South Holston, Watauga, and Wilbur reservoirs were designated as "unplanned" rather than identified as one of the categories above (Appendix F).

The Boone RLMP, prepared in 1999, updated Forecast System designations previously used on Boone Reservoir. The 1999 RLMP planned the following uses for Boone Reservoir parcels: TVA Project Operations, Sensitive Resource Management, Natural Resource Conservation, Recreation, and Residential Access. Land use zones used in the 1999 RLMP have definitions similar to the zones proposed for the NTRLMP.

TVA presently manages 3,749 acres on the NTRs utilizing the Forecast System, 880 acres utilizing the Boone Reservoir Land Management Plan (TVA 1999), and 304 acres that have no previous land use plan. The 4,933 acres managed under these three systems are the subject of the NTRLMP.

Under Alternative A – the No Action Alternative, TVA would continue to use the Forecast System designations established by TVA in 1965 to manage Fort Patrick Henry, South Holston, Wilbur, and Watauga reservoirs. There are approximately 225 acres of uncommitted lands surrounding these four reservoirs that would be managed under the Forecast System, TVA's SMP, and the TVA Land Policy. There are 3,524 acres of committed lands around those four reservoirs that would continue to be managed according to existing land use agreements. Under Alternative A, TVA also would continue to manage approximately 29 acres of uncommitted lands in accordance with the 1999 Boone RLMP, TVA's SMP, and the TVA Land Policy. The remaining 851 acres of committed lands on Boone Reservoir would be managed according to existing land use agreements. Beaver Creek and Clear Creek Reservoirs would remain unplanned. The 304 acres surrounding these two reservoirs are committed lands that would be managed according to existing land use agreements. Under this alternative, the lands surrounding the seven NTRs would not be allocated according to the current seven-category land use zones (Table 1-2); 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 any existing land use agreement, TVA policies, and/or previous forecast (Fort Patrick Henry, South Holston, Watauga, Wilbur) or plan (Boone) for the relevant reservoir, which may not incorporate current data on land conditions, adjacent uses, etc. If the request is not consistent with the previously planned or forecast land use, formal TVA Board of Directors approval, following appropriate review, would be required to change the land use.

To facilitate the comparison of alternatives, the Forecast System designations for Fort Patrick Henry, South Holston, Wilbur and Watauga reservoirs have been converted to the equivalent designation of one of the seven proposed land use zones (Table 2-1). For example, a parcel with a Forecast System designation of Dam Reservation would be converted to Zone 2 (Project Operations). 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 zone. Additionally, some adjacent parcels with similar land uses were combined and allocated to the

Table 2-1. Alternative A – Area² by Equivalent Current Land Use Designations by Reservoir

Equivalent Allocation Designation (Zone)	Land Area in Acres by Reservoir							
	Beaver Creek	Clear Creek	Boone	Fort Patrick Henry	South Holston	Watauga	Wilbur	Total
Project Operations (2)	40	14	246	166	902	661	48	2,077
Sensitive Resource Management (3)	0	0	335	0	0	0	0	335
Natural Resource Conservation (4)	0	0	224	3	798	380	4	1,409
Industrial (5)	0	0	0	0	125	0	0	125
Recreation (6)	250	0	75	85	431	93	6	939
Shoreline Access (7)	0	0	<1	29	15	3	0	48
Total	290	14	880	283	2,271	1,137	58	4,933

Note: Zone 1 – Non-TVA Shoreland is not represented because the parcels are private land (on which TVA owns flowage rights) and will not change as a result of the land planning process.

compatible zone. When parcels were designated unplanned under the Forecast System (e.g., see parcels 2, 5, 6, and 7 in Appendix F, Table F-11), the nature of the existing land use agreement was used to determine the compatible zone. For 12 parcels (totaling 37 acres) that were unplanned under the Forecast System and are also uncommitted, (i.e., no land use agreement exists), the equivalent zones were based upon existing land conditions and use of the parcel and adjacent land.

The planning zones identified within the 1999 Boone Reservoir Land Management Plan have also been converted to the equivalent land use zone designations. The committed lands surrounding Beaver Creek and Clear Creek reservoirs have been converted to equivalent land use zone designations based on the nature of the existing land use agreements. The conversions are identified for individual parcels on each reservoir in Appendix F, and the converted designations are used in many of the discussions below.

2.4. Action Alternatives

2.4.1. The Planning Process

As part of the process of developing alternatives for the NTRLMP, TVA reviewed existing and newly collected field data both on the condition of and the resources on the lands being planned. Field surveys were conducted on uncommitted parcels. No surveys for sensitive resources were conducted on committed land where data exist from previous surveys or no changes in land use are proposed. 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. The planning team honored all existing commitments (i.e., existing leases, licenses, and easements). 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 (Table 1-2). About 46 percent of the shoreline on the NTRs are lands that TVA does not own in fee, typically flowage easement lands, which are allocated to Zone 1 (Non-TVA Shoreland). Non-TVA shoreland is not included in this planning process.

² Areas in the table and associated text are rounded to the nearest acre, which may result in slight discrepancies in calculated totals.

Committed Land. For planning purposes, land is considered committed if it:

- Is under lease, license, easement, 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.
- Is a TVA-developed recreation area.

Agricultural licenses are not considered to be committed uses because they are an interim use of TVA public land.

Land currently committed to a specific use would be allocated to a land use zone compatible with the 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 license or easement holder. If sensitive resources are 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 were found. However, TVA approval would be required prior to future activities that could impact the identified sensitive resources.

No changes to any committed land uses are proposed under either of the action alternatives. Approximately 4,679 acres (95 percent) of the TVA public land surrounding the NTRs were considered committed during the preallocation process (Table 2-2). The committed or uncommitted status of each parcel can be found in the conversion tables (Appendix F).

Table 2-2. Committed and Uncommitted Parcels on the Northeastern Tributary Reservoirs

Reservoir	Committed		Uncommitted	
	Parcels	Acres	Parcels	Acres
Beaver Creek	3	290	0	0
Clear Creek	1	14	0	0
Boone	36	851	8	29
Fort Patrick Henry	30	165	7	118
South Holston	70	2,212	10	59
Watauga	52	1,095	8	42
Wilbur	5	52	1	6
Total	197	4,679	34	254

The two action alternatives do not change the amount of land allocated for Shoreline Access (Zone 7). One Fort Patrick Henry parcel and two South Holston parcels, totaling 19 acres, were originally forecast as Reservoir Operations, but are allocated to Zone 7 under Alternatives B and C. In accordance with TVA's Section 26a regulations (18 Code of Federal Regulations [CFR] § 1304.201(a)), these parcels were placed in Zone 7 due to

existing access rights by policy because the residential areas had water access facilities prior to 1992 (see description of Reservoir Operations [Mainland] forecast in Appendix E). Once an RLMP has been adopted for a reservoir, TVA will no longer approve any private water use facilities or shoreline modifications on land previously forecast for Reservoir Operations. Additionally, all undeveloped land previously forecast for Reservoir Operations will remain in an unaltered and unencumbered condition to be considered for the most appropriate public uses during the reservoir land planning process.

TVA has transferred thousands of acres of land around the NTRs to other federal and state agencies, primarily to the USFS. TVA typically retained the fee interest in the land below the maximum shoreline contour (MSC) elevation of the specific reservoir. However, the agreements transferring lands to public agencies allowed those agencies to manage TVA-retained land below the transfer contour in a manner consistent with the agencies' objectives on the back-lying public land. The width of this marginal strip of TVA-retained land located between summer operating pool and the transfer tracts varies from reservoir to reservoir. While the width of this strip may vary, the total acreage for a reservoir may be substantial due to the total length of the shoreline. Although TVA has not calculated exact acreages of the marginal strip on some of the reservoirs, planning objectives are not impacted because these lands are committed to the back-lying land use via the transfer agreement covenants and provisions. These marginal strips are included in the RLMP and the committed use is either Zone 4 (Natural Resource Conservation) or Zone 6 (Developed Recreation). Selection of the appropriate zone primarily is 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 NTRs (254 acres or 5 percent) is not committed to a specific use through an easement, lease, or license. To develop the NTRLMP, technical specialists collected field data on many uncommitted parcels to identify sensitive resources. Representatives from various TVA organizations, including power generation, resource stewardship, recreation, and industrial development, met to allocate the parcels of TVA public land into the planning zones. Using maps that identified the known and potential locations of sensitive resources (e.g., cultural resources, wetlands, threatened and endangered species, and areas of high scenic quality), the capability and suitability of each parcel for potential uses were considered. The proposed allocations reflect the consensus of the planning team members.

2.4.2. *Alternative B – Proposed Land Use Alternative*

Under Alternative B, TVA would create and implement individual land plans for the seven NTRs to guide future land use decisions. The lands managed by TVA would be placed into one of the seven land use zones that best fits the existing land use, as determined in the preallocation process described above. The land areas for each of the proposed zone allocations are summarized by reservoir in Table 2-3, and the zone allocation for each individual parcel is identified in Appendix F.

Under Alternative B, new allocations for the 3,749 acres (183 parcels) that were previously forecast around Fort Patrick Henry, South Holston, Watauga, and Wilbur reservoirs would reflect the existing land uses. A majority of these forecasted lands, 3,524 acres (157 parcels), are committed due to land use agreements or deeded rights. Allocations for the 880 acres (44 parcels) around Boone Reservoir that were previously planned would reflect either the 1999 Boone Reservoir Land Management Plan allocation or the current land use agreement. A majority of the Boone Reservoir lands, 851 acres (36 parcels), are

committed under land use agreements or deeded rights. New allocations for the 304 acres (4 parcels) that have no forecast around Beaver Creek and Clear Creek reservoirs would reflect the existing land use agreements because all of these lands are committed.

Table 2-3. Alternative B – Area by Allocation Zone by Reservoir³

Allocation Designation	Land Area in Acres by Reservoir							
	Beaver Creek	Clear Creek	Boone	Fort Patrick Henry	South Holston	Watauga	Wilbur	Total
Zone 2	40	14	210	75	644	518	48	1,550
Zone 3	0	0	149	19	98	19	0	284
Zone 4	0	0	446	119	955	543	10	2,073
Zone 5	0	0	0	0	125	0	0	125
Zone 6	250	0	75	41	434	54	0	854
Zone 7	0	0	<1	29	15	3	0	48
Total	290	14	880	283	2,271	1,137	58	4,933

The uncommitted 254 acres (34 parcels) are proposed to be allocated to Zone 4 (Natural Resource Conservation) or Zone 6 (Developed Recreation).

2.4.3. Alternative C – Modified Proposed Land Use Alternative

To develop Alternative C, preallocations developed under Alternative B were modified based upon information obtained during the scoping process described in Section 1.6 and the scoping document (Appendix B). New information collected during the scoping process included comments from the public and regulatory agencies and data collected during field surveys. The same planning process described in Section 2.4.1 above was implemented, including maintaining all existing land use commitments (i.e., existing leases, licenses, and easements). Similar to Alternative B, the uncommitted 254 acres (34 parcels) are proposed to be allocated to Zone 3 (Sensitive Resource Management), Zone 4 (Natural Resource Conservation), or Zone 6 (Developed Recreation).

Under this Alternative, TVA would create and implement individual land plans for the seven NTRs. Parcels managed by TVA would be placed into land use zones that best represent the existing land use, resources observed during field surveys, 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 19 parcels of TVA-managed land. Specifically, based upon observation of sensitive resources, 11 additional parcels would be placed into Sensitive Resource Management (Zone 3). Conversely, following field verification that sensitive resources do not exist on South Holston Parcel 1, that 98-acre parcel would be allocated to Natural Resource Conservation (Zone 4). Based upon evaluation of recreation needs and site suitability, six of the remaining seven parcels would be allocated to Developed Recreation (Zone 6) and one would be allocated to Natural Resource Conservation (Zone 4). Because the total acreage of those 19 parcels is relatively small (238 acres), the percentage of land allocated to each of Zones 3, 4, and 6 is nearly the same under Alternative C as under Alternative B. The land areas for each of the proposed zone allocations are summarized by reservoir in Table 2-4, and the zone allocation for each individual parcel is identified in Appendix F.

³ Areas in the table and associated text are rounded to the nearest acre, which may result in slight discrepancies in calculated totals.

Table 2-4. Alternative C – Area by Allocation Zone by Reservoir⁴

Allocation Designation	Land Area in Acres by Reservoir							Total
	Beaver Creek	Clear Creek	Boone	Fort Patrick Henry	South Holston	Watauga	Wilbur	
Zone 2	40	14	210	76	644	518	48	1,550
Zone 3	0	0	149	21	5	102	0	278
Zone 4	0	0	446	116	1,045	427	10	2,044
Zone 5	0	0	0	0	125	0	0	125
Zone 6	250	0	75	41	436	86	0	888
Zone 7	0	0	<1	29	15	4	0	48
Total	290	14	880	283	2,271	1,137	58	4,933

2.5. Comparison of Alternatives

In this section, the potential environmental impacts anticipated under the three alternatives are compared based upon the information and analyses provided in Chapter 3 (Affected Environment) and Chapter 4 (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 three alternatives are consistent with this policy. 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 2-5. Only five of the seven reservoirs are represented in the table because there are no changes in the proposed parcel allocations for the committed parcels surrounding Beaver Creek and Clear Creek reservoirs.

Table 2-5. Allocation Differences Among Alternatives A, B, and C

Parcel Number	Acres	Zone by Alternative			Description
		A*	B	C	
Boone Reservoir					
16	<0.1	2	2	2	New parcel created for new road right-of-way
19	<0.1	2	2	2	New parcel created for new road right-of-way
26	151.4	3	4	4	Contains no sensitive resources; good wildlife habitat
27	70.1	3	4	4	Contains no sensitive resources; good wildlife habitat
28	35.5	2	3	3	Contains sensitive resources

⁴ Areas in the table and associated text are rounded to the nearest acre, which may result in slight discrepancies in calculated totals.

Parcel Number	Acres	Zone by Alternative			Description
		A*	B	C	
Fort Patrick Henry Reservoir					
1	17.6	2	3	3	Contains sensitive resources
7a	2.4	2	2	2	New parcel created for new road right-of-way
10	66.8	2	4	4	Contains diverse wildlife habitat and riparian buffer important to water quality
10a	2.7	2	4	3	Created from Parcel 10 to protect sensitive resources
13	1.3	6	4	4	Provides good quality riparian buffer for river corridor and shoreline management; no developed recreation facilities exist
17	3.5	2	4	4	Provides good quality riparian buffer for river corridor and shoreline management; no developed recreation facilities exist
21	42.2	6	4	4	Provides good quality riparian buffer for river corridor and shoreline management; no developed recreation facilities exist
27	1.0	4	3	3	Contains sensitive resources
28a	0.3	2	2	2	New parcel created for new road right-of-way
South Holston Reservoir					
1	97.9	2	3	4	Contains no sensitive resources; good wildlife habitat
2	139.5	2	4	4	Contains good wildlife habitat
9	0.8	2	4	4	Contains three small, forested islands
12	4.1	2	4	4	Consists of marginal strip fronting private property and small islands; good riparian buffer
19	23.5	4	6	6	Fronts privately owned campground; suitable for recreational uses
21	15.7	6	4	4	Consists of Baumgardner Islands
23	1.4	6	4	6	Consists of marginal strip containing an informal boat launching ramp
25	7.0	2	4	4	Provides diverse wildlife habitat; and is a Virginia Bird and Wildlife Viewing Area
25a	5.3	2	4	3	Created from Parcel 25 to protect sensitive resources
32	7.4	6	6	4	Contains small undeveloped parking area and riparian buffer important to sensitive aquatic species nearby
35	1.7	6	4	6	Contains good wildlife habitat, riparian buffer, and primitive camping; good potential for campground
36	6.0	6	4	6	Has potential for campground
37	4.3	6	4	4	Provides excellent wildlife habitat
43	3.0	2	4	4	Consists of riparian buffer fronting Cherokee National Forest (CNF)
46	13.1	4	6	6	Managed as part of Little Jacobs Creek Recreation Area of the CNF
51	4.3	6	4	4	No developed recreation facilities present; manage for natural resources

Northeastern Tributary Reservoirs Land Management Plan

Parcel Number	Acres	Zone by Alternative			Description
		A*	B	C	
Watauga Reservoir					
2	5.8	4	4	3	Contains sensitive resources
3	2.3	4	4	3	Contains sensitive resources
4	31.5	4	4	3	Contains sensitive resources
5	14.1	4	4	3	Contains sensitive resources
6	24.7	4	4	3	Contains sensitive resources
8	21.3	2	4	4	Consists of islands, peninsula, and cove with diverse wildlife habitat
11	10.3	6	4	4	Provides riparian buffer and quality wildlife habitat
16	8.1	6	4	4	Provides riparian buffer and quality wildlife habitat
17a	3.0	4	4	6	Requested by USFS for use as boat ramp
21	18.7	4	3	3	Contains sensitive resources
22	17.3	6	4	4	Contains good quality wildlife habitat and riparian buffer; no developed recreation facilities exist
23	118.3	2	4	4	Contains good quality, diverse wildlife habitat and riparian buffer; sensitive aquatic resources occur nearby
25	3.3	2	4	3	Contains sensitive resources
26	0.7	4	4	3	Contains sensitive resources
31	0.2	4	4	3	Contains sensitive resources
32	0.5	4	4	3	Contains sensitive resources
41	3.5	6	4	4	Contains vegetated riparian buffer beneficial to wildlife and water quality; no developed recreational facilities exist
50	9.1	4	4	6	Consists of vegetated strip bordered by USFS land; currently managed by USFS for primitive camping and used for swimming
59	20.1	4	4	6	Currently managed by the USFS for dispersed recreation
Wilbur					
1	5.9	6	4	4	No developed recreation facilities; excellent wildlife habitat

*Land use zone equivalent to the allocation in the Forecast System, Boone Reservoir Land Management Plan, or current use.

Comparison of alternatives is based upon the number of acres allocated to each zone as well as the allocation of individual parcels. Because resources, including sensitive resources, are present on some NTRs parcels, it is important to consider both measures. While a slightly smaller proportion of NTR lands would be allocated to resource conservation and protection under Alternative C, a greater number of parcels would be designated to protect specific sensitive resources.

Compared to the No Action Alternative, the two action alternatives (B and C) allocate about 12 percent more of the NTR lands to Natural Resource Conservation (Zone 4) and Sensitive Resource Management (Zone 3) (Table 2-6). Furthermore, a greater number of parcels on which sensitive resources were identified would be allocated to Zone 3 under

both of the action alternatives. In turn, compared to the No Action Alternative, the amount of land allocated to Project Operations (Zone 2) under the action alternatives would decrease by about 11 percent. The amount of land allocated to Developed Recreation (Zone 6) would decrease by 1 to 2 percent under the action alternatives compared to the No Action Alternative. As stated in Section The parcels designated for Industrial (Zone 5) and Shoreline Access (Zone 7) are the same under all three alternatives. 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 No Action Alternative than under the action alternatives.

Table 2-6. Allocation by Zone Under Alternatives A, B, and C

Zone	Alternative					
	A		B		C	
	Acres	%	Acres	%	Acres	%
2	2,077	42.1	1,550	31.4	1,550	31.4
3	335	6.8	284	5.8	278	5.6
4	1,409	28.5	2,073	42.0	2,044	41.4
5	125	2.5	125	2.5	125	2.5
6	939	19.0	854	17.3	888	18.0
7	48	1.0	48	1.0	48	1.0
Total	4,933	100	4,933	100	4,933	100

Compared to Alternative B, Alternative C includes slightly more land in Zone 6 and slightly less in Zones 3 and 4. As stated above, the differences between Alternatives B and C affect only 19 parcels totaling 238 acres. Therefore, under the assumption that development would be more likely to occur in Zone 6 than in Zones 3 and 4, Alternative B would result in slightly fewer opportunities for development than Alternative C.

However, although there are minor differences between the two action alternatives in acreage allocated to each zone, Alternatives B and C are distinguished by different allocations of specific parcels. Under Alternative C, 11 parcels on Fort Patrick Henry, South Holston, and Watauga reservoirs are allocated to Zone 3 to protect sensitive resources. In comparison, those parcels are allocated to Zone 4 under Alternative B. Eight other parcels are zoned differently under Alternative C as compared to Alternative B, primarily to better reflect existing conditions and suitable uses of the parcels (Table 2-5).

2.6. Summary of Impacts

Under the No Action Alternative, the total number of acres of NTR land designated to Industrial, Developed Recreation, and Project Operations uses is greater than under either of the action alternatives. Under the No Action Alternative, Sensitive Resource Management is designated for the smallest number of acres, and occurs on only one of the seven reservoirs. Compared to Alternative A, the action alternatives allocate fewer acres to developed uses (Project Operations, Developed Recreation) and greater acres to Natural Resource Conservation. Generally, implementation of the No Action Alternative would present a greater potential for environmental impacts than either of the action alternatives.

Between the action alternatives, Alternative B provides fewer opportunities for developed recreation than Alternative C. Because it contains slightly more land allocated to Developed Recreation, adoption of Alternative C would pose a slightly greater potential for ground disturbance and overall impacts than Alternative B, which generally has the lowest potential for impacts. However, under Alternative C, all 25 of the parcels that contain sensitive resources would be allocated to Zone 3 (Sensitive Resource Management), which is the most protective of sensitive resources. Under Alternative B, 14 of those parcels would be allocated to Zone 3, and 10 would be allocated to Zone 4. Under Alternative C, parcels on Fort Patrick Henry, South Holston, and Watauga reservoirs that contain state-listed plants, rare plant communities, cultural resources, and high-quality wetlands would be allocated to Zone 3, as compared to their allocation to Zone 4 under Alternative B.

Impacts to each resource under each of the three alternatives are summarized in Table 2-7 below. Mitigation measures designed to avoid or minimize impacts are included in Section 4.20.

Table 2-7. 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	Greatest Zone 6 land – beneficial effect on developed recreation. Least Zone 4 land – minor negative impact to dispersed recreation.	Greatest reduction of Zone 6 land, resulting in minor indirect impacts. Minor beneficial effects from increase in dispersed recreation opportunities.	Moderate reduction of Zone 6 land, resulting in minor indirect impacts. 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.	Lowest number of acres potentially affected; adverse impacts minor.	Lower number of acres affected than Alternative A; 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 potential direct and indirect impacts to rare plant community on Watauga Reservoir. Insignificant impacts to terrestrial wildlife.	Smallest area potentially affected; minor potential impacts to common plant species. Minor potential direct and indirect impacts to rare plant community on Watauga Reservoir. Insignificant impacts to terrestrial wildlife.	Area potentially affected smaller than Alternative A; minor potential impacts to common plant species. Lowest potential for impacts to rare plant community on Watauga Reservoir; potential impacts minor. Insignificant impacts to terrestrial wildlife.

Resource	Potential Impacts	Alternative		
		A – No Action	B – Proposed	C – Modified
Threatened and Endangered Plants and Terrestrial and Aquatic Animals	Direct impacts associated with clearing and ground disturbance; indirect impacts from habitat fragmentation, human visitation, spread of invasive species	No federally listed species affected. No significant direct or indirect impacts to known state-listed species.	No federally listed species affected. No significant impacts to known state-listed species.	No federally listed species affected. Most protective of state-listed plants. No significant impacts to known state-listed species.
Wetlands	Adverse effects to or destruction of wetlands from land clearing and ground disturbance	No direct impacts assuming protection under EO 11990; minor indirect impacts associated with dispersed recreation.	No adverse impacts assuming protection under EO 11990. Emphasis on preservation of natural habitat including wetlands; minor indirect impacts associated with dispersed recreation.	No adverse impacts assuming protection under EO 11990. Greatest emphasis on preservation of natural habitat including wetlands; minor indirect impacts associated with dispersed recreation.
Floodplains	Adverse impacts to floodplain values	Minor	Lowest due to increase in conservation lands.	
Cultural Resources	Damage to archaeological and historic properties	Greatest potential for impacts; effects avoided or mitigated through site-specific analysis and compliance with the programmatic agreement (PA) and Section 106 of the NHPA.	Lowest potential for impacts to archaeological resources, effects avoided or mitigated through site-specific analysis and compliance with the PA and Section 106 of the NHPA.	Lesser potential for impacts to archaeological resources, effects avoided or mitigated through site-specific analysis and 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.		
Visual Resources	Effects on scenic quality; gradual degradation of visual resources	Decline in visual resources on uncommitted lands over the long term.	Lowest potential for effects to visual resources; long-term beneficial effect of largest percentage of acres in Zones 3 and 4.	Potential for effects to visual resources lower than Alternative A, slightly greater than Alternative B; long-term beneficial effect of large percentage of acres in Zones 3 and 4.

Resource	Potential Impacts	Alternative		
		A – No Action	B – Proposed	C – Modified
Water Quality	Impacts from runoff of pollutants and soil erosion	Greater potential for adverse effects project-specific review and use of best management practices (BMPs) when appropriate; minor negative effects.	Lowest potential for ground disturbance; project-specific review and use of BMPs when appropriate; minor negative effects.	Potential for ground disturbance lower than Alternative A; project-specific review and use of BMPs when appropriate; minor negative effects.
Aquatic Ecology	Alteration of aquatic habitat primarily from shoreline modification	Greater potential for adverse effects; site-specific review and use of BMPs when appropriate; minor negative effects.	Lowest potential for ground disturbance; site-specific review and use of BMPs when appropriate; adverse effects negligible.	Potential for ground disturbance lower than Alternative A; site-specific review and use of BMPs when appropriate; adverse effects negligible.
Air Quality	Emissions from construction and development activities	Very low potential for impacts; project-specific review needed; adverse effects minor.		
Noise	Noise generated by facilities associated with Industrial, Project Operations, or Developed Recreation	Greatest potential for noise generation; no significant impacts.	Lowest potential for noise generation; no significant impacts.	Potential to generate noise smaller than Alternative A, but slightly greater than Alternative B; no significant impacts.
Socioeconomic Impacts and Environmental Justice	Effects to the local economy and populations	No noticeable effect on local economy. No disproportionate impacts to disadvantaged populations.		

2.7. The Preferred Alternative

The preferred alternative is Alternative C, the Modified Proposed Land Use Alternative, which provides suitable opportunities for developed recreation, conservation of natural resources, and management of sensitive resources. Under Alternative C, 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. Compared to Alternative B, Alternative C would provide more of the recreational opportunities in which the public expressed interest during scoping.