Appendix G – Supporting Data

Page intentionally blank

Table G-1. Acres of Prime Farmland and Farmland of Statewide Importance on Northeastern Tributary Reservoir Parcels

Reservoir	Parcel	Common Name	Total Acres in Parcel	Acres Prime Farmland	Acres Farmland of Statewide Importance	Allocation		
						Alternative A*	Alternative B	Alternative C
Beaver Creek	1	Sugar Hollow Park	38.3	0.0	1.6	6	6	6
Beaver Creek	2	Dam Reservation	40.5	0.0	1.2	2	2	2
Beaver Creek	3	Sugar Hollow Park	211.4	18.2	117.2	6	6	6
Boone	1	Dam Reservation	191.5	37.4	0.0	2	2	2
Boone	2	Dam Reservation	10.4	3.6	0.0	2	2	2
Boone	27	Deerlick Island	70.4	13.8	0.0	3	4	4
Boone	44	Green Tract	7.2	3.7	0.0	3	3	3
Clear Creek	1	Dam Reservation	13.8	0.0	2.5	2	2	2
Fort Patrick Henry	1	Tailwater/Island	17.6	17.6	0.0	2	3	3
Fort Patrick Henry	2	Kendrick Creek	0.8	0.8	0.0	7	7	7
Fort Patrick Henry	3	Island Below Dam	2.4	2.4	0.0	2	2	2
Fort Patrick Henry	4	Dam Reservation	69.0	3.1	0.0	2	2	2
Fort Patrick Henry	10	I-81	66.8	15.4	0.0	2	4	4
Fort Patrick Henry	15	Pitt Road	5.4	5.2	0.0	7	7	7
Fort Patrick Henry	19	Smith Shoals Subdivision	2.3	1.7	0.0	7	7	7
Fort Patrick Henry	29	Warriors Path State Park	17.6	3.4	0.0	6	6	6
South Holston	1	Emmett Tailwater	97.9	41.8	0.0	2	3	4
South Holston	2	Tailwater	139.5	75.5	0.0	2	4	4
South Holston	3	Dam Reservation	373.2	80.2	0.0	2	2	2
South Holston	4	Ruritan Ballfields	16.2	1.4	0.0	6	6	6
South Holston	5	Water Treatment Plant	24.4	3.5	0.0	2	2	2
South Holston	6	Industrial Park	125.4	6.5	0.0	5	5	5
South Holston	14	Sullivan County Park	229.6	3.6	0.0	6	6	6
South Holston	23	Spring Creek Marginal	1.4	0.0	1.3	6	4	6
South Holston	24	Washington County Park	56.3	0.0	14.6	6	6	6
South Holston	25	Wolf Creek	7.0	4.7	7.0	2	4	4
South Holston	26	Green Spring Fire Department	0.39	0.0	0.1	2	2	2

Reservoir	Parcel	Common Name	Total Acres in Parcel	Acres Prime Farmland	Acres Farmland of Statewide Importance	Allocation		
						Alternative A*	Alternative B	Alternative C
South Holston	28	Avens Bridge SW	0.3	0.0	0.3	4	4	4
South Holston	29	Webb Access	1.2	0.0	0.6	7	7	7
South Holston	30	Area 1 Ramp	3.3	0.0	1.9	6	6	6
South Holston	32	Access Area 7	7.4	3.1	2.9	6	6	4
South Holston	33	Area 6 Ramp	10.9	0.0	9.1	6	6	6
South Holston	35	Access Area 4	1.7	0.0	1.7	6	4	6
South Holston	36	Access Area 3	6.0	0.0	5.1	6	4	6
South Holston	73	Bouton River Access	82.7	71.3	0.0	2	2	2
Watauga	21	Williams Island	18.7	12.4	0.0	4	3	3
Total			**1,968.9**	**430.3**	**167.1**			

*Equivalent land use zones

Table G-2. Boone Reservoir
South Fork Holston River Flood Profiles

River Mile		100-Year Flood[1]	500-Year Flood[1]	Landmark
18.60		1385.0	1385.0	Boone Dam
19.93		1385.0	1385.0	Watauga River
22.40		1385.0	1385.0	Wagner Creek
22.60		1385.0	1385.0	Candy Creek
25.47		1385.0	1385.0	Muddy Creek
26.21		1385.0	1385.0	Devault Bridge
29.00		1385.0	1385.0	
29.50		1385.0	1385.1	
29.56		1385.0	1385.1	Beaver Creek
30.00		1385.0	1385.1	
30.60		1385.0	1385.1	
30.72	D*	1385.0	1385.1	Rainbow Bridge
30.72	U*	1385.0	1385.1	
31.00		1385.1	1385.1	
31.10		1385.1	1385.1	
31.70		1385.1	1385.1	
32.00		1385.1	1385.1	
32.20		1385.1	1385.1	
32.70		1385.1	1385.2	
33.00	D*	1385.1	1385.2	U. S. Highway 11E
33.00	U*	1385.1	1385.2	
33.70		1385.3	1385.7	
34.00		1385.5	1386.0	
34.41	D*	1385.7	1386.5	Andrew Johnson Highway
34.41	U*	1385.8	1386.8	
34.70		1386.2	1387.7	
34.78	D*	1386.4	1388.1	Southern Railway
34.78	U*	1386.6	1388.4	
34.90	D*	1386.9	1389.0	Swinging Bridge
34.90	U*	1386.9	1389.0	
35.00		1387.1	1389.4	
35.23	D*	1387.6	1390.2	Island Park Bridge
35.23	U*	1388.0	1390.8	
35.56		1390.6	1393.2	
36.00		1398.0	1401.1	
36.30		1403.3	1406.8	

[1]All Elevations are NGVD 1929
* Downstream and Upstream at Bridges

My documents\Reservoir Data\boone-sfholston for land plan.xls

Table G-3. Boone Reservoir
Watauga River Flood Profiles

River Mile		100-Year Flood[1]	500-Year Flood[1]	Landmarks
0.30		1385.0	1385.0	
4.80		1385.0	1385.0	Reedy Creek
5.60		1385.0	1385.0	
6.00		1385.0	1385.0	
6.77		1385.1	1385.1	
7.00		1385.1	1385.1	
7.38		1385.1	1385.1	
7.73		1385.1	1385.1	
8.00		1385.1	1385.1	
8.30		1385.1	1385.1	
8.58		1385.1	1385.2	Carroll Creek
8.89		1385.1	1385.2	
9.00		1385.1	1385.2	
9.60		1385.2	1385.3	
10.00		1385.3	1385.5	
10.74		1385.6	1385.8	
10.84		1385.6	1385.9	
10.97	D*	1385.7	1386.0	Andrew Johnson Hwy - Devault Bridge
10.97	U*	1385.8	1386.2	
11.00		1385.8	1386.2	
11.18		1385.9	1386.3	
11.30		1386.0	1386.5	
11.43		1386.1	1386.6	Knob Creek
11.88		1386.4	1387.1	
12.00		1386.4	1387.1	
12.47		1386.5	1387.2	
12.88		1386.5	1387.2	
13.00		1386.9	1387.7	
13.01	D*	1386.9	1387.7	Austin Springs Bridge
13.01	U*	1387.2	1388.2	
13.07		1387.4	1388.5	
13.33		1388.2	1389.4	
14.00		1390.1	1391.5	
14.01		1390.1	1391.5	
14.45		1391.9	1393.3	
15.00		1395.4	1397.1	
15.59	D*	1399.2	1401.0	Gibson Bridge
15.59	U*	1399.5	1401.3	
15.80		1402.7	1404.4	

[1]All Elevations are NGVD 1929
Downstream and Upstream at Bridges

Table G-4. Watauga River Flood Profiles Downstream of Wilbur Dam

River Mile	100-Year Flood[1]	500-Year Flood[1]	Landmark
33.40	1584.8	1585.3	Lower Limit of TVA Property
33.68	1586.2	1586.6	
34.00	1587.4	1587.8	Downstream of Wilbur Dam

[1]All Elevations are NGVD 1929

Table G-5. Boone Reservoir
South Fork Holston River Flood Profiles Downstream of South Holston Dam

River Mile		100-Year Flood[1]	500-Year Flood[1]	Landmark
46.50		1472.6	1475.1	
46.79		1474.8	1477.4	
47.00		1476.1	1478.8	
48.00		1482.2	1485.4	
48.26	D*	1483.8	1487.1	Bristol Water Works Dam
48.26	U*	1484.0	1487.1	
48.32		1484.5	1487.5	
48.43	D*	1485.4	1488.3	Osceola Island Foot Bridge
48.43	U*	1485.5	1488.4	
48.49	D*	1486.0	1488.8	TVA Labyrinth Weir
48.49	U*	1487.4	1489.1	
48.52		1487.6	1489.3	
48.56		1487.8	1489.6	
48.64		1488.2	1490.1	
48.80		1489.2	1491.3	
49.00		1490.5	1492.9	
49.04		1490.7	1493.2	
49.27		1492.8	1495.8	
49.44		1494.8	1498.5	
49.52		1495.1	1498.8	
49.80		1495.6	1499.2	Downstream of South Holston Dam

[1]All Elevations are NGVD 1929
* Downstream and Upstream at Bridges, Dams, and/or Weirs

Table G-6. South Fork Holston River Flood Profiles Downstream of Fort Patrick Henry Dam

River Mile		100-Year Flood[1]	500-Year Flood[1]	Landmark
7.40		1205.4	1211.4	Lower Limit of TVA Property
7.68		1206.6	1212.5	
7.95	D*	1207.9	1213.8	U. S. Highway 23
7.95	U*	1208.5	1214.5	
8.20		1209.6	1215.5	Downstream of South Holston Dam

[1]All Elevations are NGVD 1929
* Downstream and Upstream at Bridge

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

September 4, 2008

Mr. E. Patrick McIntyre, Jr.
State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

NORTHEASTERN TRIBUTARIES LAND MANAGEMENT PLAN, GREENE, CARTER, AND SULLIVAN COUNTIES, TENNESSEE

Dear Mr. McIntyre:

The Tennessee Valley Authority (TVA) is developing a Land Management Plan (LMP) for TVA lands on Beaver Creek, Boone, Cherokee, Clear Creek, Douglas, Fort Patrick Henry, Nolichucky, South Holston, Watauga, and Wilbur Reservoirs in Virginia and Tennessee.

In Tennessee, the southern portion of the Holston Reservoir extends into Sullivan County, Tennessee. South Holston, Boone, and Fort Patrick Henry Reservoirs lie on the South Fork of the Holston River near Kingsport, Tennessee. Watauga and Wilbur Reservoirs impound portions of the Watauga River which converges with the South Fork of the Holston River to form the Holston River. Cherokee Reservoir is located approximately halfway between this confluence and the city of Knoxville, Tennessee. To the south of the Holston River lies the Nolichucky Reservoir (or Davy Crockett Lake) on the Nolichucky River halfway between the headwaters and its confluence with the French Broad River. Douglas Reservoir lies on the French Broad River below the Nolichucky River to the east and above Knoxville to the west.

TVA prepares LMPs with the participation of public agencies and officials, private organizations, and the public to provide a clear statement of how TVA will manage public land. Identifying land for specific uses minimizes conflicting land uses and makes it easier to handle requests for use of public land. For the LMP currently being prepared, TVA Cultural Resources staff has identified the area of potential effects (APE) pursuant to 36 CFR Parts 800.4(a)(1) and 80.16(d) as the 880 acres on Boone, 9120 acres on Cherokee, 2055 acres on Douglas, 283 acres on Fort Patrick Henry, 1143 acres on Nolichucky, 2099 acres on South Holston, 1136 acres on Watauga, and 58 acres on Wilbur Reservoir in Tennessee. Future use of these lands is being planned or has been previously committed to specific land uses. Maps depicting the specific land parcels to be addressed by the LMP may be accessed on TVA's website at http://www.tva.com/environment/reports/ntrlmp/index.htm. However, if you require hard copies for your initial review, our office will be glad to furnish a set.

Mr. E. Patrick McIntyre, Jr.
Page 2
September 4, 2008

TVA has previously conducted cultural resources surveys on portions of the lands addressed by this LMP, and numerous historic properties potentially eligible for listing on the National Register of Historic Places have been identified by these surveys. TVA has also conducted a survey of certain parcels on Nolichucky, South Holston, and Watauga Reservoirs that are associated with the proposed LMP (Gage 2008). A copy of this report is included for your review.

Pursuant to 36 CFR Part 800.3(f)(2) of the Advisory Council's regulations, TVA is also inviting Indian tribes that might attach religious or cultural significance to historic properties in the APE to be consulting parties. Because of the location of this project, TVA is inviting the following groups to be consulting parties to the proposed project: Cherokee Nation, Eastern Band of the Cherokee Indians, United Keetoowah Band of Cherokee Indians in Oklahoma, Muscogee (Creek) Nation of Oklahoma, Thlopthlocco Tribal Town, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Kialegee Tribal Town, Absentee Shawnee Tribe of Oklahoma, Shawnee Tribe, Eastern Shawnee Tribe, The Chickasaw Nation, and the Choctaw Nation of Oklahoma.

TVA requests your concurrence that the existing Programmatic Agreement between TVA and the Tennessee State Historic Preservation Officer would fulfill TVA's obligations under section 106 of the *National Historic Preservation Act* regarding the effects of the LMP on historic properties in Tennessee.

If you have any questions or need additional information, please contact Ted Wells at (865) 632-2259 or by email: ewwells@tva.gov.

Sincerely,

Thomas O. Maher, Ph.D.
Manager
Cultural Resources

EWW:IKS
Enclosure
cc: Ms. Jennifer Barnett
Tennessee Division of Archaeology
Cole Building # 3
1216 Foster Avenue
Nashville, Tennessee 37210

Files, CR, WT 11D-K

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

September 26, 2008

Dr. Thomas O. Maher
Tennessee Valley Authority
400 West Summet Hill Dr.
Knoxville, Tennessee, 37902-1499

RE: TVA, NORTHEAST TRIBUTARIES LAND MANAGEMENT PLAN, UNINCORPORATED, MULTI COUNTY

Dear Dr. Maher:

Pursuant to your request, received on Tuesday, September 9, 2008, this office has reviewed documentation concerning the above-referenced undertaking. This review is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739)

Based on the information provided, we find that the current documentation adequately mitigates project effects upon properties eligible for listing in the National Register of Historic Places as stipulated in the existing Programmatic Agreement (PA).

Therefore, this office has no objection to the implementation of referenced project elements covered by the PA. Your continued cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg

May 09 06 04:28p ACHP 606 5072 p.2

Preserving America's Heritage

October 11, 2005

Mr. J. Bennett Graham
Senior Archaeologist
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1401

REF: Programmatic Agreement for proposed land plans in Tennessee

Dear ~~Mr. Graham:~~ Bennett

Enclosed is the executed Programmatic Agreement for the referenced program. By carrying out the terms of the Agreement, the Tennessee Valley Authority will have fulfilled its responsibilities under Section 106 of the National Historic Preservation Act and the Council's regulations.

We appreciate your cooperation in reaching this Agreement. If you have any questions, please call Dr. Tom McCulloch at 202-606-8554.

Sincerely,

Don L. Klima
Director
Office of Federal Agency Programs

Enclosure

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 809 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

PROGRAMMATIC AGREEMENT
AMONG
THE TENNESSEE VALLEY AUTHORITY,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE TENNESSEE STATE HISTORIC PRESERVATION OFFICER
REGARDING THE IMPLEMENTATION OF RESERVOIR LAND MANAGEMENT PLANS IN TENNESSEE

WHEREAS, the Tennessee Valley Authority (TVA) has proposed to develop Reservoir Land Management Plans for TVA land holdings within the State of Tennessee, these reservoirs being Boone in Sullivan and Washington Counties; Cherokee in Grainger, Hamblen, Hawkins, and Jefferson Counties; Chickamauga in Bradley, Hamilton, McMinn, Rhea, and Meigs Counties; Douglas in Cocke, Jefferson, and Sevier Counties; Fort Loudoun in Blount, Knox, and Loudon Counties; Fort Patrick Henry in Sullivan and Hawkins Counties; Great Falls in Van Buren, Warren, and White Counties; Guntersville in Marion County; Kentucky in Benton, Decatur, Hardin, Henry, Houston, Humphreys, Perry, Stewart, and Wayne Counties; Melton Hill in Anderson, Knox, Loudon, and Roane Counties; Nickajack in Hamilton and Marion Counties; Nolichucky in Green County; Normandy in Bedford and Coffee Counties; Norris in Anderson, Campbell, Claiborne, Grainger, and Union Counties; Ocoee #1, #2, and #3 in Polk County; Pickwick in Hardin County; South Holston in Sullivan County; Watauga in Carter and Johnson Counties; Watts Bar in Loudon, Meigs, Rhea, and Roane Counties; Wilbur in Carter County; and the Beech River Project consisting of Beech, Cedar, Dogwood, Lost Creek, Pin Oak, Pine, Redbud, and Sycamore Reservoirs in Henderson County, Tennessee; and

WHEREAS, TVA has determined that the implementation of the Land Management Plans has the potential to affect historic properties that are eligible for listing in the National Register of Historic Places (NRHP); and

WHEREAS, TVA has consulted with the Advisory Council on Historic Preservation (Council), the Tennessee State Historic Preservation Officer (SHPO), the Eastern Band of Cherokee Indians, the United Keetoowah Band, the Cherokee Nation of Oklahoma, Chickasaw Nation, the Muscogee (Creek) Nation of Oklahoma, the Poarch Band of Creek Indians, the Alabama-Coushatta Tribe, the Alabama-Quassarte Tribal Town, the Kialegee Tribal Town, the Mississippi Band of Choctaw Indians, the Choctaw Nation of Oklahama, the Jena Band of Choctaw Indians, the Seminole Nation of Oklahoma, the Seminole Indian Tribe, the Eastern Shawnee Tribe of Oklahoma, and the Absentee-Shawnee Tribe of Oklahoma pursuant to 36 CFR Part 800, the regulations of the Council implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Eastern Band of Cherokee Indians, the Chickasaw Nation, the Choctaw Nation of Oklahoma, and the Muscogee (Creek) Nation of Oklahoma have been invited to be a signatory to the Programmatic Agreement; and will assist TVA in determining NRHP eligibility of historic properties and appropriateness of treatment plans for historic properties which have religious or cultural significance to the Eastern Band of Cherokee Indians, Chickasaw Nation, the Choctaw Nation of Oklahoma, and/or the Muscogee (Creek) Nation of Oklahoma that will be adversely affected by TVA Land Management Plans; and

WHEREAS, TVA has conducted complete or partial investigations to identify historic properties on portions of lands considered in the Reservoir Land Management Plans; and

WHEREAS, 36 CFR Part 800.14(b) of the regulations of the Council encourages the use of Programmatic Agreements when effects on historic properties are regional in scope and cannot be fully determined prior to the approval of the undertaking; and

WHEREAS, TVA will develop a Reservoir Land Management Plan at each of these reservoirs which will clearly identify the area of potential effect (APE) for each reservoir;

NOW THEREFORE, TVA, the Council, the SHPO, the Eastern Band of Cherokee Indians, Chickasaw Nation, the Choctaw Nation of Oklahoma and the Muscogee (Creek) Nation of Oklahoma agree that the undertaking shall be implemented in accordance with the following stipulations to satisfy TVA's Section 106 responsibilities for Reservoir Land Management Plans. The TVA Federal Preservation Officer, or the designee thereof, shall act for TVA in all matters concerning the administration of this Agreement.

Stipulations

TVA will ensure that the measures outlined below are a part of all Reservoir Land Management Plans developed by TVA within the state of Tennessee, and that these provisions relating to identification, evaluation, and treatment of historic properties are carried out within the APE prior to the commencement of any ground-disturbing activities or activities that may have visual or other effects on a historic property. This Agreement allows phased identification, evaluation, and treatment of the historic properties located within the APE.

1. CONSULTATION:

TVA will seek comments from all appropriate consulting parties as defined at 36 CFR 800.2(c), and from signatories to this agreement on any undertaking proposed pursuant to a Reservoir Land Management Plan. All comments received in response to such requests for comments will be taken into consideration by TVA in its decision to proceed with such undertaking.

2. AREA OF POTENTIAL EFFECT (APE):

The APE is defined as all TVA fee lands described in the Reservoir Land Management Plan and those private or other non-TVA lands which may be affected by an undertaking on TVA fee land.

3. IDENTIFICATION:

A. TVA shall conduct surveys to identify all historic properties within the APE for each Reservoir Land Management Plan. Previous inventories of TVA lands have identified some but not necessarily all historic properties eligible and potentially eligible for listing in the NRHP.

B. The surveys will be carried out in a manner consistent with the *Secretary of the Interior's Standards and Guidelines for Identification* (48 FR 44720-23) and the Tennessee SHPO Standards and Guidelines for Architectural and Archaeological Resource Management Studies. Survey Plans will be provided to all signatories for thirty (30) days for review and comment, and TVA shall take all comments into account prior to implementation. A written report of the survey shall be submitted to the SHPO, Indian tribes, and the other signatories for thirty (30) days for review and comment. Existing information such as previous survey data, photographs, maps, drawings, building plans, descriptions, sketches, etc. shall be used along with new data.

2

4. EVALUATION:

A. TVA, in consultation with the SHPO, Indian tribes, and the other signatories to this Agreement, shall evaluate the National Register eligibility of properties identified through the surveys in accordance with 36 CFR Part 800.4(c). For properties that have been determined to be potentially eligible for listing in the NRHP, TVA shall conduct evaluation studies in a manner consistent with the *Secretary of the Interior's Standards and Guidelines for Identification and Evaluation* (48 FR 44720-26) and the Tennessee SHPO Standards and Guidelines for Architectural and Archaeological Resource Management Studies. The SHPO, Indian tribes, and the other signatories shall review and comment on the scope of work (SOW) prior to the evaluation. The evaluations shall be conducted in consultation with the SHPO, Indian tribes, and the other signatories, and a written report shall be submitted to all signatories for thirty (30) days for review and comment.

B. Properties which have been evaluated and have been found to meet National Register criteria shall be considered historic properties. Should a dispute arise on the eligibility of a historic property, TVA will consult with the SHPO to resolve the objection. If TVA and the SHPO do not agree with the determination of eligibility, or if the Council or the Secretary of the Interior (Secretary) so request, TVA shall obtain a determination of eligibility from the Secretary pursuant to 36 CFR Part 63. If an Indian tribe that attaches religious and cultural significance to a property off tribal land does not agree with the determination of eligibility, it may ask the Council to request the TVA Federal Preservation Officer to reassess the determination of eligibility.

5. TREATMENT PLANS:

A. AVOIDANCE, PROTECTION, AND MAINTENANCE:

(1) TVA, in consultation with the SHPO, Indian tribes, and the other signatories, shall ensure that historic properties determined eligible for listing in the NRHP are, to the extent prudent and feasible as determined by the consultation process, avoided and preserved in place while conducting activities that could affect the characteristics of such property. In the implementation of the Reservoir Land Management Plans, alternatives to avoid adversely affecting historic properties eligible for the NRHP will be considered. All eligible historic properties, that are avoided, will be protected by a buffer zone established in consultation with the SHPO, Indian tribes, and the other signatories.

(2) TVA will develop a protection and maintenance plan for historic properties on a particular reservoir within two (2) years of the completion of a Reservoir Land Management for that reservoir as specified under Stipulation10.B. of this Agreement. This plan will be consistent with the standards for archaeological resources set forth in *Treatment of Archaeological Properties* (Advisory Council on Historic Preservation 1989), and with the recommended approaches to rehabilitation of historic structures set forth in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (U.S. Department of the Interior, National Park Service, 1983). Furthermore, this plan will be developed in consultation with the SHPO, Indian tribes, and the other signatories. TVA will seek and consider the views of other consulting parties pursuant to 36 CFR Part 800.3(f).

B. DATA RECOVERY:

(1) When historic properties eligible for the NRHP will be adversely affected by unavoidable physical destruction or damage and all avenues of avoidance have been considered, and a treatment plan for data recovery is found through consultation with the signatories to this Agreement and Indian tribes having a cultural affiliation with the historic properties to be the appropriate treatment, data recovery will be implemented. In such an instance, TVA shall develop a data recovery plan in consultation with the SHPO, Indian tribes, and the other signatories for the recovery of historic and archaeological data from properties that are determined to be eligible for inclusion in the NRHP.

(2) The data recovery plan shall be developed in accordance with 36 CFR Part 800.5 and 800.16 and will be consistent with 36 CFR Part 800 and the standards set forth in *Archeology and Historic Preservation: Secretary of Interior's Standards and Guidelines.* The data recovery plan shall specify, at a minimum:

(a) the property, properties, or portions of properties where data recovery is to be carried out;

(b) any property, properties, or portions of properties that will be destroyed without data recovery;

(c) the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

(d) the field and laboratory methods to be used, with an explanation of their relevance to the research questions;

(e) the methods to be used in analysis, data management, and dissemination of data, including a schedule;

(f) the proposed disposition of recovered materials and records. The proposed location of this material will be at the University of Tennessee, McClung Museum except for items specified under Stipulation 9 below;

(g) proposed methods for involving the interested public in data recovery;

(h) proposed methods for disseminating results of the work to the interested public;

(i) a proposed schedule for the submission of progress reports to the SHPO; and

(j) a plan, developed in consultation with the SHPO, Indian tribes, and the other signatories, delineating the manner in which historic properties, human remains, and associated funerary objects discovered subsequent to the ratification of this Agreement document would be treated.

(3) TVA shall provide all signatories an opportunity to monitor the implementation of the data recovery plan.

6. POST REVIEW DISCOVERIES:

Previously unidentified historic properties discovered during the implementation of the Reservoir Land Management Plans will be subject to the evaluation process under Stipulation 4 and treated according to the process under Stipulation 5.

Should historic properties be discovered on TVA lands, the discovered historic properties shall be protected and stabilized to prevent any further disturbance until TVA can make an informed decision about further steps to take to meet Federal agency obligations under Section 106 and the terms of this Agreement.

7. REPORTS:

TVA shall ensure that all historical and archaeological investigations undertaken for compliance with this Agreement are recorded in formal written reports that meet the *Archeology and Historic Preservation: Secretary of Interior's Standards and Guidelines* and the Tennessee SHPO Standards and Guidelines for Architectural and Archaeological Resource Management Studies. The SHPO, Indian tribes, and the other signatories shall be afforded thirty (30) days to review and comment on any archaeological or historical reports submitted under this Agreement.

8. SHORELINE STABILIZATION:

Consistent with its obligations under Section 110 of the NHPA, TVA will monitor reservoir shorelines to determine whether any historic properties are being affected by reservoir operation and/or vandalism. TVA will implement appropriate measures, in consultation with the SHPO, Indian tribes, and the other signatories to protect eligible historic properties that are determined to be adversely affected by such causes.

Since fiscal year 1999, TVA has been pursuing a systematic effort in identifying the most significant and endangered archaeological sites along its reservoir shorelines and stabilizing/protecting them. All stabilization to date has been coordinated with the requisite SHPO and Indian tribes.

9. TREATMENT OF HUMAN REMAINS:

A. TVA shall ensure that the treatment of any human remains discovered within the APE complies with all State and Federal laws, including the Native American Graves Protection and Repatriation Act (NAGPRA), concerning archaeological sites and treatment of human remains. Regarding human remains identified on State lands, TVA shall ensure that the remains be treated in a manner that is consistent with the Advisory Council of Historic Preservation's *Policy Statement Regarding the Treatment of Human Remains and Grave Goods* (1988), and in accordance with Tennessee Code Annotated (T.C.A.) 46-4-101 et seq. "Termination of Use of Land as a Cemetery," and T.C.A. 11-6-116b, "Notification and Observation," and T.C.A. 11-6-119 "Reinterment" with implementing Tennessee Rules and Regulations Chapter 0400-9-1 "Native American Indian Cemetery Removal and Reburial." Should human remains be encountered during historic properties investigations or post-review discovery, all ground disturbing activities in the vicinity of the human remains will be ceased immediately. TVA will notify signatories within three (3) business days and invite them to comment on any plans developed to treat the human remains.

B. After consultation with signatories and culturally affiliated Indian tribes in accordance with the provisions of NAGPRA, if any Native American human remains and/or associated funerary objects are excavated during the survey, evaluation, or data recovery of historic properties, TVA shall ensure that these remains and associated objects will be repatriated in accordance with the provisions of NAGPRA within sixty (60) days of completion of any investigations specified in the research design. The temporary curation of the human remains and associated funerary objects will be at the University of Tennessee, McClung Museum during this interim.

10. TIMETABLES FOR COMPLIANCE:

A. Consistent with Stipulation 11 that allows phased compliance, TVA shall ensure that the commitments in this Agreement are met prior to commencement of any ground-disturbing activities. In the event that previously unidentified historic properties should be encountered during the implementation of any ground-disturbing activities, consultation with the SHPO, Indian tribes, and the other signatories will be conducted to determine where work can resume while the effects to the historic property are addressed.

B. Within two (2) years of completion of a Reservoir Land Management plan in Tennessee, TVA will develop a plan for protection and maintenance of historic properties at that particular reservoir. The plan will be submitted to the SHPO, Indian tribes, and the other signatories for review pursuant to Stipulation 5.A(2).

C. Throughout this agreement, unless otherwise stated, the SHPO, Indian tribes, and the other signatories shall have thirty (30) days to review and comment on all reports concerning investigations of historic properties and proposed data recovery plans provided by TVA. Comments received from the signatories shall be taken into consideration in preparing final plans. A copy of the final reports and data recovery plans shall be provided to the signatories.

11. PHASED COMPLIANCE:

Consistent with 36 CFR Part 800.4(b)(2), this Agreement allows phased identification, evaluation, and treatment of historic properties in order to meet the requirements of Section 106 of the National Historic Preservation Act (NHPA).

12. LAND TRANSFER OF PROPERTY RIGHTS:

The instrument of conveyance for the transfer, lease or sale, of any parcel containing or that may contain a historic property from the Federal Government to a third party will include provisions to ensure that all requirements of Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) are met. The instrument of conveyance shall contain, when necessary to protect historic properties, a legally binding preservation covenant for the protection of such properties prepared in consultation with the SHPO, Indian tribes, and the other signatories. TVA may release the grantee from the preservation covenant in whole or in part, as appropriate, pursuant to the terms of the covenant and after consultation with the SHPO, Indian tribes, and the other signatories. The covenant may be enforced by TVA or the United States of America.

13. ADMINISTRATIVE CONDITIONS:

A. If Stipulations 1 - 12 have not been implemented within ten (10) years, this Agreement shall be considered null and void, unless the signatories have agreed in writing as provided in Paragraph 13.B. below to an extension for carrying out its terms. If no agreement is reached on an extension at the end of this 10-year period, TVA and the SHPO will resume consultation pursuant to 36 CFR Part 800.

B. If Stipulations 1 - 12 have not been implemented within nine (9) years from the date of this Agreement's execution TVA and the SHPO shall review the Agreement to determine whether the Agreement should be extended. If an extension is deemed necessary, TVA, the Council, and the SHPO and other signatories will consult to make appropriate revisions to the Agreement.

C. The signatories to this Agreement shall consult at least once every year to review implementation of the terms of this Agreement. Prior to the reviews, TVA shall provide to the signatories a report detailing how it has carried out its obligations pursuant to this Agreement.

D. The Council, SHPO, Indian tribes and the other signatories may monitor activities carried out pursuant to the Agreement, and the Council will review such activities if so requested. TVA will cooperate with the Council, SHPO, Indian tribes and the other signatories in carrying out their monitoring and review responsibilities.

E. The signatories to this Agreement may agree to amend the terms of the Agreement. Such amendment shall be effective upon the signatures of all signatories to this Agreement, which shall be appended to the Agreement as an attachment.

F. Should the SHPO, Indian tribes and the other signatories object within thirty (30) days after receipt of any plans, specifications, contracts, or other documents provided for review pursuant to this Agreement, TVA shall consult with the SHPO to resolve the objection. If TVA determines that the objection cannot be resolved, TVA shall request the further comments of the Council pursuant to 36 CFR Part 800. Any Council comment provided in response to such a request will be taken into account by TVA in accordance with 36 CFR Part 800 with reference only to the subject of the dispute; TVA's responsibility to carry out all actions under this Agreement that are not the subjects of the dispute will remain unchanged.

G. In the event the SHPO is unable to fulfill its responsibilities pursuant to this Agreement, TVA shall consult with the Council on an appropriate course of action for implementing the terms of this Agreement.

H. If the Council determines that the terms of this Programmatic Agreement are not being carried out, or if this Agreement is terminated, TVA shall comply with subpart B of 36 CFR Part 800 with regard to individual Reservoir Land Management Plans covered by this Agreement.

I. TVA shall ensure that public involvement in addition to its outreach to the signatories to this Agreement is conducted pursuant to 36 CFR Part 800.14 by inviting comment through Public meetings, Public notices, or other appropriate mechanisms as may be agreed upon by the signatories.

Execution and implementation of this Programmatic Agreement evidences that TVA has taken into account the effects on historic properties resulting from its action to develop Reservoir Land Management Plans in Tennessee and TVA has thereby complied with its obligations under Section 106 of National Historic Preservation Act for these actions..

SIGNATORIES:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: 10/11/05
[ ]

TENNESSEE VALLEY AUTHORITY

By: _____ Date: 7.20.05
[ ]

TENNESSEE STATE HISTORIC PRESERVATION OFFICER

By: Herbert L. Harper, DSHPO Date: 8/23/05
[ ]

CONCURRING PARTIES:

EASTERN BAND OF CHEROKEE INDIANS

By: _____ Date: _____
[ ]

CHICKASAW NATION

By: _____ Date: _____
[ ]

CHOCTAW NATION OF OKLAHOMA

By: _____ Date: _____
[ ]

MUSCOGEE (CREEK) NATION OF OKLAHOMA

By: _____ Date: _____
[ ]

By: _____ Date: _____
[ ]

By: _____ Date: _____
[ ]

Table G-7. State-designated impaired TVA reservoirs and tailwaters within the scope of the Northeastern Tributary Reservoirs Land Management Plan.

Waterbody ID	Affected Waterbody	State	County	Miles/Acres Impaired	Cause	Pollutant Source
TN060101012 001 - 2000	South Fork Holston River	TN	Sullivan	2.4 miles	Low dissolved oxygen Flow alteration Thermal Modification	Upstream Impoundment (Fort Patrick Henry)
TN06010102 006 - 1000	Boone Reservoir	TN	Washington Sullivan	4400 ac	PCBs Chlordane	Contaminated Sediment
TN06010102 014 - 1000	South Fork Holston River	TN	Sullivan	4.4 miles	Flow alteration Thermal Modification	Upstream Impoundment (South Holston)
TN06010102 015 - 1000	South Holston Reservoir	TN	Sullivan	7577 ac	Mercury	Atmospheric Deposition
TN06010103 020 - 1000	Watauga Reservoir	TN	Carter Johnson	6427 ac	Mercury	Atmospheric Deposition

Table G-8. TVA's Reservoir Ecological Health ratings for dissolved oxygen, sediment quality, chlorophyll, benthic macroinvertebrates, and fish assemblage at each location monitored on Northeastern Tributary Reservoirs.

Location	Monitoring Years																	Rating Summary*
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Boone Forebay																		
Dissolved Oxygen	Fair	Good	Fair	Good	Good	*NS*	Fair	*NS*	Poor	*NS*	Poor	Poor	Good	Fair	Poor	Poor	Poor	G/F/P
Sediment	*NS*	*NS*	Fair	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Good	F
Chlorophyll	Fair	Fair	Good	Good	Fair	*NS*	Poor	*NS*	Poor	*NS*	Fair	Poor	Poor	Poor	Good	Poor	Fair	G/F/P
Benthic Community	*NS*	*NS*	**	Fair	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	*NS*	Poor	*NS*	Fair	*NS*	Poor	F/P
Fish Community	**	**	Poor	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	F
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Boone Mid-Res South Holston																		
Dissolved Oxygen	Poor	Poor	Poor	Poor	Poor	*NS*	Good	*NS*	Poor	*NS*	Poor	Poor	Good	Poor	Poor	Poor	Poor	P
Sediment	*NS*	*NS*	Fair	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	F
Chlorophyll	Poor	Poor	Fair	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	Poor	Poor	Poor	Poor	Poor	Poor	P
Benthic Community	*NS*	*NS*	**	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	P
Fish Community	**	**	Fair	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	F
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Boone Mid-Res Watauga																		
Dissolved Oxygen	Good	Fair	Fair	Good	Good	*NS*	Good	*NS*	Good	*NS*	Good	Good	Good	Good	Good	Good	Good	G
Sediment	*NS*	*NS*	Poor	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	*NS*	Fair	*NS*	Fair	P → F
Chlorophyll	Poor	Poor	Fair	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	Poor	Poor	Poor	Poor	Poor	Poor	P
Benthic Community	*NS*	*NS*	**	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	P
Fish Community	**	**	Fair	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	F

Location	Monitoring Years																	Rating
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Summary*
Fort Pat Forebay																		
Dissolved Oxygen	*NS*	*NS*	Good	Good	Good	Good	Good	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	Good	Good	G
Sediment	*NS*	*NS*	Good	Fair	Fair	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Good	*NS*	Good	G/F
Chlorophyll	*NS*	*NS*	Fair	Poor	Poor	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Good	*NS*	Poor	Poor	Poor	P
Benthic Community	*NS*	*NS*	**	Fair	Poor	Fair	Poor	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Poor	F/P
Fish Community	*NS*	*NS*	Fair	Fair	Poor	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Poor	*NS*	Fair	*NS*	Fair	F/P
Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
South Holston Forebay																		
Dissolved Oxygen	Poor	Poor	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	Poor	P
Sediment	*NS*	*NS*	Good	Good	*NS*	Fair	*NS*	Fair	*NS*	Good	*NS*	Fair	*NS*	Good	*NS*	Good	*NS*	G/F
Chlorophyll	Good	Good	Good	Fair	*NS*	Good	*NS*	Good	*NS*	Good	Good	Good	Good	Good	Good	Good	Fair	G
Benthic Community	*NS*	*NS*	**	Fair	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	P
Fish Community	**	**	Good	Good	*NS*	Good	*NS*	Good	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	G/F
Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
South Holston Mid-Res																		
Dissolved Oxygen	Poor	Poor	Poor	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	Poor	Poor	Poor	P
Sediment	*NS*	*NS*	Fair	Good	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Good	*NS*	Good	*NS*	G/F
Chlorophyll	Good	Good	Good	Good	*NS*	Good	*NS*	Fair	*NS*	Poor	Poor	Fair	Fair	Good	Fair	Poor	Good	G→G/F/P
Benthic Community	*NS*	*NS*	**	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	*NS*	P
Fish Community	**	**	Good	Fair	*NS*	Fair	*NS*	Good	*NS*	Fair	*NS*	Fair	*NS*	Good	*NS*	Fair	*NS*	G/F

Location	Monitoring Years																	Rating Summary*
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Watauga Forebay																		
Dissolved Oxygen	Fair	Good	Good	Fair	*NS*	Good	*NS*	Fair	*NS*	Fair	*NS*	Good	*NS*	Good	Good	Fair	Fair	G/F
Sediment	*NS*	*NS*	Fair	Good	*NS*	Good	*NS*	Fair	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	NS	G/F
Chlorophyll	Good	Good	Good	Good	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	Good	Good	Good	G
Benthic Community	*NS*	*NS*	**	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Poor	*NS*	Fair	*NS*	P
Fish Community	**	**	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	F
Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Watauga Mid-Res																		
Dissolved Oxygen	Fair	Fair	Fair	Poor	*NS*	Fair	*NS*	Poor	*NS*	Poor	*NS*	Poor	Poor	Good	Poor	Poor	Poor	F/P
Sediment	*NS*	*NS*	Fair	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Good	NS	F
Chlorophyll	Good	Good	Good	Good	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	*NS*	Good	Good	Good	Good	G
Benthic Community	*NS*	*NS*	**	Fair	*NS*	Poor	*NS*	Poor	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	Fair	*NS*	P/F
Fish Community	**	**	Good	Fair	*NS*	Fair	*NS*	Good	*NS*	Fair	*NS*	Good	*NS*	Fair	*NS*	Fair	*NS*	G/F

* = The rating summaries represent the typically rating for each indicator and may not reflect all the rating categories applied to a given indicator.
Rating Summary Codes: *G = Good; F = Fair; P = Poor; more than one rating code (e.g., G/F) for an indicator means that ratings have fluctuated generally between the rating categories shown; an arrow (→) between rating codes signifies that the indicator has exhibited a trend towards either improved or lower ratings.*
NS = Not Sampled
** = The difference in reservoir benthic scoring methodology from 1990-1993 prevents a direct comparison to results from 1994-2007, and a difference in RFAI scoring methodology from 1990-1992 prevents a direct comparison to results from 1993-2007.

Table G-9. Invasive Exotic Pest Plants Rank 1 – Severe Threat*

Common Name	Scientific Name
Air-potato	*Dioscorea oppositifolia L.*
Amur bush honeysuckle	*Lonicera maackii (Rupr.) Maxim.*
Asian bittersweet	*Celastrus orbiculata Thunb.*
Autumn olive	*Elaeagnus umbellata Thunb.*
Bush honeysuckle	*Lonicera x bella Zabel*
Camus Nepalgrass, Japanese grass	*Microstegium vimineum (Trin.) A.*
Chinese privet	*Ligustrum sinense Lour.*
Common privet	*Ligustrum vulgare L.*
Common reed	*Phragmites australis (Cav.) Trin. ex Steud.*
English ivy	*Hedera helix L.*
Eurasian water milfoil	*Myriophyllum spicatum L.*
Garlic-mustard	*Alliaria petiolata (Bieb.) Cavara & Grande*
January jasmine	*Lonicera fragrantissima Lindl. & Paxton*
Japanese honeysuckle	*Lonicera japonica Thunb.*
Japanese knotweed, Japanese bamboo	*Polygonum cuspidatum Seib. & Zucc*
Japanese spiraea	*Spiraea japonica L.f.*
Johnson grass	*Sorghum halepense (L.) Pers.*
Kudzu	*Pueraria montana (Lour.) Merr.*
Mimosa	*Albizia julibrissin Durz.*
Morrow's bush honeysuckle	*Lonicera morrowii A. Gray*
Multiflora rose	*Rosa multiflora Thunb.*
Princess tree	*Paulownia tomentosa (Thunb.) Sieb. & Zucc. ex Steud*
Purple loosestrife	*Lythrum salicaria L. [all varieties and cultivars]*
Sericea lespedeza	*Lespedeza cuneata (Dum.-Cours.) G. Don*
Tartarian honeysuckle, twinsisters	*Lonicera tatarica L.*
Thorny-olive	*Elaeagnus pungens Thunb.*
Tree of heaven	*Ailanthus altissima (Mill.) Swingle*
Tropical soda apple	*Solanum viarum Dunal*
Winter creeper	*Euonymus fortunei (Turcz.) Hand.-Mazz.*

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*. Retrieved from < http://www.tneppc.org/>. (Accessed: September 23, 2008

* Rank 1 — Severe Threat: Exotic plant species that possess characteristics of invasive species and spread easily into native plant communities and displace native vegetation

Table G-10. Invasive Exotic Pest Plants Rank 2 – Significant Threat*

Common Name	Scientific Name
Alligatorweed	*Alternanthera philoxeroides* (Mart.) Griseb.
Asian spiderwort	*Murdannia keisak* (Hassk.) Hand.-Mazz.
Bicolor lespedeza, shrubby bushclover	*Lespedeza bicolor* Turcz.
Bull thistle	*Cirsium vulgare* (Savi) Ten.
Bunchy knotweed, oriental lady's-thumb	*Polygonum caespitosum* Blume
Burning bush	*Euonymus alata* (Thunb.) Sieb.
Canada thistle	*Cirsium arvense* L. (Scop.)
Chinese wisteria	*Wisteria sinensis* (Sims) DC.
Coltsfoot	*Tussilago farfara* L.
Common cocklebur, rough cocklebur	*Xanthium strumarium* L.
Common mullein	*Verbascum thapsus* L.
Common periwinkle	*Vinca minor* L.
Crown vetch	*Coronilla varia* L.

Common Name	Scientific Name
Curly pondweed	*Potamogeton crispus* L.
Cutleaf teasel	*Dipsacus laciniatus* L.
Dame's rocket	*Hesperis matronalis* L.
Foxtail-millet	*Setaria italica* (L.) P. Beauv.
Fuller's teasel	*Dipsacus fullonum* L.
Garden vetch	*Vicia sativa* L.
Green millet	*Setaria viridis* (L.) P. Beauv.
Hairy jointgrass	*Arthraxon hispidus* (Thunb.) Makino
Hayek watercress	*Rorippa nasturtium-aquaticum* (L.)
Hydrilla, water thyme	*Hydrilla verticillata* (L.f.) Royle
Japanese barberry	*Berberis thunbergii DC.*
Japanese bromegrass	*Bromus japonicus* Thunb. ex Murray
Japanese privet	*Ligustrum japonicum* Thunb.
Leatherleaf clematis	*Clematis ternifolia* DC.
Meadow brome	*Bromus commutatus* Schrad.
Meadow fescue	*Festuca pratensis* Huds.
Moneywort, creeping Jenny	*Lysimachia nummularia L.*
Mugwort, common wormwood	*Artemisia vulgaris* L.
Musk thistle, nodding thistle	*Carduus nutans* L.
Nandina, sacred-bamboo	*Nandina domestica* Thunb.
Nodding foxtail-grass, Japanese bristle-grass	*Setaria faberi* R.A.W. Herrm.
Oregon grape	*Mahonia bealei* (Fortune) Carriere
Parrot's feather, water milfoil	*Myriophyllum aquaticum* (Vell.) Verdc.
Poison hemlock	*Conium maculatum* L.
Rye brome	*Bromus secalinus* L.
Spotted knapweed	*Centaurea biebersteinii* DC.
Spreading hedge-parsley	*Torilis arvensis* (Huds.) Link
Tall fescue	*Festuca arundinacea* Schreb.
Thatch bromegrass, cheat grass	*Bromus tectorum* L.
White poplar	*Populus alba* L.
White sweet clover	*Melilotus alba* Medik.
Wild carrot, Queen Anne's-lace	*Daucus carota* L.
Wisteria	*Wisteria floribunda* (Willd.) DC.
Yellow foxtail, smooth millet	*Setaria pumila* (Poir.) Roem. & Schult.
Yellow sweet clover	*Melilotus officinalis* (L.) Lam.
Zebra grass, Chinese silver grass	*Miscanthus sinensis* Andersson

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*. Retrieved from < http://www.tneppc.org/>. (Accessed: September 23, 2008

*Rank 2 — Significant Threat: Exotic plant species that possess characteristics of invasive species but are not presently considered to spread as easily into native plant communities as those species listed as Rank 1— Severe Threat

Table G-11. Invasive Exotic Pest Plants Rank 3 –Lesser Threat*

Common Name	Scientific Name
Bachelor's button, cornflower	*Centaurea cyanus L.*
Balloonvine, love-in-a-puff	*Cardiospermum halicacabum L.*
Brazilian elodea, Brazilian water-weed	*Egeria densa Planch.*
Bromegrass, rescue grass	*Bromus catharticus Vahl*
California poppy	*Eschscholzia californica Cham.*
Chicory	*Cichorium intybus L.*
Chinaberry	*Melia azedarach L.*
Corn gromwell	*Lithospermum arvense (L.) I. M. Johnston*
Field garlic	*Allium vineale L.*
Giant reed, elephant grass	*Arundo donax L.*
Gill-over-the-ground, ground ivy	*Glechoma hederacea L.*
Hairy crabweed	*Fatoua villosa (Thunb.) Nakai*
Japanese clover	*Kummerowia striata (Thunb.) Schindl.*
Korean clover	*Kummerowia stipulacea (Maxim.) Makino*
Lady's thumb	*Polygonum persicaria L.*
Ox-eye daisy	*Chrysanthemum leucanthemum L.*
Pale-yellow iris	*Iris pseudacorus L.*
Paper mulberry	*Broussonetia papyrifera (L.) L'Her. ex Vent.*
Puncturevine	*Tribulus terrestris L.*
Russian olive	*Elaeagnus angustifolia L.*
Sicklepod senna	*Senna obtusifolia (L.) H. S. Irwin & Barneby*
Smooth bromegrass	*Bromus inermis Leyss.*
Spiny cocklebur	*Xanthium spinosum L.*
Star of Bethlehem	*Ornithogalum umbellatum L.*
Stinging nettle	*Urtica dioica L.*
Wild parsnip	*Pastinaca sativa L.*
Wineberry	*Rubus phoenicolasius Maxim.*
Yellow goat's-beard	*Tragopogon dubius Scop.*

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*. Retrieved from < http://www.tneppc.org/>. (Accessed: September 23, 2008

*Rank 3 — Lesser Threat: Exotic plant species that spread in or near disturbed areas and are not presently considered a threat to native plant communities

Table G-12. Nonnative, Noninvasive Species Suitable for Erosion Control/ Stabilization Activities

Common Name	Scientific Name
Annual ryegrass	*Lolium multiflorum*
Browntop millet	*Panicum ramosum*
Japanese millet	*Echinochloa esculenta*
Winter wheat	*Triticum aestivum*
Oats (spring variety)	*Avena sativa*
Orchardgrass	*Dactylis glomerata*
Perennial ryegrass	*Lolium perenne*
Redtop	*Agrostis gigantea*
Rye	*Secale cereal*
Timothy	*Phleum pretense*
Weeping lovegrass	*Eragrostis curvula*
Crimson, red, and ladino clovers	*Trifolium incarnatum, Trifolium pretense, Trifolium repens*