ENVIRONMENTAL ASSESSMENT

PRIVATE WATER USE FACILITY CONSTRUCTION STANDARDS AND GUIDELINES FOR THE HIWASSEE RIVER, MILES 20-42.5 POLK, MCMINN, AND BRADLEY COUNTIES, TENNESSEE

TENNESSEE VALLEY AUTHORITY
JUNE 1999

The Proposed Decision - The Tennessee Valley Authority (TVA) must decide under what conditions to issue Section 26a (of the TVA Act) permits for the construction of private water use facilities in the lower Hiwassee River between river miles (HiRM) 20 and 42.5. Most private water use facility approvals qualify for a categorical exclusion under Section 5.2.26 of TVA's National Environmental Policy Act (NEPA) Procedures. However, private water use facility permitting in this river reach may have the potential to cumulatively impact the snail darter (*Percina tanasi*) and other sensitive aquatic species. TVA therefore proposes to implement a set of customized private water use facility construction standards and guidelines designed to minimize potential cumulative impacts and streamline the permit review process. TVA has prepared this Environmental Assessment (EA) in order to assess the impacts of these permitting decisions.

Purpose and Need for TVA's Action - TVA is receiving an increasing number of Section 26a permit requests for private water use facilities along the lower Hiwassee River (HiRM 20-HiRM 42.5). Typical private water use facilities requiring TVA approval in this area include floating and fixed docks. At present, there are two residential subdivisions (fronting HiRM 28.5-30.5 and HiRM 31.3-32.0) where owners of waterfront lots have requested or are anticipated to request Section 26a permit approvals from TVA for private water use facilities. The potential for additional farms to be subdivided for residential development exists as this area is experiencing growth pressures from the cities of Charleston and Calhoun, as well as from north Bradley County.

The snail darter, federally listed as threatened, occurs in the lower Hiwassee River. In reviewing the potential environmental impacts of recent Section 26a permit requests in this area, TVA has determined that any individual permit approval (and subsequent facility construction properly installed) is unlikely to adversely affect the habitat of sensitive aquatic species, including the snail darter. TVA recognizes, however, that these approvals, taken cumulatively, have the potential to cause an adverse impact on the environment. Both NEPA and the Endangered Species Act specifically require consideration of cumulative impacts. Because a categorical exclusion is not applicable to actions that may individually or cumulatively have a significant impact on the environment, and TVA has determined that the potential exists for cumulative impacts from permitting actions on the lower Hiwassee River, a categorical exclusion may not be applicable to these individual permitting decisions. Therefore, TVA has prepared this EA to better analyze and mitigate the impacts of these permitting decisions.

Excavations of boat channels have the potential to impact water quality and aquatic communities through the removal of shallow water habitats and by siltation. Channel excavation is not expected to occur in this reach of the Hiwassee River and therefore is excluded from the scope of the EA. Boat ramps also offer the potential for siltation and are excluded from the scope of this EA.

Other Pertinent Reviews - TVA's *Chickamauga Reservoir Land Management Plan*, published in 1990, briefly describes the natural resources and current land uses of the TVA fee-owned tracts between HiRM 20 and HiRM 29.2.

TVA's *Final Environmental Impact Statement - Shoreline Management Initiative* (the SMI FEIS), published in 1998, is a programmatic review of the impacts of residential shoreline development. Although this review focuses on reservoir shorelines, many of its conclusions are applicable to more riverine environments such as the portion of the Hiwassee River considered in this EA. This EA therefore tiers from the SMI FEIS.

Alternatives

The two alternatives under consideration in this EA are the action alternative, which would establish a set of customized construction guidelines and conditions applicable to private water use facilities on the lower Hiwassee River, and the no action alternative. These alternatives are described in more detail below.

Action Alternative - The action alternative is to establish a set of private water use facility construction guidelines and special conditions customized for this reach of the Hiwassee River. In addition, all of the General Conditions for Section 26a and Land Use, as well as Standard Conditions 6a, 6b, 6d, 6e, 6f, 6g, 6h and 6i (see Attachment 4) would be included in 26a permits on this stretch of the river. The TVA Minor Water Use Facility Guidelines (Attachment 2, in effect until November, 1999), and the TVA Shoreline Management Initiative Guidelines (Attachment 3, in effect November, 1999) would also be included, except where they are superseded by the more restrictive, customized guidelines and special conditions listed below. This combination of guidelines and conditions would protect the habitat of the snail darter and other sensitive aquatic species while allowing restricted access to the water. The customized construction guidelines and special conditions applicable to the lower Hiwassee River are outlined below.

Construction Guidelines

1. A maximum allowable footprint of 400 square feet is recommended for all private water use facilities in this reach of the Hiwassee River. Any dock, boat slip, or other water-use facility associated with a particular lot should be contained within a 400 square-foot rectangle or square area at the riverward end of the access walkway that extends from shore to dock. The space occupied by the access walkway is not included in the 400 square-foot allowance.
2. Private water use facilities in areas continuously exposed to strong river currents and drifting logs and other debris should be immediately adjacent to the river bank. In no case should the combined length of the private water use facility and access walkway extend more than 25 feet from the shoreline, or one-tenth the distance from the bank at normal summer pool to the opposite shore, whichever is greatest.
3. Both fixed and floating water use facilities may be permitted (fixed piers, floating dock, and fixed or floating single boat slip). All fixed facilities should have deck elevations at least 24 inches above normal summer pool level.
4. For riprap, a well graded, Class I or Class II (50 to 125 pound nominal size) rock with a mixture of smaller rock is preferred. Filter fabric should be placed between the rock and protected slope when possible.
5. Loss of vegetation should be minimized and trees on the river bank should not be removed.

Special Conditions

1. Water use facilities may not have a roof or side walls.

2. Water use facilities may not have any enclosed storage spaces.
3. All anchoring cables or spud poles must be anchored in a way that would not accelerate bank erosion. Anchoring to trees is prohibited.
4. Retaining walls are prohibited. Gabions, riprap revetment, or a combination of riprap and live plantings (biostabilization) is preferred.

No Action Alternative - Under the no action alternative, the baseline specifications for private water use facilities on the lower Hiwassee River would continue to be the standards and guidelines presently in place (Attachment 2) or those described in the SMI (Attachment 3) effective November, 1999, supplemented by the General and Standard Conditions listed in Attachment 4. TVA recognizes that some of these standards and guidelines may not be applicable to the riverine conditions found on the lower Hiwassee, and will continue to evaluate each individual 26a permit request as it is received on a case by case basis. The review would include consultation with the U.S. Fish and Wildlife Service on each proposed action that may affect threatened or endangered aquatic species or their habitat.

Comparison of Alternatives - TVA staff have determined that impacts to the snail darter and other sensitive aquatic species would not likely result from any individual Section 26a permit approval (and subsequent facility construction). However, these permit approvals in the lower Hiwassee River taken together could potentially result in cumulative impacts that adversely affect the snail darter. If TVA chooses the No Action Alternative, Section 26a permit requests will continue to be reviewed individually as they are received and the cumulative impacts would be assessed with each review. If TVA chooses the Action Alternative, TVA would review the 26a permitting requests in the lower Hiwassee River as a class of actions for which the recommended construction guidelines and required permit (general and standard) conditions would help avoid aquatic species impacts. Section 26a requests for private water use facilities that conform to the specifications in the Action Alternative would require no further review of potential impacts to listed aquatic species. Section 26a requests that do not comply with the specifications in the Action Alternative would require further review. With the implementation of these protective construction guidelines and required permit (general and standard) conditions, TVA anticipates that snail darters and other sensitive aquatic species and their habitat would be protected while accommodating reasonable access to the river for waterfront property owners.

Affected Environment

Site Description - The Hiwassee River reach under consideration extends from above Charleston, Tennessee (HiRM 20) upstream to Highway 411 (HiRM 42.5). This reach forms the boundaries of Bradley, McMinn and Polk Counties. This section of the lower Hiwassee River is at the upstream end of Chickamauga Reservoir and downstream of the portion of the river used for whitewater boating. The shoreline from HiRM 20 to HiRM 28.5 on the left (descending) bank and most of the shoreline from HiRM 20 to HiRM 29.2 on the right bank is TVA fee owned property (Tracts 100, 101, 102, 105 and 106 as described in the *Chickamauga Reservoir and Land Management Plan*) and are not available for development of private water use facilities. From HiRM 28.5 upstream to HiRM 30.5 the riverfront properties on the left bank are privately owned and TVA has flowage easement rights. Upstream of HiRM 29.2, riverfront properties on the right bank are privately owned with no TVA land rights. About 62 percent of the shoreline between HiRM 20 and 42.5 is privately owned. Under Section 26a of the TVA Act, any person proposing to construct a structure on the lower Hiwassee River must obtain prior approval from TVA.

Several streams enter the Hiwassee River between HiRM 20 and HiRM 42.5. The largest of these are Chestuee Creek, at HiRM 32.3, South Chestuee Creek at HiRM 31.4 and Conasauga Creek at HiRM 38.5. The main Hiwassee River channel varies in width from about 100 feet to 300 feet, and averages about 250 wide. Islands occur at HiRM 28, 29.5, 37, and 42. At present agriculture is the major land use along the lower Hiwassee, but residential development is expected to increase.

Average annual flow at Charleston, Tennessee is around 5,000 cubic feet per second, and flood flows may exceed 30,000 cubic feet per second. Normal summer water level is approximately 682 feet above mean sea level (msl), and routinely fluctuates 2 to 3 feet. Ten year, fifty year, one hundred year, and five hundred year flood elevations are approximately 702.2 msl (10 year), 707.8 msl (50 year), 710.0 msl (100 year), and 715.6 msl (500 year) at HiRM 29 (River Pointe subdivision). This represents flood elevations of 20.6 feet, 26 feet, 28.3 feet and 34 feet, respectively above the normal water level.

Water Quality - The Hiwassee River at Charleston, Tennessee drains an area of about 2300 square miles. The upper Hiwassee River basin is underlain primarily by igneous and metamorphic rock and thus the water is very soft and low in dissolved minerals. Upstream of HiRM 20, the river derives its surface water quality characteristics from releases from Appalachia Dam at HiRM 66 near the Tennessee/North Carolina state line, the Ocoee River which enters the lower Hiwassee River at HiRM 34.4, and several smaller streams in the lower basin which are underlain primarily by limestone rock and therefore add additional dissolved constituents.

Average values for water quality characteristics as measured at HiRM 18.9 (from TVA Fixed-Station monitoring network) include temperature (17.1 deg C), dissolved oxygen (9.1 milligram/liter (mg/l)), pH (7.1 std. units), alkalinity (23 mg/l), hardness (36 mg/l), total suspended solids (10 mg/l), turbidity (10.9 mg/l), conductivity (80 umhos/cm), and total dissolved solids (52.5 mg/l). These values are within applicable state water quality standards.

According to the 1998 Status of Water Quality in Tennessee (305b Report), the Hiwassee River partially supports its designated uses of fish and aquatic life, livestock watering and wildlife, and recreation. Industrial discharges have historically impacted the Hiwassee River below Charleston downstream of the project area, as well as the upper Ocoee River in Polk, County. Water quality in a portion of the Hiwassee upstream of the project area and below Appalachia Dam is considered in a threatened status due to flow alterations from the dam.

Aquatic Threatened and Endangered Species - The lower Hiwassee River supports a large population of the snail darter, a fish federally listed as a threatened species. This population is likely the result of transplants by TVA of snail darters from the Little Tennessee River to three sites on the lower Hiwassee River. These transplants began in 1975, when the snail darter was listed as an endangered species. The population in the lower Hiwassee persisted and in the early 1980s was estimated to be about 3,000 individuals. Because of the health of the Hiwassee population and other transplanted populations, as well as the discovery of the species in other streams; the snail darter was reclassified as a threatened species in 1984. As a result of the TVA transplants, the species has been found in seven or eight Tennessee River tributaries, including the lower French Broad and Holston Rivers, and downstream as far as the lower Paint Rock River in northern Alabama. Periodically, adults have also been observed in the mainstem impoundments near the mouths of these tributaries (Biggins and Eager 1983).

Although the current status of most populations is unknown, snail darters are consistently found in TVA surveys at the fixed-station Index of Biotic Integrity (IBI) site (HiRM 37) in the lower Hiwassee River. In addition, snail darters have recently been found at a site in the lower Ocoee River, and likely occur in larger stream habitat throughout the lower Hiwassee River system.

The snail darter inhabits larger East Tennessee waterways where it frequents clean-swept sand and gravel shoal areas for spawning and feeding. Spawning takes place on sand and gravel shoals in medium to large free-flowing streams from December to April. Newly hatched larvae drift with the downstream river currents, and often occur in deeper portions of rivers and reservoirs where current is present. Snail darters feed primarily on small pleuocerid river snails. Long-term maintenance of snail darter populations in the Hiwassee River depends upon continuity of appropriate habitats in the migratory corridor of snail darters. Important habitat characteristics in this corridor include relatively stable bottom sediments and a relatively low level of suspended sediments to ensure snail darters suitable places to rest and hide, and an adequate supply of food items.

Other aquatic species of importance identified in this river reach include the tangerine darter (*Percina aurantiaca*), currently known in the Hiwassee River between HiRM 35 and HIRM 37.8, the highfin carpsucker (*Carpiodes velifer*), reported at HiRM 38.1, and the eastern hellbender (*Cryptobranchus alleganiensis*) reported at HiRM 36 to HiRM 37. These three species are listed by the state of Tennessee as “In Need of Management.”

Aquatic Ecology - TVA fish sampling in the Hiwassee River (at McClary Island - HiRM 37) from 1991 through 1995 resulted in an Index of Biotic Integrity (IBI) rating of 44-48 or a fair to good classification. Sampling in 1995 season identified 37 native fish species including 6 darter species, 6 sunfish species and 5 sucker species at this location. For comparison, IBI rating for other, upstream sites on the Hiwassee River (miles 54, 57, 63, 97.2 and 134) ranged from 38-54 or poor/fair to good/excellent for fish surveys conducted from 1991 through 1997. Other larger streams within the Hiwassee watershed, including the lower Ocoee and Nottely rivers, ranged from poor to poor/fair, with IBI scores between 32 and 38 for 1993-1997 surveys. IBI scores for other rivers in the area, such as the Tellico River and upper Little Tennessee River, have averaged somewhat higher than the lower Hiwassee.

Other Resources - Other potentially affected environmental resources are listed as “Media Categories” on the Environmental Decision Record (EDR) form that is included as Attachment 1.

The regional cumulative environmental impacts of private water use facilities on TVA reservoirs were assessed in the 1998 SMI FEIS. Many of the same impacts identified in that FEIS are anticipated to result from private water use facilities along the lower Hiwassee River. This EA tiers from the SMI FEIS, and incorporates by reference the SMI discussions of resource issues such as shoreline vegetation, wildlife, wetlands, flood plains, recreation, aesthetics, cultural resources, socioeconomics, and navigation.

The 1998 Tennessee Rivers Assessment (TDEC 1998) rated the natural and scenic qualities of the Hiwassee River as being of local to regional significance. The assessment also rated the river as having statewide or regional significance for recreational boating. A portion of the Hiwassee River upstream of Highway 411 is a State Scenic River.

No significant managed areas, such as State Natural Areas or State Wildlife Management Areas, occur along this stretch of the Hiwassee River. The nearest such downstream area is Mouse Creek Wildlife Management Area, opposite HiRM 15.6. A short distance upstream of the Highway 411 bridge are the Cherokee National Forest, the Gee Creek Wilderness area, and, as mentioned above, the portion of the Hiwassee designated as a State Scenic River.

TVA reviews have identified wetlands at HiRM 24.3 (palustrine forested, 1.4 acres), HiRM 26.1 (palustrine scrub shrub, 1.6 acres), and HiRM 31 (palustrine forested, 3.9 acres). Other shoreline areas on the lower Hiwassee have not been surveyed for wetlands.

TVA archeological surveys on the Hiwassee River shoreline have identified no cultural resources near River Pointe subdivision from HiRM 28.5-HiRM 30.5 (left descending bank), near Davis Bend from HiRM 26.9- HiRM 27.8 (left descending bank), or near TVA Planned Tract 100 from HiRM 20.2-HiRM 20.5 (right descending bank). Important cultural resources occur on TVA Planned Tracts 102 and 105 at Bates Bend, which as described in the Chickamauga Reservoir Land Management Plan, are not available for development of private water use facilities. No other shoreline areas have been surveyed for cultural resources.

Listed terrestrial plant and animal species known from the surrounding area include the false foxglove (*Aureolaria patula*), state listed as Threatened, known from Johnson Bottoms at HiRM 14.4, the green anole (*Anolis carolinensis*), known from about 4.5 miles south of the project area, and the black-bellied salamander (*Desmognathus quadramaculatus*), known from about 6.4 miles north of the project area. Both of these species are state listed as In Need of Management. Most of the potentially affected shoreline in the project area has not been surveyed for the presence of listed plant and animal species.

Evaluation of Impacts

As described in the SMI FEIS, private water use facilities permitted under either alternative are not anticipated to adversely impact floodplains, or socioeconomics. Because of the distance between the project area and significant managed areas, no effects on these resources are anticipated.

The specifications proposed under the action alternative would provide more protection of the river's scenic and recreational qualities than would the guidelines associated with the no action alternative, and thus would be beneficial to these resources.

Because information on the presence of wetlands and cultural resources is incomplete and impacts to these resources are usually site specific, TVA will continue, under either alternative, to conduct site-specific reviews for individual Section 26a requests to determine if wetlands and cultural resources would be impacted. Site specific environmental reviews will also continue to be conducted for the potential impacts to shoreline vegetation, wildlife, terrestrial threatened and endangered species, and navigation. If these reviews identify potential impacts, the permit approval would be conditioned in a manner to avoid or minimize the impacts.

The remainder of this section describes potential impacts to aquatic threatened and endangered species, aquatic ecology, and water quality. The snail darter, other protected aquatic species, and other components of aquatic ecology are dependent on

good water quality. In addition, river channel obstructions could interfere with snail darter's ability to successfully complete its life cycle, consisting of larval drift into deep pools or impounded areas, and subsequent upstream migration by juveniles to sand-gravel shoals.

Compared to the no action alternative, the action alternative would provide a higher level of protection and lower level of cumulative impacts to aquatic resources by establishing a set of specifications for private water use facilities that have been customized for the riverine conditions of the lower Hiwassee River. The features of these customized specifications, and manner in which they would avoid or mitigate adverse impacts, are described in detail below.

However, the impacts to snail darter habitat, aquatic ecology and water quality are expected to be insignificant if the construction guidelines and the required permit (general and standard) conditions described below in the measures to mitigate adverse impacts discussion are taken. This will ensure that the continuity of snail darter migratory habitat is maintained and that any suspended sediment, caused by construction, is kept to a minimum. TVA has determined that, with these measures in place, its issuance of permits for private water use facilities on the lower Hiwassee River, individually and cumulatively, is not likely to adversely affect federally listed species. In a letter dated May 7, 1999 (see Attachment 5), the U.S. Fish and Wildlife Service concurred with this determination.

Dock Standards - Guidelines for the size and type of docks permitted by TVA help fulfill TVA's responsibility under Section 26a of the TVA Act to promote the unified development and regulation of the Tennessee River and its tributaries. These guidelines define the maximum size of docks and other private wter-use facilities that would be approved by TVA (Attachments 2 and 3). The size and type of docking facilities to be proposed would be selected by the applicant, provided the maximum guidelines are not exceeded. Property owners would be responsible for submitting drawings of proposed private water use facilities for TVA review and approval. TVA would make available sample drawings for docks. Property owners could either use these drawings or create their own drawings to reflect personal preferences. TVA would work with the applicant to explore options.

The Hiwassee River in this reach is subject to considerable changes in surface water elevation. Private water use facilities constructed along this reach are subject to periodic routine flooding (as much as 20 to 34 feet above normal water level depending on the flood event) and thus must be constructed with the greatest likelihood of remaining in place when exposed to flood conditions. If the facility design or construction configuration is such that it is likely to wash away, it could contribute to changes in the riverine environment such as obstructing the river flow or increasing sedimentation, and consequently impacting sensitive aquatic species. Facility failure is associated with the likely failure of the facility anchoring system which may affect the stream bank stability. Design configurations which TVA has determined can contribute to facility failure in flood prone areas include covered roofs, enclosed storage areas and large overall size (the smaller the better). TVA has also determined that facilities that extend too far out into the river (up to one-third of the channel width under the SMI guidelines) are likely to catch floating logs and debris, which may increase their probability of failure. These factors are addressed in the action alternative in Construction Guidelines 1 and 2, and Special Conditions 1 and 2. The more restrictive dock standards proposed for the Hiwassee River would also reduce aesthetic impacts and impacts to recreational boaters.

Stream Bank Stabilization - When working with property owners on Section 26a permit requests for private water use facilities, TVA requires minimal disturbance of the stream bank vegetation when installing the facility. Stream bank vegetation including the trees and understory vegetation is paramount for a stable river bank and to protect a landowner's property from washing into the river. When working with property owners on Section 26a permit requests for stream bank stabilization associated with private water use facilities (or a request for stream bank stabilization only), TVA has allowed applicants to choose between riprap, retaining walls, biostabilization, gabions, or a combination of these approaches. Riprap has been the preferred method of stabilization in the past with site preparation limited to work necessary to obtain adequate slope and stability of the material. Riprap must be placed several feet above and several feet below the normal water level of the river and along the surface of the eroded area and in accordance with construction guidelines to be effective.

Because of the ecological benefits of biostabilization, TVA would continue efforts to increase property owner awareness of this approach, with the expectation that biostabilization would become more widely adopted. Moderate bank contouring would be allowed to provide conditions suitable for planting vegetation. Willow stakes, silky dogwoods or other suitable native plant materials would be planted along the surface of eroding areas.

Retaining walls typically require extensive site disturbance, generally reduce aquatic habitat conditions; often are not properly designed; and result in further site disturbance and stream siltation if they fail. For this reason, they are not appropriate in the Hiwassee River situation. These factors are addressed in the action alternative in Construction Guideline 4 and Special Condition 4.

Vegetation Management - When a property owner submits a 26a request for a private water use facility, TVA performs a site inspection as part of the permit review. A member of the TVA Resource Stewardship Watershed Team will be available to meet with the property owner and to discuss the results of this environmental assessment and the importance of stream bank stabilization and vegetation management. TVA will work with the property owner to ensure that vegetation management is consistent with the following principles:

- A healthy stand of forest vegetation along the shoreline contributes to the river ecology by providing food and habitat for diverse populations of plants and animals.
- Trees and understory vegetation protect water quality by filtering sediments and pollutants from runoff before they reach the river. Root systems of trees and other shoreline vegetation help bind soil particles together and minimize soil erosion.
- Shoreline vegetation provides shade and cover for fish and habitat for aquatic invertebrates, which are a source of food for fish.
- Understory vegetation contributes to continued growth and health of the forest.
- Vegetation contributes to shoreline aesthetics for the lake/stream user

As part of the process of approving a 26a permit request, TVA seeks to minimize impacts to sensitive resources including the stream bank vegetation through the mandatory adherence to permit (general and standard) conditions (Attachment 4). General conditions 1, 9, 10, and 14 and standard conditions 6a, 6b, 6d, 6e, 6f, 6g, 6h and 6i would be required for permit approval in this reach along the lower Hiwassee River. These conditions, as well as Construction Guideline 5 and Special Conditions 3 and 4, both included in the Action Alternative, would help maintain shoreline vegetation and its benefits.

Preferred Alternative - TVA's preferred alternative is the action alternative that would establish construction guidelines and require permit (general and standard) conditions to protect the snail darter and other sensitive aquatic resources.

References

Biggins, R. G., and R. B. Eager. 1983. Snail Darter Recovery Plan, U.S. Fish and Wildlife Service, Atlanta, GA.

Tennessee Department of Environment and Conservation. 1998. Tennessee Rivers Assessment Project, Summary Report. Tennessee Department of Environment and Conservation, Nashville.

Tennessee Valley Authority. 1990. Chickamauga Reservoir Land Management Plan. Tennessee Valley Authority, Knoxville.

Tennessee Valley Authority. 1998. Final Environmental Impact Statement - Shoreline Management Initiative. Tennessee Valley Authority, Knoxville.

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Agencies/Others Consulted

Dr. Lee A. Barclay, U.S. Fish and Wildlife Service, Cookeville, Tennessee
Mr. Dan Sherry, Tennessee Wildlife Resources Agency, Nashville, Tennessee
Mr. Justin P. Wilson/Mr. Dodd Galbreath, Department of Environment and Conservation, Nashville, Tennessee
Mr. Reggie Reeves, Division of Natural Heritage, Nashville, Tennessee

Attachments

1. Environmental Decision Record
2. Existing TVA Water Use (Fixed and Floating Docks) Guidelines
3. TVA Shoreline Management Initiative (SMI) Guidelines
4. General and Standard Conditions
5. May 7, 1999 Letter from Dr. Lee A. Barclay, U.S. Fish and Wildlife Service, to Mr. Jon M. Loney, TVA

Attachment 1

ENVIRONMENTAL DECISION RECORD (EDR)*

PROJECT ID NUMBER _____
(Assigned by Initiating Organization)

TRACKING NUMBER: _____
(NEPA Administration Use Only)

Organization Initiating Project: **Resource Stewardship, Chickamauga Watershed Team**

Project Manager: **Kenneth P. Parr** **Address:** **LMO 1A-C** **Phone:** **954-3808**

Preparer: _____ **Address:** _____ **Phone:** _____
(If different from Project Manager)

Project Action Title: **Private Water Use Facilities on the Hiwassee River (HiRM 20 - HiRM 42.5)**

Project Action Description:

a. **Location:** (e.g., TVA land, facility, reservoir, county, state) **Chickamauga Reservoir - Hiwassee River - Bradley Co./McMinn Co./Polk Co.**

b. **TVA Involvement:** (TVA land, facility, funds, technical assistance, etc.) **26a Permitting**

c. **Narrative:** (include name of applicant, if any) **Area review (lower Hiwassee River (HiRM 20 - HiRM 42.5) for TVA 26a permitting actions with respect to federally listed snail darter and other sensitive aquatic species protection.**

Public Notification: **No** ____ **Yes** **X** (Attach Copy)
Permits Required from Other Agencies:
Project Environmental Commitments: (Attach sheet for additional commitments. Include performing organization and estimated completion date.)

LEVEL OF REVIEW DETERMINATION: (Check one, based on supporting information on Page 2)

____ **Categorical Exclusion pursuant to Section 5.2. ___ of TVA NEPA Procedures.** No nonroutine commitments have been identified as necessary to avoid significant environmental impacts. *The action does not qualify for categorical exclusion if* Unknown *or* Significant *is checked under* Potential Effects.

_X__ Environmental Assessment (EA) or

____ **Environmental Impact Statement (EIS) needed, pursuant to Sections 5.3 or 5.4 of TVA NEPA Procedures.** (See EA or EIS instructions)**.**

Signature, Project Manager Date Resource Stewardship NEPA Reviewer Date

* For more information on using this form, please contact NEPA Administration at 423-632-NEPA

PROJECT ID NUMBER _____
(Assigned by Initiating Organization)

TRACKING NUMBER: _____
(NEPA Administration Use Only)

Media Categories	Potential Effects						Require-ments			Information Source
Refer to Exhibit 3 of EDR instructions for description of media categories.	NONE	UNKNOWN	BENEFICIAL	INSIGNIFICANT	SIGNIFICANT		NONE	PERMITS	COMMITMENTS	**Provide name of media expert providing input or reference document and date (reference documents are to be attached to EDR). This column must be completed for each media category unless none is checked. If you are certain that potential effects (either positive or negative) are none (based on the LM Prescreening Criteria Checklist), it is not necessary to contact the media expert. Refer to the LM Prescreening Criteria Checklist or Exhibit 2 of EDR instructions for a listing of TVA media experts for each category.**
WASTE STREAM GENERATION OR ALTERATION										
Air	X						X			**Nature of Action**
Hazardous Waste	X						X			**Nature of Action**
Solid Waste	X						X			**Nature of Action**
Special Materials	X						X			**Nature of Action**
Wastewater	X						X			**Tier to SMI EIS**
SOCIOECONOMIC EFFECTS										
Land Use	X						X			**Nature of Action**
Transportation	X						X			**Tier to SMI EIS**
Recreation			X				X			**Tier to SMI EIS, See EA**
Noise	X						X			**Nature of Action**
EMF	X						X			**Nature of Action**
EFFECTS ON NATURAL FEATURES										
Groundwater	X						X			**Nature of Action**
Surface Water				X					X	**See Attached Environmental Assessment**
Stream Modification	X						X			**See Attached Environmental Assessment**
Floodplains				X			X			**Tier to SMI EIS**
Wetlands										**Individual Permit Review Required**
Farmland	X						X			**Nature of Action**
Significant Managed Areas	X						X			**See Attached Environmental Assessment**
Historic Structures										**Individual Permit Review Required**
Historic Sites										**Individual Permit Review Required**
Archaeological Resources										**Individual Permit Review Required**
Aquatic Ecology				X					X	**See Attached Environmental Assessment**
Terrestrial Ecology										**Individual Permit Review Required**
Protected Species-Sensitive Habitat										
Aquatic Animals				X					X	**See Attached Environmental Assessment**
Terrestrial Animals										**Individual Permit Review Required**
Plants										**Individual Permit Review Required**
Visual			X				X			**Tier to SMI EIS, See EA**

Attachment 2

EXISTING TVA MINOR WATER USE (FIXED AND FLOATING DOCKS) GUIDELINES (EFFECTIVE UNTIL NOVEMBER, 1999)

- Requests for fixed docks should be limited to a maximum deck surface area of 400 square feet excluding access walkways
- The height of docks must be at least 1 foot above summer water level (or normal water level along rivers or streams).
- The distance the dock extends from the shoreline (at normal water level along rivers and streams) should not exceed one-third the distance.
- Method of support for fixed docks (Creosote poles are not permitted)
- Method of anchorage for floating docks should not accelerate shoreline erosion.
- Plans should also indicate electrical service, if applicable, including the location of the disconnect switch (which must be accessible during flood events).
- An enclosed space such as a locker or storage room on a facility over the water cannot exceed 25 square feet of total space.
- Access walkways cannot exceed 6 feet in width.
- Interior boathouse walkways cannot exceed 4 feet in width.
- For floating docks, specify type of approved floatation. Floatation devices for floating structures must be made of foam blocks, pontoons or other material commercially manufactured specifically for floatation. Metal or plastic barrels, drums or other containers not made for floatation are prohibited.
- Docks should not exceed 400 square feet total space (this measurement excludes the access walkway).
- Boathouses may have no more than two boatwells and the total space occupied by the boat wells cannot exceed 700 square feet.
- Erosion control and shoreline protection is approvable only in areas with active erosion as determined by TVA. In areas with active erosion, TVA prefers to establish live plantings or to use a combination of riprap and live plantings. If retaining walls are approved, they may be constructed of stone, concrete blocks, poured concrete or other acceptable materials. Railroad ties, creosote timbers, and asphalt are not permitted.

TVA RIPRAP AND RETAINING WALLS GUIDELINES

- Type of materials proposed for construction. For riprap 6 to 18 inch diameter clean stone is preferred. For retaining walls, asphalt materials, railroad ties and creosote timbers are not permitted.
- The base of retaining walls or riprap should extend on average no more than two horizontal feet of existing streambank at normal water level.
- For riprap, placement of a filter blanket or filter material under the riprap will help prevent additional soil loss.
- A combination of live plantings and riprap is preferred by TVA and will reduce project costs.
- If the project will include grading, provide grading plans showing existing and proposed elevations, erosion control plans showing how runoff will be controlled during construction, and indicate how the site will be permanently stabilized (seed, sod, plantings, etc.).

Attachment 3

TVA SHORELINE MANAGEMENT INITIATIVE (SMI) GUIDELINES (IN EFFECT NOVEMBER, 1999)

- A maximum allowable footprint of 1,000 square feet would be established for all residential water use facilities. The docks, slips, boathouses, and other water-use facilities associated with a particular lot would be contained within a 1,000 square-foot rectangle or square area at the riverward end of the access walkway that extends from shore to dock. The space occupied by the access walkway would not be included as part of the 1,000 square-foot allowance.
- The length of the water-use facility and access walkway would not extend more than one-third the distance from the bank at normal summer pool to the opposite shore.
- Either fixed or floating water-use facilities could be permitted (fixed piers, floating docks, and fixed or floating boat slips). All fixed facilities must have deck elevations at least 24 inches above normal summer pool level.
- Fixed boat slips could have a roof or they could be uncovered. Covered boat slips could have open sides or could be covered with exterior siding to form a boathouse. Covered docks, boat slips, and boathouses would not exceed one story in height. The roof of these facilities could be used as an open deck with a railing, but the roofed area could not be enclosed with siding, screening, or covered by a second roof.
- Floating facilities would be required to use commercially manufactured floatation. If Styrofoam is used, it must be commercially manufactured, encased type.
- Access walkways constructed over water and walkways inside boathouses could not exceed 6 feet in width. The access walkway to a dock or other facility must connect from land to dock by the most direct route.
- Enclosed storage space would be allowed only for the storage of water-use equipment. The outside dimensions of the completely enclosed space would not be allowed to exceed 32 square feet, and it must be located on an approved dock, pier, or boathouse.
- Docks, piers, and boathouses must not contain living space, sleeping areas, or any type of enclosed floor space in excess of 32 square feet. Floor space would be not considered enclosed if three of the four walls were constructed of wire or screen mesh from floor to ceiling, and if the wire or screen mesh left the interior of the structure open to the weather.
- Docks proposed in subdivision (platted after the effective date of the new SMI policy) would be constructed at least 50 feet from neighboring docks. When this density requirement could not be met, only grouped or community facilities would be allowed.
- All anchoring cables or spud poles would be anchored in a way that would not accelerate bank erosion. Anchoring to trees would not be permitted.
- Utility lines (electric, water-intake lines, etc.) are allowed. Power lines and poles to serve water-use facilities would be installed in a way that would not be hazardous to the public or interfere with TVA reservoir operations. Electrical services would be required to have an electrical disconnect located above the 500-year floodplain or the flood risk profile, whichever is higher, and would be accessible during flood events.

Attachment 4

GENERAL AND STANDARD CONDITIONS
Section 26a and Land Use

General Conditions

1. You agree to make every reasonable effort to construct and operate the facility authorized herein in a manner so as to minimize any adverse impact on water quality, aquatic life, wildlife, vegetation, and natural environmental values.

2. This permit may be revoked by TVA by written notice if:
   a) the structure is not completed in accordance with approved plans;
   b) if in TVA's judgment the structure is not maintained as provided herein;
   c) the structure is abandoned;
   d) the structure or work must be altered to meet the requirements of future reservoir management operations of the United States or TVA, or:
   e) TVA finds that the structure has an adverse effect upon navigation, flood control, or public lands or reservations.

3. If this permit for this structure is revoked, you agree to remove the structure, at your expense, upon written notice from TVA. In the event you do not remove the structure within 30 days of written notice to do so, TVA shall have the right to remove or cause to have removed, the structure or any part thereof. You agree to reimburse TVA for all costs incurred in connection with removal.

4. In issuing this Approval of Plans, TVA makes no representations that the structures or work authorized or property used temporarily or permanently in connection therewith will not be subject to damage due to future operations undertaken by the United States and/or TVA for the conservation or improvement of navigation, for the control of floods, or for other purposes, or due to fluctuations in elevations of the water surface of the river or reservoir, and no claim or right to compensation shall accrue from any such damage. By the acceptance of this approval, applicant covenants and agrees to make no claim against TVA or the United States by reason of any such damage, and to indemnify and save harmless TVA and the United States from any and all claims by other persons arising out of any such damage.

5. In issuing this Approval of Plans, TVA assumes no liability and undertakes no obligation or duty (in tort, contract, strict liability or otherwise) to the applicant or to any third party for any damages to property (real or personal) or personal injuries (including death) arising out of or in any way connected with applicant's construction, operation, or maintenance of the facility which is the subject of this Approval of Plans.

6. This approval shall not be construed to be a substitute for the requirements of any federal, state, or local statute, regulation, ordinance, or code, including, but not limited to, applicable electrical building codes, now in effect or hereafter enacted.

7. The facility will not be altered, or modified, unless TVA's written approval has been obtained prior to commencing work.

8. You agree to notify TVA of any transfer of ownership of the approved structure to a third party. Third party is required to make application to TVA for permitting of the structure in their name.

9. You agree to stabilize all disturbed areas within 30 days of completion of the work authorized. All land-disturbing activities shall be conducted in accordance with Best Management Practices as defined by Section 208 of the Clean Water Act to control erosion and sedimentation to prevent adverse water quality and related aquatic impacts. Such practices shall be consistent with sound engineering and construction principles; applicable Federal, state, and local statutes, regulations, or ordinances; and proven techniques for controlling erosion and sedimentation, including any *required* conditions.

10. You agree not to use or permit the use of the premises, facilities, or structures for any purposes that will result in draining or dumping into the reservoir of any refuse, sewage, or other material in violation of applicable standards or requirements relating to pollution control of any kind now in effect or hereinafter established.

11. The facility will be maintained in a good state of repair and in good, safe, and substantial condition. If the facility is damaged, destroyed, or removed from the reservoir or stream for any reason, or deteriorates beyond safe and serviceable use, it cannot be repaired or replaced without the prior written approval of TVA.

12. You agree that if any historical or prehistoric archaeological material (such as arrowheads, broken pottery, bone or similar items) is encountered during construction of this facility you will immediately contact this office and temporarily suspend work at that location until authorized by this office to proceed.

13. The Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act apply to archaeological resources located on the premises. If LESSEE {or licensee or grantee (for easement) or applicant (for 26a permit on Federal land} discovers human remains, funerary objects, sacred objects, objects of cultural patrimony, or any other archaeological resources on or under the premises, LESSEE {or licensee, grantee, or applicant} shall immediately stop activity in the area of the discovery, make a reasonable effort to protect the items, and notify TVA by telephone (phone _ _ _ _ _). Work may not be resumed in the area of the discovery until approved by TVA.

14. On TVA land, unless otherwise stated on this permit, vegetation removal is prohibited.

Standard Conditions: (Items that pertain to your request have been checked.)

1. Structures and Facilities

a) ☐ TVA number _____ has been assigned to your facility. When construction is complete, this number shall be placed on a readily visible part of the outside of the facility in the numbers not less than three inches high.

b) ☐ The 100-year flood elevation at this site is estimated to be _____-feet mean sea level. As a minimum, your fixed facility should be designed to prevent damage to stored boats by forcing them against roof during a 100-year flood event.

c) ☐ You agree that the float will be temporarily connected (i.e., by slip pin/ropes) and not permanently attached to nonnavigable houseboat.

d) ☐ You agree that this _____ shall have no side enclosures except wire mesh or similar screening.

e) ☐ Buildings or other enclosed structures containing sleeping or living accommodations, including toilets and related facilities, or that have enclosed floor area in excess of 25 square feet, are prohibited.

f) ☐ Ski jumps will not be left unattended for extended periods of time. All facilities will be tied to the shoreline or to a boathouse or pier fronting your property at the completion of each day's activities.

g) ☐ For all electrical services permitted, a disconnect must be located at or above the _____-foot contour that is accessible during flooding.

h) ☐ You should contact your local government official(s) to ensure that this facility complies with all applicable local floodplain regulations.

i) ☐ The entire closed-loop coil heating and air conditioning system and its support apparatus must be either placed below elevation _____ (to provide a five-foot clearance for water craft at minimum pool elevations of _____) or located underneath a TVA approved water use facility or other TVA approved structure. The supply and return lines must be buried as they cross the reservoir drawdown zone in areas of water depth less than five feet (minimum pool). The liquid contents of the closed-loop heating and air conditioning system must be propylene glycol or water, and the applicant or authorized agent must provide TVA with written verification of this fact.

j) ☐ You agree that only those facilities which have been approved by TVA prior to construction will be placed within the harbor limits and that permanent mooring buoys, boat slips, or other harbor facilities will not be placed outside the harbor limits.

k) ☐ You agree that all storage, piping, and dispensing of liquid fuel shall comply with applicable requirements of the "Flammable and Combustible Liquids" section of the National Fire Codes and any additional requirements of federal, state, and local laws and regulations.

l) ☐ You agree that the _____ facility hereby approved will be used for _____ and for no other purpose unless approved in writing from TVA.

m) ☐ You agree that the construction project covered by this permit will be completed by the following date: _____.

n) ☐ You agree to securely anchor all floating facilities to prevent them from floating free during major floods.

o) ☐ You are responsible for accurately locating your facility, and this authorization is valid and effective only if your facility is located on or fronting property *owned* or *leased* as shown on your application.

2. Ownership Rights

a) ☐ No fill will be placed higher than elevation _____ maximum shoreline contour (msc), and every precaution will be taken not to disturb or alter the existing location of the _____-foot contour elevation through either excavation or placement of fill.

b) ☐ It is understood that you own partial interest in the land at this location. Therefore, you should be aware that, if objections to this structure are received by the other owners of partial interest at this site, that action may be cause for TVA to consider revoking this permit.

c) ☐ You are advised that TVA retains the right to flood this area and that TVA will not be liable for damages resulting from flooding.

d) ☐ You shall notify TVA of any sale or transfer of land, which would affect the landward limits of harbor area, as far in advance of such sale or transfer as possible.

e) ☐ This approval of plans is only a determination that these harbor limits will not have any unacceptable effect on TVA programs or other interests for which TVA has responsibility. Such approval does not profess or intend to give the applicant exclusive control over the use of navigable waters involved.

f) ☐ You recognize and understand that this authorization conveys no property rights, grants no exclusive license, and in no way restricts the general public's privilege of using shoreland owned by or subject to public access rights owned by TVA. It is also subject to any existing rights of third parties. Nothing contained in this approval shall be construed to detract or deviate from the rights of the United States and TVA held over this land under the Grant of Flowage Easement. This Approval of Plans does not give any property rights in real estate or material and does not authorize any injury to private property or invasion of private or public rights. It merely constitutes a finding that the facility, if constructed at the location specified in the plans submitted and in accordance with said plans, would not at this time constitute an obstruction unduly affecting navigation, flood control, or public lands or reservations.

3. Shoreline Modification and Stabilization

a) ☐ For purposes of shoreline bank stabilization, all portions will be constructed or placed, on average, no more than two feet from the existing shoreline at normal summer pool elevation.

b) ☐ You agree that spoil material will be disposed of and contained on land lying and being above the _ _ _ _-foot contour. Every precaution will be made to prevent the reentry of the spoil material into the reservoir.

c) ☐ Bank, shoreline, and floodplain stabilization will be permanently maintained in order to prevent erosion, protect water quality, and preserve aquatic habitat.

d) ☐ You agree to reimburse TVA $_ _ _ _ _, which is the current value of the _ _ _ _ _ acre feet of power storage volume displaced by fill into the reservoir.

4. Water Intake

a) ☐ If the reservoir falls below the elevation of the intake, the applicant will be responsible for finding another source of raw water.

b) ☐ You must install and maintain a standard regulatory hazard buoy at the end of the intake to warn boaters of the underwater obstruction. The word “intake” should be added to the buoy and be attached using a five-foot cable.

c) ☐ The screen openings on the intake strainer must be 1/8-inch (maximum), to minimize the entrapment of small fish.

d) ☐ This approval does not constitute approval of the adequacy or safety of applicant’s water system. TVA does not warrant that the water withdrawn and used by applicant is safe for drinking or any other purpose, and applicant is solely responsible for ensuring that all water is properly treated before using.

5. Bridges and Culverts

a) ☐ You agree to design/construct any instream piers in such a manner as to discourage river scouring or sediment deposition.

b) ☐ Applicant agrees to construct culvert in phases, employing adequate streambank protection measures, such that the diverted streamflow is handled without creating streambank or streambed erosion/sedimentation and without preventing fish passage.

c) ☐ Concrete box culverts and pipe culverts (and their extensions) must create/maintain velocities and flow patterns which offer refuge for fish and other aquatic life, and allow passage of indigenous fish species, under all flow conditions. Culvert floor slabs and pipe bottoms must be buried at least one foot below streambed elevation, and filled with naturally occurring streambed materials. If geologic conditions do not allow burying the floor, it must be otherwise designed to allow passage of indigenous fish species under all flow conditions.

d) ☐ All natural stream values (including equivalent energy dissipation, elevations, and velocities; riparian vegetation; riffle/pool sequencing; habitat suitable for fish and other aquatic life) must be

provided at all stream modification sites. This must be accomplished using a combination of rock and bioengineering, and is not accomplished using solid, homogeneous riprap from bank to bank.

e) ☐ You agree to remove demolition and construction by-products from the site--for recycling if practicable, or proper disposal--outside of the 100-year floodplain. Appropriate BMPs will be used during the removal of any abandoned roadway or structures.

6. Best Management Practices

a) ☐ You agree that removal of vegetation will be minimized, particularly any woody vegetation providing shoreline/streambank stabilization.

b) ☐ You agree to installation of cofferdams and/or silt control structures between construction areas and surface waters prior to any soil-disturbing construction activity, and clarification of all water that accumulates behind these devices to meet *state* water quality criteria *at the stream mile where activity occurs* before it is returned to the *unaffected portion of the stream*. Cofferdams must be used wherever construction activity is at or below water elevation.

c) ☐ A floating silt screen extending from the surface to the bottom is to be in place during excavation or dredging to prevent sedimentation in surrounding areas. It is to be left in place until disturbed sediments are visibly settled.

d) ☐ You agree to keep equipment out of the reservoir or stream and off reservoir or stream banks, to the extent practicable (i.e., performing work "in the dry").

e) ☐ You agree to avoid contact of wet concrete with the stream or reservoir, and avoid disposing of concrete washings, or other substances or materials, in those waters.

f) ☐ You agree to use erosion control structures around any material stockpile areas.

g) ☐ You agree to apply clean/shaken riprap or shot rock (where needed at water/bank interface) over a water permeable/soil impermeable fabric or geotextile and in such a manner as to avoid stream sedimentation or disturbance, or that any rock used for cover and stabilization shall be large enough to prevent washout and provide good aquatic habitat.

h) ☐ You agree to remove, redistribute, and stabilize (with vegetation) all sediment which accumulates behind cofferdams or silt control structures.

i) ☐ You agree to use vegetation (versus riprap) wherever practicable and sustainable to stabilize streambanks, shorelines, and adjacent areas. These areas will be stabilized as soon as practicable, using either an appropriate seed mixture that includes an annual (quick cover) as well as one or two perennial legumes and one or two perennial grasses, or sod. In winter or summer, this will require initial planting of a quick cover annual only, to be followed by subsequent establishment of the perennials. Seed and soil will be protected as appropriate with erosion control netting and/or mulch and provided adequate moisture. Streambank and shoreline areas will also be permanently stabilized with native woody plants, to include trees wherever practicable and sustainable (this vegetative prescription may be altered if dictated by geologic conditions or landowner requirements). You also agree to install or perform additional erosion control structures/techniques deemed necessary by TVA.

Additional Conditions

Attachment 5

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

May 7, 1999

Mr. Jon M. Loney
Manager, Environmental Management
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

Re: FWS #99-1322

Dear Mr. Loney:

Thank you for your letter and enclosure of April 16, transmitting an environmental assessment for private water use facilities on the Hiwassee River between Mile 20.0 and 42.5 in Bradley, McMinn, and Polk Counties, Tennessee. The Fish and Wildlife Service (Service) has reviewed the document and offers the following comments.

The environmental assessment is adequate and supports the conclusion of "not likely to adversely affect" with which we concur. In view of this, we believe that the requirements of Section 7 of the Endangered Species Act have been fulfilled, provided that water use facilities are constructed in accordance with all of the appropriate general and standard conditions described in the assessment. Obligations under Section 7 must be reconsidered, however, if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Based on discussions with biologists from several agencies and on-site inspections of other proposed water use facilities, it appears that there is a trend toward residential development along many of the rivers in eastern Tennessee. Consequently, there is likely to be a significant increase in the number of applications for water use facilities such as boat ramps, docks, and piers on the Holston, Hiwassee, French Broad, and other rivers. We believe that cumulative impacts resulting from construction of large numbers of these facilities in close proximity can have significant adverse impacts if not done with protection of aquatic resources in mind. In addition, consultation on permit

applications for large numbers of individual facilities would consume tremendous amounts of staff time and effort. Therefore, we encourage you to explore the feasibility of evaluating this trend and addressing the potential for impacts to endangered and threatened species on a watershed or basin level. The Service is willing to provide technical assistance to help resolve potential conflicts between recreational use of East Tennessee's rivers and endangered species protection.

Thank you for the opportunity to comment on this action. If you have any questions, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,

for Lee A. Barclay, Ph.D.
Field Supervisor