

DRAFT 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 Dam was completed in March 1936 and forms Norris Reservoir, which has about 34,200 surface acres of water at normal summer pool (NSP) and 809 miles of shoreline. Norris Reservoir is located in east Tennessee, north of Knoxville on the Clinch and Powell Rivers. It spans a 73-mile stretch of the Clinch River from Norris Dam to River Ridge at the Claiborne-Grainger County line and also covers the lower 56 miles of the Powell River, which empties into the Clinch River 10 miles upstream from Norris Dam. Norris is the largest tributary reservoir in the Tennessee River system. Norris 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, 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. This draft environmental assessment (EA) evaluates the potential environmental consequences that would likely result from the construction and operation of the proposed Pointe Marina. The draft 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 would 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.

The proposed marina would be built 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 (see Appendix B).

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 a total of 74 cubic yards (CY) of concrete and riprap below NSP. Finally, the applicant 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.

The anticipated impacts from constructing and operating the marina facility with 500 boat slips have been considered in this draft EA and will be considered in the permitting process. Therefore, permits would be issued for the complete marina proposal and no phased permitting would occur.

1.3. Purpose and Need.

The basic purpose of the proposed project is to provide safe, conveniently accessible, water use facilities to the public. The overall project purpose is to construct nine floating docks with a restaurant, retail marina store, and a gas dock platform, construct a 20-foot-wide boat-launching ramp, involving placement of 74 CY of concrete and riprap below NSP, construct 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 2.0) during the public involvement process, and the initial marina proposal has been modified 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 draft document, the applicant's initial proposal (see Section 1.3.), 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 301 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.

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, excavation below NSP, shoreline stabilization, and any other disturbance located on TVA flowage easement. TVA is a cooperating agency in the preparation of this draft 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 assign 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.

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, and the final permit was issued on 19 May 2009 and is presented in Appendix D. 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 must, in the appropriate NEPA analysis, analyze the alternatives to the proposed action and consider primary, secondary, and cumulative impacts (see Section 3.5).

As previously described, the proposed project 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 (≤ 6 percent) to medium (≥ 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. Public Involvement Process**2.1. General.**

As previously discussed, USACE and TVA issued JPN 09-03 (Appendix C) on 19 March 2009 to advertise the proposed action. 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.

Sixty-two comments (52 letters and 10 e-mails) were received in response to the JPN. The distribution of comments is as follows: Three agency letters with two conditional comments from the Tennessee Historical Commission (THC) and one comment from the United States Fish and Wildlife Service (USFWS) (see Appendix F), 58 private individual objections (48 letters and 10 e-mails); and one favorable letter from a private individual. Thirty-five of the private individual commenters objected to the proposal and requested a public hearing. On 5 April 2010, the Friends of Norris Reservoir provided one additional objection to the proposal in the form of a letter to the editor of the *LaFollette Press* newspaper. Four additional e-mail objections were received after 13 May 2010. Therefore, including the other comments received after the public notice had expired, 67 comments were received. In addition to regular comments, three congressional inquiries were received during the application's public interest review process (see Section 2.3 below).

2.2. Public Notice Comments.

The USACE and TVA have evaluated the substantive issues raised by the commenters during the public notice comment period in Section 3.0. A summary of the USACE/TVA response to the comments, where appropriate, has been included in Section 5.5. The applicant also provided a response to the comments (see Appendix G), and this information is summarized in Section 2.3 below.

2.2.1. Agency Responses.**2.2.1.1. United States Fish and Wildlife Service.**

By letter dated 17 April 2009 (see Appendix F), USFWS stated that based on the information and collection records available at the present time, no federally listed or proposed threatened or endangered species are known to occur within the project impact area. Therefore, it considers the requirements of Section 7 of the ESA fulfilled. In addition, it believes that no significant impacts to fish and wildlife or their habitats would result from the proposal. For the above reasons, USFWS stated that it would have no objection to the authorization of the proposed work.

Response: Comments noted. No issues requiring a response were identified.

2.2.1.2. Tennessee Historical Commission.

TVA offered to be the lead federal agency in matters of compliance with Section 106 of the NHPA of 1966, and the USACE accepted this role. TVA wrote to THC that the proposed undertaking could affect historic properties and recommended that a Phase 1 cultural resources survey should be conducted over the proposed area of potential effect (APE). 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. The recommended APE for historic structures is a 0.5-mile radius surrounding the proposed marina development.

THC responded to TVA agreeing with the APE and requesting that two known archaeological sites should either be avoided by all ground-disturbing activities or subjected to Phase 2 archaeological testing. Furthermore, THC concurred that the remainder of the APE should be surveyed for the presence of archaeological resources. Phase 2 testing and geomorphology investigations were conducted, and test results were negative.

A Phase 1 cultural resources survey of the remainder of the APE identified two previously unrecorded archaeological resources and five previously unrecorded historic structures within the APE. In a letter to THC, one site was recommended potentially eligible for listing in the National Register of Historic Places (NRHP). TVA recommended implementation of a preservation covenant in the applicant's deed to reduce potential impacts to the potentially eligible site and requested concurrence. THC concurred with TVA's finding that the site is potentially eligible for listing and that the site would not be adversely affected with the implementation of the preservation covenant. To ensure compliance, the archeological covenant would be incorporated into the deed as required by SHPO prior to issuance of final permits. Copies of this correspondence are included in Appendix F.

2.2.2. Public Responses.

As indicated in Section 2.1, 64 comments were received from members of the public. Thirty-five of the commenters requested a public hearing. All but one of the comments received were against the proposal. The main concerns stated by the objectors included safety, navigation, recreation, aesthetics, noise, erosion, water quality, property values, and property rights. The respondent commenting in favor of the proposal indicated that the project is imperative to the county's economic growth.

Response: The comments are noted. This draft EA evaluates the resources identified as the main concerns by the commenters.

2.2.3. Congressional Correspondence.

Three congressional inquiries were received during the application's public interest review process. By letter dated 3 August 2009, Congressman Lincoln Davis requested assistance for constituent William Bennett, executive director of Galilee Bible Camp. The camp is located in the proposed marina cove approximately 400 feet upstream and on the opposite shoreline. Mr. Bennett opposes the project and would like to be assured that a public hearing will be held before a final permit decision is made. The second congressional inquiry, dated 10 September 2009, came from Senator Lamar Alexander's office on behalf of Tom Painter, resident of Deerfield Resort. The letter requested that USACE contact Mr. Painter and provide him with additional project information. Mr. Painter opposes the construction of the proposed marina and cited issues such as overdevelopment, bank erosion, water quality, impact on Galilee Bible Camp, and increased danger among his concerns. The third congressional contact was from Congressman Lincoln Davis, who on 14 September 2009 wrote on behalf of Mr. Painter citing the same issues he had expressed to Senator Alexander. Copies of this correspondence are included in Appendix F.

Response: In all three instances, the USACE responded that additional information had been requested from the applicant and that changes to the proposal had already occurred (Appendix F). For example, the applicant has reduced the number of boat slips from 799 to 500 slips in the revised project plans and is planning to construct the marina in phases based on occupancy levels (Appendix B). The applicant has indicated that his initial plans involve providing slips for approximately 60 vessels, and 60 more slips would be added per phase through Phase 7 once occupancy reached 70 percent. Eighty slips would be added for Phase

8. Additional modifications to the proposal have occurred that could result in further reductions in navigation, recreation, water quality, and aesthetic impacts, among others. The USACE has determined that a public hearing will not be held. TVA concurred with this approach. However, there will be a public release of this draft EA and a 30-day public comment period. TVA plans to release a public notice regarding the opportunity to review and comment on this draft EA.

2.3. Applicant's Rebuttal.

On 4 May 2009, USACE sent the comments/objections that were received in response to the JPN to the applicant for resolution or rebuttal (Appendix G). In a letter dated 11 May 2009 (Appendix G), the applicant addressed the substantive issues raised. Please note that the following response statements (Sections 2.3.1, 2.3.2, 2.3.3, 2.3.4, and 2.3.5) are the applicant's responses to comments and these responses do not reflect USACE or TVA's views. Analyses of these and other resource issues and considerations are addressed in Sections 3.0 and 5.0.

2.3.1. General.

Commenters questioned the need for a new marina and the size and phasing of this project.

Response: My research indicates that existing commercial marinas in the area are operating at their capacity.

Response: Construction of Phase 1, will begin within 18 months of receipt of the marina permit. The initial phase will include the wave attenuator, a scaled down retail area, fuel dispensing system, and Phase 1 slips.

Response: Subsequent phases will be constructed based in an 80 percent occupancy rate of existing slip standard. Once Phase 1 is 80 percent occupied, then Phase 2 will begin and continue this process through completion of all phases.

Since the 11 May 2009 response letter was prepared, the applicant has revised his phased construction plan (Appendix B). The revised plan is reflected in Section 1.2, Project Description.

2.3.2. Navigation Safety.

Commenters expressed concerns about the docks extending beyond established harbor limits, the wave attenuator extending past the mouth of the cove, and increased boating traffic resulting in boat congestion in the cove.

Response: Revised harbor space will not occupy more than one-third of the existing cove's width during summer pool.

Since the 11 May 2009 response letter was prepared, the applicant has revised the requested harbor space and it would not occupy more than one-third of the existing cove's width year-round (instead of summer pool).

2.3.3. Roadway Safety.

Commenters posed questions regarding the roadways that would be used to access the marina and whether improvements to these roads are planned or would be required.

Response: Demory Road is the most direct route from Highway 63 [sic] US 25W, TN63 to the proposed marina. It is difficult to determine the daily increase in traffic other than the marina employees. No roadway improvements are currently planned or required by the county. (Please see attached letter (Appendix F) from the Campbell County Highway Department).

2.3.4. Environmental.

Commenters requested information regarding planned measures to prevent water quality impacts from debris and petroleum products from happening, and information about plans for a marine pump-out station and sewage handling was requested.

Response: Currently the passing vessels and wind facilitate the movement of debris into the cove as it has for many years. It is the applicant's opinion that there is no organized effort to keep this cove free of debris, and this would change once a marina occupies the cove with an incentive to keep the surrounding shoreline clean and safe.

Response: The vessels that currently utilize this area for launching do not abide by the governing bodies' rules for fueling. The marina would have a state-of-the-art fueling system as well as an emergency response plan and constant monitoring of the fueling process.

Response: There will be marina pump-out stations at the dock which will initially be pumped to a holding tank on land and then transported to LaFollette Utilities Sewage Treatment Plant for disposal (pump and haul).

Commenters indicated measures should be taken to reduce the potential impacts to wildlife habitat and air quality.

Response: If needed, I (the applicant) will riprap the marina's shoreline. It is my opinion that having a no-wake harbor would decrease the shoreline erosion.

Response: Currently the property is being used illegally for hunting (hunters are trespassing), dumping trash, and tree cutting. The marina will utilize the property in a manner that will promote better stewardship for wildlife.

Response: The marina would not produce air emissions that will be harmful to the environment. Currently, there are federal and state regulations in place to regulate marine engine emission.

Commenters questioned whether the applicant would commit to measures to reduce noise impacts.

Response: Construction work and operating hours will be similar to those of existing marinas and home construction sites.

Response: If authority were bestowed upon me by the federal or state agencies that adopt and enforce noise pollution regulations, I would be happy to commit to enforcing these measures.

2.3.5. Socioeconomics.

Commenters expressed concerns that the development of a large marina would devalue their property in the immediate vicinity of the proposed marina.

Response: I have spoken with local realtors regarding property devaluation. They have all agreed that there would be no negative impact to property values as a result of the proposed marina.

Commenters expressed concern that recreational activities at Galilee Bible Camp would be severely affected.

Response: As a steward of Norris Lake, access to the reservoir by the general public and equally by Galilee Bible Camp are goals that all marinas and the community as a whole should strive to achieve. The general public, Turkey Cove, and Galilee Bible Camp would maintain two-thirds of the cove for use at summer pool.

Commenters indicated that plans to minimize visual impacts as proposed in the JPN are welcomed.

Response: I plan to create the least impact on the environment, aesthetics of the marina property, and Norris Reservoir as feasibly possible. Natural neutral colors will be utilized in the marina construction.

2.4. Supplemental Public Notice.

The basic precept of the public notice process is to include sufficient information to give a clear understanding of the nature and magnitude of the proposed activity to generate meaningful comment. A supplemental notice is issued whenever there is a change in the application data that would affect the public's review of the proposal or when the probable impacts to the aquatic environment resulting from the changes are substantially greater from those described in the original notice. The changes described in Section 1.4 would not increase the scope of work and are intended to address some of the issues that were identified during the public involvement project scoping phase. These changes would not result in additional project impacts. Construction of boat slips in phases based on future increases in demand would slow the incremental increases in land (i.e., roadway) and water-based traffic and reduce related potential safety concerns. USACE believes that advertisement of the changes would not have substantially affected the public's review of the proposal. Therefore, issuance of a revised JPN for this purpose is not warranted. The environmental evaluation conducted in Section 3.0 of this document is based on the final proposal including all changes. TVA concurs with this approach.

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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 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 (JPN 09-03, Appendix C). The following sections describe the relevant factors identified and provide a concise description of the probable impacts of the proposed action. 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 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, 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 postconstruction. 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 H.

In order to minimize potential impacts to water quality, Section 26a and DA permit approvals will be subject to special conditions (see Section 4.3.4) that will require the applicant to perform all work in a manner that would prevent violations of water quality standards. With the implementation of these special conditions, 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, bank stabilization, 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. 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 shorelines where boat slips are located generally occurs. Therefore, the applicant has indicated that he would stabilize the shoreline in the harbor area, if determined necessary by TVA and/or USACE. The proposed wave attenuator would reduce erosion in the cove from main channel backflows to an acceptable level.

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.

Therefore, Section 26a and DA permit approvals would be subject to the following condition:

- In order to minimize potential shoreline 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.

() 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 (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. TVA considers a small shoreline fringe (less than 0.10 acre) in the vicinity of the proposed boat launch to be a scrub-shrub wetland; the dominant species is black willow (*Salix nigra*). 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 special aquatic sites would be minor and insignificant.

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.

(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. However, 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 F), 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 I). 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
Commercial Marinas and Resorts				
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 ¹	132 slips	N/A	N/A	Commercial marina
Private Marina and Resort				
Deerfield Resort ²	257 slips ¹	50 spaces ¹	1 ramp	Private resort with community docks
Other				
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	None	None	None	Public recreation
Commercial Marina Base Case Totals	1412 slips	212 spaces	8 ramps	(1624 total vessels)
Pointe Marina (Proposed)	500 slips	30 spaces	1 public ramp	Commercial marina
Proposal + Base Case	1912 slips	242 spaces	9 ramps	(2154 total vessels)

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

²Not included in base case totals for commercial marinas and resorts but included in boating capacity calculations.

Much of the shoreline in this area of Norris Reservoir is part of the Chuck Swan Wildlife Management Area, which is managed by Tennessee Wildlife Resources Agency (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 B) 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. This would provide a positive benefit and attraction for local residents, tourists, and potential homeowners. As previously discussed, the applicant is planning to build the marina in phases. Because an

increase in boating amenities would be achieved gradually during buildout of Pointe Marina, the increased demand would be gradual, and the anticipated increased use of the reservoir would not significantly affect reservoir (water-related) recreation in the study area.

Boating Capacity

Development of the proposed marina facility would provide additional boating services in this area of Norris Reservoir, and this level of new development would also lead to increased boating traffic in an area that currently receives moderate to heavy boating use. 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 to estimate recreational boating densities based on observations of boating use patterns across the Tennessee River system. Based on the recent study by TVA (2009b), TVA has estimated 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. The data used to estimate boating capacity 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 4th, 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 Norris Reservoir on an average daily basis on a nonholiday 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 capacity thresholds should allow at least 6.0 to 7.6 surface acres per boating unit. The current boating capacity thresholds are within or above optimum recreational boating capacity 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 capacity thresholds are within or above optimum recreational boating capacity 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 worksheet calculating 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 capacity thresholds for peak use holiday weekends are below optimum recreational boating capacity, thus resulting in a negative impact on boater's recreational experience.

As previously stated, the applicant has indicated that his initial plans involve providing slips for 60 vessels and 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. 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.

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. TVA plans to consult with TWRA regarding the implications of this finding and the outcome of the planned consultation will be included in the final EA.

Boating Safety

It is the responsibility of TWRA to enforce and administer the provisions of the Tennessee Boating Safety Act (TWRA 2008). The agency also has responsibility for fostering the safe use of the state's waters through a program of law enforcement, education, and access. TWRA enforcement officers are on the water to assist boaters as well as to enforce laws and to provide control when necessary. TWRA maintains seasonal boat patrols, however, staff reductions have impacted the capacity for boat patrols. TWRA has created programs and provided training to encourage and secure TVA Police and local law enforcement assistance with boat patrols.

The TWRA Boating Safety Regulations (ibid) prohibit reckless operation of watercraft, boating under the influence, and speeding. Boating under the influence means a blood alcohol content of 0.08 percent or higher, and speeding is concerned with traveling at speeds higher than idle in no-wake zones. Regulations indicate life jackets are required for boaters, and noise levels are limited to 86 decibels at 50 feet or more.

TWRA is also responsible for preparing annual Tennessee boating safety reports. According to the latest *Tennessee Boating Accident Statistical Report* (TWRA 2009), there were 158 reported boating accidents with 22 fatalities, and 35 personal watercrafts (PWCs) involved in accidents with zero fatalities in 2009. The leading type of motorized boating accident was collision with another vessel, typically during recreational cruising. The leading type of accident that resulted in the most fatalities was falls overboard, with nine occurrences. In 2009, alcohol use and operator inattention were the primary causes of accidents and fatalities. Operator inexperience and operator inattention were the primary causes for PWC accidents, with four occurrences each.

When compared to other reservoirs and systems in the Tennessee River, Norris has a relatively low occurrence of boating and PWC accidents (see Table 3-2). In 2009, (with the exception of commercial whitewater accidents on the Ocoee River), Chickamauga Reservoir had the highest occurrence of boating accidents reported at 18. The most PWC accidents in 2009 occurred on Tims Ford with five accidents. On Norris Reservoir, there were six boating accidents reported and no fatalities in 2009. See Table 3-2 for further boating and PWC accident data.

Table 3-2. Boating and Personal Watercraft Accidents and Fatalities in 2007 to 2009

Incidents	Overall	Norris	Chickamauga	Tims Ford
Accidents				
2009 Boating	158	6	18	10
2009 PWC	35	0	4	5
2008 Boating	159	unknown	unknown	unknown
2008 PWC	33			
2007 Boating	189	16	19	7
2007 PWC	61	6	10	
Fatalities				
2009 Boating	22	0	0	0
2009 PWC	0			
2008 Boating	20	unknown	unknown	unknown
2008 PWC	0			
2007 Boating	12	1	2	0
2007 PWC	5			

Source for data: TWRA (2007 and 2009)

As shown in Table 3-2, Norris has a lower occurrence of accidents and fatalities than reservoirs of similar sizes and usage. Under the proposed action, there would be an increase in recreational boating traffic, but it is expected that this impact on water-related recreation would be minor and safety would not be measurably reduced although boat carrying capacity could exceed maximum recommended density in the study area during summer peak use holiday weekends. Additionally, the applicant's phased construction plan would have an effect of lessening this potential impact further compared to an immediate buildout of 500 slips.

(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 a slight 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, Section 26a and DA permit approvals would be subject to the following standard conditions:

- 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.
- 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.
- 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.
- 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.
- 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.

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 be necessarily 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 21 May 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 12 May 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 F). 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 traffic issues with vehicles entering and exiting the proposed marina are expected.

() energy consumption or generation – No adverse effects

(x) safety –Water safety related issues are addressed in the “water-related recreation” and “navigation” sections above. The location of proposed marina and floating docks has been carefully considered to reduce potential conflicts with recreational boaters and reservoir traffic. As indicated in the navigation section, no commercial navigation, i.e., barge traffic, occurs on Norris Reservoir. Potentially unsafe conditions that could impact general public safety have been reduced to a minimum, i.e., reducing the number of boat slips from 799 slips to 500 slips, planned implementation of a phased construction plan, lighting/markings to enhance visibility, and conditions to require moored boats to be maintained within the harbor limits at all times.

(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. Anticipated long-term noise generators include vehicles, recreational vessels, 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. This would tend to soften the effects of this increase as the potential for new receptors also increases. Short- and long-term construction noise impacts would be minor to moderate, because noise would be temporary, intermittent, and 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 (see Section 2.2.1.2) 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 A). 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 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 F). On 7 August 2009 (see Appendix F), 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 16 November 2010 (see Appendix F). Furthermore, in order to reduce potential impacts to Site 40CP304, Section 26a and DA permit approvals 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 and DA permits 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 06 December 2010, THC responded to TVA's letter (see Appendix F), 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 16 November 2010 (see Appendix F), 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 State Historic Preservation Officer has concurred with this approach.

(x) land use classification – This portion of Campbell County is not subject to any land use plans or restrictions based on local municipal jurisdictions. During public involvement initiatives associated with this project, it was not determined that this proposed marina development would conflict with any plans or program of any planning or development agency or authority of interests. The land use classification would not be changed for the proposed marina. A mix of commercial, recreational, and residential land uses exist on the properties in the vicinity of the proposed marina project area. There would be no impacts to land use under the proposed action.

(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). In 2009, the Tennessee population grew 10.7 percent since 2000 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, 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 its 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 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, and the potential for effects on nearby property values would be smaller if the marina does not reach complete buildout as planned.

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 4.3.4) 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 for discussion of the potential for this proposal affecting 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 I, 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 capacity evaluation. As reservoir-front properties continue to develop, additional community boat docks and marinas would likely be proposed. Any future construction of 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. 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. 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. With the proposed 500-slip marina, and based on projections of the resulting recreation development and boating use estimates, it appears this section of Norris could accommodate typical summer weekend day boating activity without exceeding generally accepted recreational boating thresholds of 6.0 to 7.6 surface acres per vessel (TVA 2009b). Boating density factoring in the potential 500-slip marina was computed to be 7.8 surface acres per vessel on nonholiday summer weekend days and 5.7 surface acres per vessel on peak use holiday summer weekend days (Appendix J). TVA plans to consult with TWRA regarding the implications of this finding, and the outcome of the planned consultation will be included in the final EA.

Boating density calculations indicate heavy recreational boating traffic in the study area, especially during the three peak use summer holidays (Memorial Day, July 4th, and Labor Day). Additional boating traffic resulting from future boating facilities in the area would further contribute to boating congestion and safety concerns. As a result, efforts by TWRA and boat operators would continue in order to support safe boating, especially during peak use summer holidays. Boat operators and passengers are expected to continue to follow safe boating practices and State of Tennessee boating laws in order to support safe boating on the reservoir.

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. If a decision were made to issue the required Section 26a and DA permit approvals, special permit conditions would be incorporated to reduce the identified impacts to a minimum. When considering the impacts from past, present, and reasonably foreseeable future proposals, the primary, secondary, and cumulative impacts from this proposal are considered minor.

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CHAPTER 4.0. Alternatives**4.1. 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 4.2 and their impacts are compared in Section 4.3. Other alternatives not considered in detail are discussed in Section 4.4.

4.2. Description of Alternatives.**4.2.1. 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.

4.2.2. Applicant's Proposed Action. This alternative consists of the initial proposal and project changes described in Sections 1.3 and 1.4.

4.2.3. Applicant's Proposed Action With Added Special Conditions.

This alternative would result in similar impacts and benefits to the Applicant's Proposed Action. This alternative consists of the inclusion of special conditions developed for incorporation to the Section 26a and DA permits to further minimize/mitigate unavoidable environmental impacts to the maximum extent practicable (see Section 4.3.4).

4.2.4. 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.

4.3. Comparison of Alternatives.**4.3.1. 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 expected water-based 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.

4.3.2. Applicant's Proposed Action. The proposed action described in Sections 1.3 and 1.4 would potentially have various adverse and beneficial environmental and socioeconomic effects. These potential effects have been listed in Section 3.0 above.

4.3.3. Applicant's Proposed Action With Added Special Conditions.

This alternative would result in similar impacts and benefits to the alternative described in Section 4.3.2 above. Special permit conditions have been developed for incorporation into the permit to reduce or avoid adverse impacts to aesthetics, navigation safety, wildlife habitat, water quality, the aquatic environment, and historic and cultural values (see Section 4.3.4). 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.

4.3.4. 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*
- The fill created by the discharge shall be properly maintained to prevent erosion and other nonpoint sources of pollution. *Justification: Minimize impacts on water quality and the aquatic environment*
- 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, ripped, 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 on-site shoreline assessments. *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 Pointe Marina 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*
- 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 the DA permit approval does 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 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 their expense. *Justification: Public interest requirement (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 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*

CHAPTER 5.0. Other Considerations**5.1. Section 404(b)(1) Guidelines Determination.****5.1.1. 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.

5.1.2. 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.

5.1.3. 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 L.

5.2. 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.

5.3. 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.

5.4. Public Hearing.

Thirty-five requests for a public hearing were received from members of the public during the public involvement period. In a memorandum dated 21 January 2011, Ronald E. Gatlin, Regulatory Branch chief, denied the public hearing requests (Appendix M). 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.

5.5. Consideration of Public Comments.

Comments were received from 64 individuals (mostly area residents). Only one comment favored the proposal. The main concerns stated by the objectors 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 public comments have been reviewed and evaluated by USACE in the paragraphs that follow.

5.5.1. Navigation.

Many commenters indicated that there are already many marinas serving the area and the increased traffic and congestion would affect navigation safety.

Evaluation: The applicant has indicated that existing commercial marinas in the area are operating at capacity (Section 2.3.1). 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. Most applicants conduct a marketing analysis to decide whether to enter into a business enterprise such as a marina, and the USACE and TVA rely on those studies. On the issues of congestion and safety, the water-related recreation discussion in Section 3.4 explains that additional boat traffic would be generated by the marina. Based on observed boating patterns across the Tennessee River system, TVA estimates that only 25 percent of vessels stored at commercial marinas and private docks are likely to be in use during a typical summer weekend. The number for a peak use summer holiday weekend would be 35 percent. Based on boat-launching ramp parking space usage, estimates for boat-launching ramp usage for the same two periods ranged from 60 percent to 75 percent of full capacity. Even at full development (i.e., all construction phases completed), less than 150 additional vessels would likely be in use on a nonholiday summer weekend. Given the water surface available in the study area of the reservoir, it appears that nonholiday summer weekend boating activity could be accommodated without exceeding generally accepted optimum recreational boating density thresholds of 6.0 to 7.6 surface acres per boating unit on nonholiday summer weekend days. However, peak use holiday weekend boating capacity estimates exceed optimum recreational boating density thresholds. TVA plans to consult with TWRA regarding the implications of this finding, and the outcome of the planned consultation will be included in the final EA.

5.5.2. Recreation.

Several commenters expressed concerns, particularly Galilee Bible Camp, that the proposed action would prevent safe swimming and canoeing in the cove.

Evaluation: The site of the proposed marina is privately owned with no road infrastructure or developed water-access facilities. Only limited opportunities exist at present for public use and water-based recreation at the project site and in the associated cove. With the increased lake access and moorage, water-related recreation opportunities would most likely increase as well. This would provide a positive benefit and attraction for some residents and potential homeowners.

Because this increase would be achieved gradually during buildout of Pointe Marina; the increased demand and use would not substantially affect overall reservoir (water-related) recreation. Increased boating use within the study area would not jeopardize recreational boating on Norris Reservoir, as long as recreational boaters follow safe boating practices and State of Tennessee boating laws. Although there would be an increase in recreational boating traffic, it is expected that this impact on recreational boating opportunities would be minor, and safety would not be significantly reduced.

A small number of private residences occur at the head of the cove, and 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.

5.5.3. Aesthetics.

Several commenters indicated that the large facility would spoil the natural beauty of the landscape and obstruct reservoir views.

Evaluation: 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 be necessarily pleasing to another, i.e., there is no generally accepted rule as to what constitutes beauty.

Views of the proposed activities would be available from different locations on Norris Reservoir. However, 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 addition of several individual docking structures with a combined total space for 500 vessels would alter the existing landscape within the cove. However, since there are six marinas/resorts within a few miles of the proposed facilities, the views available of the proposed commercial marina would remain in context with views already present at those other marina locations.

Finally, 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. Impacts to visual resources associated with the proposed action would be relatively minor.

5.5.4. Noise.

Some commenters indicated that the proposed marina would significantly increase noise levels in the cove to unbearable levels.

Evaluation: Noise levels would increase slightly to moderately above background values during typical construction and operation activities. The loudest noise at the facility would probably occur during the construction phase and would be a short-term effect. However, one attenuating factor during this phase is that the construction activities would be performed during daylight hours. Expected long-term noise generators include passenger and heavy vehicles, recreational vessels, and PWC. The added boating activity would most likely occur on the same days and during the same times as the current boating activity on the reservoir. 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 transmission absorption effect created by foliage 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 transmission absorption 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.

5.5.5. Erosion.

Commenters indicated that the additional boat traffic and wake they generate would increase erosion in the cove.

Evaluation: The construction and operation of the proposed facilities is not likely to considerably change the site's shore erosion rate. 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. Therefore, Pointe Marina has indicated that, if necessary, it would stabilize the marina shoreline with riprap. 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.

5.5.6. Water Pollution.

Commenters expressed concerns that the cove will become contaminated with pollutants generated by the marina activities.

Evaluation: Only minor water quality impacts are expected to occur at the project site from the construction and operation of the marina. Since fuel would be sold at the marina, water quality impacts would range from minor (inadvertent leakage of petroleum products from vessel engines) to major (spills from the gas dispensers). In case of a large spill, Pointe Marina will be required to respond in accordance with their SPCC Plan, which is required by the state fire marshall's office. Since the marina is located at the mouth of the cove, river currents would help disperse the discharges quickly in the channel's water column. Pointe Marina has indicated that there will be marina pump-out stations at the docks, which will 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.

TDEC is responsible for enforcement of state standards for construction sites and storm water runoff under Section 402 of the CWA. 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 15 April 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.

The property is currently being used by private individuals for unauthorized dumping and camping, and neighbors have indicated that users leave large amounts of trash and refuse behind when they depart. These materials have the potential for reaching the waterway and contributing to pollution. The presence of the marina would minimize or eliminate this occurrence.

5.5.7. Property Values.

Commenters indicated that properties in the cove and nearby subdivisions would be devaluated by the existence of a commercial marina.

Evaluation: The marina operation has the potential to generate substantial economic benefits for Pointe Marina and would likely enhance its 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. Increased tax revenues would be derived because of the planned facilities. Concerns have been expressed that the construction of the docks would lower the value of nearby properties. The potential impact that facilities such as the one proposed may have on residential property values is highly debatable among real estate professionals. Potential economic effects on residential property values in the immediate area are speculative and would depend on market demand and current economic health. Considering the phased development approach planned by Pointe Marina, the choice and color of the building materials, and the well-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.

5.5.8. Property Rights.

Commenters raised various issues concerning property ownership. One commenter stated that the proposed project land is apparently owned by the local Methodist church, and it appears that deed restrictions exist that would limit the use of the land for religious, educational, and recreational purposes. Several commenters criticized TVA for selling the property they originally acquired when building Norris Dam and allowing commercial development in it. These commenters believe the property should have been developed into a park and/or offered back to the original property owners or their descendents.

Evaluation: TVA owns approximately 293,000 acres of public land located along the Tennessee River system. 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.

Historically, the property that makes up Tract XNR-585, locally known as Heatherly's Point, was purchased in fee by TVA from Harley Hatmaker, Harrison Heatherly, and Hobart Heatherly. In 1948, by Special Warranty Deed (Deed), TVA sold XNR-585 down to the 1,020-foot contour elevation (NSP) under authority of Section 4(k)(a) of the TVA Act of 1933. Section 4 (k)(a) was historically used by TVA to dispose of land or landrights for recreational uses to stimulate commercial recreation development. As stated in the Deed, the purpose of the sale of this tract was for religious, educational, and recreational use. Even though TVA sold the fee ownership of this tract to the 1,020-foot contour, it retained the right to flood the property to the 1,052-foot contour during spring floods and to the 1,034-foot contour at other times of the year. The Deed stated that buildings for human habitation could not be constructed below the 1,052-foot contour. The explicit right to construct water use facilities with prior approval from TVA was given in this deed. Finally, the Deed also requires that the subject tract would not be resold except as a whole.

In 1958, the Deed was modified to require that the land be used solely for recreational purposes. The Deed of Modification also changed the language associated with the resale of the subject tract to include that the land will not be leased, sold, or otherwise alienated except as a whole to better reflect the intent of the original deed.

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.

Further Evaluation: 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 public's right of navigation on the water surface. The proposed water use facilities would not substantially impede water access of nearby property owners or seriously interfere with boaters' surface water rights. No issues are known to USACE nor were any identified through our public interest review process that would violate private property rights.

FOR THE COMMANDER:

Date

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Regulatory Branch
Operations Division

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