

DRAFT ENVIRONMENTAL ASSESSMENT

File No. 2006-0497

The Preserve Marina Owners Associations Application

for Proposed Community Floating Docks, Boat Ramp, Access Road, and Upland Dry Storage
at Haw Branch Embayment, Tennessee River Mile 209.6R
Pickwick Reservoir, Hardin County, Tennessee

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CHAPTER 1.0 Proposed Activity

1.1. Background. The Preserve Marina Owners Association, Inc. (applicant) submitted an application for a U.S. Department of the Army (DA) permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and for a Tennessee Valley Authority (TVA) permit pursuant to Section 26a of the TVA Act for construction of community boat slips. The proposed project location is Haw Branch Embayment at Tennessee River Mile (TRM) 209.6, right bank (R), on Pickwick Reservoir, in Hardin County, Tennessee. The joint TVA and DA application was received by the DA, Corps of Engineers (COE) on 26 December 2006. Additional information was received on 9 January 2007, which completed the permit application. Joint Public Notice 07-01 was issued on 12 January 2007 (See Appendix A for public notice with detailed project description and location map).

Shoreline fronting the proposed facility is allocated in the Pickwick Reservoir Land Management Plan (TVA 2002) for residential access. Back-lying landowners have rights of ingress and egress to the waters of Pickwick Reservoir and can apply for shoreline alteration and improvement approvals from TVA. Prior to the receipt of the community boat slip application, an application for a proposed 200-foot long by 20-foot wide boat ramp at this location was received by TVA and COE, dated 12 December 2006. The COE's Field Office in Decatur, Alabama reviewed the proposed boat ramp and verified the ramp met the Nationwide Permit #36 conditions for boat ramp construction on 19 December 2007 (See Appendix B). The boat ramp construction met the Tennessee Department of Environment and Conservation (TDEC) conditions for a General Permit for Launching Ramps, which was issued on 1 July 2005 (See Appendix B). TVA's action was determined to qualify for categorical exclusion under its procedures for compliance with the National Environmental Policy Act. This determination was documented by TVA in a Categorical Exclusion Checklist (CEC). After review of the boat ramp, TVA issued the 26a permit for the boat ramp on 20 December 2006 (See Appendix B).

TVA provided photos of the proposed project site and Haw Branch that were taken while the reservoir was at normal summer pool (NSP) elevation 414.0-foot mean sea level (msl) (Appendix C). On 5 February 2007, prior to expiration of the joint public notice, TVA and COE conducted a field inspection of the proposed community boat slips and boat ramp locations. A memorandum about the onsite visits with project photos is found in Appendix C. No work had started on the community boat slips and/or boat ramp at that time. As requested by the concerned citizens' group "Friends of Pickwick," another onsite inspection was conducted by COE and TVA on 22 February 2007 to listen to concerns of its members (See memorandum with project photos in Appendix C).

Subsequently, the COE and TVA became aware of upland activities associated with the boat ramp (See boat ramp plans with upland facilities in Appendix E). The COE determined that the

upland dry (boat) storage and parking area are integral to the approved boat ramp. Thus, the COE and TVA have decided that the boat launching ramp, access road and areas related to ramp parking, and the area for the upland boat dry storage facility would be included in the permit area which would be evaluated in association with the community boat slips. The applicant was notified by letter dated 7 March 2007, that no additional work on these areas should occur until the COE completes its review (See Appendix E). The applicant then advised COE and TVA that the boat ramp would only be utilized by the residents of The Preserve that store their boats in the dry storage. The dry storage would be constructed on one level with no stacking, with boat-on-trailer storage bays. Only the dry storage facility operator would launch the boats at the ramp, thus, no additional parking would be required at the ramp. This draft Environmental Assessment (DEA) incorporates a review of the boat ramp, community boat slips, access road, and dry storage facility and supersedes earlier environmental reviews by COE and TVA.

A photograph of Haw Branch looking upstream from near its confluence with the Tennessee River (mouth) is shown in Figure 1. Aerial photos of the project site and Haw Branch, taken by TVA in February 2007, are included in Appendix D. An artist rendering and conceptual plans of the proposed development with generally defined amenities can be found in Appendix J.

1.2. Proposed Action and Scope of Work. The proposed work consists of the construction of a boat ramp, floating covered community boat slips, an access road, and a dry boat storage facility (and parking area) for The Preserve Marina Owners Association, Inc. at the subject location (See Appendix A). The proposed work would involve five separate dock systems. Dock A would consist of three (3) – 20-foot by 20-foot boat slips that would extend out 40 feet from the normal summer pool (NSP, elevation 414-feet msl) shoreline for Pickwick Reservoir. Dock B would consist of fifteen (15) – 20-foot by 24-foot boat slips, and extend out 48 feet from NSP shoreline. Dock C would consist of fifteen (15) – 20-foot by 24-foot boat slips, and extend out 38 feet from NSP shoreline. Dock D would consist of seven (7) – 20-foot by 20-foot boat slips, and extend out 36 feet from the NSP shoreline. Dock E would consist of thirteen (13) – 20-foot by 20-foot boat slips, and would extend out 36 feet from the NSP shoreline. All 53 boat slips would be covered and floating. No dredging is proposed. A narrow strip of forested TVA land occurs along the shoreline at the site and lies between the 414-foot msl and 423 foot msl contour elevations. As back-lying landowners, The Preserve and future lot owners have rights of ingress and egress to the waters of Pickwick Reservoir which would allow them to apply for shoreline alterations and construction of water use facilities pursuant to COE Section 10 and Section 404 and TVA Section 26a regulations.

Figure 1. Photograph of Haw Branch Embayment Taken During the 22 February 2007 On-Site Inspection



The purpose of the proposed work is to provide the residents at The Preserve at Pickwick (The Preserve) residential development with boat mooring facilities and the ability to utilize a dry boat storage facility. As a part of the agencies' public scoping and involvement (described in detail below in Chapter 2), the Friends of Pickwick sent numerous emails concerning "piecemealing" of the project (See emails in Appendix G). In response to their concerns, the COE and TVA reviewed the development to determine what the appropriate scope of review would be for the proposed activities.

The COE forwarded a letter to Friends of Pickwick, on 12 March 2007, responding to the "piecemealing" questions regarding this project (See Appendix I).

There are two issues which the agencies have considered. First, The Preserve residential development is being constructed on private property. Neither agency has the ability to control the effects of this construction on private property because of limited statutory authority over the relevant actions. Therefore, the agencies have determined that the appropriate scope of review is limited to the specific federal approvals requested by the applicant and the impacts and effects of these proposed facilities.

Second, the COE and TVA have reviewed a conceptual plan prepared by the developers of The Preserve showing possible future phases of residential development. Based on the conceptual plan, future federal permits could be requested including permits for several off-reservoir lakes, constructed by excavating and impounding tributary streams or wet weather conveyances to the reservoir (See Appendix J). An application for additional amenities or development has not been received by either permitting agency. A meeting was held onsite on 27 March 2007, with the applicant, TVA, TDEC, and the COE concerning the concept plan. This meeting confirmed that the proposed lake construction or possible future development is not related to the boat ramp and/or community boat slip construction. The agencies have determined that the off-reservoir lakes and possible future developments are not an integral part of the boat ramp and/or boat slips and have independent utility. The developer stated that any additional amenities would be in future phases of the development which are uncertain at this time and would be based on financial and other considerations. If these activities are proposed, the appropriate level of review would be undertaken by the COE and TVA and the cumulative impacts of these actions, if any, to other proposed actions would be considered.

To better understand, evaluate, and document potential environmental effects of The Preserve proposal, the agencies have decided to include the boat launching ramp, community docks, access road, and dry storage facilities in this DEA.

1.3. Decision Required. Section 10 of the Rivers and Harbors Act of 1899 prohibits the alteration or obstruction of any navigable waters of the United States unless authorized by the Secretary of the Army acting through the Chief of Engineers. The location of the proposed work is a navigable water of the United States as defined by 33 CFR Part 329. Section 26a of the TVA Act requires that no dam, appurtenant work, or other obstruction affecting navigation, flood control, or public lands or reservations be constructed and thereafter operated or maintained across, along, or in the Tennessee River or any of its tributaries until plans for such construction, operation, and maintenance have been submitted to and approved by TVA. TVA is a cooperating agency in this jointly-prepared DEA. TVA and DA permits are required for the work; therefore, the agencies must decide on one of the following:

- a. issuance of a permit for the proposal,
- b. issuance of a permit with modifications or conditions,
- c. denial of the permit.

1.4. Other Approvals Required. No other federal, state, and local approvals are required for the proposed boat slips, boat ramp, access road, and upland dry storage.

CHAPTER 2.0 Public Involvement Process

On 12 January 2007, Joint COE/TVA Public Notice No. 07-01 (Appendix A) was issued to advertise the proposed work and to solicit comments from local, state, and other federal agencies, elected officials, nongovernmental organizations and other interested parties. This scoping information is necessary to evaluate the issues to be addressed and probable impacts of the proposed action. This public notice did not contain information or plans from the applicant for the upland dry storage facility. The public notice expiration date was 12 February 2007.

One individual responded by email dated 31 January 2007, requesting a public notice comment period extension. This individual requested the extension in order to have adequate time to get information together to respond effectively, and also requested an onsite meeting with COE and TVA personnel to answer questions regarding the proposed work (See Appendix G). The COE and TVA granted a 15-day public notice extension, to 27 February 2007, by email on 31 January 2007 (See Appendix G). The commenter then requested for another public notice comment period extension. Another public notice comment period was granted for an additional 7 days, which extended to 7 March 2007 (See Appendix G).

Comments received during this public involvement process identified the important issues/factors that have been determined relevant to the required decision and are addressed in this DEA. All written responses to the public notice (See Appendix A) are included in Appendix F. These comments, as well as the comments received during the public review of this DEA (Appendix P), will be taken into account in the agencies' decision making process. Summaries of the public notice responses are as follows:

Reviewing Agency Comments:

- a. The Tennessee Historical Commission (THC) responded to the public notice by letter dated 12 January 2007, requesting comments and recommendations of the COE's cultural resources staff regarding the undertaking's potential to affect historic properties.
- b. The Tennessee Wildlife Resources Agency (TWRA) responded by letter dated 7 February 2007, stating they are concerned about the numerous boat docks and high traffic area for recreational boating and commercial vessels. TWRA is concerned that Haw Branch embayment is the one of the last coves in the area of Pickwick Reservoir where jet skiers can safely recreate. The upstream section of Haw Branch is used extensively by sport fishers seeking largemouth and smallmouth bass. TWRA is concerned about the potential boating safety issues, reduction in area of public waters available to recreational boaters (such as jet

skiers) and reduction in area of public waters available to sport fishers within Haw Branch. Also, TWRA expressed its concern that the proposed docks may exceed the one-third of the width of cove rule.

- c. The U.S. Fish and Wildlife Service (USFWS) responded to the public notice by letter dated 14 February 2007, stating that endangered species collection records available do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. USFWS stated that they believe that the requirements of Section 7(c) of the Endangered Species Act of 1973, as amended, are fulfilled. Also, USFWS does not anticipate adverse effects to fish and wildlife or their habitats as a result of the proposed work.

Opposing Public Comments:

- a. Ms. Barbara Tigrett and Ms. Doris Jackson Jibeault, known as Friends of Pickwick, responded by letter dated 13 March 2007, stating their opposition to the project and requesting a public hearing for the project. Their comments stated violation of NEPA procedures and 26a regulations, critical information was withheld, reported an “after-the-fact” violation, issues with feasibility and dredging requirements, piecemeal issues (project segmentation), SMI shoreline regulation compliance, consideration of alternative locations to protect public lands and preserve the natural, pristine cove, and objections to the boat ramp. They requested officials enforce established regulations, honor policies, and deny the permit.
- b. Pickwick Boaters Association responded by letter dated 21 January 2007, stating they do support Friends of Pickwick’s long-time efforts to preserve and protect Haw Branch. They urged TVA and COE to respond positively to formal requests relating to questionable categorical exclusions, public comment period extension, and a full Environmental Impact Study vs. the EA.
- c. Mr. & Mrs. Ison, responded by email dated 8 March 2007, stating they could hardly find a place to park their boat as there are only a few coves left.
- d. Pete Payne responded by email dated 7 March 2007, requesting to save Haw Branch from commercial/residential development and they don’t need another marina with high slip rental and gas prices.
- e. The Alexanders responded by email dated 7 March 2007, stating they support “saving” Haw Branch.

- f. Wil & Kim Horn responded by email dated 7 March 2007, stating they support saving Haw Branch as a natural area.
- g. Bob & Mary Ann Gantzer responded by email dated 7 March 2007, stating they are in strong objection to the development of this last safe haven in their part of Pickwick.
- h. Bess McMillan responded by letter dated 7 March 2007, that such a development is a travesty to the environment.
- i. Mr. Doris Jibeault responded by email dated 6 March 2007, stating her concerns of the new development to meet the 1/3 cove requirement, concerns over dredging and operation of a full service marina, and request moving the boatslips to Bluff Creek.
- j. Nancy Straciner responded by letter dated 24 February 2007, requesting help to preserve the shoreline of Pickwick and prevent the boat ramp.
- k. Corrinie Smith responded by letter dated 23 February 2007, requesting to preserve Haw Branch Cove, urge officials to enforce regulations and honor policies to protect vanishing natural resources, adjacent public lands and wetlands, and preserve the last pristine cove in this area.
- l. Carol Miller responded by email dated 26 February 2007, stating her opposition of the development of Haw Branch, that this is one of the few undeveloped coves on the river in this area.
- m. Gerald Trejo responded by email dated 26 February 2007, requesting to stop development in Haw Branch and keep this area in its natural state.
- n. Paul and Brenda Irwin responded by email dated 27 February 2007, requesting to preserve Haw Branch cove, officials to enforce regulations and honor policies that protect vanishing natural resources, adjacent public lands and wetland from adverse environmental impacts.
- o. Lucius Lamar responded by letter dated 25 February 2007, stating he is 100% against this proposal that it is the only deep water cove near the dam that hasn't been spoiled by shoreline development.
- p. Jerry Ehrlich responded by email dated 23 February 2007, requesting to deny any permits for construction of the boat facilities in the last pristine cove in the area, and that it is imperative that Haw Branch remain in its natural state for future generations of wildlife, the children, and grandchildren.
- q. Jerry Ehrlich responded again by letter dated 23 February 2007, stating that cove by cove developers are taking away the pristine natural state of Pickwick Lake. He requested the

permits be denied because it (Haw Branch) is the last pristine cove in the area and it should remain in its natural state for future generations of wildlife, for the children, and grandchildren to enjoy.

- r. Danny Lyons responded by email dated 27 February 2007, stating TVA and COE to fairly enforce regulations to protect Haw Branch and adjacent public lands from the adverse impact of development.
- s. Richard Blount responded by email dated 27 February 2007, stating that it is becoming harder to find a place like Haw Branch and urged the agencies to keep some areas closed to development so that the not- so –rich public will still have a piece of this magnificent area.
- t. Greg Basye responded by email dated 27 February 2007, that the COE to fairly enforce regulations and policies in the protection of Haw Branch and public lands from the adverse effect of proposed development. The development of one of the most pristine coves left on Pickwick Lake would change the character of this area that would be irreversible threatening critical habitat and turning it into a boat hotel for the privilege of only a few.
- u. The Friends of Pickwick provided a petition with 101 names stating they support preserving all of Haw Branch Cove as a natural area for wildlife, residents, fishing and as a safe harbor for recreational boaters.
- v. A total of 141 postcards were received with names and addresses that stated to “please preserve Haw Branch Cove.” The postcards also urged TVA and COE to enforce regulations and honor policies that protect vanishing natural resources, adjacent public lands and wetlands, from adverse environmental impact of all the boat facilities.

Supportive Public Comments:

- a. State of Tennessee, House of Representatives, Randy Rinks commented to the proposed work by letter dated 12 February 2007, stating that he supports The Preserve development. As the sponsor of the TN River Resort Bill that would bring additional revenue to the county, it is imperative that these types of projects continue. The lake draws many people to the area and he hopes that with the development of retirement villages and tourist attractions, the economy will grow.
- b. David Giesler, Vice-President of Central Bank, responded by letter dated 22 January 2007, expressing his support of the development. He indicated that as a board member of Friends of Pickwick Landing State Park, he wanted to clarify this was different from Friends of Pickwick. He indicated that Friends of Pickwick Landing State Park supports the development and the economic benefits that could result from the project. In addition, he

indicated that as a board member of the Pickwick Landing Rotary Club, they support the development and its economic benefits. Also, as treasurer of Hardin County Chamber of Commerce, the board voted to offer support of the development.

- c. Beth Pippin of Hardin County Chamber of Commerce responded by letter dated 21 January 2007, stating their support of the project. The letter stated that the development will provide a positive economic impact on the immediate and surrounding area, as well as providing a substantial residual impact on the entire southwest Tennessee tourism region. The letter encouraged approval of the application on behalf of the Hardin County Chamber of Commerce Board of Directors representing small and large businesses, independent owners and national chains, the area's manufacturing and service sectors.
- d. Thomas Griffith of the Tennessee-Tombigbee Waterway Development Authority responded by letter dated 13 February 2007, stating their support of the project. The Authority is a four state compact created by Congress in 1958 to promote the construction and development of the Tennessee Tombigbee Waterway and one mission is to promote tourism.
- e. Bob Shutt, Mayor of City of Savannah, Tennessee responded by letter dated 8 February 2007, stating that the Savannah City Commission recently voted to participate in the Resort Bill as part of economic development. He stated the importance of increasing the tax base along the Tennessee River by encouraging new developments such as the Preserve.
- f. Kevin Davis, Hardin County Mayor, responded by letter dated 8 February 2007, stating he gives full support of the Preserve development. He indicated that development is a vital asset to the county. Tourism and retirement villages are the main base for the growing economy and the use of the lake as an attraction and recreational facility is essential.
- g. Donnie Gean, Regional President of Community South Bank, responded by letter that he is in full support of the development. He indicated that if the boat ramp and boat slips were not permitted for the owners of the development, it would add additional stress on the use of the state park boat ramp, where it is already difficult to launch on peak weekends.
- h. Donny Turnbow, City President of Community South Bank, responded by letter stating he is pleased with the interest in the project and the boat slips would be in the best interest of the area.
- i. Richard Rogers responded by letter stating that he purchased two lots in the Preserve. He indicated that it was expected that the project would be permitted in similar fashion to those issued for the existing developments such as Lands of Pickwick, Rivercliff, Shiloh Falls, Points of Pickwick and Grand Harbor. It is his position that the failure to issue the permit would be inconsistent with historical practices of TVA and the COE.

- j. Bill Crowell responded by letter stating that he purchased a lot in the Preserve development and believes that the development is a great enhancement to Pickwick Lakes, the plan represents a unique approach to provide individual home sites near the lake with potential access to the lake.
- k. Jim Kerr responded by letter stating he reviewed a handbill, by the Friends of Pickwick, and it is riddled with inaccurate information. It is his position that the Friends of Pickwick represent a very few versus the majority of Hardin or Shelby County. He supports the water use facilities for the development.
- l. Duane Wright, Wright’s Marine Construction Co., responded by letter dated 8 February 2007, stating the new developments increase bank stabilization along the shoreline and provides jobs during and after the development construction. Hardin County is mainly supported by the growth of developments which also creates jobs throughout the community. Also, his personal and business opinion is that all agencies and businesses would benefit from the development, such as his own company. Without the ability to supply docks with the purchase of lake property the land is harder to promote and the tax basis for the county is a lot less.
- m. A total of 273 names and addresses were provided on a petition that stated their approval and support of TVA and COE to approve the permits for the Preserve Development.

2.1. Responses to Comments. In accordance with standard DA permit processing procedures, the objections (and support) letters received in response to the public notice were forwarded to the applicant for attempted resolution or rebuttal. The applicant responded to the concerns by various letters, phone conversations, and submittals. The applicant formally responded to the concerns by letters dated 6 March 2007, 19 March 2007, and 23 March 2007. The concerns raised and responses will be evaluated and addressed throughout this document. See Appendix K for applicant’s response letters. The following provides a summary of the issues raised concerning the proposed work:

- a. **“Piecemealing” Project:** As discussed above in Section 1.2, the projects were reviewed for independent utility and/or as a single and complete project. The COE determined that the upland dry storage is an integral part of the ramp and should be reviewed as a part of this project. To better evaluate potential project effects, the agencies have decided to include the boat launching ramp, community docks, access road, and dry storage facilities in this DEA. In addition, several interior subimpoundments or small lakes were shown on the development’s conceptual plan (See Appendix J). A meeting was held onsite on 27 March 2007, with the applicant, TVA, TDEC, and the COE concerning any permitting requirements for the proposed lakes (See memorandum in Appendix H). The applicant indicated that the

proposed lake construction is not related to the boat ramp and/or boat slip construction. The agencies have determined that the lakes are not an integral part of the boat ramp and/or boat slips and have independent utility. Thus, the lakes would be separately reviewed as a single and complete project (See Section 1.2 Proposed Action and Scope of Work). In addition, the applicant indicated that such work was speculative at this time and any possible future development phases would depend on a number of factors.

- b. Archaeological Concerns: TVA and COE staff reviewed the project location, including the boat slips, boat ramp, access road, and upland dry storage area, for the project's potential to impact to historic properties including archaeological resources. COE archaeologist conducted a records search and file review of the Tennessee Division of Archaeology (TNDOA). Two archaeological sites were located in proximity to the project area (40HR72 and 40HR73). Both sites are located to the south of the project area and shown as inundated by the waters of Pickwick Reservoir. This project was also reviewed by TVA Cultural Resource staff. This staff determined that no historic properties would be affected by the project (See CEC in Appendix B). A letter was forwarded to the Tennessee Historical Commission (THC), dated 9 April 2007, stating that based on the COE file search and review at the TNDOA, the TVA cultural resource review, the steep slope of the project area combined with the minimal potential for impact to intact cultural materials within the water pool of Pickwick Reservoir and within the upland setting of the storage facility, it is the finding of the COE and TVA that no historic properties listed on or eligible for listing on the National Register of Historic Places will be affected by this project (See Appendix L).

In response to the 9 April 2007 letter from COE and by letter dated 17 April 2007, THC concurred that there are no National Register of Historic Properties listed or eligible properties affected by this undertaking. Therefore, THC has no objections to proceeding with the project (See Appendix L).

- c. Last Remaining Pristine Cove on Pickwick: The agencies realize that development is occurring along the right descending bank of lower Pickwick Reservoir and other private land along the Tennessee River. While the agencies have limited control over the upland activities, it is understood that residents of developments on reservoirs where they have access rights typically desire water-use facilities. Pickwick Reservoir provides an excellent area for water activities and the public has the right to free navigation on this public waterway. Due to the desirability of the area and the reservoir, continual growth pressure on the area is virtually inevitable. TVA and COE staff is aware of four other coves on lower Pickwick Reservoir within the vicinity of Haw Branch that are not developed. These coves are Dry Creek embayment (TRM 211.0R), Bryson Branch, a formerly designated safety harbor (TRM 212.0, left bank (L)), Panther Creek (TRM 218.0R), and Caney Branch (TRM 217.0R). There are numerous other coves located on Pickwick that are not developed, especially further upstream of the project site.

- d. Wetlands within the Haw Branch embayment and Tier II Stream: The proposed project is located within the backwater (upstream of the dam) of Pickwick Reservoir. A comment received has mentioned the presence of wetlands at the project site. The project site consists of backwater from the reservoir within the Haw Branch embayment. Due to the steep slope of the bank and shoreline, no wetlands are present along the shoreline at the project site. TVA personnel have indicated that a small wetland is located in the back of the Haw Branch embayment (See letter dated 10 April 2007 in Appendix I), but it would not be impacted by the project. No work is being proposed in this area; thus, no DA and TVA permits are required. While the upper headwater of Haw Branch is designated as a Tier II stream by TDEC, the tier designation does not continue downstream and into the backwater of the impoundment. Thus, Haw Branch backwater of Pickwick Reservoir is not considered a Tier II stream. Impounded waters at the project site rise and fall (i.e., fluctuate) consistent with TVA's seasonal operations at Pickwick Dam (See Section 3.2 for summer and winter normal operating elevations). Therefore, the tier qualification is not valid at the project site.
- e. Exceed "One-third" of the Width of Cove: A comment received from TWRA and a commenter raises the issue of whether there is sufficient room to navigate within the Haw Branch embayment and that the docks should not exceed one-third of the width of the cove. According to TVA Section 26a regulations in § 1304.204 Docks, piers, and boathouses, docks and walkway(s) shall not extend more than 150 feet from the shoreline, or more than one-third the distance to the opposite shoreline, whichever is less. This provision is used to ensure that adequate room is available for navigating within coves and embayment areas. The applicant and dock designer have advised the permitting agencies that they were aware of the "one-third" rule and it was considered during the design of the community docks. The cove widths are 105 feet across the first dock location at the upstream end (Dock E) of the embayment and 210 feet across at the last dock (Dock B) location toward the mouth of the embayment (See Appendix A). Given the dimensions for the community docks and the proper installation, they would meet the one-third of a cove rule. Corps and TVA staff have discussed this issue with the applicant and explained that if the docks cannot meet this standard, they will not be allowed to be installed at the requested location or will require modification or removal if installed in violation of this provision.
- f. Montana Land Company (MLC) Proposed Shoreline Access Rights and Land Exchange and Construction of Ramp on TVA Land/Public Land: In January 2000 MLC made a formal request for fee transfer of TVA's Planned Tract 3 (18 acres located at the mouth of Lower Anderson Branch) and Planned Tract 4 and 5 (36 acres located at the mouth of Haw Branch) in exchange for approximately 164 acres of MLC land and 4,794 feet of shoreline with residential access rights. Based on the proposal, the TVA land would have been sold at public auction and access rights over this land would have been granted. The 164 acres of former MLC land surrounds the back half of Haw Branch embayment and, if agreed upon,

access rights over this land would have been extinguished preserving Haw Branch from development. In 2005, TVA and MLC reached an impasse regarding the proposal and it was no longer pursued.

Regarding the location of the launching ramp in Haw Branch, TVA Watershed Team staff conducted a site visit on March 27, 2007 and confirmed that the ramp is located on the TVA fee-owned property (which is allocated for residential access in the Pickwick Reservoir Land Management Plan). This is a narrow strip of land between the water's edge (between elevations 414-foot msl and 423-foot msl) and the adjoining private property over which the back-lying property owner has the right to apply for shoreline alterations including the construction of private water use facilities upon approval of plans by TVA. Management of this marginal strip is subject to TVA's Shoreline Management Policy (SMP) which the TVA Board of Directors made effective November 1, 1999 for newly-developed residential areas (TVA 1998). Under SMP, TVA responds to a broad spectrum of residential shoreline management issues that protect critical resources while allowing reasonable access to the water. TVA continues to allow docks and other alterations along shorelines where access rights exist if they meet specific standards and guidelines to minimize environmental effects (See Section 3.6 Cumulative and Secondary Impacts). Other than the larger tracts of TVA land on both sides of the mouth of Haw Branch, this residential access shoreline, allocated in the Pickwick Reservoir Land Management Plan (TVA 2002), fronts the entirety of The Preserve property.

- g. Preparation of an Environmental Impact Study vs. Environmental Assessment: In accordance with the requirements of the National Environmental Policy Act (NEPA) and the *Regulations For Implementing The Procedural Provisions Of The National Policy Act* (40 CFR Parts 1500-1508) promulgated by the Council on Environmental Quality (CEQ), each federal agency has the responsibility to evaluate and document the potential effects on the human environment of its respective proposed actions. In compliance with NEPA and the *CEQ Regulations*, in coming to a determination of effects, interdisciplinary team experts rely on pertinent laws, regulations, executive orders, field analysis and observation, modeling, available knowledge, experience, and professional judgment. Potential to violate another environmental law or regulation, such as the Clean Air Act, would be an example of an adverse impact.

When an action, such as The Preserve Marina Owners Association proposal, cannot be categorically excluded and could result in potentially significant impacts or require mitigation to reduce those effects to levels of insignificance, federal agencies usually prepare an Environmental Assessments (EA) documenting those expected impacts and mitigation. Based upon the findings in the EA, an agency then makes a Finding of No Significant Impact (FONSI) determination or proceeds with additional environmental review. Completion of an EA and issuance of the FONSI is a determination that the

proposed action, including any necessary mitigation, would not have significant environmental consequences.

If, based upon the nature of an action and the context and intensity of effects in the environs where the action is proposed, agencies determine that environmental or socioeconomic impacts of a proposal are likely to be significant, an Environmental Impacts Statement (EIS) is usually initiated. If, during the process of preparing an EA, agencies determine that potential environmental effects are likely to be significant and not support a FONSI, despite mitigation, then the review may be elevated to an EIS.

CHAPTER 3.0 Environmental and Public Interest Factors Considered

3.1. Introduction. 33 CFR 320.4(a) states the decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. All factors that may be relevant to the proposal must be considered. The public notice in Appendix A listed those factors. The following sections describe the existing setting, show which public interest factors are relevant, and provide a concise description of the impacts of the project description with all submitted plans.

3.2. Site and Reservoir Description. Pickwick Reservoir has a normal pool area of 43,100 surface acres with 491 miles of shoreline. The NSP elevation of Pickwick Reservoir is 414-foot msl and the normal winter pool (NWP) elevation is 408-foot msl. Pickwick Reservoir has wide relatively unobstructed views from the water because it has few islands, is approximately 1.5 miles wide near Pickwick Dam, and averages over a mile in width throughout its length. Due to the wide open nature of the lower end of Pickwick Reservoir, the recreational value of the reservoir is quite desirable. The numerous coves and sheltered embayment areas on the reservoir provide tranquility and seclusion benefits to boaters. Haw Branch embayment is navigable by pontoon boats, bass boats and similar small to moderate size recreational vessels for about 0.75-mile.

Haw Branch originates in the upper headwaters and flows generally southwest before joining the Tennessee River at TRM 209.6R. Although timbered in the past, the headwaters of Haw Branch as it nears Pickwick Reservoir flow through relatively undisturbed second-growth forest lands. The shoreline in Haw Branch embayment is characterized as undeveloped, generally forested, and largely undisturbed. A large portion of both sides of Haw Branch shoreline, at its confluence with the Tennessee River, is owned by TVA.

The upper headwaters of Haw Branch have been determined by TDEC to be a Tier II water of the state of Tennessee (outstanding water). However, the Tier II category does not continue downstream beyond the confluence with the backwater of Pickwick Reservoir. The proposed

project is located within the embayment area of Pickwick Reservoir; thus, the project is located within the backwaters of Pickwick Reservoir. Water levels rise and fall in association with seasonal reservoir operation and water various downstream needs.

The proposed project site would be located on the west bank of Haw Branch (right descending bank). Land access to the development is from existing county highways. The closest town to the development is Savannah, Tennessee. Land access to the boat slips, boat ramp, and upland dry storage area would be from roads constructed by the applicant. The upland portion of the project site is owned by the applicant (private ownership). Some residential home construction has commenced within the development. Many lots have been sold within the development where the owners have not started construction yet. Also, a club house/restaurant is under construction. These activities do not require COE and/or TVA permits.

Pictures of the project site are found in Appendixes C, D, and H.

The TVA website (<http://www.tva.com/environment>) provides information concerning Pickwick Reservoir. A copy of the website information concerning Pickwick Reservoir, ecological health rating, swimming advisories, fish consumption advisories, sport fishing ratings, sportfish survey results, and water release information is found in Appendix M. The website also contains information concerning dissolved oxygen, chlorophyll, fish community, bottom life, and sediment levels. Waterbodies where fish tissue has levels of contamination that pose a higher than acceptable risk to the public are posted and the public advised of the danger. The project site and vicinity of the dock or ramp locations is not known at this time to be contaminated and poses no known public health or safety risk. There are no swimming advisories and/or fish consumption advisories in Pickwick Reservoir. The website information indicates that the overall ecological health condition in Pickwick Reservoir was rated good in 2004, when it had the highest score since monitoring began in 1994. The reservoir ratings for Pickwick have fluctuated in a pattern that generally follows reservoir flow conditions. Like most Tennessee River mainstem reservoirs, Pickwick tends to rate better in wet years and worse in dry years. The inflow rating, which is based on the health of fish and benthos, also was the highest to date in 2004.

Information concerning TVA's Shoreline Management Policy can be found at TVA website http://www.tva.com/river/landandshore/landuse_shore.htm. Information regarding the management of residential access shoreline on TVA reservoirs Valley-wide can also be found on its website at http://www.tva.gov/river/landandshore/landuse_shore.htm.

Onsite and Pre-application Meetings - Onsite meetings by COE and TVA personnel occurred throughout the application processing for the proposed project. TVA Watershed Team and

Navigation staff participated in several pre-application meetings and provided comments so that the proposed work could be designed in a manner to minimize navigation hazards. Other onsite inspections by the agencies were held on 5 February 2007, 22 February 2007, and 27 March 2007 (See Appendix C and H for memorandums of inspections). One of the onsite inspections involved meeting with the concerned citizens' group, Friends of Pickwick, and viewing the Haw Branch embayment by boat on 22 February 2007. This meeting/inspection was performed as requested by a member of this citizens' group to answer questions and obtain additional information prior to providing comments regarding the proposal. Two subsequent meetings were held with the applicant concerning the proposed project (See Appendix H for memorandums). See Appendix D for aerial photos of project site and Pickwick Reservoir at the project vicinity.

3.3. Physical/Chemical Characteristics and Anticipated Changes. The relevant blocks are checked with a description of the impacts.

(x) substrate – The Tennessee River and Haw Branch at the project site consists of a deep, slow-flowing pool habitat with accumulated sediment and gravel covering the reservoir bottom. No dredging is proposed for the proposed boat slips and/or boat ramp. Because there have been few industrial activities in the vicinity that may have contaminated sediments, there is no reason to suspect that sediments are contaminated with PCBs or any other recognized environmental contaminant.

(x) currents, circulation or drainage patterns – Because of its setting on a large reservoir, the proposed work is not expected to impact the current patterns in Haw Branch or the Tennessee River.

(x) suspended particulates, turbidity - Turbidity levels are expected to increase very slightly from the construction and presence of floating boat slips. Also, a pre-formed concrete slab has been prepared upland for the boat ramp. To complete the boat ramp construction, the concrete slab only has to be pushed into the reservoir. This activity would create minor and temporary turbidity impacts during the installation. The presence of the boat ramp is not expected to increase the turbidity levels. In addition, if issued, the DA and TVA permits for the community docks would be conditioned such that all disturbed areas must be stabilized after construction to eliminate any erosion or turbidity entering the reservoir. Also, the permits would include a condition that the applicant must institute and maintain erosion control measures for the life of the project and all disturbed areas must be properly seeded, mulched, or otherwise stabilized as soon as practicable to prevent erosion and sediments from entering the waterway during and after construction. Erosion and sediment control measures must include but not be limited to silt fencing, sedimentation pond, straw bales, rock barriers or check dams, erosion matting, silt curtains, and

temporary seeding and mulching. With these measures in place, the effects of the proposed construction on turbidity would be minimal and temporary.

(x) water quality (temperature, color, odor, nutrients, etc) – As defined by the Tennessee Department of Environment and Conservation, Pickwick Reservoir is classified for uses for domestic water supply, industrial water supply, fish and aquatic life, recreation, livestock watering and wildlife, irrigation, and navigation. Haw Branch is classified for uses for fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. No streams in the project area are listed on TDEC's 2006 303(d) list as impaired (i.e., not fully supporting their designated uses). As indicated in Section 3.2, there are no swimming or fish consumption advisories in Pickwick Reservoir.

TDEC's classification of the stream as a High Quality (Tier II) stream requires the incorporation of the antidegradation policy into regulatory decisions which affect the stream. Degradation cannot be authorized unless (1) there is no reasonable alternative to the proposed activity that would render it non-degrading and (2) the activity is in the economic or social interest of the public. However, the Tier II designation does not apply at the project site which is located below the confluence with the backwater of Pickwick Reservoir. No impacts to water quality are expected upstream of the project site.

Only minor water quality impacts are expected to occur at the project site from the construction and use of the boat slips and boat ramp. Since no fuel would be sold at the community docks, water quality impact would only be from minor, inadvertently leakage of petroleum products from boat engines. It is expected that such leakage would be very minor amounts and would be quickly dissipate in the normal downstream currents. No change is expected to occur in water temperature, color, odor, and nutrients from the boat slips and boat ramp or small amount of disturbance associated with their site preparation and construction. In addition, see recommended conditions for DA and TVA permits in “turbidity section” above. These conditions would also minimize any water quality impacts from potential turbidity sources.

Water supply and wastewater disposal for the dry storage facilities are expected to be provided by Aqua Utilities, a local private company. The utility has sufficient existing sewer capacity and no new discharge or septic system installation is expected. The utility is required to comply with federal, state, and local regulations for treatment and disposal of wastewater.

(x) flood control functions – The applicant would be responsible for designing the boat slip facilities to accommodate the floodwater velocities, volume and elevation changes. The dock equipment would be designed to accommodate the seasonal reservoir water level changes and

debris associated with flood events. The DA and TVA permits, if issued, would be conditioned requiring the applicant to consider water level fluctuations, particularly flood events, in the design of the planned community dock facilities.

(x) storm, wave and erosion buffers – The activity of mooring and launching boats would likely increase wave action within the embayment. However, there are many variables that contribute to shore erosion. There are no measurable means of determining erosion as a direct result of recreational boating in the area, especially compared to the number of recreational boats that are likely present within the embayment on a normal summer weekend. TVA owns a strip of land between the private property and the lake which would be left relatively undisturbed. If approved, vegetation along the TVA shoreline would be managed in accordance with the SMP (TVA 1998). Except for the area at the boat ramp and 20-foot wide (maximum) access corridors at each of the five community slips, this buffer would continue to provide natural erosion control. Although there is somewhat typical evidence of minor erosion along the shoreline where the community slips are proposed, the applicant has not proposed any bank stabilization measures at the project site at this time. In the long-term, slow but continued erosion could result in loss of TVA land and some vegetation, including trees. Therefore, in the long-term, the Preserve would consider the need for bank stabilization measures (e.g., bioengineering methods and/or combination of stone and vegetation planting) to be installed along the shoreline near the docks if shoreline erosion appears to be accelerating. Such shoreline stabilization is expected to have minor and insignificant impacts.

(x) baseflow – Because of the nature of the action, the baseflow of Haw Branch and the Tennessee River would not be impacted from the proposed project.

3.4. Biological Characteristics and Anticipated Changes. The relevant blocks are checked with a description of the impacts.

(x) special aquatic sites (wetlands, mudflats, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45) – The proposed project is located within the backwater of Pickwick Reservoir, which is not considered a special aquatic site. The project site occurs along the right descending bank of and within the Haw Branch embayment. Due to the steep slope of the bank, no wetland is present along the shoreline at the project site. While no jurisdictional determination has been made, it appears that a small wetland area is located further upstream in the back of the Haw Branch embayment (See TVA letter dated 10 April 2007 in Appendix I). However, this area is far enough away from the proposed actions that there would no impact on this wetland from the project. No work is being proposed in this wetland area; thus, no DA and TVA permits are required for any part of the current proposal.

(x) habitat for fish and other aquatic organisms – Physical habitat of the project site appears adequate to support the type of fish species common in backwater/pool systems. Land use in the area for the past several years has primarily been associated with recreation and land cover is mostly forest. Aquatic habitat in the area has not been heavily disturbed by development (See water quality section above).

TVA began a program to systematically monitor the ecological conditions of its reservoirs in 1990, though no samples were taken on Pickwick Reservoir until 1993. Reservoir (and stream) monitoring programs were combined with TVA’s fish tissue and bacteriological studies to form an integrated Vital Signs Monitoring program. Vital signs monitoring activities focus on (1) physical/ chemical characteristics of waters; (2) physical/chemical characteristics of sediments; (3) benthic macro-invertebrate community sampling; and (4) fish assemblage sampling.

Benthic macro-invertebrates are included in aquatic monitoring programs because of their importance to the aquatic food chain, and because they have limited capability of movement, thereby preventing them from avoiding undesirable conditions. Sampling and data analysis are based on seven parameters that indicate species diversity, abundance of selected species that are indicative of good (and poor) water quality, total abundance of all species except those indicative of poor water quality, and proportion of samples with no organisms present. Areas sampled on Pickwick Reservoir include the fore-bay at TRM 207.3 and a mid-reservoir transition station in the vicinity of TRM 230. All of the benthic community scores rated “Good” to “Excellent” for the seven years during which benthic samples were taken (Table 1). Haw Branch would likely score similarly considering the lack of disturbance over the recent past years.

Table 1. Recent (1994-2006) Benthic Community Scores* Collected as Part of the Vital Signs Monitoring Program Upstream and Downstream of Haw Branch, Pickwick Reservoir

Station	River Mile	1994	1996	1998	2000	2002	2004	2006
Fore-bay	TRM 207.3	29	29	29	27	25	25	29
Mid-reservoir	TRM 230	31	33	31	21	29	31	29

*Benthic Community Score 7-12 13-18 19-23 24-29 30-35
 Community Condition Very Poor Poor Fair Good Excellent

The Reservoir Vital Signs monitoring program included annual fish sampling on Pickwick Reservoir in 1993 and 1994, and biennially until 2006, except for the forebay in 1998. Fish are included in aquatic monitoring programs because they are important to the aquatic food chain and because they have a long life cycle which allows them to reflect water quality conditions over time. Fish are also important to the public for aesthetic, recreational and commercial

reasons. Ratings are based primarily on fish community structure and function using a metric known as the Reservoir Fish Assemblage Index (RFAI). Also considered in the rating is the percentage of the sample represented by omnivores and insectivores, overall number of fish collected, and the occurrence of fish with anomalies such as diseases, lesions, parasites, deformities, etc. (TVA 1999). The fish community in Pickwick Reservoir has consistently rated in the “Good” to “Excellent” range at both the fore-bay and the mid-reservoir sampling stations (Table 2).

Table 2. Recent (1993-2006) RFAI Scores* Collected as Part of the Vital Signs Monitoring Program Upstream and Downstream of Haw Branch, Pickwick Reservoir

Station	River Mile	1993	1994	1996	1998	2000	2002	2004	2006
Fore-bay	TRM 207.3	49	45	53		44	48	48	41
Mid-reservoir	TRM 230	44	43	47	42	46	46	44	44

* RFAI Score
 Community Condition 12-21 22-31 32-40 41-50 51-60
 Very Poor Poor Fair Good Excellent

Typical fish species expected at the site include largemouth bass, smallmouth bass, bluegill sunfish, redear sunfish, longear sunfish, redbreast sunfish, warmouth, catfish, freshwater drum, striped shiner, brook silverside, longnose gar, spotted sucker, and gizzard shad. A Sport Fishing Index (SFI) has been developed to measure sport fishing quality for various species in Tennessee and Cumberland River Valley Reservoirs (See Appendix M). The SFI is based on the results of fish population sampling by TVA and state resources agencies and, when available, results of angler success as measured by state resource agencies (i.e., bass tournament results and creel surveys). Pickwick Reservoir provides some opportunities for sport anglers, particularly those interested in black bass (Hickman 1999). In 2005, Pickwick Reservoir rated just below average for largemouth bass, spotted bass and smallmouth bass (Table 3).

Table 3. SFI Scores for Selected Sport Fish Species in Pickwick Reservoir, 2005

Fish Species	2005 Score	2005 Valleywide Average
Black Bass	33	34
Largemouth Bass	31	34
Smallmouth Bass	24	30
Spotted Bass	27	30

Data on the fish species collected has been published or posted on the TVA website for all samples taken between 1994 and 2004. However, the numbers of each species collected are only available from 2000 to 2006. In total there were 50 species collected from Pickwick Reservoir between 2000 and 2006. Table 4 lists the 50 species collected from Pickwick Reservoir at the two sample sites, as well as the total number of fish collected by river mile during years that such data are available.

Table 4. Fish species collected from electro-fishing and gill netting samples at two sites (TRM 207.3 and TRM 230), Pickwick Reservoir, from 2000 to 2006

Scientific Name	Common Name	2000		2002		2004		2006	
		RM 207.3	RM 230						
<i>Lepisosteus oculatus</i>	Spotted Gar	1	2	7	1	3		5	6
<i>Lepisosteus osseus</i>	Longnose Gar	-	2	-	-				
<i>Alosa chrysochloris</i>	Skipjack Herring	32	23	98	55	45	8	81	11
<i>Dorosoma cepedianum</i>	Gizzard Shad	323	84	289	92	163	44	246	127
<i>Notropis texanus</i>	Weed Shiner	-	-	-	-				1
<i>Pimephales vigilax</i>	Bullhead Minnow	-	-	-	7				1
<i>Carpiodes carpio</i>	River Carpsucker	-	2	-	-				
<i>Hypentelium nigricans</i>	Northern Hogsucker	-	2	-	1	1	1		2
<i>Carpiodes cyprinus</i>	Quillback		-	-	-			1	
<i>Ictiobus bubalus</i>	Smallmouth Buffalo	1	7	1	6		1	2	4
<i>Ictiobus cyprinellus</i>	Bigmouth Buffalo	-	-	2	-	1			1
<i>Ictiobus niger</i>	Black Buffalo	-	-	1	1		1	1	
<i>Minytrema melanops</i>	Spotted Sucker	13	8	11	6	14	2	5	16

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Scientific Name	Common Name	2000		2002		2004		2006	
		RM 207.3	RM 230						
<i>Moxostoma duquesnei</i>	Black Redhorse	-	-	-	3	1	3		1
<i>Moxostoma anisurum</i>	Silver Redhorse	-	5	-	-				
<i>Moxostoma macrolepidotum</i>	Shorthead Redhorse	1	4	-	-		1	1	
<i>Moxostoma erythrurum</i>	Golden Redhorse	1	4	1	1	1	1		1
<i>Ictalurus furcatus</i>	Blue Catfish	8	19	8	2	5	6	6	5
<i>Ictalurus punctatus</i>	Channel Catfish	5	9	25	21	17	25	9	15
<i>Polydictis olivaris</i>	Flathead Catfish	8	5	15	4	2	2	4	1
<i>Morone chrysops</i>	White Bass	-	17	2	5		1		
<i>Morone mississippiensis</i>	Yellow Bass	1	6	28	8	15	4		6
<i>Morone saxatilis</i>	Striped Bass	3	-	2	7	2	1		
<i>Morone sp.</i>	Hybrid striped X white	1	6	-	-				
<i>Lepomis gulosus</i>	Warmouth	-	-	2	-			1	
<i>Lepomis cyanellus</i>	Green Sunfish	3	-	16	2	15		5	
<i>Lepomis macrochirus</i>	Bluegill	22	9	74	45	56	41	147	6
<i>Lepomis megalotis</i>	Longear Sunfish	38	1	110	67	108	34	76	7
<i>Lepomis microlophus</i>	Redear Sunfish	10	8	11	17	5	3	16	7
<i>Micropterus dolomieu</i>	Smallmouth Bass	6	6	17	7	14	1	18	3
<i>Micropterus punctulatus</i>	Spotted Bass	2	11	60	6	22	7	7	2
<i>Micropterus salmoides</i>	Largemouth Bass	15	19	78	55	48	85	66	184
<i>Pomoxis annularis</i>	White Crappie	-	-	4	1	3	1	1	

Scientific Name	Common Name	2000		2002		2004		2006	
		RM 207.3	RM 230						
<i>Pomoxis nigromaculatus</i>	Black Crappie	-	-	-	-	1	1		
<i>Perca flavescens</i>	Yellow Perch	1	2	5	1	11	9	1	
<i>Etheostoma kenneicotti</i>	Stripetail Darter	-	-	1	-				
<i>Percina caprodes</i>	Logperch	5	4	8	4	2	14	1	2
<i>Sander canadensis</i>	Sauger	3	7	6	2	10	11	5	4
<i>Aplodinotus grunniens</i>	Freshwater Drum	10	8	18	9	20	1	11	5
<i>Labidesthes sicculus</i>	Brook Silverside	-	-	-	-	11			
<i>Menidia beryllina</i>	Inland Silverside	-	-	86	151	120	29	7	8
<i>Ichthyomyzon castaneus</i>	Chestnut Lamprey	-	-	2	-	1	1		
	Total Fish Collected	535	494	1443	609	859	410	744	450

Because uncured concrete can be toxic to aquatic life, a concrete slab boat ramp would be poured on dry land then moved into place to avoid exposure of uncured concrete to surface waters. This proposed work is not expected to impact fish and other aquatic life and their habitat during construction, except for the very brief period that it takes to push the cured concrete boat ramp slab into the water. The boat ramp, which is 20 feet wide, would cover a very small amount of natural reservoir-bottom habitat for fish and aquatic life. Because the types of species located along this stretch of the Tennessee River are widespread and typical of these impounded conditions, it is expected the same benthic macroinvertebrates found here would be found throughout the project area. Therefore, these impacts are expected to be minor and insignificant.

There would also be some small amount of temporary turbidity associated with construction of the floating community docks; but this would soon dissipate and would have an insignificant effect on fish and other aquatic life. Turbidity could cause a temporary loss of light penetration to the bottom substrate but this would not noticeably affect aquatic fish or benthic organisms in the area. TVA and DA would require implementation of construction related best management practices (BMPs) including all standards and conditions that apply to construction near water,

thus further reducing potential impacts to aquatic species near the site. Therefore, this project would not have adverse effects to fish or their habitats. Shading created by the over-water structures (floating boat slips) could increase the biological productivity for aquatic fauna and aquatic biomass over a period of time and provide an area for attachment by sedentary species.

USFWS indicated that it does not anticipate adverse effects to fish and wildlife or their habitats, including rare species, as a result of the proposed work (See Appendix F). Because no state- or federally-listed aquatic animal species are present in the project area, there would be no effect on listed aquatic life.

(x) Vegetation, Managed Areas, and Wildlife and their Habitat - The lands under development by The Preserve and the proposed project site are within The Transition Hills section of the Southeastern Plains Ecoregion III. This section has the highest elevation (400 to 1,000 ft) of the Southeastern Plains Ecoregion III and is overlain with sand, silt, clays, and gravels of Cretaceous age. In some areas streams have cut down into shale, limestone, and chert of Mississippian, Devonian, and Silurian age. This section consists mainly of dissected hills with rounded tops and steep slopes and ravines with low to moderate grade streams. Some of the gently sloping hilltops and valleys have been cleared and converted to pasture and cropland. Potential natural vegetation is oak-hickory-pine forest, large portions of which have been converted to pine plantations for pulp and paper products in support of one of the major industries within the region (Griffith et al. 2001).

Three vegetative classes observed on the project site are Evergreen-Deciduous Forest, Evergreen Forest, and Herbaceous Vegetation. Portions of these three vegetative communities, which comprise approximately 30, 60, and 10 percent, respectively, of the project site would be directly affected by the project footprint.

The Evergreen-Deciduous Forest class occurs within and near the project site on ridge tops, slopes and ravines along Haw Branch and in the southern portion of property fronting Pickwick Reservoir and does not show evidence of timber harvest in recent years. Dominant overstory trees include various oaks, hickories, and some shortleaf pine. Common understory trees include sugar maple and hornbeam with shrubs such as big-leaf snowbell, farkleberry, and deerberry. The 20-foot to 40-foot wide TVA-owned strip between elevation 414-foot (full pool level of Pickwick Reservoir) and the 423-foot contours along Haw Branch is primarily Evergreen-Deciduous Forest. Some of the more moist areas in ravines on or near the project site have an overstory of American beech, white oak, sweet gum and tulip poplar with sugar maple in the understory. Most of the forested areas do not have an abundance of herbaceous species on the forest floor.

Pine plantations represent the Evergreen Forest on and adjacent to the project site and occur in areas of The Preserve that have been harvested and then replanted with loblolly pine. Woody

species characteristic of upland woodlands and disturbed sites grow around the margins of the pine plantations, and along dirt roads within the plantations and in adjacent open areas. The more common deciduous trees and shrubs found in association with the evergreen forest include black cherry, winged elm, sourwood, hickories, various oaks, winged and fragrant sumac, and blackberry. Herbaceous vegetation along margins of the plantation includes various grasses and forbs.

The Herbaceous Vegetation class is an herbaceous dominated plant community that grows under the power line in the vicinity of the proposed dry storage facility. This right-of-way (ROW) is managed to suppress woody species that could interfere with operation and maintenance of the power lines and support structures. Portions of the ROW are dominated by herbaceous plants while other areas have woody species or a mix of woody and herbaceous species. Woody plants include blackberry, cat briers, various shrubs (e.g., farkleberry, sumac, oak-leaf hydrangea, and hazel-nut) and small trees such as redbud, pines, winged elm, tulip poplar, and red cedar. Herbaceous plants include bracken fern, a wide variety of native grasses including grease grass, broom sedge, little blue stem, Indian grass and a variety of forbs (downy phlox, narrow-leaf mountain mint, various composites). A population of American colombo (an estimated 100 to 200 plants) grows on an area with shale outcropping on the down slope of the project site where the power line crosses Haw Branch.

Invasive Terrestrial Plant Species - Relatively few invasive species occur on or adjacent to the project site. This is probably due to the prior absence of improved roads, the pine plantations that can exclude other vegetation, and the closed forest canopy of the upland forests that show little evidence of recent disturbances such as timber harvesting or major storm damage. Invasive exotic plant species occurring within and near the project area include small populations of Japanese honeysuckle, sericea lespedeza, and Princess tree. The Tennessee Exotic Plant Pest Council (TN-EPPC) considers these invasive species as Rank 1 (severe threat). In addition, Presidential Executive Order 13112 (Invasive Species Control), addresses invasive species control. These plants have the potential to negatively impact the native plant communities because of their tendency to spread rapidly and displace native vegetation.

Vegetation clearing for the dry boat storage facility and parking lot would primarily affect an area previously planted in loblolly pine. Construction of a road from the dry storage site to the ramp in Haw Branch would cross under the power line ROW, transverse a portion of forest land, and result in some minor loss of these two habitat types. Access to the proposed community boat slips along Haw Branch also would result in some minor clearing in the narrow strip of TVA land with upland forest and potentially impact a small area of herbaceous vegetation under the power line ROW along the TVA property between the 414-foot msl and 423 foot msl contour. Considering the small magnitude of these losses in comparison to the coverage and distribution of these vegetation types in the area and region, direct impacts as a result of the proposed project are expected to be minor.

An estimated 70 percent of the project footprint would occur in a pine plantation or early growth forest and any clearing for the boat storage facility and parking lot would likely increase the probability of the establishment of invasive species. Similarly, the opening of a road to the boat ramp and clearing of corridors to the community docks would also increase the likelihood of establishment of invasive species. The Preserve would not plant, cultivate, or otherwise establish any non-native vegetation on the TVA shoreland. In the vicinity of the dry storage facility, TVA would encourage The Preserve to use native grasses or non-native, non-invasive species (James 2002) for site stabilization and native plants for landscaping purposes. TVA would provide The Preserve with a list of native plants endemic to the region and encourage their use for site stabilization and residential landscaping purposes on the adjoining private uplands. If adhered with, these measures could help suppress invasive/exotic weed invasion and ensure that impacts are insignificant.

Aquatic Plants - An estimated 550 acres of submersed (primarily rooted plants with leaves and stems beneath the surface of the water) aquatic plants grow in Pickwick Reservoir. Some species of submersed aquatic plants can grow in water up to about 10 feet deep. The most common submersed plants in Pickwick are southern naiad, hydrilla, spinyleaf naiad, coontail, muskgrass, and pondweeds. Emergent species (rooted plants with stems and leaves that extend well above the surface of the water) grow along some shorelines with saturated soils and in shallow water to a depth of about 1-foot. The most extensive emergent communities occur in the upstream ends of embayments or shoreline areas protected from high wave action. Some common emergent plants on Pickwick Reservoir include water-willow, giant cutgrass, alligator-weed, rose mallow, and wide variety of sedges, rushes, and other herbaceous species.

Within Haw Branch, the emergent shoreline plant community is very sparse and non-existent in most of the embayment because of the steep and rocky shoreline. Haw Branch and most other small downstream embayments along the north shore of Pickwick Reservoir historically have had no to very small populations of submersed plants. These embayments are relatively deep and have rocky bottoms and coarse sediments that are generally not suitable habitats for submersed aquatic plant establishment and growth.

The terrestrial and aquatic plant communities observed within the project area are common and representative of the region. Except as indicated in the endangered species section below, no uncommon terrestrial plant communities were observed on or adjacent to Haw Branch, the project site, or adjacent private property adjacent uplands including the dry storage area (See endangered or threatened species). Therefore, effects on these plant communities are expected to be minor and insignificant.

Natural Areas - The TVA Regional Natural Heritage database indicates that the proposed community slips, boat ramp and dry storage facility would be located about one-half mile downstream of one managed area, Bruton Branch State Recreation Area (BBSRA), a part of

Pickwick Landing State Resort Park (PLSRP). BBSRA, managed by TDEC, is a 347-acre area that provides a swimming beach and primitive campsites. The main resort park is across the reservoir and approximately two miles from the proposed action. It features a resort inn, restaurant, golf course, swimming pool, and a full-service marina with approximately 270 slips. No other natural areas, Nationwide Rivers Inventory streams, or Wild and Scenic rivers are within three miles of the proposed action.

Changes expected to result from the proposal would not adversely affect the management or public use opportunities of BBSRA. Increased people presence, boat launching activity, noise, and lighting is unlikely to diminish the primitive character of the site due to the distance (0.3 miles overland and over 0.5 miles via the reservoir) from the proposed action. Boating activity in the vicinity would only slightly increase (See water-related recreation below) and overall changes to the scenic and aesthetic qualities of the general area, further reduced by mitigation, are expected to be insignificant (See aesthetics below). Overall, any effects to this recreation area are expected to result from minor and insignificant changes to the surrounding local environment.

Because the proposed action is sufficient distance (2.0 miles) from the public use marina at the main PLSRP and the proposed action is intended for use by private land owners at The Preserve, no direct, indirect, or cumulative impacts to the state park or its activities are anticipated (See cumulative and secondary impacts).

Wildlife and Their Habitat - The upland wildlife habitat occurs immediately adjacent to the reservoir shoreline and no transition zone of wetlands or shallow aquatic vegetation exists. The deciduous forested areas provide habitat for bird species such as wild turkey, Carolina chickadee, downy woodpecker, American crow, red-eyed vireo, and tufted titmouse. Other animals likely occurring in this habitat include white-tailed deer, eastern gray squirrel, white-footed mouse, slimy salamander, eastern box turtle, and copperhead. Birds common in early successional habitats include Carolina wren, eastern bluebird, white-eyed vireo, northern cardinal, and indigo bunting. Common mammals include striped skunk, eastern cottontail rabbit, white-tailed deer, Virginia opossum and various rodents. Reptiles often found in early successional habitats include racers, black rat snake, and eastern garter snake.

Development of the project area would convert a very small part of the upland forest habitat to a short road and parking area for the dry storage and ramp. This would cause a very slight increase in early successional and forest edge habitat. Some species, including several neotropical migrant songbirds, are dependant on large forested areas and are negatively affected by forest conversion. Conversely, several species require early successional habitats. This project would alter the composition of wildlife in the project area, decreasing forest species and increasing early successional species. Species that would be affected by these changes, however, are locally and regionally common, and individuals would likely move to surrounding forested

habitats and establish populations based on competition and the quality of available habitats. Therefore, impacts to wildlife would not be significant.

There are no records of caves or heron colonies within three miles of the project site, and no impacts to these features are expected.

Conclusions - During previous onsite inspections, the private land area was under construction with residential development. It is expected that there would be a loss of terrestrial wildlife habitat from the dry storage facility and adjoining residential development on the uplands. Some wildlife occupying this habitat would migrate to other desirable locations within the vicinity and reach new population levels based on competition among and between species. However, the upland residential development can occur without DA and TVA permits. TVA owns a strip of land between the private land and the reservoir between the 414-foot msl and 423-foot msl contour elevations which, except for narrow access corridors to the community docks and the boat ramp, would be left undisturbed. If issued, the DA and TVA permits would be conditioned such that wooded, natural vegetation is left undisturbed, to the extent practical, especially along the shoreline. Vegetation removal on the TVA shoreland would be permitted in accordance with SMP (TVA 1998). Construction and associated use of the boat slips and boat ramp are not expected to significantly impact wildlife habitat. In addition, the applicant has indicated that approximately 500 acres of the development property would be left undisturbed. Large acreages of managed forests and open lands are available to wildlife in nearby state parks and TVA public shoreland in Tennessee and Alabama. Thus, the TVA land in Haw Branch and any areas left undisturbed would continue to provide wildlife habitat, especially to smaller to medium-sized animals. There are no unique terrestrial animals or habitats in the area that would be affected by the project. This includes the adjoining and nearby property in the vicinity of the upland development. This area is largely rural in character but, lands on Pickwick Reservoir are generally undergoing an increase in development pressure, which is expected to continue to result in the reduction of undisturbed properties. Because upland development would take place whether or not the TVA and DA permits were issued, the proposed action would not contribute significantly to any ongoing wildlife habitat losses in the area (See Cumulative Impacts section). USFWS responded that they do not anticipate adverse effects to fish and wildlife or their habitats as a result of the proposed work (See Appendix F).

(x) endangered or threatened species – A review of the TVA Regional Natural Heritage database indicates there are no federal-listed threatened or endangered plant species in Hardin County, TN. Since no populations of federally threatened or endangered plant species are known from the project area, no effects on such species are anticipated. Although no Tennessee state-listed plants were observed to occur on the project site, four species listed as

endangered or of special concern by the state of Tennessee (see Table 5) occur within five miles of the project site in Haw Branch. These plants include goldenseal (*Hydrastis canadensis*), Fraser loosestrife (*Lysimachia fraseri*), blue sage (*Salvia azurea* var. *grandiflora*), and ovate catch fly (*Silene ovata*). No plants or habitat for goldenseal were found during a 24 April 2007 field survey of the woodland areas near the ramp in Haw Branch or upstream in the area of the proposed community docks. Based on the habitat description (i.e., wet areas along small streams under power line ROW) for a nearby population of Fraser loosestrife, habitat for this species does not exist at or near the project site. Because no habitat for Fraser loosestrife occurs within the project footprint; no impacts to this species is anticipated from the proposed action.

The two remaining species, blue sage and ovate catch fly, are known from habitats along power line ROWs or open, grassy areas along roadsides. Thus, the open, grassy areas along the power line ROW at the project site could provide potential habitat for these species. Blue sage is known from five counties in Tennessee and is more common west of the Mississippi River, while ovate catch fly is known to occur in nine counties in Tennessee and has a scattered distribution throughout southeastern United States.

The construction of the road to the boat ramp and any site preparation underneath the power line ROW for the dry boat storage facility and parking lot or use of heavy construction equipment under the power line to place and anchor the community boat slips would impact habitat that potentially could support populations of state-listed ovate catch fly and blue sage. Because of time of year constraints, TVA did not verify the presence of these species during its late April field survey. Some ground disturbance probably associated with work on the roadway from the boat ramp to the dry storage area was observed during the field visit which included an area on the power line ROW. Both of these species flower and fruit from mid summer to early fall and are more conspicuous to surveyors. Therefore, to minimize effects on these plants (if they are found to be present) and consistent with the earlier ground disturbance, remaining work in the area of potential habitat would not be done during the plants' flowering/fruiting time (mid-July to mid-September). This would ensure regeneration of juveniles from seed should ground disturbance damage the plant's rootstock. Although a few individual plants could be destroyed, the ROW habitat elsewhere in the area beyond the access road and dry storage facility footprint would continue to be maintained in an open early successional condition suitable for the plants to persist. No significant impacts from the project are expected to affect the viability of the populations of these species.

Table 5. State-Listed Plant Species Reported From Within 5 Miles of the Proposed Project Site in Hardin County, Tennessee

Common name	Scientific name	TN State Status/rank
Blue Sage	<i>Salvia azurea var. grandiflora</i>	SPCO/S3
Fraser Loosestrife	<i>Lysimachia fraseri</i>	END/S2
Goldenseal	<i>Hydrastis canadensis</i>	S-CE/S3
Ovate Catch fly	<i>Silene ovata</i>	END/S2

State Status abbreviations: END=Endangered; S-CE=Special Concern/Commercially Exploited; SPCO=Special Concern

State Rank abbreviations: S1=Critically Imperiled in the state because of extreme rarity (Five or very few occurrences of few remaining individuals or acres) S2= Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres), S3=Rare or uncommon in the state (on the order of 21 to 100 occurrences).

No designated critical habitat for rare plant species occurs in the vicinity of the proposed project.

A review of the TVA Regional Natural Heritage database revealed records of one state-listed (Tennessee) animal species within three miles of the project site, and two federally listed animal species from Hardin County, Tennessee (Table 6).

Table 6. Endangered, Threatened, and Other Species of Concern Known From the Hardin County, Tennessee, Project Area

Common Name	Scientific Name	Federal Status	State Status
Western Pigmy Rattlesnake	<i>Sistrurus miliarius streckeri</i>	--	THR (S2S3)
Bald Eagle	<i>Haliaeetus leucocephalus</i>	THR*	NMGT (S3)
Red-cockaded Woodpecker	<i>Picoides borealis</i>	END	EXTI (S1)

Status abbreviations: END = Endangered, THR – Threatened, NMGT = in need of management; EXTI – Extirpated; S-Ranks: S1 = critically imperiled, S2 = imperiled, S3 = rare or uncommon

*Formerly federally listed as threatened but recently de-listed. Bald eagle is still afforded protection under the Migratory Bird Treaty and Bald and Golden eagle Protection Acts

Western Pigmy Rattlesnakes usually occur near water in floodplains, swamps, marshes, or similar areas with wet, loose soils. No suitable habitat for this species exists at the project site, and this project would not impact this species.

Bald eagles prefer roosting and nesting in forested habitat near the large bodies of water where forage is available. One bald eagle nest has been reported from the mouth of Bluff Creek, approximately 0.6 miles from the project site. This is an adequate distance from the proposed project and, therefore, there would be no impact to this nest site. The forested habitat on the shore of the project site provides suitable habitat for this species, however, bald eagles have not been reported in this area, and private land development currently occurring in the area reduces the quality of this habitat for bald eagles. These proposed actions would not impact bald eagles.

Red-cockaded Woodpeckers have been extirpated from the state of Tennessee and this project would not impact this species.

After review of the TVA Regional Natural Heritage database and field inspections, TVA and DA have determined that no federally or state listed aquatic endangered or threatened species known from Pickwick Reservoir occur at or near the proposed ramp or community docks construction site. Eight listed aquatic animal species occur below the dam and in other tributary watersheds within ten miles of the project area, but do not occur at the project site and would not be affected by this project (Table 7). No designated critical habitat for any terrestrial or aquatic animals occurs at the site or in the vicinity of the proposed project.

Table 7. Listed Aquatic Animal Species Know From Below Pickwick Dam and in Other Tributary Watersheds Within 10 Miles of the Project Area

Common Name	Scientific Name	Federal Status	State Status - State Rank
Pink Mucket	Lampsilis abrupta	END	END (S2)
Fanshell	Cyprogenia stegaria	END	END (S1)
Ring Pink	Obovaria retusa	END	END (S1)
White Wartyback	Plethobasus cicatricosus	END	END (S1)
Orange-foot Pimpleback	Plethobasus cooperianus	END	END (S1)
Spectaclecase	Cumberlandia monodonta	CAND	NOST (S2S3)
Muddy Rocksnail	Lithasia salebrosa	-	NOST (S2)
A Crayfish	Orconectes wrighti	-	END (S1)

Status codes: **CAND** = Candidate for federal listing; **END** = Endangered; **NMGT** = In need of management; **NOST** = No legal status, but tracked by the Tennessee Natural Heritage Program; **RARE** = State listed as rare; **THR** = Threatened; **S1** = Extremely rare and critically imperiled in the state with 5 or fewer occurrences; or very few remaining individuals; or because of some special condition, where the species of some factor(s) make it vulnerable to extinction; **S2** = Very rare and imperiled within the state, 6 to 20 occurrences; **S3** = Rare or uncommon with 21 to 100 occurrences; **S?** Unranked at this time or rank uncertain

A literature search was conducted by the USFWS regarding the potential occurrence of federally listed endangered and threatened species that could be affected by the proposal. By letter dated February 14, 2007, the USFWS acknowledged that no listed or proposed endangered or threatened species would be affected by the proposed construction activities. See letter from USFWS in Appendix F.

(x) biological availability of possible contaminants in dredged or lakebottom material – While there is no dredging and lakebottom disturbance associated with the proposed work, according to TVA’s website information, Pickwick Reservoir has no state advisories against swimming and there are no fish consumption advisories. Accordingly, there is no evidence that the site is contaminated by PCBs or another recognized environmental contaminant.

3.5. Human Use Characteristics and Anticipated Impacts. The relevant blocks are checked with a description of the impacts.

(x) existing and potential water supplies; water conservation – The nearest existing water intakes located downstream of the proposed project are operated by 1st Utility District Hardin County, Packaging Corporation of America and Tennessee State Parks (See Natural Areas above). All intakes are located near Pickwick Dam. See location map of the intake structures in Appendix N. These intakes are located over two-miles downstream of the project site. Since only very minor increases in turbidity and temporary minor water quality impacts are expected to occur in the immediate vicinity from the project, the intakes would not be impacted from the proposed work. Therefore, the proposed work is not expected to impact any existing water supplies and/or water intakes.

(x) water-related recreation – BBSRA, owned by the state of Tennessee, is located at TRM 210.0R, a short distance upstream of Haw Branch. BBSRA facilities include camping and a day-use area, including a boat ramp. It has no water use facilities other than the boat ramp (See Natural Areas above).

A large piece of TVA property located near the dam at TRM 207.6L is under permanent recreational easement to and managed by the state of Tennessee for PLSRP. PLSRP is a major resort park with a boat ramps, a full-service marina, lodging, cabin rentals, camping and a golf course. PLSRP is located on the opposite shore and approximately 2 miles downstream from Haw Branch. The embayment at PLSRP, which accommodates 2 boat ramps, an approximate 270 slips marina, and transient slips for the lodge and restaurant, is heavily used. With the exception of perhaps more transient boaters wanting temporary dockage at the restaurant, TVA and COE do not believe that The Preserve proposal would have a significant impact on the state of Tennessee facilities at either state park property or recreational users on the lower end of the reservoir (See Natural Areas above).

The boat ramp would only be utilized by the residents of The Preserve that store their boats in the dry storage, which would be constructed on one level with no stacking. Boats on trailers would be positioned in storage bays and retrieved by a facility operator who, as desired by the owner, would launch the boats at the ramp. Thus, no parking at or along the access road would be required at the ramp (See Section 1.1 Introduction). The Preserve community docks would accommodate 53 boats and would allow temporary mooring (parking) only. It is also unlikely that 53 boats would originate from these docks to use the reservoir at the same time. Therefore, there would be a few more boaters in the vicinity of BBSRA, but the increase in this part of the reservoir would not be significant. Other than mooring boats, these water use facilities would possess none of the characteristics nor provide services commonly associated with a commercial marina.

Based on its observations of jet skiers on lower Pickwick Reservoir, TVA and COE staffs believe that this form of recreational use is more suited to open water than narrow coves. Many of these personal watercrafts are high-powered and are built for speed. Some users enjoy wave-jumping and follow and jump over the more substantial wakes produced by cruisers, yachts, and other large power boats. By their nature, jet skis are better suited to open water such as the main channel area of the Tennessee River. Medium to larger boat owners prefer to anchor in coves and embayment areas where there is little disturbance from other crafts or from shore-based activities. The proposed development would reduce the attractiveness to some boaters of Haw Branch for this type of boating.

The Preserve residential development project is expected to create an enhanced value and provide greater opportunity for water-related recreation for the residents of the new development (also see the traffic/transportation patterns section below). The boat slips, boat ramp, and dry storage would provide the residents of The Preserve an opportunity to moor and store a boat near their home. While residents that live directly on the lake could potentially obtain approval and construct their own private docking facility, with the appropriate DA and TVA approval, the inland residents do not have the immediate access and/or land-rights to request approval to construct a dock. Thus, the boat slips, boat ramp and dry storage would especially benefit the inland interior home owners. Because lower Pickwick Reservoir has wide unobstructed views, few islands, and is approximately 1.5 miles wide near Pickwick Dam, the added boating traffic from The Preserve is not expected to significantly reduce recreation quality or increase safety risks. It could reduce the perceived quality of boating in Haw Branch for some boaters, especially those who are not residents of The Preserve.

(x) aesthetics –Visual resources are evaluated based on existing landscape character, distances of available views, sensitivity of viewing points, human perceptions of landscape beauty/sense of place (scenic attractiveness), and the degree of visual unity and wholeness of the natural landscape through the course of human alteration (scenic integrity).

The proposed community docks, upland dry storage facility, access roadway, and launching ramp, lie within Haw Branch on the lower end of Pickwick Reservoir. The shoreline topography within Haw Branch is moderate to steeply sloping. Vegetation is dense surrounding the shoreline and upward to the ridges, which rise over one hundred feet above the reservoir. Mature hardwoods and mixed pine species dominate views of the lands surrounding the confluence of Haw Branch with the Tennessee River; however, the vegetation patterns change noticeably toward the rear of the embayment. The mature stands of forest vegetation give way to thinner forest stands where timber harvests on private uplands have occurred in years past. Approaching the upper end of the embayment nearing the headwaters, an overhead transmission line is visible as it crosses the

embayment at close to a perpendicular angle. The cleared transmission line ROW and support towers are also prominent features on the slopes above the embayment. The embayment contrasts in scale with the larger reservoir water body to the south. At the confluence, the embayment stretches to approximately nine hundred feet wide and narrows toward the headwaters some 0.75-mile northward, beyond the project site, to where the shallow water spans a width of no more than forty (40) feet. In several locations along the shoreline, small rock outcroppings are visible. Haw Branch remains undeveloped, with the exception of the aerial transmission line crossing. Views are confined to within the foreground (from the observer up to 1/2 mile away) viewing distance due to existing vegetation and topography. The existing scenic integrity is high and the scenic attractiveness ranges from common to distinctive within the viewshed.

If approved, the DA and TVA would permit the construction of community docks as shown in Appendix A. This would result in the addition of approximately 53 boat slips to moor watercraft in Haw Branch, as well as a private launching ramp, access roadway, and dry storage facility.

The proposed shoreline development would occur toward the headwaters of the Haw Branch embayment and along 1,162 feet of the right descending bank, approximately 0.34 mile from its confluence with the Tennessee River. The remaining Haw Branch shoreline, on both banks and including blocks of TVA land, would be left undisturbed. From this location, recreational reservoir users would have brief views of the community facilities and the moored watercraft. These available views would exist from positions on the reservoir from TRM 209.8, southward along the channel for a distance until distinguishing shapes and features would tend to merge with the larger landscape patterns along the northern shoreline. This would occur somewhere between TRM 210 and TRM 211. From these positions, recreational reservoir users would generally not have views of the proposed dry storage facility, due to changes in elevation and vegetation. However, in order to reduce the potential impacts associated with these structures, design mitigation described below would be required so that these elements would more closely blend with the surrounding natural environment.

Other user groups, which may include recreational reservoir users who choose to anchor overnight in the embayment, would have foreground views of community docks. These views would vary, based on the duration of the stay and fluctuations in usage patterns. These users would also have views of the proposed facilities during night time hours when site lighting would potentially generate waste light and glare. This potential impact would be addressed through design mitigation where all associated fixtures would be equipped with full cutoff features which limit the amount of waste light produced and subsequently reduce glare.

Additionally, recreational reservoir users and shoreline residents would potentially have foreground views of increases in traffic within the lower sections of Pickwick Reservoir. Through the addition of approximately 53 berths and a similar number of dry storage accommodations, it is probable that a perceivable increase in recreational reservoir traffic would occur during the peak usage periods (May through August). Although not likely to be present on the reservoir at the same time, this discernable increase in boating traffic would reflect the overall usage patterns of the reservoir, but would not result in an adverse impact to scenic resources. Impacts associated with this proposal would be insignificant and effects further reduced by adherence to the design mitigation included below and in Section 5.5.

- The proposed dry storage facility and covered floating community boat slips facilities shall be designed and constructed with materials which are non-reflective and analogous in color to the surrounding environment and the back-lying shoreline landscape.
- Site lighting shall be equipped with full cutoff features which limit the amount of waste light produced at a vertical angle of 80 degrees above the lowest light emitting portion of the luminaire.

(x) traffic/transportation patterns – The proposed project is expected to increase traffic in the area. However, based on trends observed by staff in association with other similar developments in the area, many of the homes are probably second and/or weekend homes that would be built on the uplands regardless to DA and TVA approval of the shoreline facilities, ramp, and dry storage. Existing county and state roads are of adequate capacity to provide access to the development, including the dry storage facility and ramp. Any upgrades to the road network are designed to enhance and bring into Hardin County enhanced economic benefits. In addition, the applicant would have to obtain approval from the Tennessee Department of Transportation and/or county highway department for any revisions to the highway system for the development and would have to meet the standards for traffic management and zoning. Therefore, DA and TVA have determined that effects of their approvals on existing and future transportation pattern would be minor.

(x) energy consumption or generation – It is not anticipated that the proposed project would have any notable impacts on energy consumption or generation. If approved, the DA and TVA permits shall be conditioned such that site lighting would be equipped with full cutoff features which limit the amount of waste light produced at a vertical angle of 80 degrees above the lowest light emitting portion of the luminaire.

(x) navigation – Pickwick Reservoir was impounded by the construction of the Pickwick Landing Lock and Dam and was opened to commercial navigation in 1938. Additional improvements, completed in 1948, provided a commercially navigable waterway up to Wilson Dam. Today, Pickwick Reservoir is an important link in the Tennessee River System which provides 800 miles of slack-water navigation from Paducah, Kentucky to Knoxville, Tennessee, and includes several navigable tributaries such as the Hiwassee and Clinch Rivers. The Tennessee-Tombigbee Waterway enters Pickwick Reservoir at mile 415.0. The Tennessee River Waterway is in turn linked to the 12,000 mile National Inland Waterway in several places, and supports local, national, and international commerce. Approximately 54 million tons of commodities move on the Tennessee River System annually. About 19 million tons of that traffic moved on Pickwick Reservoir and past Haw Branch in 2006.

The proposed project is located within the impoundment of Pickwick Reservoir on the Tennessee River near mile 209.6. The Tennessee River at this location is very wide, roughly 1.5 miles, and has sufficient room to accommodate both commercial and recreational traffic. While there are no aids to navigation located in Haw Branch, the entrance to the embayment is marked by the Whites Lake Light and Daymark at mile 209.6R.

The proposed community docks, launching ramp and dry storage, would be located along the right (west) bank of Haw Branch embayment at a location which would not interfere with commercial navigation traffic. It is expected that recreational boating activities would slightly increase in the immediate area as a result of having a new community dock and dry storage area (See water-related recreation above). It is anticipated that this would be a slight seasonal increase, occurring generally on summertime weekends and holidays. The increase in boating activity could cause a minor disruption of some of the current uses of the embayment; however, there should be sufficient shoreline and embayment area to continue activities such as mooring of personal vessels and/or fishing (See water-related recreation).

To ensure that boater access is maintained to the upper reaches of the embayment, the proposed facilities should not exceed 150 feet or one-third of the width of the embayment from shoreline to shoreline at normal summer pool elevation 414 msl at any location. The applicant and dock designer have advised that they were aware of the “one-third rule” and took it into consideration during the design process; and based on the provided drawings, measurements and communications with the applicant and dock designer, the proposed facilities would not exceed 150 feet or one-third of the way across the embayment, whichever is less, at any location. TVA has discussed this issue with the applicant and explained that if the docks cannot meet this provision, they will not be allowed to be installed at the requested location and/or facility dimensions will have to be adjusted as needed.

Boating congestion and associated boating safety concerns within the embayment are an indirect impact of the proposed development. If the community docks are constructed as proposed,

additional boaters can be expected to use the Haw Branch embayment and the passage to the Tennessee River. TVA recreation specialists indicate that the impact to boating numbers as a result of building the proposed facilities would not be significant and that there is a growing market for boating facilities on Pickwick Reservoir. But, boating safety would likely continue to be a concern for the public, particularly since law enforcement agencies responsible for marine safety (TVA Police, U.S. Coast Guard, and TWRA) are not able to patrol all of the waters in their jurisdictions all the time. These agencies rely heavily on public involvement. Those concerned with boating safety in the area and/or if they see a boater operating in an unsafe or suspicious manner, they may write down the boat registration number and report the activity to the TVA Police at 256-386-2444.

In light of the issues addressed in this section, the community docks would be constructed in accordance with the following conditions so there would be no significant impacts to navigation.

- The applicant is advised that this facility would be located on a recreational channel and may be subject to wave wash from passing vessels and possible collision damage.
- The community docks would be lit and marked in accordance with U.S. Coast Guard guidelines and the mitigation requirements described above in the aesthetics section above.
- All floating structures shall be securely anchored to prevent them from floating free during a flood event.
- No portion of the proposed community dock facilities shall exceed more than one-third of the width of the embayment at any point at normal summer pool elevation 414 msl.
- No no-wake buoys would be permitted for this facility.

(x) safety – It is expected that the infrastructure is designed to accommodate anticipated flood water elevations. If issued, the DA and TVA permits shall be conditioned so that the applicant must install and maintain, at their expense, safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on the authorized facilities. The lighting shall comply with the mitigation requirements described above in the aesthetics section above.

(x) air quality – Emissions that are expected to result from the project would be temporary from construction equipment and dust. However, it is anticipated that the proposed activities would not exceed de minimus levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153 (See Section 5.3). While it is expected that construction could increase fugitive dust in the vicinity of the project during dry periods, this minor impact would only be temporary and would be minimized by applying water on the construction site.

(x) noise – Construction of the proposed shoreline facilities and dry storage would create some noise impacts. However, it is expected that these construction activities would be performed during the daylight hours, would be temporary, and would be performed within normal ranges for construction equipment.

Based on the proposal, it is expected that there would be additional power boating activity in the general area of Haw Branch and on Pickwick Reservoir. The added noise generated by these boats would be heard along the shoreline of Haw Branch and by other watercraft occupants. Haw Branch is currently used for powered watercraft activities including water skiing, jet-ski riding, and fishing, which produce similar noise heard along the shoreline.

The addition of up to 53 power boats (See water-related recreation) and the slight increase in noise levels from The Preserve docking and launch facilities would be an insignificant impact in the area. This added boating would probably occur on the same days and during similar times as the current boating activity on Haw Branch. Most shoreline residents probably already participate in power boating activities and they already hear watercraft noise from other users. The additional activity might increase the frequency of hearing watercraft but it would not increase the noise level of the watercraft.

(x) historic properties and cultural values – By letter dated 17 April 2007, THC concurred with the DA and TVA determination that there are no National Register of Historic Properties listed or eligible properties affected by this undertaking. Therefore, THC has no objections to proceeding with the project (See Appendix L).

(x) land-use classification – Hardin County is the responsible agency for local zoning and land-use classification of the proposed project site. According to the applicant, the project has been approved by the appropriate representatives of Hardin County government and would comply with the county’s local zoning regulations. See local government website at http://www.naco.org/Template.cfm?Section=Find_a_County&Template=/cfiles/counties/county.cfm&id=47071.

(x) conservation – The project would impact approximately 2 acres of private land, of which a small portion has recently been disturbed from construction and/or earth moving activities for the access road and dry storage facility. About one-half acre of TVA public land occurs along 1,162 feet of shoreline that would be affected by the boat ramp and community slips. Because this represents a very small amount of land relative to the amount of rural private land and public land in the area such a change in use would be insignificant.

(x) economics – The Preserve proposes to construct a boat ramp, community boat slips, dry storage facilities, and roadway and associated parking. The applicant estimates

that construction of these facilities would employ about 40 workers for six months. Any local spending from construction crew income would obviously be temporary, and it is unlikely that workers would relocate to the area for such temporary work. Although these facilities would enhance the market value of nearby interior lots in the residential development, the overall socioeconomic impacts of these facilities would be positive, but minor and regionally insignificant. There would be very little direct permanent employment associated with these facilities. The additional recreational activity made possible by these facilities could result in some additional retail and services activity in the general vicinity, but, again, this would be minimal. The applicant estimates that the facilities in question would generate \$600,000 in annual area retail sales, which would amount to less than 0.3 percent of current retail sales in Hardin County (2002 U.S. Economic Census). This would yield \$15,000 in annual sales tax revenue to Hardin County.

According to the applicant, a substantial socioeconomic benefit would result from The Preserve residential development on the privately owned property. This residential development of the upland property would likely be more financially successful with the availability of adjacent boating facilities, but the impacts of residential development are only indirectly related to the proposed actions. In any case, the proposed development of 600 to 800 homes valued at \$500,000 each would generate from \$1,365,000 to \$1,820,000 in annual local property tax revenue for Hardin County. If retail spending per household followed existing patterns for Hardin County (2002 U.S. Economic Census), then additional annual sales tax revenue would total between \$1.1 million and \$1.5 million. Of this tax revenue, between \$294,000 and \$391,000 would accrue to the county (versus the state).

Additional temporary impacts would result from construction of the proposed homes. The timeframe for full “build-out” is unknown, but if assumed to be five years and that each home takes 6 months to complete with a construction crew of six full-time equivalents, then average annual construction employment would total 360-480 workers. This construction employment would temporarily boost county employment by approximately 5 percent. Although the greater the number of new residents, the greater the economic benefit, it is difficult to estimate how many construction workers (and families) would relocate to Hardin County during the construction phase.

In addition, the applicant estimates that 60 jobs would be created for the 14 month period required to construct a clubhouse, pools, and associated facilities. Additional construction jobs required to construct a proposed restaurant and equestrian center would total 80 and 20, over a time period of 18 and 6 months, respectively. Permanent jobs at all facilities, including boat slips and dry storage would total over 60, according to the applicant. This would represent less than one percent of current county employment.

The applicant has made estimates of local sales generated by all phases of construction, which would in turn generate additional sales tax revenue. Residential construction is projected to generate \$2 million in annual sales, which would generate \$50,000 in county sales tax revenue over several years. Construction of the clubhouse, restaurant, and equestrian center are projected by the applicant to generate a total of up to \$2.2 million in local sales over a period ranging from 6 to 18 months. Additional spin-off economic activity and socioeconomic impacts would result from all of the above described economic activity, and this would result in an undetermined positive, but insignificant amount of additional tax revenue to the county (from property tax and sales tax).

Directly, it is expected that the proposed boat slips and dry storage would economically benefit the applicant from the increase of property values for the interior lots that would not have other water access. It is also expected that the sale of the residences within the development would also provide an economic benefit to the applicant.

(x) food and fiber production – It is not anticipated that the proposed project would have any impacts on food and fiber production since it is not currently utilized for food or fiber production.

(x) general environmental concerns – While the boat slips and boat ramp could not be constructed without requiring a DA or TVA permit, the privately owned property could be developed with residential and/or commercial development without either approval. Therefore, other private projects could create impacts to wildlife, water quality, conservation, aesthetics, noise, land-use, and transportation (See Cumulative and Secondary Impacts below). In addition, some of these impacts could be greater than those of the proposed project such as aesthetic values, all while producing a number of public benefits through the increased water-related recreation opportunities, jobs, tax-base, and sales. Other developments may or may not provide the economic benefits for the area compared to the proposal.

(x) mineral needs – It is not anticipated that the proposed project would have any impacts on mineral needs.

(x) consideration of private property – The applicant owns some 1,250 acres of property along Pickwick Reservoir back-lying adjoining strips and blocks of TVA fee-owned land. The Preserve has access rights across the “strips” of public land but does not have these access right across the larger blocks (i.e., along both banks at the mouth of Haw Branch). Residential development of these private uplands by the applicant is considered an ongoing activity that is or would likely occur in the near future with or without issuance of a COE or TVA permit.

(x) floodplain values – The proposed shorelines alterations and adjoining development by The Preserve would be located along Haw Branch, a tributary to the Tennessee River at mile 209.6. The 100-year floodplain is the area below elevation 419.1 msl. The TVA Flood Risk Profile (FRP) elevation is 419.2 msl. The FRP is used to control flood damageable development for TVA projects, and residential and commercial development on TVA lands. At this location, the FRP elevation is equal to the 500-year flood elevation. The 500-year flood elevation is also used to establish the “critical action floodplain.” A “critical action” is defined in the Water Resource Council Floodplain Management Guidelines as any activities for which even a slight chance of flooding would be too great.

The proposed project involves the construction of floating covered boat slips, a boat ramp, a dry boat storage facility, a parking area, and an access road. The floating covered boat slips and boat ramp would be located within the 100-year floodplain. Consistent with Executive Order 11988, these are considered to be repetitive actions in the floodplain that should result in minor impacts. The dry boat storage facility, parking area, and access road would be located outside of the 100-year floodplain which would be consistent with Executive Order 11988. The proposed project would create less than 1 acre-foot of displaced flood control storage and is consistent with the TVA Flood Control Storage Loss Guideline.

To ensure the proposed development would not adversely impact floodplains and flood control, the following condition would be included in the final permit:

- The Preserve agrees to securely anchor all floating facilities to prevent them from floating free during major floods.

3.6. Cumulative and Secondary Impacts. Consideration of cumulative effects requires a broader perspective than examining just the direct and indirect effects of a proposed action. A cumulative effect is the impact on the environment which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. One of the most important aspects of a cumulative effects assessment is that it requires consideration of how actions by others (including those actions completely unrelated to the proposed action) have and would affect the same resources in the vicinity of the project (in the present case, lower Pickwick Reservoir). The President’s Council on Environmental Quality has published guidance on assessing cumulative environmental affects (USEPA, EPA 315-R-99-002, May 1999).

There are a number of past actions which have influenced lower Pickwick Reservoir. The event having the greatest influence on the aquatic environment in the vicinity of the proposed site to date was the completion of Pickwick Landing Lock and Dam in 1938, transforming this section of Tennessee River into an impounded reservoir. According to the District’s database, past DA and TVA permits issued in the vicinity of the project mainly involve bank stabilization, private docks,

and other community dock structures. Residential development on private uplands on the right descending reservoir bank upstream of the Pickwick Dam Reservation includes Northshore (which includes The Retreat, Harbor Lights Pointe, and Ridge Pointe) and Points of Pickwick Subdivisions. Upstream, along this shore, is BBSRA (See Natural Areas), which lies between The Preserve and Bruton Branch, Bruton Branch Extension, and Pompey's Branch Estates Subdivisions. From this point and upstream Dry Creek lies more than 1,500 acres of largely forested TVA shoreland in Tennessee, which includes Stateline Islands. This TVA property adjoins another 4,650 acres of similar conservation land in Alabama included in the Lauderdale Wildlife Management Area. This undeveloped land occurs along more than 13 river miles, is allocated to natural resources conservation (TVA 2002); and along with the reservoir, it provides for the recreational enjoyment of many outdoor enthusiasts.

On the opposite, left descending bank, public land is primarily used for recreation and natural resources conservation. Upstream and along this shore, from about mile 212.2 to the county line, Shiloh Falls, Land of Pickwick, Holiday Hills, Eagle Point, North Winn Springs, Lakeshore, Winn Springs, Caney Hollow, River Cliff, and portions of Red Sulfur and Holiday Hills Subdivisions occur along residential access (Zone 7) shorelines. All these residential developments also have a variety of approved shoreline improvements. The present effect of these past actions and existing uses are discussed in the descriptions of the existing environs in Section 3.0 above.

Currently, several other applications are being processed by COE and TVA for other shoreline developments in the vicinity of and similar to The Preserve. These include another nearby development, Ridge Pointe at Northshore. Its marina and homeowners association has applied for community boat slips about 1 mile downstream, in Lower Anderson Branch. Also, Harbor Lights Pointe Marina & Homeowners Association has applied for approval of floating boat slips in Boyer Branch about one-quarter mile downstream of Lower Anderson Branch. Several residential lot owners of The Preserve have already applied for private docks and/or bank stabilization along the main river channel. No other permitted activities have occurred in Haw Branch or in the vicinity of the proposed project.

In recent years, because they typically result in fewer impacts, TVA and DA have encouraged larger residential landowners and homeowner associations to apply for multiple-slip community docks particularly if sheltered shoreline coves or embayments were available. Such approvals are considered in light of current SMP and other appropriate guidelines and regulations. In lieu of individual private docks, this can reduce the length of affected shoreline and potential for wildlife habitat, wetlands, erosion, sedimentation, and associated water quality and aquatic ecological effects. Many developers, including The Preserve, Ridge Pointe, Harbor Lights, and others on lower

Pickwick Reservoir have requested and/or have been approved to build and operate community structures. The COE and TVA expect that future requests by large residential landowners and homeowners associations would also apply for community docks rather than individual facilities. As at The Preserve, some individual residential landowners in these developments would also likely apply for private water use facilities.

It is harder to predict future impacts to lower Pickwick Reservoir. Pickwick Reservoir has 490 miles of shoreline. Of this length, 118 miles of shoreline are available for requests for residential development (i.e., shoreline allocated to residential access). According to TVA (1998), of this reservoir-wide total available for residential use, 54 percent of Pickwick Reservoir's shoreline is already developed. Along the right descending bank between Pickwick Dam, at TRM 207, and TRM 210, there are 11.8 miles of shoreline (calculated at elevation 414 msl). Of this total, TVA has allocated 9.5 miles of shoreline to Zone 7, residential access, and the remainder 2.3 miles to Zone 4, natural resource conservation (TVA 2002). Based on TVA and COE records, 94 permits for residential improvements on this Zone 7 shoreline were issued during the 5-years between June 2002 and June 2007.

The Preserve and other new residential development would further encourage additional shoreline development in the area in coming years. Consistent with TVA's current land policy and SMP, the level of residential access property will not exceed 38 percent Valley-wide (TVA 1998). The policy of not increasing the amount of residential access shoreline (Zone 7) has been adopted as a means of reducing the cumulative effects on environmental resources in the Tennessee River watershed.

The continued growth of the area makes the conversion of undeveloped private property into commercial, residential, business developments, and other uses virtually inevitable, especially in an area where a property owner could possibly benefit economically from the sale of the land. In addition, future impacts could result from permitting the proposed work, causing other phases of this project to be constructed. However, the projects or project phases would be constrained in size by their property boundaries, highways and other infrastructure, state park lands, public land, and the Tennessee River. Also, given current growth and other expected development in the area, any additional development would likely be consistent with the existing land use and expected to be constructed in accordance with any other federal, state and local regulations and zoning regulations.

Based on the COE and TVA's evaluation of the effects of past actions, the most likely environmental impacts from proposals being presently considered or future actions would be to water quality and aquatic life, terrestrial resources, water-related recreation, and aesthetics. Water-based transportation (boating traffic) to and from the proposed community slips could reasonably be expected to utilize the reservoir for some distance downstream and upstream of

the site. Because of the length and width of the lower part of the reservoir, the additional boats originating from The Preserve and the other potential developments, combined with foreseeable level of commercial barge traffic, are not expected to result in adverse cumulative impacts (See water-related recreation, traffic/transportation patterns, and navigation).

Because of the amount of habitat on private land around these developments as well as public land allocated to natural resource conservation on lower Pickwick Reservoir, issuance of community dock and boat ramp permits would not likely adversely affect wildlife and natural resources in the area. In addition, continued application of environmental protection requirements such as BMPs under the Clean Water Act, and implementation of various programs to deal with non-point sources of water pollution and to restore degraded environments would mitigate some of the ongoing impacts of these activities. Because of BMPs, standard conditions and other site specific environmental protection commitments and mitigation requirements that are normally placed on DA, TVA, and TDEC permit approvals, cumulative effects to resources in the watershed are substantially reduced and are anticipated to be minor. The COE and TVA have been informed that there are erosion and sedimentation issues occurring in connection with some of the private residential development on lower Pickwick Reservoir, downstream of this proposal. TDEC is taking action to correct these situations and ensure that developers are taking the appropriate steps to stop this from occurring. Therefore, with the use of standard practices and the additional mitigation measures proposed, The Preserve ramp, community boat slips, and dry storage facilities, in combination with past, present, and reasonably foreseeable future actions, would not cause or contribute to significant degradation of water quality or other natural or cultural resources on lower Pickwick Reservoir.

The residential development of the privately owned upland property adjacent to the proposed project is likely to occur whether or not the COE and TVA issue a permit for the proposed activities. In addition, the developer may choose at a later time to develop additional privately owned lands adjacent to Phase I of The Preserve. Because the construction of these facilities are uncertain and speculative and have independent utility (See Section 2.1 a.), they are considered outside the scope of the present request. But, if these activities are proposed in the future, the appropriate level of review would be undertaken by the COE, TVA and TDEC at that time.

CHAPTER 4.0 Alternatives

4.1. Introduction. This section discusses alternatives as required by 33 CFR 320.4(a)(2). The relevant environmental issues identified in Chapter 3.0 were used to formulate the alternatives. The alternatives that were given detailed consideration are listed in the following section.

4.2. Description of Alternatives. Only reasonable alternatives have been considered in detail, as specified in 40 CFR 1508.14(a). As mentioned in paragraph 1.3 above, the alternatives that are

available to the COE and TVA and were given detailed consideration are: 1) no federal action, 2) issue the Section 10 and Section 26a permits as proposed by the applicant, or 3) issue the Section 10 and Section 26a permits subject to special commitments and conditions. The community boat slips and boat ramp would be defined as a water dependent project in 40 CFR 231.10(a)(3) and clearly requires complete access to the Tennessee River, a navigable and public waterway. The proposed site has been selected to meet the applicant’s purpose and need for the water dependent project and is the most practicable location to propose because it would accommodate the number of boat slips, boat ramp, access road and dry storage facility. This site, which adjoins the applicant’s private land, is available and feasible considering cost, existing technology, and logistics based on the overall purpose of the project.

Because the applicant owns the adjoining land and it is the most practicable location for the proposed facilities, no other alternative sites on Pickwick Reservoir were considered. In addition, this site offers the following advantages desirable to the applicant: 1) adequate size, 2) economically viable, 3) adequate summertime water depth for navigation, 4) offers a safe area to protect vessels from wave wash, and 5) the community boat slips would not create a navigation hazard for commercial barge movement and/or recreational vessel traffic. Such a structure would not likely be proposed or approved at alternative sites directly on the Tennessee River, unless within a protected embayment, in this vicinity due to the vessel traffic and potential for excessive wave wash. Therefore, the proposed site of the project would meet the purpose and needs of the applicant while providing positive socioeconomic benefits.

The applicant prepared an economic feasibility study regarding the potential project benefits from the employment and tax revenues in the area (See Appendix K).

a. No Action. This alternative would involve denial of the applicant’s request for a DA and TVA permit to perform the proposed work. No Action would also result if the applicant withdraws the application for a DA and TVA permit. Under this alternative, the proposed work would not be performed. However, the No Action alternative for this proposal would not preclude the developer from continuing with other ongoing land-transforming activities with the potential for greater environmental impacts that do not require DA and/or TVA approval.

b. The Applicant's Proposed Action (as described in Public Notice 07-01, Appendix A).

The proposed work consists of the construction of community docks for The Preserve Marina Homeowners Association. The proposed work would involve five separate dock systems. Dock A would consist of three – 20-foot by 20-foot boat slips that would extend out 40 feet from the NSP elevation 414-feet msl for Pickwick Reservoir. Dock B would consist of fifteen (15) – 20-

foot by 24-foot boat slips, and extend out 48 feet from NSP shoreline. Dock C would consist of fifteen (15) – 20-foot by 24-foot boat slips, and extend out 38 feet from NSP shoreline. Dock D would consist of seven – 20-foot by 20-foot boat slips, and extend out 36 feet from the NSP shoreline. Dock E would consist of thirteen (13) – 20-foot by 20-foot boat slips, and would extend out 36 feet from the NSP shoreline. All boat slips would be covered and floating. No dredging is proposed.

Additional work considered by this NEPA review includes the 200-foot long by 20-foot wide boat ramp and the upland dry storage area (as shown in Appendix E).

The purpose of the proposed work would be to provide enhanced recreational and water-related use opportunities on this area of Pickwick Reservoir for the residents of The Preserve residential development.

c. The Applicant’s Proposed Action with Special Conditions. This alternative would authorize the proposed work as stated in b. above with special conditions recommended to avoid, minimize, or mitigate the environmental impacts. In accordance with CFR 320.4(r), review of the proposed action has revealed mitigation measures which would avoid and/or minimize the environmental impacts of the proposed action to the extent possible. Recommended mitigation measures and/or special conditions to minimize environmental impacts for the proposed action are listed in Section 5.5.

4.3. Comparison of Alternatives.

a. No Action. With this alternative, the proposed work would not be performed and would not impact Haw Branch and/or Tennessee River (Pickwick Reservoir). The applicant’s proposed boat slips and boat ramp with the associated residences and economic benefit to the area would not be fully realized. Thus, some of the impacts and benefits associated with the proposed action would not occur. However, if confined above elevation 423 msl, this tract of land could be developed for residential and other associated uses not requiring DA and/or TVA approval, with resulting adverse impacts that could be similar or greater than those associated with this proposal. Currently, the upland area is already being constructed with lake front homes.

b. The Applicant's Proposal. This alternative would result in the construction of the community boat slips, boat ramp, and dry storage facility with associated facilities and residential homes. The boat slips, boat ramp and dry storage facility would only produce minor impacts to recreation, visual, aesthetics, vegetation, state-listed plant habitat, and water quality and wildlife habitat. Beneficial impacts would include economic benefits to the applicant, homeowners, Hardin County and the surrounding areas; enhanced water-related recreation opportunities from additional

moorage, launching ramp, and dry storage. No impacts on wetlands or historic properties would occur as a result of the proposed work. In addition, the work would not impact any threatened or endangered species.

c. The Applicant's Proposal with Special Conditions. This alternative would authorize the proposed work as stated in b. above with special conditions added to avoid, minimize, or mitigate the environmental impacts (See Section 5.6 for list of recommended special conditions).

CHAPTER 5.0. Other Considerations

5.1. Section 404 (b)(1) Determination and Water Quality Certification. The floating boat slips, access road, and dry storage area does not require any fill material placed below the NSP shoreline. Therefore, a Section 404 permit is not required for these proposed activities. The boat ramp would require a 20-foot wide concrete slab to be pushed into the reservoir. The boat ramp meets the conditions of Nationwide Permit #36. TDEC issued a General Permit for the boat ramp on 1 July 2005; thus, complying with the state water quality guidelines and a water quality certification is not required for the proposed work.

5.2. Clean Air Act Determination. Tennessee is subject to the National Ambient Air Quality Standards, which limit outside air concentrations of six pollutants: particulate matter, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead. Hardin County is in an attainment area for the new 8-hour ozone standard. The proposed project has been analyzed for conformity applicability, pursuant to Section 176c of the Clean Air Act. Due to the nature of emissions expected from the project, it has been determined that the proposed activity would not exceed de minimus levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions caused by the proposed activity are generally not within the DA continuing program responsibility, these emissions cannot be practically controlled by the DA, and, for these reasons, a conformity determination is not required for a permit.

Based on the ambient air quality in Hardin County and the nature of the proposed actions, TVA has determined that construction and operation of these shoreline improvements and the small number of additional recreation boats likely to use these facilities would result in minor emissions of air pollutants that would not threaten local or regional air quality.

5.3. Environmental Justice. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-

income populations. The proposed activities would only result in minor effects and could increase adjacent property values. The Census Block Group containing The Preserve property has a lower percentage minority population (0.5 percent) than the encompassing Census Tract (2.6 percent), which has a lower percentage minority population than Hardin County (5.8 percent). Tennessee as a whole has a minority population of 20.8 percent. The poverty rate for the Block Group is 10.9 percent which is lower than the poverty rate for the Census Tract (16.9 percent) and the county (18.8 percent). The poverty rate for Tennessee is 13.5 percent according to the 2000 Census. Based on these 2000 U.S. Census data, DA and TVA do not expect the impacts of this proposal to have a disproportionate affect on minority or low-income populations. Through the public involvement process, the general public, including low-income and minority populations, has had an opportunity to participate in a decision-making process that could affect their well-being.

5.4. Consideration of Public Comments. The comments received in response to the public notice have been considered and addressed in this EA. They will also be considered in the final decision regarding this permit request.

There were two requests for a public hearing for the proposed work. A public hearing has been denied on the proposed work by the COE District Engineer (DE), LTC Steven Roemhildt, on 14 May 2007 (See MFR in Appendix O). The public hearing was denied because all substantial issues surrounding the proposal were presented and discussed and the public had a meaningful opportunity to be heard. In addition, COE and TVA met with the two people that requested the public hearing and toured the site by boat on 22 February 2007. The onsite meeting was held to answer their questions and discuss the proposed work. The DE stated that the public hearing would not provide any additional information that would assist in reaching a final decision on the proposed request. Thus, since it would serve no valid interest, a hearing was denied. The COE and TVA will provide the public with a thirty day public comment period on the Draft EA. The comments received will be considered in the Final EA.

5.5. Special Conditions to Minimize Environmental Impacts. Recommended special conditions for inclusion in the DA and TVA permits to minimize or avoid the potential impacts to the environment follow:

1. The work must be accomplished in accordance with any plans attached to these permits.
2. A copy of these permits must be available on the site and the permittee must ensure all contractors are aware of its conditions and abide by them.

3. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the U.S.
4. You must design each community dock's infrastructure to accommodate anticipated flood water elevations, velocities, or volume changes and boat slips must be securely fastened or anchored to prevent them from breaking away. The dock equipment should be designed to accommodate the reservoir water elevation changes and debris associated with flood events.
5. You must recognize that the proposed structures are located on a waterway that provides commercial barge and recreational boat traffic and the possibility that any permitted structures may be subject to damage by wave wash from passing vessels, possible collision damage, or damage from high water velocities and elevations from flood conditions. The permittee shall not hold the U.S. liable for any such damage.
6. You must install and maintain, at your expense, any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on the authorized facilities.
7. In the long-term, to help protect the land and shoreline vegetation, the Preserve will consider the need for bank stabilization measures to be installed along the shoreline at the community docks and boat ramp sites if the current rate of erosion appears to be accelerating. Bioengineering methods (vegetation) are recommended or combination of rock or other suitable material. Any materials utilized for bank stabilization activities shall be well-graded quarry stone or its equivalent, i.e., clean material free of waste metal products, organic materials, toxic pollutants, unsightly debris, etc. For purposes of shoreline stabilization, all portions would be constructed or placed, on average, no more than two feet from the existing shoreline at NSP. Prior to placement of the bank stabilization, the proper approvals must be obtained from COE and TVA.
8. TVA owns a strip of land between the private land and the reservoir between the 414-foot msl and 423-foot msl contour elevations which, except for an area at the boat ramp and 20-foot wide access corridors to each of the community docks, will be left undisturbed. All soil disturbed on this land associated with facilities construction or vegetation removal must be stabilized within 10 days after construction to eliminate any erosion or turbidity entering the stream. This TVA land will be managed in accordance with SMP.
9. The Preserve will not plant, cultivate, or otherwise establish any non-native vegetation on the TVA shoreland. In the vicinity of the dry storage facility, TVA will encourage The Preserve to use native grasses or non-native, non-invasive species for site stabilization and native plants for landscaping purposes. TVA will provide The Preserve with a list of native plants endemic to the region and encourage their use for site stabilization and residential landscaping purposes on the adjoining private uplands.

10. The proposed dry storage facility and open and covered water use facilities shall be designed and constructed with materials which are non-reflective and analogous in color to the surrounding environment and the back-lying shoreline landscape.
11. Site lighting, including that required by Condition 6 above, shall be equipped with full cutoff features which limit the amount of waste light produced at a vertical angle of 80 degrees above the lowest light emitting portion of the luminare.
12. You must institute and maintain erosion control measures for the life of the project and all disturbed areas must be properly seeded, rock barriers or check dams, or otherwise stabilized as soon as practicable to prevent erosion and sediments from entering the waterway during and after construction. Erosion and sediment control measures must include but not be limited to silt fencing, sedimentation pond, straw bales, rock barriers or check dams, erosion matting, silt curtains, and temporary seeding and mulching.
13. At normal summer pool elevation 414 msl, no portion of the proposed community dock facilities shall exceed more than 150 feet or one-third of the width of the embayment at elevation 414 msl at any point, whichever is less.
14. No-wake buoys will not be permitted for this facility.
15. To minimize effects on Blue Sage (*Salvia azurea var. grandiflora*) and Ovate Catch fly (*Silene ovata*), The Preserve will not conduct the remaining work on the dry storage access road, or any portion thereof within the area of potential habitat (transmission line ROW corridor), during the flowering/fruitleting time (mid-July to mid-September) for these plant species.
16. During dry periods, The Preserve will apply water at the access road and dry storage construction site as necessary to control fugitive dust.
17. You must contact the Regulatory Office (Amy Robinson at 615-369-7509) or J. Kenley Austin, TVA (256-386-3456) to arrange the following onsite compliance meetings. These meetings are required, but are not limited to the following:
 - a. A pre-construction meeting with you, your contractors, and representatives from the COE and TVA shall be held prior to any work in the waterway. The contractors shall present their method of operation for the work at this meeting and ensure that the docks would not exceed one-third of the cove. You must contact this COE or TVA office at least two weeks prior to construction to arrange the required pre-construction meeting.
 - b. You must also contact the COE or TVA office upon completion of the boat ramp, access road, and boat slips to arrange an onsite inspection.

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