

**FINAL ENVIRONMENTAL ASSESSMENT**

(File No. 200801767)

Applicant: Pointe Marina - Norris Reservoir

Proposed Commercial Marina in Unnamed Cove  
Opposite Mile 4.0, Right Bank, Powell River (Norris Reservoir)  
South of Heatherly's Point Cabin Area, in Campbell County, Tennessee

Prepared by:

UNITED STATES ARMY CORPS OF ENGINEERS  
Nashville District, Regulatory Branch

In cooperation with the  
TENNESSEE VALLEY AUTHORITY

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**CHAPTER 1.0. Proposed Activity****1.1. Introduction.**

Norris Reservoir is located in east Tennessee, north of Knoxville. It spans a 73-mile stretch of the Clinch River from Norris Dam (built in 1936) to River Ridge at the Claiborne-Grainger County line, and includes the lower 56 miles of the Powell River, a tributary to the Clinch River 10 miles upstream from Norris Dam. Norris Reservoir has about 34,200 surface acres of water at normal summer pool (NSP) and 809 miles of shoreline. It is the largest tributary reservoir in the Tennessee River system and offers various forms of public recreation including, but not limited to, boating and operation of personal watercraft, swimming, fishing, hiking, picnicking, sunbathing, camping, and wildlife viewing.

The Pointe Marina (applicant) is planning to construct and operate a 500-vessel capacity commercial marina, restaurant, and boat-launching ramp on Norris Reservoir, right bank, Powell River Mile 4.0, in Campbell County, Tennessee (Appendix A). The applicant is seeking a Department of the Army (DA) permit from the United States Army Corps of Engineers (USACE) and Section 26a approval from the Tennessee Valley Authority (TVA) for the proposed commercial marina facility. USACE and TVA jointly prepared this final environmental assessment (EA) evaluating the potential environmental consequences that would likely result from the construction and operation of the proposed Pointe Marina. This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508).

**1.2. Project Description.**

The proposed commercial marina facility would be open to the public and could include nine covered floating docks with 484 covered 21-foot-wide by 30-foot-deep dual-berth boat slips and 16 boat slips measuring 12 feet wide by 30 feet deep. Additionally, the proposal includes a restaurant, a retail marina store, and a gas dock platform (see Appendix B, Harbor Area). Cables and anchors would be placed within the established harbor limits.

As described in the Applicant's Proposed Action (Section 2.2.2), the applicant is planning to build the proposed marina in phases, as dictated by demand. The Phase 1 actions include construction and operation of a scaled-down marina store and restaurant and construction of 60 covered slips, the boat launch, parking areas, roadways, and wave attenuator. Phase 1 also involves installing the fuel dispensing system and the sewage pump-out station. Subsequent phases would be constructed based on a 70 percent occupancy rate standard of existing slips. Once the 60 covered slips are 70 percent occupied, then Phase 2 would begin, and the applicant would construct 60 more covered slips. As the phases develop and the demand warrants further expansion, the marina store and restaurant would be further developed to the final design. Phases 3, 4, 5, 6, and 7 involve constructing 60 more covered slips per phase once the existing slips are 70 percent occupied. Phase 8 involves construction of the last 80 covered slips.

The immediate upland area along the shoreline would include walkways, a boat-launching ramp, a concrete cart path, three adjacent parking lots, an aboveground fuel storage area (see Appendix B, Overview), and other necessary infrastructure. The parking lots would have 160 parking spaces for vehicles and 30 spaces for vehicles with a boat trailer attached. The proposed public boat-launching ramp would be 20 feet wide by 200 feet long and would extend approximately 160 feet into the reservoir, measured from the NSP contour of elevation 1,020 feet above mean sea level (msl), and would require 0.07 acre of land below NSP. The boat-launching ramp's design involves placing 40 cubic yards (CY) of concrete and 34 CY of riprap

below NSP. Excavation, grading, or deposit of fill below NSP would be performed during the periods of winter drawdown of Norris Reservoir to minimize adverse effects on aquatic life and water quality. The applicant also proposes to install a 12-foot-wide by 570-foot-long I-shaped floating wave attenuator extending 4 feet below the water surface at the head of the cove to reduce wave action and minimize erosion caused by waves. Additionally, in order to minimize visual impacts to the area, the applicant's proposed marina's design characteristics involve use of earth tones and neutral colors to better blend with the natural environment.

The scope of the environmental review includes the 500 slips in the Applicant's Proposed Action (Section 2.2.2). The anticipated impacts from constructing and operating the marina facility with 500 boat slips have been considered in this final EA and will be considered in the permitting process. However, in order to reduce potential impacts, should a permit be issued, special permit conditions have been developed for incorporation into the permit to reduce or avoid adverse impacts to water quality, the aquatic environment and wetlands, wildlife habitat, water-related recreation, navigation, and historic and cultural values (see Section 2.4).

Additionally, a phased permit condition to limit initial project development to 300 boat slips been developed for incorporation into the permit to reduce impacts to water-related recreation. The phased permit approach would initially allow for construction of Phases 1 through 5 and the applicant would need to contact TVA in writing for approval to construct Phases 6 through 8 once Phase 5 is at 70 percent occupancy. At that time, TVA would reassess boating safety data by using the same or similar methodology (if current methodology has been updated) as used for this environmental review, including completion of a boating density analysis and consideration of Tennessee Wildlife Resource Agency's (TWRA) annual boating safety data.

### **1.3. Purpose and Need.**

The basic purpose of the proposed project is to provide additional safe, conveniently accessible, water use facilities to the public on Norris Reservoir. To do so, the project would involve construction of a marina with up to 500 slips and nine floating docks, a restaurant and retail marina store, a gas dock platform, a 20-foot-wide boat-launching ramp, involving placement of 74 CY of concrete and riprap below NSP, three parking lots, a concrete path, and a utility reservation area for fuels, electric, and sewage. The overall project purpose was determined based on information submitted by the applicant.

See Section 1.5 *Decision Required* for a brief discussion of the purpose and need from the permitting authorities' perspective.

### **1.4. Project Changes.**

The applicant's initial proposal for a 799-vessel capacity facility was advertised in Joint Public Notice (JPN) 09-03 (Appendix C), and the initial plans of the proposed work are included in the JPN. At winter pool configuration, the docks would have extended beyond the established marina harbor limits. Navigation, boating safety, water quality, and the aquatic environment were identified as concerns (see Section 5.1) during the JPN public involvement process, the initial marina proposal was modified to a 500-vessel capacity to address these concerns. The applicant revised the initial marina plans and submitted supplementary information to the USACE and TVA for consideration (Appendix B). For purposes of the evaluation contained in this document, the applicant's initial proposal shown in the JPN (Appendix C) as modified by changes described in this EA, is considered the "Applicant's Final Proposal." Revised project drawings and a letter from the applicant are presented in Appendix B.

Some of the details of the proposed marina's changes are included below.

- The marina proposal was reduced from a 799-vessel capacity plan to a 500-vessel capacity plan. The number of floating docks was reduced from 12 docks to nine docks.
- The initial proposal was designed for the marina to extend beyond the harbor limits during winter drawdown of the reservoir to winter pool (995-foot contour elevation). Under the “Applicant’s Final Proposal,” the marina does not extend beyond the harbor limits and all facilities would remain within the approved harbor limits (one-third the distance of the cove year-round).
- The wave attenuator was changed from an L-shaped structure, to an I-shaped structure that would be 12-feet wide, 570-feet long, and would extend 4 feet below the water’s surface.

### **1.5. Decision Required.**

**1.5.1. United States Army Corps of Engineers.** Under Section 10 of the Rivers and Harbors Act of 1899, alteration or obstruction of any navigable waters of the United States (NWUS) is prohibited unless authorized by the Secretary of the Army acting through the Chief of Engineers. The Tennessee River from its mouth to its head at Tennessee River Mile 652.1 is an NWUS as defined by 33 CFR Part 329. In addition, Section 401 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into waters of the United States (WUS) unless authorized by the DA pursuant to Section 404 of the same act. The Tennessee River in its entirety is a WUS as defined by 33 CFR Part 328. Because the proposed action is located in both an NWUS and a WUS, a DA permit under Section 10 and Section 404 is required for the work. USACE is the lead federal agency.

### **1.5.2. Tennessee Valley Authority.**

TVA holds flowage easement rights over land associated with the proposed marina. These rights allow TVA to flood property to elevation 1,044 feet above msl. The 100-year floodplain elevation at this location is 1,032 feet above msl. Under Section 26a of the TVA Act (16 United States Code §831y-1), TVA requires that no dam, appurtenant work, or other obstructions affecting navigation, flood control, public lands, or reservations be constructed and thereafter operated or maintained across, along, or in the Tennessee River or any tributaries, unless plans for such construction, operation, and maintenance have been submitted to and approved by TVA. A Section 26a permit would be required for the construction of the commercial marina and associated structures, and placement of 74 CY of concrete and riprap below NSP for the boat-launching ramp, and any other disturbance located on TVA flowage easement such as shoreline stabilization (if deemed necessary by TVA and/or USACE). TVA is a cooperating agency in the preparation of this final EA, and after completing the NEPA process for the proposed project, TVA will determine Section 26a approval, denial, or modifications with approval through Section 26a regulations, deed restrictions, and compliance with policies and guidelines.

TVA would also enter into a contractual agreement to operate the marina. The agreement would include provisions that require the marina to operate in a safe manner adhering to state and federal regulations for, but not limited to, electric, fuel handling, and waste disposal and water quality. The agreement may also require provisions for rental payments based upon the associated land rights.

### **1.5.3. Summary.**

Section 26a and DA permit approvals are required for the proposed work; therefore, the agencies will decide on one of the following:

- Issuance of Section 26a and DA permit approvals for the proposal

- Issuance of Section 26a and DA permit approvals with modifications or conditions
- Denial of Section 26a and DA permit approval requests

#### **1.6. Other Approvals Required.**

As required by the 1977 Tennessee Water Quality Control Act §69-3-101 et seq., authorization is necessary from the Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control, a water quality certification is required in accordance with Section 401(a)(1) of the CWA. A draft 401 water quality certification permit application was made available to the public for a 30-day review and comment period. The final permit was issued on 19 May 2009 (Appendix D), but it expired 31 October 2011. Because the permit has expired, the applicant will need to renew the water quality certification. TDEC is responsible for enforcement of state standards for construction sites and storm water runoff under Section 402 of the CWA; a construction storm water permit would be required from TDEC. Additionally, a permit for the pumping station would be required from TDEC. Permits for the fuel storage and fuel dispensing system for the proposed gas dock platform would also be required.

#### **1.7. Scope of Analysis.**

The USACE must determine the proper scope of analysis for NEPA, the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA), and any other laws and regulations related to its permit actions. Once the scope of analysis is established, USACE can address the impacts of the specific activity requiring a DA permit and those portions of the entire project over which it has sufficient federal control and responsibility to warrant federal review. This is generally coincidental with the definition for "Permit Area." NEPA Implementation Procedures for the USACE Regulatory Program (33 CFR Part 325, Appendix B, Paragraph 7b) list the typical factors to be considered in determining whether sufficient control and responsibility exist to warrant federal review: (a) whether the regulated activity comprises merely a link in a corridor-type project, (b) whether there are aspects of the upland facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity, (c) the extent to which the entire project would be within DA jurisdiction, and (d) the extent of cumulative federal control and responsibility. In determining whether sufficient cumulative federal involvement exists to expand the scope of federal action outside the Permit Area, the USACE should consider whether other federal agencies are required to take federal action under other laws and/or executive orders (EOs).

Once the scope of analysis is determined, the USACE and TVA must, in the appropriate NEPA analysis, analyze the alternatives to the proposed action and consider primary, secondary, and cumulative impacts (see Section 3.5, *Secondary and Cumulative Impacts*).

The scope of the environmental review includes the 500 slips in the "Applicant's Final Proposal." As previously described, the proposal consists of the construction of a commercial marina, a retail store and restaurant on encased flotation (i.e., floating docks), a public boat-launching ramp, a floating wave attenuator, three parking lots, and a utility reservation (for fuels, electric, and sewage). In light of the above discussion, the USACE and TVA have determined that the scope of analysis for the Section 26a and DA permit applications should be limited to the Permit Area, which includes the shoreline, near-shoreline, and immediate upland area that would be directly impacted by construction of the docks, walkways, boat-launching ramp, concrete cart path, and three parking lots.

#### **1.8. Site Inspection.**

A site inspection is generally performed in connection with the processing of all standard DA

permit applications. USACE project manager, J. Ruben Hernandez, conducted two site inspections with the applicant and TVA's Watts Bar-Clinch Watershed Team personnel. The first site inspection was conducted by land on 5 May 2009. The second inspection was conducted by water on 12 May 2009. Site inspection photographs are included in Appendix E.

The proposed marina would be located along the north shoreline of an unnamed cove in the Powell River portion of Norris Reservoir (Appendix A). At NSP, the cove is approximately 3,168 feet in length at NSP elevations, and about 1,660 feet wide at its mouth, narrowing considerably at the western marina harbor limits to about 590 feet. Three residences with docks are present on the north shoreline near the head of the cove. The western edge of the marina harbor limits would be approximately 1,050 feet from the easternmost residence. Galilee Bible Camp owns backlying property along the south shoreline also near the head of the cove. The Galilee Bible Camp has approximately 1,000 feet of reservoir frontage with maintained lawns and possesses one covered boat dock.

The project site's topography has a gentle ( $\leq 6$  percent) to medium ( $\geq 20$  percent) slope. However, there is a relatively flat point of land at the mouth of the cove on the north shoreline. Except for the flat point of land at the confluence with the river, most of the property is wooded. Tree species observed include white pine, cedar, red maple, sycamore, and other common species. Although water surface elevations were close to NSP during both inspections, portions of shoreline and reservoir bottom within the marina footprint would become exposed in the winter months during winter drawdown of the reservoir. Inspection pictures have been included in Appendix E. In addition, an aerial photograph of the marina vicinity is included in Appendix A.

**CHAPTER 2.0. Alternatives****2.1. Introduction.**

This section discusses alternatives as required by USACE and TVA regulations and by NEPA. USACE requirements about consideration of alternatives are found at 33 CFR 320.4 (a)(2). The relevant environmental issues identified in Section 3.0 were used to formulate the alternatives. The alternatives considered in detail are described in Section 2.2 and their impacts are compared in Section 2.3. Other alternatives not considered in detail are discussed in Section 2.2.4.

**2.2. Description of Alternatives.****2.2.1. No Action.**

This alternative would result in no construction or work requiring Section 26a or DA permit approvals. No Action would occur by denial of the permit/approval or withdrawal of the permit application. This alternative would not satisfy the applicant's purpose and need.

**2.2.2. Applicant's Proposed Action.** This alternative consists of the "Applicant's Final Proposal" to construct and operate nine floating docks with 500 boat slips as well as a restaurant, a retail marina store, a gas dock platform, a 20-foot-wide boat-launching ramp, three parking lots, a concrete path, and a utility reservation area for fuels, electric, and sewage (see Appendix B). The applicant has indicated that its development plans are phased and Phase 1 involves providing slips for 60 vessels then 60 more vessels would be added per phase from Phase 2 to Phase 7 once occupancy reached 70 percent. Eighty slips would be added for Phase 8.

**2.2.3. Applicant's Proposed Action With Added Special Conditions.**

This alternative consists of the "Applicant's Final Proposal" as described above with inclusion of special conditions developed for incorporation to the Section 26a and DA permits to further minimize/mitigate unavoidable impacts to the maximum extent practicable (see Section 2.4). These special permit conditions would reduce or avoid adverse impacts to water quality, the aquatic environment, including wetlands, wildlife habitat, water-related recreation, navigation, and historic and cultural values.

Under the proposed action, there would be an increase in recreational boating traffic. Because the increases in boating density could exceed maximum recommended density in the study area during summer peak use holiday weekends, and weekend boating density would be at or near threshold levels, TVA has developed a phased permit approach involving 26a permit conditions that reduces the initial number of vessel slips approved to 300 slips. In order to reduce impacts to water-related recreation, a special condition to limit initial development of the proposed marina to 300 slips would be implemented. However, under this alternative, the number of slips could still reach 500 slips. The approval of the 200 additional slips would be contingent on the results of further boating density assessments conducted by TVA after the initial 300 slips are at least 70 percent occupied.

**2.2.4. Alternatives Not Considered in Detail.**

Other reasonable alternatives involving different designs (size, shape, height), materials (metal, composites, etc.), or sites exist. However, the resultant degree of impact would be commensurate with the impacts of the proposed action. All of the alternative designs would require DA and or Section 26a permit approvals and would be subject to the agencies' review processes. These alternatives might not satisfy the applicant's purpose and need.

### **2.3. Comparison of Alternatives.**

#### **2.3.1. No Action.**

Implementation of the No Action Alternative would not result in any project-related primary, secondary, or cumulative impacts because the project area would remain in its current condition, and potential environmental impacts described in Section 3.0 would not occur. Changes to the area would nonetheless occur over time, as factors such as population trends, land use and development, quality of air, water, and soil, recreational patterns, and cultural, ecological, and educational interests change within the area. Conversely, the potential for minor water-related recreation and socioeconomic benefits described in those sections would not be achieved. Selection of the No Action Alternative would not satisfy the applicant's purpose and need.

**2.3.2. Applicant's Proposed Action.** The proposed action described in Section 2.2.2 would potentially have impacts to water quality, the aquatic environment and wetlands, wildlife habitat, water-related recreation, navigation, and historic and cultural values, and beneficial recreation and socioeconomic effects. These potential effects have been considered in Section 3.0.

#### **2.3.3. Applicant's Proposed Action With Added Special Conditions.**

This alternative would result in similar benefits and fewer resource impacts than the Applicant's Proposed Action described in Section 2.3.2 above. Special permit conditions have been developed for incorporation into the permit to reduce or avoid adverse impacts to water quality and the aquatic environment, wetlands, wildlife habitat, water-related recreation, navigation, and historic and cultural values (see Section 2.4). The special conditions are reasonably enforceable and would afford appropriate and practicable environmental protection. Some of the conditions are necessary to satisfy legal requirements and public interest concerns.

### **2.4. Special Conditions to Minimize Adverse Impacts.**

Special permit conditions have been developed for incorporation into the Section 26a and/or DA permits (see below).

- The work must be in accordance with the plans and information submitted in support of the proposed work attached to this permit. *Justification: Clarify permit application*
- You (the applicant) must have a copy of this permit available on the site and ensure all contractors are aware of its conditions and abide by them. *Justification: Recommended at 33 CFR 325, Appendix A - Permit Form and Special Conditions*
- Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States. *Justification: Recommended at 33 CFR 325, Appendix A - Permit Form and Special Conditions*
- A preconstruction meeting must be held among representatives of the USACE Nashville District, TVA, permittee, and contractor(s) to discuss the conditions of this permit. The contractors must present their method of operation for the work at this meeting. If the method of operation includes additional work such as temporary access pads/fills, structures, etc., below elevation 1,020 feet msl, another permit may be required before construction begins. You should contact Scott Fanning of the USACE, telephone number (615) 369-7521, to arrange the required meeting. *Justification: Clarify permit application and prevent noncompliance issues*

- To reduce potential water quality impacts, applicant will manage the marina facility based on the *Tennessee Valley Clean Marina Guidebook*. *Justification: Minimize impacts on water quality and the aquatic environment*
- Section 230.10 of the CWA requires that the discharge meet certain restrictions in order to be authorized. The project must comply with the following restrictions: The fill created by the discharge shall be properly maintained to prevent erosion and other nonpoint sources of pollution; and any discharge shall consist of suitable material free from toxic pollutants in toxic amounts. *Justification: Minimize impacts on water quality and the aquatic environment*
- Siltation and erosion-control methods such as entrenched silt fences, rock check dams, erosion-control mats, etc., shall be utilized as appropriate and in place prior to commencement of any work. Selected methods for controlling erosion and minimizing sedimentation shall be maintained for the life of the project. Areas disturbed during construction shall be properly seeded, riprapped, or otherwise stabilized as soon as practicable. *Justification: Minimize impacts on water quality and the aquatic environment*
- You must stabilize the marina shoreline if TVA or USACE determine that more than a normal amount of erosion is observed during periodic on-site shoreline assessments. TVA staff will conduct annual on-site visits where shoreline conditions (rate of erosion) will be evaluated. *Justification: Minimize impacts on water quality and the aquatic environment*
- Any excavation, grading, or deposit of fill below the elevation 1,020 feet msl contour shall be performed during the periods of winter drawdown of Norris Reservoir to minimize adverse effects on aquatic life and water quality. *Justification: Minimize impacts on water quality and the aquatic environment*
- The disturbance to riparian vegetation shall be kept to a minimum during construction. *Justification: Minimize impacts on wildlife habitat, water quality, and the aquatic environment*
- In order to avoid wetland impacts, the applicant must avoid the delineated wetland area so that the wetlands are not disturbed by construction activities, operations, and/or future development. *Justification: Minimize impacts on wildlife habitat, water quality, and the aquatic environment*
- Before the fuel dispensing dock becomes operational, you must prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan to prevent the discharge of oil, fuel, or petroleum products from the facility into Norris Reservoir. The SPCC Plan must outline the marina's containment systems and procedures to prevent a spill as well as spill response and cleanup protocols. The SPCC Plan must comply with EPA regulations. *Justification: Minimize impacts on water quality and the aquatic environment*
- In order to reduce water-related recreation impacts, Section 26a permit approval will be in two phases and will initially allow for construction and operation of 300 boat slips. Approval of 200 additional slips will be contingent on the results of further boating density assessments by TVA to evaluate potential impacts to water-related recreation considered in this EA. Under the phased permit approach, the applicant is to notify TVA in writing to request approval for the remaining 200 slips, as depicted in the approved marina design drawings, when occupancy levels of the 300 permitted slips are at or near 70 percent. At that time, TVA will reassess boating safety data and will make its determination based on the following guidance:

TVA would recalculate the boating density of the Study Area using the same or similar methodology (if current methodology has been updated) as used for this environmental review, including completion of a boating density analysis. The boating density analysis will consider water-related recreation facilities in the Study Area (see Table 3-1 and Appendix ), including commercial wet and dry slips in the Study Area, issuance of Section 26a permits for private access and community water-use facilities, and public and private community boat-ramp parking. TVA will also consider of TWRA's annual boating safety data. Once the data is analyzed, if TVA determines approval for 200 additional slips would not adversely impact boating safety, TVA would issue approval for 200 slips as depicted in the "Applicant's Final Proposal" (Appendix B). If TVA determines approval would have a significant adverse impact on water-related recreation, TVA would not approve construction of the additional 200 slips. *Justification: Reduce water-related recreation impacts (navigation safety)*

- You hereby recognize the possibility that the structures permitted herein may be subject to damage by wave wash and possible collision damage from passing vessels. The issuance of DA and TVA permit approvals do not relieve you from taking all proper steps to ensure the integrity of the structure and the safety of vessels moored thereto from damage by wave wash or collisions, and you shall not hold TVA or the United States liable for any such damage. *Justification: Public interest requirement (navigation safety)*
- Any floating plant and/or craft engaged in the construction activities must display lights and signals compliant with requirements of the current "Inland Navigation Rules" and must be positioned so as to provide maximum horizontal navigational clearance in the cove and main channel at all times. *Justification: Public interest requirement (navigation safety)*
- All floating facilities must be securely anchored to prevent them from floating free during major floods. *Justification: Public interest requirement (navigation safety)*
- Adequate safety lights and/or reflectors that would allow the boating public to recognize the presence and extent of all docks between dusk and dawn, and during overcast, foggy, and other low-light conditions, must be installed and maintained by the applicant at its expense. *Justification: Public interest requirement (navigation safety)*
- No docks are to extend more than one-third of the width of the water measured to the shoreline from bank to bank at all times. *Justification: Navigation safety*
- Certified "as-built" drawings shall be furnished to this office within 60 days of completion of a construction phase showing final overall dock dimensions and maximum extensions measured from the normal summer pool shoreline, elevation 1,020 feet msl. *Justification: Minimize permit noncompliance issues*
- In order to reduce potential impacts to archaeological Site 40CP304, a preservation covenant shall be placed in the property owner's deed, which will include a 50-foot buffer surrounding Site 40CP304. Under the preservation covenant, the area within the buffer would not undergo any ground disturbance. The applicant will be required to submit a copy of the new deed to TVA once the covenant has been added. *Justification: Avoid impacts on historic and cultural values*

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**CHAPTER 3.0. Environmental and Public Interest Factors Considered****3.1. Introduction.**

The decision whether to issue Section 26a and DA permit approvals would be based on an evaluation of the probable environmental 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 are considered. The following sections describe the relevant factors identified and provide a concise description of the probable impacts of the proposed action, as described in Chapter 1 and the Applicant's Proposed Action (Section 2.2.2). The baseline data discussed in this section have been obtained from information provided by the applicant, other agencies, field investigations, input to the JPN and the draft EA, and other sources.

**3.2. Physical/Chemical Characteristics and Anticipated Changes.**

The relevant blocks are checked with a description of the impacts. An unchecked block denotes that no adverse effects are expected.

(x) substrate – The existing substrate consists of gravel, silt, clay, and scattered bedrock outcroppings. The proposed boat-launching ramp would result in the loss of 0.5 acre of substrate within the area being permitted. The proposed boat-launching ramp would have a minor impact on substrate.

(x) currents, circulation, or drainage patterns – The proposed floating docks would be exposed to debris/drift accumulation. The applicant has stated that the design of the marina structures was carefully considered to reduce the opportunity for debris and drift accumulation. No considerable changes in water circulation are expected as a result of the proposed activities.

(x) water quality (temperature, color, odor, nutrients, etc.) – Information published by TVA on its reservoir ecological health rating Web page (TVA 2009a) indicates that, as in previous years, the ecological condition of Norris Reservoir in 2009 (most recently tested year) was "fair." TVA monitors Norris Reservoir's ecological health every two to five years. Five ecological indicators are used to rate reservoir condition: dissolved oxygen, chlorophyll, fish, bottom life, and sediment. At the midreservoir monitoring location on the Powell River, i.e., area closest to the project site, the TVA Web site indicates that dissolved oxygen rated "poor" and chlorophyll concentrations rated "good." There were no state advisories against swimming or fish consumption indicated for Norris Reservoir. Bottom life (benthic organisms) rated "fair" due to the relatively low number and variety of animals found in samples collected from the reservoir bottom. Finally, sediment quality rated "good" since the levels of contaminants are typically lower than the concentrations found at the forebay. Water clarity in Norris Reservoir is considered excellent (i.e., low turbidity levels). The proposed activities do not include any dredging.

Standard best management practices (BMPs), such as use of silt fences, would be used during construction to reduce potential water quality impacts to a minimum, and water quality would likely return to normal conditions post construction. The construction of the proposed facilities would result in short-term minor increases in turbidity, thus having minor effects on water quality. As construction ceases, turbidity would decrease and water quality conditions would return to previous conditions.

Potential impacts to water quality resulting from marina operations would likely include erosion, runoff, wastewater discharge, petroleum, sewage, and litter. The operation of the marina would result in relatively minor long-term water quality impacts mainly from the inadvertent spillage of

petroleum products from boats. Storm water discharges and surface runoff originating in upland areas adjacent to the reservoir could also contribute to water quality degradation. However, impacts would be relatively minor because water currents would help disperse the discharges quickly in the water column. Marine sanitation device (MSD) laws apply to Norris Reservoir and discharging untreated sewage into public water is prohibited in Tennessee. Public waters are classified as either discharge (capable of accepting treated sewage) or no discharge (waste must be retained in a holding tank until properly removed). Norris is classified as a no discharge reservoir. For further information about MSD laws and other boating pollution laws, see Appendix F.

In order to minimize potential impacts to water quality, Section 26a and DA permit approvals will be subject to the special conditions described in Section 2.4 requiring the applicant to perform all work in a manner that would prevent violations of water quality standards. Additionally, the applicant is required to prepare an SPCC Plan that outlines the marina's containment systems and procedures to prevent a spill as well as spill response and cleanup protocols. The applicant has also committed to manage the marina facility based on the *Tennessee Valley Clean Marina Guidebook* (TVA 2011).

TVA developed the *Tennessee Valley Clean Marina Guidebook* (TVA 2011) to support marina owners who are voluntarily striving to protect the water resources of the Tennessee Valley. The guidebook is designed as an ongoing effort to reduce water pollution and erosion. The guidebook offers BMPs, individual activities, or structures to reduce potential impacts to water quality. With the implementation of the special conditions described in Section 2.4, construction activities would have a minor, temporary impact on water quality, and marina operations would not significantly impact long-term water quality. Issuance of the Section 401 water quality certification by TDEC also evidences that the applicant's proposal to construct and operate this facility would not result in violation of water quality standards (see Section 1.6).

(x) flood control functions – The proposed project involves the construction of floating docks, walkways, a boat-launching ramp, bank stabilization (if deemed necessary by TVA and/or USACE), and other recreational amenities within the 100-year floodplain (elevation 1,032 feet above msl). Consistent with EO 11988, Floodplain Management, these are considered repetitive actions and the project complies with the TVA Flood Control Storage Loss Guideline. TVA's prior evaluation of a class of similar actions concluded that impacts on natural and beneficial floodplain values would be minimal. To further reduce the potential for adverse impacts on reservoir operations, the proposed floating docks would be designed to accommodate typical reservoir fluctuations. The structures would have negligible to no effect on flood control functions or loss of reservoir storage; floodplain impacts would be minor.

(x) storm, wave, and erosion buffers – A component of the proposed marina facilities would be the construction of an I-shaped floating wave attenuator at the mouth of the cove. The attenuator would have a solid curtain extending 4 feet below the water's surface to help dissipate wave energy. Therefore, only a minor increase in wave action is anticipated in these areas. The proposed construction of the marina is not expected to have a measurable effect on wave action or erosion intensity.

(x) shore erosion and accretion patterns – The construction and operation of the proposed facilities are not likely to considerably change the site's shore erosion and accretion patterns. In general, there are many variables that contribute to shoreline erosion, and it is difficult to determine that erosion is a direct result of recreational boating in an area.

However, minor erosion along generally occurs shorelines where boat slips are located. Because marina-originated boating activity would be circumscribed to the area between the marina boat-launching ramp and main channel, minor erosion increases are expected along Galilee Bible Camp's shoreline and the head of the cove.

The proposed wave attenuator is intended to reduce erosion in the cove from main channel backflows to an acceptable level. Furthermore, the applicant has indicated that it would stabilize the shoreline in the harbor area, if determined necessary by TVA and/or USACE. TVA staff will follow up with the applicant by conducting annual site visits. Shoreline conditions (rate of erosion) will be one of the items evaluated during the site visit. Therefore, Section 26a and DA permit approvals would be subject to the following condition:

- In order to minimize potential shoreline erosion impacts, a special condition would be added to Section 26a and DA permit approvals to require Pointe Marina to further stabilize the marina shoreline if TVA or USACE determines that more than a normal amount of erosion is observed. TVA staff will conduct annual on-site visits where shoreline conditions (rate of erosion) will be evaluated.

( ) baseflow – No adverse effects

### **3.3. Biological Characteristics and Anticipated Changes.**

The relevant blocks are checked with a description of the impacts. An unchecked block denotes that no adverse effects are expected.

(x) special aquatic sites and wetlands (mudflats, pool and riffle areas, vegetated shallows, sanctuaries, and refuges, as defined in 40 CFR 230.40-45) – No special aquatic sites as defined in the cited regulations or based on USACE definitions exist within the Permit Area, therefore no impacts to special aquatic sites are anticipated.

TVA considers a small shoreline fringe (less than 0.10 acre) in the vicinity of the proposed boat-launching ramp to be a scrub-shrub wetland; the dominant species is black willow. In order to avoid wetland impacts, the applicant has indicated that this area would not be disturbed by construction activities and/or future development. With the implementation of the proposed avoidance measures, impacts to wetlands would be avoided.

Therefore, Section 26a approval would be subject to the following condition:

- In order to avoid wetland impacts, the Pointe Marina must avoid the delineated wetland area so that the wetlands are not disturbed by construction activities, operations, and/or future development.

With the implementation of this permit condition, this proposal is consistent with EO 11990, Protection of Wetlands.

(x) habitat for fish and other aquatic organisms – Norris Reservoir's fish population contains common fish species such as walleye, sauger, crappie, catfish, bluegill, and various bass species such as white, striped, smallmouth, largemouth, and spotted. Aquatic habitat in the area has been slightly to moderately disturbed by the presence of recreational and commercial activities associated with nearby marinas and community docks.

The shoreline and near-shoreline areas are moderately steep. Yearly reservoir drawdown typically exposes approximately 30 to 40 feet of aquatic habitat along the shoreline. Since most

of the affected bottom area is seasonally exposed, it is not highly suitable for benthic colonization or to serve fish spawning or nursery habitat functions. Although construction of the boat-launching ramp would eliminate approximately 0.5 acre of bottom substrate, the impact on this resource would be minimal because there is ample soil material in the surrounding area. Shading produced by the structures would cause a minor reduction in the photosynthetic process and associated biological productivity. The adverse impacts to aquatic life would be minor and temporary, as aquatic organisms would soon recolonize after construction is complete, and overall impacts to aquatic organisms would be insignificant.

(x) wildlife habitat –The proposed marina would be located along the north shoreline of an unnamed cove in the Powell River portion of Norris Reservoir. The site, which is directly across from the Gatham Bend area, is approximately 0.5 mile south of the Heatherly's Point Cabin area and 1 mile southeast of the Grantsboro Community, in Campbell County, Tennessee. The surrounding area is mainly rural and residential in nature. Migratory songbirds, muskrats, water snakes, great blue herons, Canada geese, and green herons are all common in the vicinity of the project area. Tree species observed include white pine, cedar, red maple, sycamore, and other common varieties. Approximately 30 to 40 feet of reservoir shoreline/bottom becomes exposed in the winter months during the seasonal drawdown period on Norris Reservoir. Vegetative clearing of several acres of land for the cart paths, vehicle driveways, and parking lots would be necessary. Implementation of 26a and DA permit conditions (see Section 2.4) limiting the disturbance to riparian vegetation and requiring wetland avoidance during construction would reduce potential impacts to wildlife. With the implementation of these permit conditions and considering the relatively small area to be impacted (when compared to the total habitat available in Campbell County and the surrounding counties) and the mobility and adaptability of species that may occupy this area, the proposed action would result in minor wildlife impacts.

(x) endangered or threatened species – No federally listed or state-listed endangered or threatened species, or designated critical habitats for listed species, have been observed or are known to exist on the project site. The USACE and TVA agree that the proposal would have no effect on these species or their designated critical habitats. In a letter dated 17 April 2009 (Appendix G), the USFWS commented that significant adverse impacts to fish and wildlife or their habitats are not anticipated; therefore, the requirements of Section 7 of the ESA have been fulfilled.

(x) biological availability of possible contaminants in dredged or fill material – As previously stated, no dredging is planned for this project. The proposed site preparation would consist of cut and fill activities. The boat-launching ramp's design involves placing a total of 74 CY of concrete and riprap below NSP. All other fill material would be derived from on-site clearing activities, and this fill material would be contaminant free. Therefore, there would be no contaminants in fill material, and no adverse effects are anticipated.

#### **3.4. Human Use Characteristics and Anticipated Impacts.**

The relevant blocks are checked with a description of the impacts. An unchecked block denotes that no adverse effects are expected.

(x) existing and potential water supplies; water conservation – USACE's permit database did not identify any municipal or industrial raw water intakes in the unnamed cove or on the Powell River arm of Norris Reservoir downstream of the proposed project. However, there is a large municipal water intake less than 0.5 miles below the junction of the

Powell and Clinch rivers. Relatively few private intakes exist on Norris Reservoir, and none are known to occur in the vicinity of the proposed marina. Impacts on existing/potential water supplies would be negligible. The proposed actions would not affect the availability of water or opportunities to reduce demand and improve efficiency; therefore, water conservation (storing, saving, reducing, or recycling water) would not be affected by the proposed action.

(x) water-related recreation – The study area considered in the water-related recreation analysis extends roughly from Clinch River Miles 83-95 and from Powell River Miles 0-16, including Cedar Creek portions of the Powell River and about 7,409 surface acres at NSP, elevation 1,020 feet above msl (Appendix H). This has been determined to constitute a reasonable distance that a typical boater might travel within the vicinity of or from the location of the proposed new marina. There are several existing public and commercial recreation facilities within the recreation study area, including six commercial marinas, three public recreation areas, two group camps, and one private resort with community boat docks serving residential developments (Table 3-1). These facilities are considered as the “base case” for this recreation analysis. Commercial and public boating-related facilities available include eight boat-launching ramps with a combined parking capacity of 212 trailers and wet and dry slip accommodations for 1,412 vessels (Table 3-1).

**Table 3-1. Water-Related Recreation Facilities in the Recreation Study Area**

| Recreation Facility                        | Boat Slips             | Trailer Parking        | Boat-Launching Ramps | Type of Facility                    |
|--|------------------------|------------------------|----------------------|-------------------------------------|
| <b>Commercial Marinas and Resorts</b>      |                        |                        |                      |                                     |
| Sequoyah Marina                            | 350 slips              | 25 spaces              | 1 ramp               | Commercial marina                   |
| Shanghai Resort                            | 200 slips              | 15 spaces              | 1 ramp               | Commercial marina                   |
| Springs Dock and Ramp                      | 180 slips              | 40 spaces              | 1 ramp               | Commercial marina                   |
| Stardust Marina and Resort                 | 350 slips              | 25 spaces              | 1 ramp               | Commercial marina                   |
| Sugar Hollow Boat Dock                     | 200 slips              | 25 spaces              | 1 ramp               | Commercial marina                   |
| The Villages at Norris Marina <sup>1</sup> | 132 slips              | N/A                    | N/A                  | Commercial marina                   |
| <b>Private Marina and Resort</b>           |                        |                        |                      |                                     |
| Deerfield Resort <sup>2</sup>              | 257 slips <sup>2</sup> | 50 spaces <sup>2</sup> | 1 ramp               | Private resort with community docks |
| <b>Other</b>                               |                        |                        |                      |                                     |
| Anderson County Park                       | None                   | 75 spaces              | 1 ramp               | Public recreation                   |
| Camp Galilee                               | None                   | None                   | None                 | Group camp                          |
| Camp Pellissippi                           | None                   | None                   | None                 | Group camp                          |
| Fisherman’s Cove Ramp                      | None                   | 7 spaces               | 1 ramp               | Public recreation                   |
| Norris Dam State Park <sup>3</sup>         | None                   | None                   | None                 | Public recreation                   |
| <b>Commercial Marina Base Case Totals</b>  | <b>1412 slips</b>      | <b>212 spaces</b>      | <b>8 ramps</b>       | <b>(1624 total vessels)</b>         |
| Pointe Marina (Proposed)                   | 500 slips              | 30 spaces              | 1 public ramp        | Commercial marina                   |
| <b>Proposal + Base Case</b>                | <b>1912 slips</b>      | <b>242 spaces</b>      | <b>9 ramps</b>       | <b>(2154 total vessels)</b>         |

<sup>1</sup>This marina was not open to the public at the time of this assessment but has been issued a permit for 132 slips.

<sup>2</sup>Not included in base case totals for commercial marinas and resorts but included in boating density calculations.

<sup>3</sup>The study area includes a portion of park lands but does not include the areas at the dam with water use facilities.

Much of the shoreline in this area of Norris Reservoir is part of the Chuck Swan Wildlife Management Area, which is managed by TWRA. Chuck Swan provides exceptional informal recreation opportunities for boaters and other users. TVA holds flowage easement rights over land associated with the proposed marina that allow TVA to flood property to elevation 1,044 feet above msl, but TVA does not own any of the marina property above NSP. TVA would issue the applicant a contractual agreement to allow use of the TVA property below the water.

The proposed marina property above elevation 1,020 feet above msl is privately owned, has no road infrastructure or developed water-access facilities, and the current use of camping is unauthorized. Limited opportunities exist at present for public use and water-based recreation at the proposed marina site and within the associated cove. A group camp facility (Camp Galilee) is located farther back into the subject cove (see Appendix A) and uses the area for camping and canoeing.

With the increased lake access and moorage, water-related recreation opportunities such as boating, fishing, and leisure-time activities would most likely increase. The proposed marina would potentially provide a benefit and attraction for local residents, tourists, and potential homeowners. The proposed marina would also lead to increased boating traffic in an area that currently receives moderate to heavy boating use.

#### **Boating Density.**

Development of the proposed marina facility would provide additional boating services in this area of Norris Reservoir. To gauge the impact this proposed marina would potentially have on recreational boating traffic and boating safety, the boating activity patterns in the vicinity of the proposed marina have been assessed in the context of general boating activity patterns on TVA reservoirs.

In order to determine boating usage on TVA reservoirs, TVA completed a study in 2009 *Boating Density Analysis* (TVA 2009b, Appendix I) to estimate recreational boating densities based on observations of boating use patterns across the Tennessee River system. The *Boating Density Analysis* (TVA 2009b, Appendix I) included a review of boating density standards and guidelines used by other federal agencies. The density thresholds used by TVA were derived from a compilation of these assessments and guidelines. In the 2009 study, TVA estimates the percentage of vessels that are likely in use that are stored at commercial marinas and permitted private access facilities (such as permitted private docks, community docks, and private marinas) across the Tennessee River system. Similarly, public boat-launching ramps are in use on any given day but generally are not used at full vehicle/trailer parking capacity.

In order to determine the boating density in the recreation study area, water-related recreation facilities, as shown above in Table 3-1, and existing private boat docks in the recreation study area have been considered (Appendix J). TVA estimated the private access boating units at 1180 in the recreation study area. The estimated private access boating units include the TVA's total permits from 26a records (726), multiple slips (169), and community slips (285). The 1180 figure is used as the "base" throughout the remaining calculations in the boating density worksheet. The data used to estimate boating density are shown in Appendix J of this EA.

For purposes of this evaluation, current boating use on TVA reservoirs was estimated for three different points in the peak summer boating season (May through September): (a) nonholiday week days, (b) nonholiday weekend days, and (c) peak use holiday weekend days (Memorial Day, July 4<sup>th</sup>, and Labor Day).

- (a) Nonholiday weekdays. This case estimates 15 percent of vessels stored at commercial marinas and private access facilities are likely to be in use, and 20 percent of estimated parking spaces for boat-launching ramps are likely in use each nonholiday weekday (Monday through Thursday) from May to September.
- (b) Nonholiday weekend days. This case estimates 25 percent of vessels stored at commercial marinas and private access facilities are likely to be in use, and 60 percent of estimated parking spaces for boat-launching ramps are likely in use during nonholiday weekend days (Friday, Saturday, and Sunday) from May to September.
- (c) Peak use holiday weekend days. This case estimates 35 percent of vessels stored at commercial marinas and private access facilities are likely to be in use, and 75 percent of estimated parking spaces for boat-launching ramps are likely in use during holiday weekend days (Friday, Saturday, Sunday, and Monday) from May to September.

The estimate of watercraft currently using the portion of Norris Reservoir in the study area on an average daily basis on a weekday is 441 boating units with 17 surface acres per boating unit. Nonholiday weekend days are currently estimated to have 805 boating units with 9.2 surface acres per boating unit. Peak use holiday weekend days are estimated to currently have 1,104 boating units with 6.7 surface acres per boating unit. These estimates are based on the 7,409 surface acres in the recreation study area at NSP. Optimum recreational boating density thresholds should allow at least 6.0 to 7.6 surface acres per boating unit. The current boating density thresholds are within or above optimum recreational boating density thresholds for all three different points in the peak summer boating season.

The estimate of recreational boating density factoring in the proposed 500-slip marina on a nonholiday weekday is calculated to be 522 boating units with 14 surface acres per boating unit. Nonholiday weekend days are currently estimated to have 948 boating units with 7.8 surface acres per boating unit. Peak use holiday weekend days with the proposed marina is estimated to have 1,301 boating units with 5.7 surface acres per boating unit. The boating density thresholds are within or above optimum recreational boating density thresholds for two of the three different points in the peak summer boating season. The threshold would be exceeded during peak use holiday weekends. The boating density analysis is shown in Appendix J.

With the addition of the proposed 500-slip marina, and based on projections of the resulting recreation development and boating use estimates, it appears this section of Norris Reservoir could accommodate nonholiday weekday and nonholiday weekend boating activity without going below generally accepted recreational boat thresholds of 6.0 to 7.6 surface acres per boat (TVA 2009b). However, boating density thresholds for peak use holiday weekends are below optimum recreational boating density, thus resulting in a negative impact on the recreational experience of boaters.

As previously stated, the applicant proposes to initially build slips for 60 vessels and construct 60 additional slips per phase from Phase 2 to Phase 7 once occupancy reached 70 percent. Eighty slips would be added for Phase 8. Because the proposed project would not be constructed all at once, the actual increase in the number of watercraft on the reservoir would be spread out over a number of years (Table 3-2).

**Table 3-2. Applicant's Planned Phases with Boating Density Estimates**

| <b>Planned Phases and Occupancy Estimates</b>                  | <b>Increase in Watercraft<sup>1</sup><br/>(boats added)</b> | <b>Density<br/>(per boating unit)<sup>2</sup></b> |
|--|---|---|
| Phase 1 = 60 boat slips<br>70% occupancy at 42 slips           | 15  | 16.3 surface acres                                |
|  | 33  | 8.8 surface acres                                 |
|  | 43  | 6.5 surface acres                                 |
| Phase 2 = 120 boat slips<br>70% occupancy at 84 slips          | 24  | 15.9 surface acres                                |
|  | 48  | 8.7 surface acres                                 |
|  | 64  | 6.3 surface acres                                 |
| Phase 3 = 180 boat slips<br>70% occupancy at 126 slips         | 33  | 15.6 surface acres                                |
|  | 63  | 8.5 surface acres                                 |
|  | 85  | 6.2 surface acres                                 |
| Phase 4 = 240 boat slips<br>70% occupancy at 168 slips         | 42  | 15.3 surface acres                                |
|  | 78  | 8.4 surface acres                                 |
|  | 106   | 6.1 surface acres                                 |
| <b>Phase 5 = 300 boat slips<br/>70% occupancy at 210 slips</b> | <b>51</b>   | <b>15</b> surface acres                           |
|  | <b>93</b>   | <b>8.2</b> surface acres                          |
|  | <b>127</b>  | <b>6.0</b> surface acres                          |
| Phase 6 = 360 boat slips<br>70% occupancy at 252 slips         | 60  | 14.8 surface acres                                |
|  | 108   | 8.1 surface acres                                 |
|  | 148   | <b>5.9 surface acres<sup>2</sup></b>              |
| Phase 7 = 420 boat slips<br>70% occupancy at 294 slips         | 69  | 14.5 surface acres                                |
|  | 123   | 8.0 surface acres                                 |
|  | 169   | <b>5.8 surface acres<sup>2</sup></b>              |
| Phase 8 = 500 boat slips                                       | 81  | 14.0 surface acres                                |
|  | 143   | 7.8 surface acres                                 |
|  | 197   | <b>5.7 surface acres<sup>2</sup></b>              |

<sup>1</sup> The three numbers coincide with estimates derived for nonholiday week days, nonholiday weekend days, and peak use holiday weekends, as described above.

<sup>2</sup> Optimum boating density thresholds are 6.0–7.6 surface acres per boat. Red text indicates numbers exceed thresholds.

As watercraft use increases, the number of visitors, both on and off the reservoir, experiencing a feeling of overcrowding may increase, especially among historic users of Norris Reservoir. Visitors seeking an experience of solitude and quiet out on a water body would be adversely impacted as visitation increases over time. These users may eventually seek other areas of the

reservoir that offer a more rural undeveloped or semiprimitive experience. It is anticipated that the experience on Norris Reservoir would become more crowded over more weekends, mostly in the months just before and after the peak boating season (May through September).

Under the proposed action, the total anticipated increase in watercraft in the study area would be 81, 143, and 197 boating units during nonholiday weekday, nonholiday weekend, and peak use holiday weekends, respectively. This is based upon the assumption that all 500 slips are rented out and the 30 parking spaces are used at the boat-launching ramp. A total increase of about 15 percent over the current nonholiday weekend daily watercraft count and the current peak use holiday weekend daily watercraft count could result from this alternative. These estimates do not account for the likely increase in boating facilities, especially private, non-commercial facilities, that would occur during the buildout of the proposed Point Marina. Therefore, the projections in Table 3-2 are conservative and the increases in boating density would likely be greater.

### **Boating Safety**

TWRA is responsible for preparing Tennessee's annual boating safety reports. The data in these boating safety reports are derived from the investigation of "reportable boating accidents" by TWRA officers. To be considered a reportable boating accident, an accident involves death, a missing person, an injury requiring medical treatment beyond first aid, or property damage of \$2,000 or more. The annual boating safety reports are analyzed in an effort to create proactive plans to reduce the number of boating accidents and their related fatalities, injuries, and property damage.

Since the draft of this EA was released for public review, the 2010 *Tennessee Boating Accident Statistical Report* (TWRA 2010) was published. In 2010, the number of boating fatalities among Tennessee's waterways decreased to 19 fatalities from the 22 fatalities reported in 2009 (TWRA 2009). There was an increase in personal watercraft (PWC) fatalities from zero in 2009 to one in 2010. With the exception of commercial whitewater accidents, the leading type of boating accident was collision with vessel (five fatalities), most often occurring while cruising, and most often because of no proper lookout. The top primary cause for fatal accidents was alcohol use and improper lookout, with five fatalities each (TWRA 2010).

On Norris Reservoir, there were no boating fatalities and 10 accidents were reported in 2010; seven were injury accidents and three were property damage accidents. When compared to other reservoirs in Tennessee, Norris has a relatively low occurrence of boating accidents (TWRA 2010). In 2010, (with the exception of commercial whitewater accidents on the Ocoee River), Chickamauga Reservoir had the highest occurrence of boating accidents reported at 19. The most PWC accidents in 2010 occurred on Chickamauga and Tims Ford reservoirs with three accidents each. Table 3-3 compares Norris to Chickamauga and Tims Ford reservoirs, which are of similar size and/or usage. For complete 2010 and 2009 boating safety data, see <http://www.tn.gov/twra/pdfs/boatstats.pdf>.

Under the proposed action, there would be an increase in recreational boating traffic. Because the increases in boating density could exceed maximum recommended density in the study area during summer peak use holiday weekends, and weekend boating density would be at or near threshold levels, TVA has developed a phased permit approach involving 26a permit conditions that reduces the initial number of vessel slips approved to 300 slips. The following permit condition would be implemented to reduce potential impacts to water-related recreation.

- In order to reduce potential water-related recreation impacts, Section 26a permit approval will be in two phases and will initially allow for construction and operation of 300 boat slips. Approval of 200 additional slips will be subject to further boating density assessments by TVA to evaluate potential impacts to water-related recreation considered in this EA.

**Table 3-3. 2009 and 2010 Boating Safety Statistics for Norris, Chickamauga, and Tims Ford Reservoirs**

|                   | Statewide | Norris | Chickamauga | Tims Ford |
|-------------------|-----------|--------|-------------|-----------|
| <b>Fatalities</b> |           |        |             |           |
| 2010 Boating      | 19        | 0      | 3           | 0         |
| 2010 PWC          | 1         | 0      | 0           | 0         |
| 2009 Boating      | 22        | 0      | 0           | 0         |
| 2009 PWC          | 0         | 0      | 0           | 0         |
| <b>Accidents</b>  |           |        |             |           |
| 2010 Boating      | 138       | 10     | 19          | 8         |
| 2010 PWC          | 25        | 1      | 3           | 3         |
| 2009 Boating      | 158       | 6      | 18          | 10        |
| 2009 PWC          | 35        | 0      | 4           | 5         |

Source for data: TWRA (2009 and 2010 )

Under the phased permit approach, the applicant is to notify TVA in writing to request approval for the remaining 200 slips, as depicted in the approved marina design drawings (Appendix B), when occupancy levels of the 300 permitted slips are at or near 70 percent. At that time, TVA will reassess boating safety data and will make its determination based on the following guidance:

TVA would recalculate the boating density of the Study Area using the same or similar methodology (if current methodology has been updated) as used for this environmental review, including completion of a boating density analysis. The boating density analysis will consider water-related recreation facilities in the Study Area (see Table 3-1 and Appendix ), including commercial wet and dry slips in the Study Area, issuance of Section 26a permits for private access and community water-use facilities, and public and private community boat-ramp parking. TVA will also consider of TWRA's annual boating safety data. Once the data is analyzed, if TVA determines approval for 200 additional slips would not adversely impact boating safety, TVA would issue approval for 200 slips as depicted in the "Applicant's Final Proposal" (Appendix B). If TVA determines approval would potentially have a significant adverse impact on water-related recreation, TVA would not approve construction of the additional 200 slips. Further minimization efforts would potentially be developed to allow for an appropriate amount of slips to be permitted through the development of additional permit conditions, as appropriate.

The reduction of 500 slips to 300 slips would improve the boating density to levels at or above optimum density thresholds of 8.2 and 6.0 surface acres (for 300 slips) from 7.8 and 5.7 surface acres (for 500 slips) during weekends and nonholiday weekends (Table 3-2). Under the phased permit condition, the total anticipated increase in watercraft in the study area would be reduced from by 30, 50, 70 fewer boating units (during nonholiday weekday, nonholiday weekend, and peak use holiday weekends, respectively) from 81, 143, and 197 boating units to 51, 93, 127 boating units. The reduced amount of boating units from a 500-slip to a 300-slip build out is completely within optimum density thresholds of 6.0–7.6 surface acres per boat.

Under the Applicant's Proposed Action (Section 2.2.2), impacts to water-related recreation would potentially be significant with the addition of 500 boat slips. However, implementation of the phased permit condition with the reduction to 300 boat slips would reduce potential water-related recreation impacts to insignificant levels. Furthermore, the addition of 300 slips and associated marina facilities would not significantly impact water-related recreation and the anticipated change in reservoir surface area per boat does not significantly affect boater recreation safety.

(x) navigation – Except for a limited number of local marine contractors who typically utilize small vessels and barges to conduct their work, no commercial navigation occurs on Norris Reservoir. The proposed marina site is located along the north shoreline of an unnamed cove opposite Powell River Mile 4.0, right bank. As indicated in Section 1.8, at NSP, the cove is approximately 1,660 feet wide at its mouth (i.e., marina eastern construction limit) and 590 feet wide at the western construction limit. In order to maintain safe navigation for watercraft, marinas and other obstructions are not to extend beyond one-third of the width of the waterway, even at the winter pool configuration. The initial marina plans as described in the JPN were designed to extend beyond one-third of the cove harbor limit during the winter drawdown. However, all of the docks have been redesigned so that they do not extend more than one-third of the width of the waterway measured perpendicular to the shoreline, even at the winter pool water elevations.

As previously mentioned, operation of the proposed marina would result in increased recreational boating activity in an area that currently receives moderate to heavy boating use. Although there would be an increase in recreational boating traffic, it is expected that this impact on navigation would be minor and safety would not be reduced.

To avoid potential navigation impacts and the creation of hazards, DA permit approvals would be subject to the following conditions:

- The applicant hereby recognizes the possibility that the structures permitted herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the applicant from taking all proper steps to ensure the integrity of the structures and the safety of vessels moored thereto from damage by wave wash, and the applicant shall not hold the United States liable for any such damage.
- Any floating plant and/or craft engaged in the construction activities must display lights and signals compliant with requirements of the current "Inland Navigation Rules" and must be positioned so as to provide maximum horizontal navigational clearance in the cove and main channel at all times.
- All floating facilities must be securely anchored to prevent them from floating free during major floods.
- Adequate safety lights and/or reflectors that would allow the boating public to recognize the presence and extent of all docks between dusk and dawn, and during overcast, foggy and other low-light conditions, must be installed and maintained by the applicant at their expense.
- No docks are to extend more than one-third of the width of the waterway measured to the shoreline from bank to bank at all times.

- The applicant's use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.

Implementation of these conditions would further reduce potential adverse effects on recreational navigation to insignificant levels.

(x) aesthetics – Broadly defined, aesthetics is a "critical reflection on art, culture, and nature." Aesthetic attributes can be perceived through the senses, but the observer's state of mind in the psychological and social sense is integral with the experience. Experts agree that there are no uniform definitions or interpretive codes for visual quality. What is particularly pleasing in terms of visual quality to one individual may not necessarily be pleasing to another, i.e., there is no generally accepted rule as to what constitutes beauty.

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 project lies within a cove 4 miles upstream of the confluence of the Powell and Clinch rivers. The subject cove is 3,168 feet in length at NSP elevations and about 1,660 feet at its widest at the confluence with the reservoir. Surrounding the cove, topographic patterns vary from gently sloping to steep. Vegetation types and patterns also vary within the viewshed from heavily wooded to manicured lawns.

Observer views to and from the cove are generally limited to the foreground viewing distance due to topography, vegetation, and existing land use patterns. At the confluence of the embayment, views do open to the north, south, and east into the middleground (0.5 mile up to 4 miles from the observer), but those views are limited due to the width and length of the main channel. The existing scenic attractiveness is common, and the existing scenic integrity is moderate.

Views of the proposed activities would be available from positions on Norris Reservoir to the north, south, and east, positions on public lands to the east (Chuck Swan Wildlife Management Area), and private lands to the west, north, and south. The addition of several docking facilities with a combined total space for 500 vessels would alter the existing landscape within the cove. However, the available views of the commercial water use facility would remain in context with other commercial facility views on the reservoir, and there are numerous coves scattered throughout the reservoir that offer similar views.

Recreational reservoir users would likely notice an increase in the number of watercraft in the vicinity of the proposed project. These increases in usage patterns would vary seasonally but would generally remain in context with the surrounding landscape character.

In order to minimize visual impacts to the area, the applicant has proposed the following design characteristics: exterior marina building colors shall harmonize with the surroundings without offering strong contrast. Earth tones and neutral colors shall be used to blend with the natural environment.

Visual impacts to local residents, boaters, and campers are anticipated. Because the proposed marina would offer similar views to boaters as other marinas and there is an abundance of coves with similar views throughout the reservoir, impacts to visual resources associated with

the proposed action would be relatively minor. Implementation of the above stated design characteristics would further reduce potential adverse effects on visual aesthetics.

(x) traffic/transportation patterns – The proposed marina site is located near LaFollette in Campbell County, Tennessee (see Appendix A). Primary access to the proposed marina site is via Interstate Highway (I-) 75. From I-75, access to the project site is via US 25 West (W)/State Route (SR) 9 and Demory Road. US 25 W and Demory Road intersect near LaFollette. After about 9 miles, Demory Road ends at the proposed marina site. Appendix K shows the transportation network near the proposed marina.

Roadways leading to the proposed marina would experience a slight increase in traffic. A TVA transportation specialist visited the marina site on May 21, 2009, to examine the roadways leading to the proposed marina and evaluated the possible impacts associated with its development. US 25 W is a four-lane divided highway that has fairly level terrain with good sight distances. The highway is in good condition with lanes about 12 feet wide and distances between the road shoulder and obstructions, such as telephone poles, of about 12 feet.

Demory Road primarily serves as access to residents living in the vicinity. A few small businesses and churches are also located along Demory Road. One residential subdivision is located within 1 mile of the proposed site. Demory Road is in good condition with lane widths of approximately 10 feet, and shoulder widths are approximately 2 feet. Demory Road is a Class II, two-lane rural road (Transportation Research Board 2000) with rolling terrain and curvy alignment. Class II roads are characterized as highways in which motorists do not necessarily expect to travel at high speeds. These roads include access routes, scenic, and recreational routes that are not primary arterials, and routes through rugged terrain (Transportation Research Board 2000). The latest annual average daily traffic (AADT) counts show 2,027 vehicles per day travel on Demory Road and the amount decreases to 960 vehicles per day near the proposed marina site (Tennessee Department of Transportation 2009).

Noticeable increases in traffic would be concentrated primarily on Demory Road near the marina site, with traffic becoming dispersed farther from the marina site. Traffic increases due to the proposed marina would be less noticeable on US 25 W because it provides higher traffic capacity than Demory Road. The assessment of traffic impacts for the proposed marina is based on the transportation planning and engineering concept of level of service (LOS) found in the *Highway Capacity Manual* (Transportation Research Board 2000). The LOS concept addresses the quality of service, or operating conditions, provided by the roadway network as perceived by motorists. LOS is a qualitative measure, expressed as one of six levels (LOS A through F), that is described in terms of travel time, comfort, safety, and maneuvering freedom and incorporates various measurable factors associated with a particular segment of a roadway into the analysis (see Appendix K).

The six levels of service are defined as differing qualities of service provided by a roadway.

- LOS A is defined as the highest quality of service that a particular class of highway can provide. It is a condition of free flow in which there is little or no restriction on speed or maneuverability caused by the presence of other vehicles.
- LOS B is a zone of stable flow. The restriction on maneuverability is negligible, and there is little probability of major reduction in speed or flow.

- LOS C is a zone of stable flow, but at this volume and density level, most drivers are becoming restricted in their freedom to select speed, change lanes, or pass.
- LOS D approaches unstable flow. Tolerable average operating speeds are maintained but could be subject to considerable and sudden variation. This condition is tolerable for short periods.
- LOS E is unstable with lower operating speeds and some momentary stoppages. There is little independence of speed selection and maneuverability. The upper limit of this level is the capacity of the facility.
- LOS F indicates forced-flow operations at low speeds. The level of density increases to the effect of a traffic “jam.”

The current *Highway Capacity Manual* LOS for Demory Road is B, a zone of stable flow, and the LOS for Demory Road would remain unchanged upon full buildout of the proposed marina (Transportation Research Board 2000). Demory Road would still see reasonably unrestricted flow because it is not a high-speed transportation route. Marina traffic is seasonal, and traffic would be lower during off-season times. As previously mentioned, in a letter dated May 12, 2009, the Campbell County Highway Department indicated that the existing county roads were sufficient to accommodate the anticipated increase in traffic generated by the proposed marina (Appendix K). Furthermore, no improvements to Demory Road or other roadways that affect the patterns or volume of Demory Road traffic are currently planned or required by the county.

The proposed marina development would generate and distribute additional traffic to US 25 W, Demory Road, and other feeder streets. An additional check of Demory Road’s ability to carry the anticipated increased traffic from the proposed marina was completed based upon hourly traffic counts. The *Highway Capacity Manual* projects a capacity of 3,200 vehicles per hour for both directions of two-lane, rural highways such as Demory Road. The two-way, peak hour vehicle volumes (19 percent of AADT) on Demory Road for full marina buildout using the projected AADT counts would result in 646 vehicles per hour in both directions.

The projected traffic volumes are estimated to be about 25 percent of the maximum vehicle capacity of Demory Road with full marina buildout. Traffic impacts are expected to be minor because the existing roadways would be capable of accommodating the anticipated traffic increases. Therefore, the proposed marina would not result in significant impacts to the roadway network, and no major traffic issues with vehicles entering and exiting the proposed marina are expected.

( ) energy consumption or generation – No adverse effects

(x) safety –Water-related recreation and navigation safety associated issues are addressed in the sections above. The earlier designs for the proposed marina and floating docks have been modified to reduce potential conflicts with recreational boaters and reservoir traffic. The size of the marina has been reduced from 799 slips to 500 slips, and the revised design ensures that moored boats are within harbor limits at all times. Potentially unsafe environments impacting general public safety have been reduced to a minimum, i.e., permit conditions reducing the number of boat slips allowable at this time from 500 slips to 300 slips and lighting/markings has been improved to enhance visibility. Therefore, with the implementation of permit conditions, the proposed marina would not result in significant impacts to safety.

(x) air quality – USACE has analyzed the marina proposal for conformity applicability pursuant to regulations implementing Section 176 (c) of the Clean Air Act. The proposed action would only result in minimal direct emissions and would not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR §93.153.

(x) noise – Under TWRA Regulations (TWRA 2008), engines of all motorized vessels must have an effective muffling system, the noise level of any motorized vessel may not exceed 86 decibels at 50 feet or more, and boat operators are required to submit to noise level testing if requested by a TWRA officer.

Noise levels would increase slightly during project construction activities, and these impacts would be short-term. Increased noise levels associated with the construction and operation of the facility would be more noticeable during the fall and winter, when the leaves have fallen from the trees, and less noise would be absorbed by the forest. However, noise-producing water-related recreation activities are at their lowest levels during the fall and winter. The operation/utilization of the proposed marina facility would result in minor increases above background levels due to increased usage of the facility and the anticipated increase in motorized boat traffic. Anticipated long-term noise generators include vehicles, motorized boats, PWC, and people. The peak periods for recreational outdoor activity occur during spring and summer, when the transmission absorption effect of foliage would offer the highest protection. Considering the recurrent existing commercial and recreational uses within this area of Norris Reservoir and present levels of marine traffic, the increased noise levels would not be out of character for this area of the reservoir. Construction of new slips in phases as justified by demand would also extend the time over which increases in noise levels would occur. Short- and long-term noise impacts would be minor to moderate, and long-term noise increases due to the anticipated increase in motorized boat traffic would be temporary and intermittent because watercraft noises would be fleeting.

(x) historic properties and cultural values – USACE designated TVA as the lead federal agency responsible for matters pertaining to compliance of the NHPA. TVA has consulted with the Tennessee State Historic Preservation Officer (SHPO) (Appendix G) in accordance with 36 CFR Part 800 regulations implementing Section 106 of the NHPA. As lead federal agency for Section 106 matters, TVA determined the archaeological APE for the undertaking involves the proposed marina and dock footprint, the boat-launching area, three parking areas, a concrete cart path, and an access road (Appendix B). The recommended APE for historic structures is a 0.5-mile radius surrounding the proposed marina development.

A background search was conducted to identify any previously recorded archaeological resources within the APE. The shoreline in the project area was surveyed in 2005 by the University of Tennessee and six archaeological resources (Sites 40CP172, 40CP173, and 40CP215 - 218) were identified in the APE. Four of the sites were considered ineligible for listing and two sites (Sites 40CP215 and 40CP217) are considered potentially eligible for listing in the NRHP. As previously discussed, TVA recommended to Tennessee Historical Commission (THC) that the remainder of the APE should be surveyed for the presence of archaeological resources, and the two known sites should be further investigated under a Phase 2 archaeological survey (see Appendix G). On August 7, 2009, (see Appendix G), THC responded to TVA, concurring that the remainder of the APE should be surveyed for the presence of archaeological resources and requested that the two sites should either be avoided by all ground-disturbing activities or subjected to Phase 2 archaeological testing.

A Phase 1 cultural resources survey was conducted of the remaining APE and two previously unrecorded archaeological resources (Sites 40CP303 and 40CP304) were identified. Site 40CP303 was recommended ineligible for listing in the NRHP and Site 40CP304, consisting of two stone piles, was recommended potentially eligible for listing in the NRHP in a letter to THC dated November 16, 2010, (see Appendix G). Furthermore, in order to reduce potential impacts to Site 40CP304, Section 26a approval would be subject to the following condition:

- In order to reduce potential impacts to Site 40CP304, a commitment will be placed in the Section 26a permit requiring the applicant (if he purchases the property) to place a preservation covenant in his deed for 40CP304, which will include a 50-foot buffer surrounding the site. The applicant has agreed to this commitment, and TVA will provide the applicant with maps depicting the buffer's boundary. The applicant will be required to submit a copy of the new deed to TVA once the covenant has been added. Under the preservation covenant, Site 40CP304 would not undergo any ground disturbance.

TVA requested concurrence with its finding that the preservation covenant would be beneficial to Site 40CP304 and the site would not be adversely affected by the applicant's undertaking. On December 6, 2010, THC responded to TVA's letter (see Appendix G), concurring with TVA's finding that Site 40CP304 is potentially eligible for listing in the NRHP and that the site would not be adversely affected with the implementation of the preservation covenant.

Phase 2 testing and geomorphology investigations were conducted at Sites 40CP215 and 40CP217; test results were negative, and both sites (40CP215 and 40CP217) were recommended ineligible for listing in the NRHP.

No historic structures (architectural resources) were previously recorded within the APE. Five previously unrecorded architectural resources (CP180-CP184) were identified within this APE. However, these sites are recommended ineligible for listing in the NRHP for lack of unique characteristics and modern alterations.

Pursuant to 36 CFR §§ 800.2 (c)(2)(ii), 800.3 (f)(2), and 800.4 (a)(4)(b), TVA consulted with the appropriate federally recognized tribes in a letter dated November 16, 2010, (see Appendix G), regarding historic properties within the proposed project's APE that may be of religious and cultural significance to tribes and that are eligible for listing in the NRHP. No issues or objections regarding the proposed project were identified by the tribes contacted.

Implementation of the preservation covenant would avoid potential impacts to historic properties and archaeological resources. The Tennessee SHPO has concurred with this approach. In consultation with the THC, TVA has fulfilled its Section 106 obligations for this undertaking.

(x) land use classification –This portion of Campbell County is not subject to any land use plans or restrictions based on local municipal jurisdictions. A mix of commercial, recreational, and residential land uses exist on the properties in the vicinity of the proposed marina project area. The deeded restrictions for the property require that the property is to be used for recreational purposes, so a deed modification would not be necessary since a marina is considered a reasonable recreation use. During public involvement initiatives associated with this project, it was determined that this proposed marina development would not conflict with any known plans or programs of any planning or development agency or authority of interests in the project area. The proposed action would have minimal impacts on land use classification.

(x) conservation – The proposed marina would impact a relatively minor amount of terrestrial and aquatic habitats. This impact would be minimal considering the abundance of those resources in the Norris Reservoir area. No unique habitats or sensitive/important upland features or resources would be affected by this proposal with the implementation of the previously described permit condition to avoid the wetland area in the vicinity of the proposed boat-launching ramp.

(x) economics – Campbell County has not experienced much growth in the past decade. As of 2009, the population of Campbell County was estimated to be 40,970; this is an increase of only 3.0 percent since 2000 (United States Census Bureau 2009). Between 2000 and 2009, the Tennessee population grew 10.7 percent to 6,296,254. The Campbell County median household income in 2008 was \$30,334, compared to the Tennessee median household income of \$43,610, and nationally it was \$52,029 (ibid). In 1999, the per capita money income in Campbell County was \$13,301, in Tennessee it was \$19,393, and nationally it was \$21,587 (ibid). In 2008, the proportion of persons below the poverty level in Campbell County was 22.8 percent, and the state level was 15.5 percent (ibid).

The marina operation has the potential to generate economic benefits and would likely enhance some property values. There would be a short-term stimulus to the local economy from the sale of goods and services in support of construction activities. The local economic base would experience minor long-term benefits associated with additional tax revenues and additional employment, and more commercial and residential development could occur in and around the area.

Concerns have been expressed that the construction of the facilities and increased vessel usage would devalue nearby properties. Varying opinions exist among land developers, real estate professionals, and property owners concerning potential impacts of facilities such as these on residential property values. Potential economic effects on residential property values in the immediate area are somewhat speculative and would depend on market conditions including demand and future economic health. Phases of new additions to the marina in the future would similarly be based on demand and economic conditions. Its overall economic impacts would likely be smaller if the marina does not reach complete buildout of 500 slips as proposed.

Considering the applicant's plan for phased growth, type, and quality of construction paired with the cove setting, adverse social impacts, if any, would be minimal for most residents. The potential for impacts would decrease in direct proportion with the distance to the marina. No major social or economic impacts are expected due to the potential marina development.

( ) food and fiber production – No adverse effects

(x) general environmental concerns – This is a broad factor almost synonymous with the area's quality of life. All of the relevant issues encompassed by this heading have been evaluated in this document. Special permit conditions have been developed (see Section 2.4) to reduce adverse impacts on water quality and the aquatic environment, navigation and safety, visual resources, and historic and cultural values. The special conditions are reasonably enforceable and would afford appropriate and practicable environmental protection. Some of the conditions are necessary to satisfy legal and public interest requirements.

( ) mineral needs – No adverse effects

(x) consideration of private property – USACE regulations at 33 CFR 320.4(g) state that authorization of work by the DA does not convey any property rights, either in real estate or material, or any exclusive privileges. Furthermore, a DA permit does not authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations. The same regulation also states that a riparian landowner has a general right of access to NWUS. However, this right of access is weighed through the DA public interest review process against the similar rights of access held by nearby riparian landowners and to the general public's right of navigation on the water surface.

TVA has a flowage easement up to elevation 1,044 feet above msl at this site and owns the land (reservoir bottom) below elevation 1,020 feet msl. The proposed marina facility would not impede water access of nearby property owners or seriously interfere with boaters' surface water rights. No issues are known to the USACE nor were any identified through the public interest review process that would violate private property rights.

See economics section above and Section 4.0 for discussion of the potential for this proposal to affect nearby private property values.

(x) floodplain values – The 100-year floodplain is the land area that would be under water in a 100-year-frequency flood, and it is 1,032 feet above msl on Norris Reservoir. The floating docks, floating walkways, marina store, restaurant, gas dock platform, and boat-launching ramp would be located within the 100-year floodplain. Consistent with EO 11988, floating docks, floating walkways, marina store, restaurant, gas dock platform, and boat-launching ramp are considered repetitive actions in the 100-year floodplain. Based on prior evaluation, TVA has determined that the effects of construction and operation of these facilities in the floodplain would be minor. The proposed access road, the three parking areas, and the aboveground fuel storage area would be located outside the 100-year floodplain.

The proposed project would not result in the loss of flood control or power storage and complies with the TVA Flood Control Storage Loss Guideline. The proposed project would not alter land use classifications and would be compatible with uses for which the floodplain is suitable. Potential impacts to or within the floodplain have been minimized to the extent practicable.

### **3.5. Cumulative and Secondary Impacts.**

The Council on Environmental Quality regulations define cumulative impact as “the environmental impact which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

When analyzing secondary impacts, the strength of the relationship between those impacts and the regulated portion of the activity should be considered, i.e., whether the impacts are likely to occur even if the permit is not issued, in deciding the level of analysis and what weight to give these impacts in the decision. This analysis should consider whether another project not requiring a permit could likely occur at the site or in the vicinity and whether its impacts would be similar to impacts of the project requiring a permit.

The USACE considers every DA permit application and TVA considers every Section 26a permit applicant on their own merits, and the agencies assess potential environmental impacts within the proper scope of review for NEPA compliance purposes.

As shown in Appendix H, there are six commercial marinas/resorts, one community dock, and at least eight boat-launching ramps within the study area of the proposed marina designated for the boating density evaluation. As reservoir-front properties continue to develop, additional private and community boat docks and commercial marinas would likely be proposed. Any future construction of private docks, community docks, marinas, public boat-launching ramps, and any other water use facility would be evaluated by the USACE and TVA for environmental and socioeconomic impacts through their respective permit review processes.

The proposed marina would be situated in a section of Norris Reservoir that contains about 7,409 surface acres at NSP of reservoir usable for recreational boating. The 7,409 surface acre area has been determined to constitute a reasonable distance that a typical boater might travel within the vicinity of or from the location of the proposed new marina. Public and private community boat-launching ramps, commercial and community marinas, and private boat access facilities are also located in this same section of the reservoir. Boating density calculations indicate moderate to heavy recreational boating traffic occurs in the study area, especially during peak use summer holidays (Memorial Day, July 4<sup>th</sup>, and Labor Day). Although boating density calculations indicate this section of Norris could accommodate typical summer weekend day boating activity without exceeding generally accepted recreational boating thresholds, additional boating traffic resulting from future boating facilities in the area would further contribute to boating congestion. In order to reduce adverse impacts to water-related recreation, as a condition of the 26a Permit, the development of the proposed marina would be limited to 300 slips at this time. Approval of additional slips will be contingent on the results of boating density assessments conducted by TVA after the initial 300 slips are constructed. Potential primary, secondary, and cumulative impacts to water-related recreation would be insignificant with implementation of this permit condition.

The scope of analysis for the Section 26a and DA permit applications is limited to the Permit Area, which includes near-shoreline, shoreline, and the immediate upland areas directly affected by riprap placement and the construction of the commercial marina and restaurant, floating docks, floating wave attenuator, and boat-launching ramp (Section 1.7). In addition, the Permit Area includes the immediate upland areas directly impacted by the construction of the parking lots, roads, and storage structures. For purposes of Section 106 of the NHPA, the APE is defined separately in the *Historic Properties and Cultural Values* topic in Section 3.4.

The Permit Area impacts described in this document would result in minimal adverse primary, secondary, and cumulative impacts on areas within the NEPA scope of review. A discussion of these impacts has been presented in Section 3.0 above. Primary, secondary, and cumulative impacts to water quality, wetlands, water-related recreation, and historic and cultural values under the Applicant's Proposed Action (without special permit conditions) (Section 2.2.2) would potentially be significant. If a decision were made to issue the required Section 26a and DA permit approvals, special permit conditions (Section 2.4) would be incorporated to reduce the identified impacts to wildlife habitat, water quality, the aquatic environment, including wetlands, water-related recreation, navigation, and historic and cultural values. When considering the impacts from past, present, and reasonably foreseeable future proposals, the primary, secondary, and cumulative impacts from implementing the Applicant's Proposed Action With Special Permit Conditions are considered minor.

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**CHAPTER 4.0. Public Involvement Process****4.1. Introduction.**

NEPA requires federal agencies to consider environmental effects on social, cultural, economic, and natural resources. In accordance with NEPA, the public can participate in the environmental review process. The NEPA process provides the public with the means to provide comments on the actions the federal agency is proposing. In the case of this project, the consideration of the proposed action requiring permit approvals from TVA and the USACE, (construction and operation of a marina facility) is the federal action.

On April 20, 2011, TVA sent notification of the draft EA to 40 individuals, including representatives of various federal, state, and local agencies. The draft EA was made available for public review at the Jacksboro and LaFollette public libraries and posted on the TVA external Web site, at [http://www.tva.gov/environment/reports/pointe\\_marina/index.htm](http://www.tva.gov/environment/reports/pointe_marina/index.htm). The notification post cards announced the availability of the draft EA at the library or online and individuals were given contact information to request printed copies or compact discs of the document. TVA requested all comments be submitted on the draft EA by May 31, 2011. The draft EA contained information, plans, and an evaluation of the effects of the applicant's proposal for construction and operation of a commercial marina facility with 500 boat slips, a restaurant, marina store, boat-launching ramp, parking lot and ancillary storage and facilities.

**4.2. Draft Environmental Assessment Public Comments**

The public comments received on the draft EA are addressed in this section. TVA received 135 comment letters during the public review period on the draft EA in April and May 2011. Comments were received via TVA's Internet site, email, mail, and some were hand-delivered. TVA has reviewed all comment letters and responded to all substantive comments in this section or in the body of the final EA. A comment is considered substantive if it raises specific issues or concerns regarding the project or the study process, but not if it merely expresses support for, or opposition to the project or a particular alternative.

In most cases, multiple issues or "comments" were raised in individual comment letters. Due to the volume of comments and the similarity of issues raised by commenters, similar comment themes are grouped and summarized. Responses to those subject areas identified in the comments are included in this chapter. The substantive portions of comment letters are included as Appendix L. The list of individuals and any organization identified as being represented by a commenter are also included in Appendix L. Entire comment letters are available upon request. Access to complete comment letters is available on TVA's website at [http://www.tva.gov/environment/reports/pointe\\_marina/index.htm](http://www.tva.gov/environment/reports/pointe_marina/index.htm).

**4.2.1. Summary of Public Comments**

Twenty-four percent of the comments were in favor of the proposal. Comments in support of the project specify that it would be good for the local economy. In summary, thirty-four comments indicate the proposed marina would have positive effects to local economy, often stating that the new marina would bring in needed revenues and tourism dollars to the community. Twenty-five other comments in favor of the project indicate the proposed marina would be good for tourists and local residents because a modern marina would give locals and visitors a nice place to go to enjoy the lake and scenery. Four comments remarked that Norris Lake and its resources would not suffer from the new marina or that a new marina would not adversely impact the environment. Four other comments stated that the proposed marina would get rid of illegal dumping, hunting, and drug activity on the property.

Seventy-five percent of the comments were opposed to the proposed marina. Similar to the comments received on the joint public notice, the main concerns stated by commenters on the draft EA included navigation-boating safety, recreation impacts, water pollution, shoreline erosion, resource conservation, aesthetics, noise, property values, and property rights. Concerns about boating congestion were most prevalent (56 comments). Some further indicated that boating congestion could lead to boating safety issues. Others stated that overcrowding negatively impacts the recreation experience due to increased wave action, boating traffic, and noise or expressed concerns that there are too few law enforcement patrols on Norris Lake. Thirty-seven comments indicated that the marina is not needed, that there are plenty of marinas in the area, and some requested that the proposal be denied or further scaled back. Five comments indicated the proposed marina would likely negatively impact the nearby marinas and that some were already financially struggling. Twenty-eight comments related that Norris Lake's natural resources need to be protected and some go on to state that TVA needs to take responsibility and protect the lake and the surrounding area's natural resources.

Concerns about water resources were identified with 18 comments specifically mentioning the likely impacts of increased boating traffic to shoreline erosion and eleven expressing concerns that allowing the marina would cause additional water pollution. The location of the marina, specifically opposition to its proximity to Camp Galilee and how it would negatively impact the camp and its campers was mentioned in 21 comments. Three other comments regarding the marina's location indicated the proposed marina's distance from the dam is unsafe.

Twenty-six comments opposed to the marina were generally related to economic impacts. Of these, nine comments stated that a new marina would not provide enough economic gain to justify the resulting adverse impacts to the area. Nine comments expressed concerns that the proposed marina would decrease nearby property values. Eight comments expressed concerns that the proposed marina would negatively impact current residents in this area of the lake due to potential for damages to personal property and loss of privacy, among other reasons.

Land use was mentioned in 15 comments, with some regarding property rights and deed issues, while others mentioned they were opposed to losing access to the cove as a recreation area. Ten comments raised questions about the environmental review, with six comments regarding the boating density assessment methodology and or validity of the assessment and four comments regarding the cultural resources assessment. Nine comments voice concerns about the proposed marina and adverse impacts to roadway traffic and safety on Demory Road. There were also nine comments communicating discontent that a public hearing for the project was not held. Six comments specifically mention concerns that noise would notably increase if the marina were approved. Only a few comments, less than one percent, were outside the scope of the draft EA.

### **4.3. Consideration of Public Comments.**

TVA and USACE have reviewed and considered the public comments on the draft EA and comment responses are presented in this section.

#### **4.3.1. Navigation-Boating Safety**

**Issue:** Recreation-Concerned With Additional Boat Congestion

**Comment Statement:** I (We) am very concerned about the additional water traffic in an already congested area. This marina would impact the safety of all those on the water.

**Response:** Under the proposed action, there would be an increase in recreational boating traffic. Because the increases in boating density could exceed maximum recommended density

in the study area during summer peak use holiday weekends, and weekend boating density would be at or near threshold levels, initial marina development would be limited to 300 slips. In order to reduce potential water-related recreation impacts, a phased permitting approach that limits the initial number of vessel slips approved to 300 slips would be a condition of the 26a permit approval. The decrease from 500 slips to 300 slips would reduce the boating density to levels at or above optimum density thresholds of 8.2 and 6.0 surface acres from 7.8 and 5.7 surface acres during weekends and nonholiday weekends. Under the phased permit condition, the total anticipated increase in watercraft in the study area would be reduced from by 30, 50, 70 fewer boating units (during nonholiday weekday, nonholiday weekend, and peak use holiday weekends, respectively) from 81, 143, and 197 boating units to 51, 93, 127 boating units.

**Issue:** Too Few Law Enforcement Patrol Personnel

**Comment Statement:** I (we) believe Norris Lake does not have enough law enforcement patrol.

**Response:** While boating enforcement resources are currently limited, TWRA has developed training programs to schedule local law enforcement assistance in boat patrols. Under this program, additional monitoring and enforcement presence could be available on Norris and other reservoirs through local law enforcement initiatives. If you see unsafe or irresponsible boating practices or suspicious activities on Norris Reservoir, please contact TWRA (1-800-332-0900) to report the activity. Include the boater registration number, if applicable.

#### **4.3.2. Recreation**

**Issue:** Marina Not Needed

**Comment Statement:** There are plenty of marinas in the area and the project should be denied or scaled back further.

**Response:** The applicant has presented TVA with several proposals and over time has reduced the number of slips from 799 to 500 at complete build out. Furthermore, in order to reduce potential impacts to water-based recreation, a permit condition has been developed that would limit the approval to 300 slips at this time. A request from the applicant for additional slips would be considered after the 300 slips are at 70 percent occupancy and approval would be contingent on further consideration of potential impacts to water-based recreation through a boating density analysis by TVA. Additionally, TVA has reviewed the applicant's proposal and believes the project would likely be successful. Additionally, public comments received on the draft EA indicate that there is a demand for a new and modern marina in the area. Moreover, the applicant's phased plan for the development of additional boat slips allows for marina growth based on percent occupancy, i.e. the marina will not grow if there is inadequate demand.

**Issue:** Marina Not Needed

**Comment Statement:** Existing marinas need to be supported - they are not thriving.

**Response:** The applicant has indicated that existing commercial marinas in the area are operating at density (Appendix M). Although USACE and TVA have not verified this statement, with the developmental growth underway near Norris Reservoir, there is potential for slip rental demand to increase over time. The Point Marina's plans only allow for its growth if existing boat slips are occupied.

#### **4.3.3. Natural Resource Conservation**

**Issue:** Norris's Natural Resources Need to be Protected

**Comment Statement:** TVA needs to take responsibility and protect the lake and the surrounding area's natural resources.

**Response:** TVA has developed the Natural Resource Plan to guide its natural resource stewardship efforts. The Natural Resource Plan addresses TVA's management of biological, cultural, and water resources; recreation; reservoir lands planning; and public engagement. The goal of the plan is to integrate the objectives of these resource areas, provide for the optimum public benefit, and balance sometimes conflicting resource uses. A copy of the Natural Resource Plan can be found on TVA's Web site, [www.tva.gov/environment/reports/nrp](http://www.tva.gov/environment/reports/nrp).

Aesthetics impacts are addressed in the final EA on pages 27-28 and are based on standard thresholds described in the EA.

#### **4.3.4. Water Resources**

**Issue:** Increased Shoreline Erosion

**Comment Statement:** Adding another marina to this section of Norris Lake would further impact shoreline already damaged from current boat traffic.

**Response:** Construction of the proposed marina would concentrate boat traffic, which could increase local wave energy levels. There are many variables that contribute to shoreline erosion and no measurable means of determining erosion as a direct result of recreational boating in an area. However, minor erosion along shorelines where boat slips are located generally occurs. The higher concentration of watercraft around the proposed marina would likely contribute to an insignificant acceleration of erosion of surrounding areas of unprotected shoreline. The applicant is planning protection measures including use of construction BMPs, post construction ground maintenance (including maintenance of buffers), and native vegetation protection and enhancement. The construction and operation of the proposed facilities is not likely to considerably change the site's shore erosion rate. However, Pointe Marina has indicated that it would stabilize the marina shoreline with riprap if deemed necessary by TVA and/or USACE. TVA staff will conduct annual on-site visits where shoreline conditions (rate of erosion) will be evaluated.

The Pointe Marina believes that the proposed wave attenuator would reduce erosion forces in the cove stemming from main channel backflows. If Section 26a and DA permit approvals are issued, a special condition would be added to require Pointe Marina to riprap the marina shoreline if more than a normal amount of erosion is observed by the USACE and/or TVA during shoreline assessments. Because marina-originated boating activity would be circumscribed to the area between the marina boat-launching ramp and main channel, a considerable erosion rate increase along Galilee Bible Camp's shoreline and the head of the cove is not expected.

**Issue:** Water Pollution from Marina/Additional Boaters

**Comment Statement:** I (We) are concerned that the marina and additional boats will pollute Norris Lake.

**Response:** TVA and the USACE considered water quality impacts in the EA, see the Water Quality section (see pages 17-19). Only minor water quality impacts are expected to occur at the project site from the construction and operation of the marina. The EA states that "The operation of the marina would result in relatively minor long-term water quality impacts mainly from the inadvertent spillage of petroleum products from boats. Storm water discharges and surface runoff originating in upland areas adjacent to the reservoir could also contribute to water quality degradation. However, impacts would be relatively minor because water currents would help disperse the discharges quickly in the water column. Marine sanitation device (MSD) laws apply to Norris Reservoir and discharging untreated sewage into public water is prohibited in Tennessee."

TDEC is responsible for enforcement of state standards for construction sites and storm water runoff under Section 402 of the Clean Water Act. Under Section 401 of the same act, TDEC has evaluated the impacts of discharging fill material into the waterway by issuing water quality certification for the proposed work on April 15, 2009. The document provides assurance that water quality standards will not be violated if the work is conducted in accordance with the conditions set forth in the certification.

Since fuel would be sold at the marina, water quality impacts could range from minor inadvertent leakage of petroleum products from vessel engines to larger spills from the gas dispensers. In case of a large spill, Pointe Marina will be required to respond in accordance with its SPCC Plan, which is required by the state fire marshal's office. Pointe Marina has indicated that there will be marina pump-out stations at the docks, which would initially be pumped to a holding tank on land and then transported to LaFollette Utilities Sewage Treatment Plant for disposal. No substantive change is expected to occur in water temperature, color, odor, or nutrients from the boat slips or the small amount of disturbance associated with site preparation and construction.

#### **4.3.5. Land Use/Marina Location**

**Issue:** Proximity to Galilee Bible Camp

**Comment Statement:** Proposed marina would negatively impact the adjacent Galilee Bible Camp and its campers.

**Response:** The Galilee Bible Camp property is located approximately 1,000 feet west of the marina limits. USACE estimates that few vessels would likely use this area west of the marina, particularly the Galilee Bible Camp frontage. Some outside fishing boats intending to navigate to the head of the cove would first need to go by the length of the marina and in so doing should be moving at a "no-wake" speed as required by Tennessee boating laws.

Unsafe or irresponsible behaviors would be managed by marine law enforcement personnel. Additionally, because more enforcement patrols are desirable, TWRA has developed training programs to incorporate local law enforcement to assist in marine patrols. Impacts to aesthetics and noise are addressed in the EA, pages 27-28 and page 30, respectively.

**Issue:** Land History - Deed Issues

**Comment Statement:** The Heatherly family property was intended for educational/recreational purposes for the public.

**Response:** Because TVA owns such a large amount of land along rivers and reservoirs, some individuals believe that TVA owns subject Tract XNR-585, where the Pointe Marina is proposed. However, the subject property has been in private ownership since 1948. TVA understands that the uses on that property by private individuals have occurred without permission of the property owner. Below is a timeline explaining the ownership and covenants associated with this property.

TVA purchased the subject property from landowners in 1934, it was not acquired by eminent domain. The United States Congress granted TVA the power to dispose of public land under its control for recreation purposes. As such, this tract was sold to LaFollette Methodist Church in 1948 for religious, educational, and recreational purposes. In 1958, the deed was modified by removing "religious and educational purposes" from the granting clause. Deeded restrictions require that the property has to be used for recreational purposes. Furthermore, a deed modification is not required to permit a commercial marina on the sold property, since a marina is considered a reasonable recreation use. TVA can also permit related facilities on its property adjacent to the sold property subject to TVA's requirements.

The most recent deed, a Deed of Exchange, was executed in 1975. A Deed of Exchange is a tool widely used that allows development to a lower contour elevation. The Deed of Exchange for the subject tract allows construction of buildings down to the 1,044-foot contour. This Deed of Exchange also strengthens TVA's ability to prevent any fill or excavation of material located below the 1,044-foot contour. The proposed boat-launching ramp would be constructed on grade, and fill would not be placed below the 1,044-foot contour for construction of the ramp. With the Deed of Exchange, TVA also abandoned the right to flood to the 1,052-foot contour but retained the right to flood to the 1,044-foot contour.

**Issue:** Loss of Current Uses of Subject Property/Cove

**Comment Statement:** This land/cove is a valuable recreation resource used by locals and boaters.

**Response:** TVA recognizes that this private property has been used for informal camping and other recreational pursuits. However, its use has likely without the consent of the property owner.

**Issue:** Proximity to Norris Dam

**Comment Statement:** The proposed marina's distance from Norris Dam is unsafe.

**Response:** The proposed marina is located at Powell River Mile 4.0 and Norris Dam is located at Clinch River Mile 79.8, approximately 13 nautical miles apart. Construction and operation of the proposed marina is not anticipated to result in any security risks to Norris Dam or boaters.

#### **4.3.6. Economic Impacts**

**Issue:** Economic Benefits Do Not Outweigh the Adverse Impacts of the Proposal

**Comment Statement:** Although our area needs an economic stimulus, a new marina would not provide enough economic gain to justify the adverse impacts to the area.

**Response:** Comments reviewed and noted.

**Issue:** Large Marina Could Negatively Impact Property Values

**Comment Statement:** I (We) believe the new marina would decrease property values of nearby residents.

**Response:** TVA acknowledges property owners concerns regarding decreased property value. Potential economic effects on residential property values in the immediate area are somewhat speculative and would depend on market conditions including demand and future economic health. In general, TVA has observed that a well-designed and well-managed marina is not likely to decrease property values and may even increase them over time. Considering the phased development approach planned by Pointe Marina, the choice and color of the building materials, and the buffered setting of the site (inside a cove), adverse impacts, if any, would be minimal for most residents. Impact potential would decrease in direct proportion to the distance to the marina facilities.

**Issue:** Adverse Impacts To Nearby Residents

**Comment Statement:** I (we) believe the proposed marina would negatively impact current residents in this area of the lake.

**Response:** Regarding concerns to personal property, denying the proposed marina's approval request would not prevent damages to personal property. That being said, protections are afforded by Tennessee State law. According to Tennessee State law, "the owner of a vessel

may be responsible for any injury or damage done by his or her vessel whether the owner is present or not.” TWRA has enforcement responsibilities. Marine law enforcement personnel do patrol Norris Reservoir, but also rely on residents and other boaters to assist them. As always, if you see someone boating in an unsafe or irresponsible manner, please record the boater registration number if achievable and report the activity to TWRA officers monitor marine radio Channel 17 and can also be contacted through the regional TWRA dispatcher at 1-800-332-0900.

Responses to other concerns expressed by nearby residents regarding boating safety, recreation experience, water pollution, property values, roadway traffic, and aesthetics and noise impacts are addressed separately in this section (Section 4.3).

#### **4.3.7. Impacts Assessment Adequacy**

**Issue:** Boating Safety - Impacts Assessment

**Comment Statement:** I (We) disagree that the effects on water-related recreation would be minor.

**Response:** While no on-site counts were conducted as a part of the boating traffic assessment, TVA’s observation of boating use patterns indicate that use levels at marinas, boat launching ramps, and private access facilities are quite consistent across the reservoir system during the primary recreation season.

**Issue:** Boating Safety - Impacts Assessment

**Comment Statement:** I (We) disagree with the density level standard that was used.

**Response:** TVA’s 2009 Boating Density Analysis included a review of boating density standards and guidelines used by other federal agencies. The density thresholds used by TVA were derived from a compilation of these assessments and guidelines. More recently, a comprehensive boating carrying density assessment completed in 2010 by ENTRIX, Inc. for Duke Energy, identified a range of surface acres needed per boat that is similar to those identified in the TVA analysis.

**Issue:** Boating Safety - Impacts Assessment

**Comment Statement:** I (We) disagree with the proposed study area that was used.

**Response:** The total distance travelled during a boat outing is likely to vary widely. Non-motorized boats or small power fishing boats may not travel more than 1 – 2 miles from their point of departure. On the other hand, power boaters engaged in cruising for pleasure may travel 30 miles or more from point of departure. TVA believes an average estimated trip length of 10 miles, which was the basis for establishing the study area, is reasonable. All types of boats, including personal water crafts, were included in boating use estimates.

**Issue:** Boating Safety - Impacts Assessment

**Comment Statement:** Existing private boat docks not considered in Boating Density Study - TVA failed to account for the 900 private boat slips that are on Norris.

**Response:** Existing private boat docks are considered in the boating density study (Appendix J). TVA estimated the private access boating units at 1180. The estimated private access boating units include the TVA’s total permits from 26a records (726), multiple slips (169), and community slips (285). The 1180 number is used as the “base” throughout the remaining calculations in the boating density worksheet.

**Issue:** Cultural Resources – Impacts Assessment

**Comment Statement:** Section 106 compliance

**Response:** TVA responded directly to Tennessee Historical Commission and has completed Section 106 compliance. This is documented in the letter sent to the Tennessee Historical Commission dated July 7, 2011.

**Issue:** Cultural Resources – Impacts Assessment

**Comment Statement:** I (We) believe there is a slave cemetery nearby

**Response:** TVA is aware that there was a slave cemetery recorded in this area and took this into account when reviewing the project. Records indicate the cemetery was removed prior to inundation of the reservoir.

**Issue:** Cultural Resources – Impacts Assessment

**Comment Statement:** Need to better understand tribal consultation process

**Response:** The Shawnee Tribe is one of 18 federally recognized tribes who have notified TVA that they have a cultural interest in the Tennessee Valley, therefore TVA notifies the tribe regarding properties within a proposed project's 'Area of Potential Effect' that may be of a religious and cultural significance to them, and eligible for listing in the NRHP, and seeks their comments.

**Issue:** Phased Approach

**Comment Statement:** The whole project is what is to be permitted, so the whole project must be considered when deciding whether or not to issue a permit.

**Response:** Comment noted. The scope of the environmental review includes the 500 slips in the Applicant's Proposed Action (Section 2.2.2).

#### **4.3.8. Roadway Traffic**

**Issue:** Roadway Infrastructure

**Comment Statement:** Demory Road is not suited to safely handle additional traffic if marina is allowed.

**Response:** Although the planned marina would increase traffic on Demory Road, analysis in the EA (pages 28-30) indicates Demory Road would be capable of accommodating the anticipated traffic increase.

#### **4.3.9. Noise**

**Issue:** Marina Would Increase Noise

**Comment Statement:** New marina and additional boats would increase noise in the area.

**Response:** Noise impacts can be subjective and are difficult to measure. However, widely accepted thresholds for "significant impacts" have been developed and used in this environmental review to estimate anticipated impacts. Furthermore, there are regulations in place to help address noise on the water. Under TWRA Regulations (TWRA 2008), engines of all motorized vessels must have an effective muffling system, the noise level of any motorized vessel may not exceed 86 decibels at 50 feet or more, and boat operators are required to submit to noise level testing if requested by a TWRA officer.

As discussed in the EA, most shoreline residents likely already hear watercraft noise from the reservoir. The additional activity would increase the frequency of hearing watercraft, but it would not increase the noise level of the watercraft itself. Increased noise levels associated

with the construction and operation of the facility would be more noticeable during the fall and winter periods when the noise reduction that can be created by tree leaves offers the lowest protection. However, during that same period, noise-producing recreational activities are usually at the lowest levels. Likewise, during the peak periods for outdoor activity (summer), the noise reduction effect of foliage would offer the highest protection. Summing up, short- and long-term noise impacts would only be minor to moderate and not in the range of unbearable levels. Based on standard noise thresholds, the analysis in the EA indicates that the potential noise impacts from marina construction and power boats would not be significant.

**4.3.10. Public Involvement**

**Issue:** Public Outreach

**Comment Statement:** I (We) are displeased that a public hearing was not held.

**Response:** USACE and TVA determined that the public comment periods for the Joint Public Notice and Draft EA would allow the public ample opportunity for public involvement as required under the National Environmental Policy Act (NEPA). See Section 5.2.1. for further discussion of the Public Hearing request.

**CHAPTER 5.0. Other Considerations****5.1. Initial Public Scoping.**

On March 19, 2009, the USACE and TVA issued JPN 09-03 (see Appendix C) to advertise the proposed action and to determine the public interest of the proposal. The JPN was distributed to a list of interested parties that included federal, state, and local agencies, elected officials, private/public organizations, news agencies, adjacent property owners, and other interested stakeholders. THC and the USFWS were the only responding resource management agencies. Their comments are addressed above in the appropriate sections and the responses are detailed in Appendix M. Sixty-four individuals expressed their views on the proposal and a total of 67 comments were received. The main concerns stated by the commenters included navigation, recreation, aesthetics, noise, erosion, water pollution, property values, and property rights. The sole respondent commenting in favor of the proposal indicated that the project was imperative to the county's economic growth. The applicant's responses to Public Notice comments are included as Appendix M.

**5.2. Consideration of Public Notice Comments.**

The public comments were reviewed and evaluated by USACE and responses were included in the draft EA and are included in Appendix M.

**5.2.1. Public Hearing.**

Thirty-five requests for a public hearing were received from members of the public during the JPN public involvement period. The USACE determined that a public hearing will not be held. In a memorandum dated January 21, 2011, Ronald E. Gatlin, Regulatory Branch chief, denied the public hearing requests (Appendix G). Among the reasons for denying the hearing, the document cites that the public had ample opportunities to express their views and opinions regarding the application, all concerns expressed were understood and addressed, and a hearing would not have provided any additional information to assist in reaching a final decision on the DA permit request. TVA concurred with this approach. There was a public release of the draft EA and a public comment period from April 20, 2011 through May 31, 2011, to provide another opportunity for public involvement.

**5.3. Section 404(b)(1) Guidelines Determination.****5.3.1. General.**

The purpose of Section 404(b)(1) of the CWA is to restore and maintain the chemical, physical, and biological integrity of the WUS through the control of discharges of dredged or fill material. Controls are established through restrictions placed on the discharges in guidelines published in 40 CFR Part 230.

**5.3.2. Restrictions on the Discharge.**

Section 230.10 of the CWA requires that the discharge meet certain restrictions in order to be authorized. The project is to be evaluated and must comply with the following restrictions: (a) there would be no other practicable alternatives to the proposal that would have less adverse impacts on the aquatic environment; (b) the discharge would not adversely impact water quality, violate state water quality standards or toxic effluent standards, or jeopardize the continued existence of a threatened or endangered species as identified under the ESA; (c) the discharge would not cause or contribute to the significant degradation of WUS; and (d) the project would be designed in such a manner as to minimize to the extent practicable the adverse impacts on the aquatic environment.

**5.3.3. Factual Determination.**

Based on the probable impacts addressed above, compliance with the restrictions, and all other information concerning the fill materials to be used, the proposed work complies with the guidelines and the intent of Section 404(b)(1) of the CWA. A Section 404(b)(1) guidelines compliance checklist has been included in Appendix N.

**5.4. Clean Air Act Determination.**

USACE has analyzed the applicant's project for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The proposal would not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors, which are exempted by 40 CFR Part 93.153. In addition, any later indirect emissions are generally not within USACE's continuing program responsibility and cannot be practically controlled by the agency. For these reasons, a conformity determination is not required for this permit.

**5.5. Environmental Justice.**

EO 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 their programs, policies, and activities on minority and low-income populations. Through the public involvement process, the USACE has offered government agencies, elected officials, adjacent property owners, and the public (including, if applicable, low-income and minority populations) an opportunity to comment on matters that affect the citizenry's welfare. Based on the information currently available to the USACE and TVA, the proposed activity would not displace any minority or low-income group, and therefore, these segments of the population would not be disproportionately impacted by the project. Several federal and state government agencies and numerous individuals commented to the proposal on matters unrelated to environmental justice. No one identifying himself/herself as being of a low-income or minority group has indicated any objection to the work. Therefore, the USACE and TVA have concluded that the proposal would satisfy the requirements of EO 12898.

FOR THE COMMANDER:

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Date

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Bradley N. Bishop  
Chief, Western Regulatory Section  
Regulatory Branch  
Operations Division

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