UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeen G. Kelly.

Grand River Dam Authority Project No. 1494-251

ORDER APPROVING NON-PROJECT USE OF PROJECT PROPERTY

(Issued June 21, 2005)

1. The Grand River Dam Authority (GRDA), licensee of the Pensacola Project No. 1494, has applied for authorization to permit John Mullen, doing business as Thunder Bay Marina Facility (Thunder Bay), to construct three boat docks at Thunder Bay's existing commercial marina on the Duck Creek arm of the project's reservoir, Grand Lake O' the Cherokees (Grand Lake), located on the Grand/Neshoo River in northeastern Oklahoma. As discussed below, we are granting the application with certain modifications and conditions. This order is in the public interest because it approves the proposed dock construction in a manner that will minimize environmental impacts.

Background

2. Grand Lake, which extends 66 miles upstream of the Pensacola Project Dam, has a surface area of 46,500 acres and about 1,300 miles of shoreline. The reservoir's normal maximum water surface elevation is 745 feet Pensacola Datum (PD).[1] The project boundary is at the 750-foot PD contour line; thus, the Commission regulates only a strip of land (of varying horizontal distance, depending on the steepness of the terrain) around the reservoir's perimeter.

[1] PD (Pensacola Datum) is 1.07 feet higher than NGVD (National Geodetic Vertical Datum), which is a national standard for measuring elevations above sea level.

3. The Commission relicensed the Pensacola Project in 1992.[2] Under the recreation plan for the project, which was required by license Article 407 and subsequently approved by the Commission, shoreline development is controlled by demand and site availability.[3] The recreation plan provides that GRDA will address shoreline development problems as they arise and evaluate the success of this management program over time. The order approving the recreation plan requires GRDA to monitor recreation use and shoreline development levels at the project and to periodically file the results with the Commission.[4]

4. Duck Creek Cove is a 3-mile-long arm of Grand Lake that runs approximately north-south and enters the main body of the project reservoir about five miles north of the project dam. The cove varies in width from about 2,600 feet at its mouth to about 700 feet in its upper reaches. Thunder Bay, one of seven marinas in the cove, is located on the western shore, about two miles upstream from the cove's mouth. At the marina, Duck Creek Cove narrows from approximately 1,150 feet to about 800 feet.[5]

5. Thunder Bay was constructed prior to 1967, and it was already in place when the project was relicensed in 1992. The marina originally included three docks, labeled docks A, B, and C, placed from west to east along the cove's shoreline. In 1996, the Commission authorized GRDA to permit Thunder Bay to construct five additional docks -- docks D, E, F, G, and H.[6] Dock F was to be located just west of dock A. Docks D, E, and G were to be located just east of dock C. Dock H was to be placed somewhat behind and south of dock G. The proposed docks were to be floating docks, and their installation was not to require dredging or other shoreline development activities, which is still the case.

---

[2] 59 FERC ¶ 62,073.

[3] *See* 84 FERC ¶ 62,144 (1998).

[4] *Id.* at 64,232. *See also* 105 FERC ¶ 61,100 at 61,505, n. 6.

[5] Harbors View Marina, another of the seven marinas, is located directly across the cove from Thunder Bay.

[6] *See* 76 FERC ¶ 62,063 (1996). The 1996 application referred to the new docks numerically, but they have subsequently come to be referred to by alphabetic designations.

6. Thunder Bay constructed two of the five additional docks (docks D and E), but did not build docks F and G because it determined that their installation in the originally-approved configuration would conflict with existing docks and adversely affect navigation. Dock H also has not been constructed, although it could have been installed as originally approved.

7. On March 25, 2003, as supplemented on May 1 and May 12, 2003, and on March 8, 2004, GRDA filed an application requesting authorization to permit Thunder Bay to construct docks F, G, and H in newly-proposed locations.[7] As now proposed, dock F would be relocated to a position south and east of, and at almost a 90 degree angle to, dock E. Docks G and H would be repositioned south and parallel to dock F.[8] GRDA states that this will remove any conflict with the Harbors View Marina and alleviate water traffic congestion in the area.

8. On September 11, 2003, the Commission issued public notice of the application. The U.S. Department of the Interior—Office of the Secretary, the U.S. Fish and Wildlife Service (FWS), and the Oklahoma Archaeological Survey filed comments.[9] FWS does not oppose the proposed dock construction, but states that, given the configuration of the boat docks at the Harbors View Marina on the side of the cove opposite Thunder Bay, the proposed Thunder Bay docks will make navigation more dangerous and restrict access to public waters. It also asserts that the increased shoreline development will have cumulative impacts on fish and wildlife habitat and result in reduced public access to the shoreline.

---

[7] GRDA first filed an application to enable Thunder Bay to build the three docks on July 15, 2002. On January 31, 2003, the Commission issued a deficiency letter dismissing the application without prejudice to GRDA filing another application to construct the docks, and GRDA subsequently filed the application that we consider here.

[8] *See* the environmental assessment prepared by Commission staff, Figure 1.

[9] GRDA's application included, among other consultation documents, a letter dated April 16, 2003, from the Oklahoma Historical Society which states that no known historic properties are affected by the proposed dock construction. Oklahoma Historical Society states that it will concur with the Oklahoma Archaeological Survey should it conclude that the proposal affects no archaeological sites within the project area, or other sites or properties eligible for inclusion in the National Register of Historic Places, and that such properties are unlikely to occur within the project area.

9. Oklahoma Archeological Survey also does not oppose the application, stating that no known archeological sites are listed as occurring in this area, and that no archaeological materials are likely to be encountered, due to the area's topography and hydrology. It requests, however, that it be notified immediately if construction activity exposes any such artifacts. Furthermore, Oklahoma Archeological Survey states that there are Native American tribes which may claim cultural interests in and around the project lands.

10. Four owners of lakefront property -- Roger Tucker, president of the Cobblestone Homes, Inc., Jack R. Lenhart, Cheryl Lenhart, and Mike Brady of the Duck Creek Homeowners Association -- intervened in opposition to the proposed dock construction. In addition, Donald Read, president of the Lakeshore Property Owners Association and Lowell Caneday, PhD, who assisted in preparing GRDA's project recreation plan, filed a protest and comments, respectively.

11. The intervenors and commentors argue that the proposed dock construction will: (1) increase boating congestion, navigational safety hazards, and ambient noise in the Duck Creek Cove channel; (2) degrade the visual character and scenic quality of the cove's shoreline; (3) decrease public shoreline access; (4) adversely affect fisheries, wildlife, riparian and aquatic habitat, water quality, and shoreline stability; and (5) encroach on Roger Tucker's property, which is to the south and adjacent to the marina. They also argue that GRDA has failed to apply its rules and regulations governing the use of project shorelands and waters to Thunder Bay's proposal. Those rules and regulations limit the distance docks can protrude into the cove.[10]

12. Commission staff conducted an environmental review of Thunder Bay's proposal to determine whether and under what conditions GRDA's application should be approved. As a part of the review process, the staff prepared a draft environmental assessment (EA) of the proposed dock construction and provided a thirty-day period for interested parties to file comments on it. The original intervenors -- Roger Tucker, Jack Lenhart, Cheryl Lenhart, and Mike Brady -- submitted comments on the draft EA. Thunder Bay filed comments regarding staff's analyses in the draft EA. Also, the U.S. Fish and Wildlife Service (FWS), the National Park Service (NPS), and the Oklahoma Department of Wildlife Conservation filed comments. These comments, which generally

[10] Pursuant to Oklahoma state law, 82 O.S.A. § 861, et. seq., GRDA developed rules and regulations to govern the use of its shorelands and waters. Those rules and regulations were submitted as Appendix B to GRDA's recreation plan filed October 3, 1997. However, we did not approve the rules and regulations as license conditions. *See* 105 FERC ¶61,100 at 61,507.

reiterate concerns previously expressed in response to the notice of GRDA's application, have all been carefully considered in the final EA, which is attached to this order. Appendix A of the final EA contains staff's responses to comments on the draft EA. The EA concludes that construction of the marina would have minor to moderate adverse impacts and recommends approving it with certain modifications and conditions.

Discussion

13. The Pensacola Project license includes a standard provision authorizing the licensee to grant permission for certain types of non-project use and occupancy of project lands and waters without prior Commission approval.[11] However, the marina facilities that GRDA proposes to permit Thunder Bay to build are not within the scope of uses set forth under Article 410, and thus can only be permitted if the licensee files, and the Commission approves, an application to amend the license to allow the facilities and uses in question.[12]

14. Because of the growing popularity of Grand Lake for recreational boating, boating densities and navigational safety are increasingly important issues. The boating densities on Duck Creek Cove are high relative to the lake as a whole.[13] Furthermore, as acknowledged by GRDA, most of Grand Lake's large boat traffic occurs on the Duck Creek arm of the lake.

15. The cove and navigation channel narrow abruptly in the vicinity of Thunder Bay and Harbors View Marinas, and boaters navigating through this area in a south-to-north direction must move west to avoid one of Harbors View's existing docks, then east to avoid Thunder Bay's existing dock E. Boaters traveling north to south make similar dock avoidance maneuvers. If dock F were constructed at the proposed location, it would reduce the amount of navigable water available to boaters moving through this constricted channel corridor even further, to approximately 180 feet. At the proposed locations for dock G and H, the distance from shoreline to shoreline (as measured from the 750-foot contour elevation) is approximately 1,175 feet. Docks G and H would extend approximately 400 feet from the shore, leaving over 700 feet of open water for

[11] *See* 59 FERC 62,073 (1992 license order) at 63,321 (Article 410).

[12] *See* Grand River Dam Authority, 105 FERC ¶ 61,100 at 61,507.

[13] A July 4, 1997 aerial photographic survey showed an average 11.15 acres of open usable water per boat on Grand Lake as a whole and about 2.6 acres of open usable water per boat on Duck Creek Cove. *See* EA, Section 5.2.3.

navigation. Though these docks would not constrict the channel as severely as proposed dock F, they would also reduce somewhat the amount of navigable water.

16. In order to alleviate potentially constricting and crowding impacts of the newly proposed dock construction, we adopt the EA's recommendation and will require GRDA to alter the dock configuration by eliminating dock F and by shifting docks G and H 40 feet to the north.[14] In addition, dock G must be set back toward the shore 15 feet and two of its slips must be removed to shorten the dock by 18 feet. To ensure safe boat maneuvering in the space between docks G and E, those dock-G slips located nearest to dock E must be appropriately sized. Finally, one slip must be removed from dock H, shortening it by 21 feet. These changes will permit Thunder Bay to construct 40 new boat slips (for a total of 181 boats slips at the marina) without further narrowing the navigation channel or conflicting with existing adjacent shoreline uses.[15]

17. FWS recommended monitoring of cumulative effects, development of a plan or process to protect shoreline and reservoir habitats, and provision of mitigation for habitat and public access impacts. We agree with FWS' general concerns about cumulative effects, and the incremental environmental effects of the proposed docks have been analyzed along with the effects of other past, present, and reasonably foreseeable future action in the EA.[16] Furthermore, based on the analysis in the EA, we require that GRDA place in Thunder Bay's commercial use permit requirements that Thunder Bay: (1) restore degraded shoreline habitat by planting native riparian and littoral habitat vegetation[17] and (2) install aquatic habitat materials to provide shelter and better feeding opportunities for fish populations, and enhanced fishing opportunities for the public.[18]

---

[14] Construction of the docks, as approved, will not encroach on Mr. Roger Tucker's property, but will occupy only project lands and waters fronting Thunder Bay's property.

[15] *See* EA, Section 6.2.3.

[16] *See* EA, Sections 5.2.1, 5.2.2, and 5.2.3.

[17] This is to occur at a shoreline location selected in consultation with the Oklahoma Department of Wildlife Conservation (Wildlife Department) and with GRDA's approval.

[18] Specifically, Thunder Bay is to prepare a plan to provide artificial fish-habitat structures in consultation with the Oklahoma Department of Wildlife Conservation, and submit the plan to GRDA for its approval. The plan is to require installation of the

(continued)

18. FWS also expressed concern that the marina's expansion will result in the restriction of the public's use of public waters. The proposed facilities do not represent a new use for the cove**.** We have already previously approved five additional docks at this marina site in 1996. Here, we are acting on a new proposal involving three of these five docks, and requiring revisions to ensure that the new docks are constructed appropriately.

19. As noted, under the project's recreation plan, approved in 1998, shoreline development is currently controlled by demand and site availability. The marinas which we have previously approved are fully consistent with, and do not represent a significant expansion of, the current nature of shoreline development. The project has 30 informal public access areas, 46 boat ramps with 64 boat launching lanes, 19 marinas, three tailwater fishing facilities, 11 fishing piers, and seven swimming areas. These facilities are used at 30 to 80 percent capacity.[19]

20. Several intervenors and commenters argue that the expanded marina would exceed the geographic limits established in GRDA's reservoir rules and regulations, which provide, among other things, that piers, wharves, landings, and docks will be limited to a total maximum length perpendicular to the shoreline of 125 feet, or one-third of the distance from the adjacent shoreline, measured across the land and water of Grand Lake to the nearest opposite shoreline, whichever distance is less.[20] As noted above, GRDA's rules and regulations are not part of the project license, and GRDA therefore does not need our approval to waive them.[21] However, in acting on GRDA's request to amend its license, we must make our own determination as to whether the proposed action is consistent with the public interest. With staff's recommendations, which we have adopted, to eliminate dock F, to shift docks G and H to the north and to shorten them, and to appropriately size some of the slips on dock G, we are satisfied that the new

---

artificial fish-habitat structures at an undeveloped shoreline site that is accessible to the public. EA, Sections 5.2.

[19] *See* GRDA's FERC Form 80, *Licensed Hydropower Development Recreation Report*, filed July 14, 2003.

[20] *See* EA, Section 6.2.3, and Appendix B of the recreation plan filed on October 3, 1997.

[21] The Attorney General of Oklahoma has issued an opinion concluding that GRDA has authority to waive its regulations and grant permits for docks that exceed the otherwise application 125-foot limitation. *See* 2003 OK AG 25 (June 16, 2003).

docks will not narrow the navigation channel or conflict with shoreline uses, and, on that basis, we will approve the amendment application.

21. With respect to the possibility that construction of the docks could (although state authorities deem it unlikely) result in the discovery of archeological materials, we are requiring GRDA to include in the permit for the boat docks a condition that, if such materials are discovered during construction, the permittee must halt construction while GRDA consults with the Archeological Survey and Native American groups, as required by the project license. *See* ordering paragraph (B) (5).

Conclusion

22. We conclude that construction of the proposed marina facilities, as conditioned herein, will not constitute a major federal action significantly affecting the quality of the human environment, will not interfere with licensed project purposes, and will be consistent with the project's recreation plan and with the public interest. Accordingly, we approve, with conditions, GRDA's application to permit the proposed use of project lands and waters.

The Commission orders:

(A) Grand River Dam Authority's application for non-project use of project lands and waters of the Pensacola Project No. 1494, filed on March 25, 2003, and supplemented on May 1, and May 12, 2003, and March 8, 2004, is approved as modified herein.

(B) The licensee shall include the following conditions in any commercial-use permit issued to John Mullen, d/b/a, Thunder Bay Marina Facility (permittee):

(1) For navigational safety reasons and for compatibility with existing adjacent shoreline uses, permittee shall modify the dock layout drawing included in its permit application. Specifically, dock F shall be eliminated and docks G and H shall be shifted 40 feet to the north. In addition, dock G shall be set back toward the shore 15 feet and two of its slips shall be removed to shorten the dock by 18 feet (one 44-foot slip and one 50-foot slip). Also, to ensure safe boat maneuvering in the fairway space between docks G and E, those dock-G slips located nearest to dock E shall be sized to accommodate boats that meet the fairway-width criteria of 1.5 times the longest-length boat that would be using that fairway. Further, one 70-foot slip shall be removed from dock H to shorten it by 21 feet. Permittee shall submit the modified dock layout drawing to Grand River Dam Authority for approval. Permittee shall install the subject docks as shown on the approved modified dock layout drawing.

(2) The installed docks, as specified in ordering paragraph (B)(1), above, shall not extend into the cove more than one-third of the distance from the adjacent shoreline to the nearest opposite shoreline, as measured from the 750-foot contour elevation.

(3) Permittee shall submit a plan to restore shoreline habitat, prepared in consultation with the Oklahoma Department of Wildlife Conservation, to the Grand River Dam Authority for approval. The plan shall provide for the planting of riparian and littoral habitat vegetation at a shoreline site equal to one-half the size to the total land and water area occupied by docks G and H, as specified in (B)(1) above. To maintain the natural aesthetic character of the shoreline landscape, plant materials native to the area shall be used to restore degraded habitat conditions. Permittee shall implement the approved plan, including any changes required by the Grand River Dam Authority.

(4) Permittee shall submit a plan to install artificial fish-habitat structures, prepared in consultation with the Oklahoma Department of Wildlife Conservation, to the Grand River Dam Authority for approval. The plan shall provide for the installation of fish-habitat structures at an undeveloped shoreline site that is accessible to the public. The structures shall be sized to cover an area equal to one-half the total development footprint of docks G and H, as specified in (B)(1) above. To ensure the long-term structural integrity of the fish-habitat installations, the structures shall be built with materials such as oak or cedar. Permittee shall implement the approved plan, including any changes required by the Grand River Dam Authority.

(5) Upon discovery of any archaeological materials during construction of the marina facilities covered by the permit, permittee shall immediately stop construction activities and contact the Grand River Dam Authority. Pursuant to article 409 of the license for Project No. 1494, GRDA will then consult with the Oklahoma Archaeological Survey, and any Native American tribes/groups that may have an interest in the discovery in order to evaluate the significance of the discovery and to determine what steps to take to protect any significant resources. GRDA will advise the permittee as to when, and under what conditions, construction can resume.

(6) Permittee's use and occupancy of project lands and waters shall not endanger health, create a nuisance, or otherwise be incompatible with the project's overall purposes, including public recreation and resource protection.

(7) Permittee shall take all reasonable precautions to ensure that its permitted use and occupancy of project lands and waters shall occur in a manner

that will protect the scenic, recreational, and other environmental values of the project.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713 (2004).

By the Commission. Commissioner Kelly dissenting with a separate statement attached.

(S E A L)

Linda Mitry,
Deputy Secretary.

FINAL ENVIRONMENTAL ASSESSMENT

APPLICATION FOR NON-PROJECT USE OF PROJECT LANDS AND WATERS

Pensacola Project
FERC No. 1494-251
Oklahoma

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration and Compliance
888 First Street, NE
Washington, D.C. 20426

May 2005

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ACRONYMS AND ABBREVIATIONS

Commission	Federal Energy Regulatory Commission
COE	U.S. Army Corps of Engineers, Tulsa District
DO	dissolved oxygen
EA	environmental assessment
FERC	Federal Energy Regulatory Commission
FWP	Fish and Wildlife Propagation
FWS	U.S. Fish and Wildlife Service
Grand Lake	Grand Lake O' the Cherokees
GRDA	Grand River Dam Authority
Interior	U.S. Department of the Interior
msl	mean sea level
OAS	Oklahoma Archaeological Survey
ODPS	Oklahoma Department of Public Safety
ODWC	Oklahoma Department of Wildlife Conservation
OHS	Oklahoma Historical Society
ONHI	Oklahoma Natural Heritage Inventory
OWRB	Oklahoma Water Resources Board
PD	Pensacola Datum
Rules and Regulations	Rules and Regulations Governing the Use of Shorelands and Waters of GRDA
SA	State Archaeologist
SHPO	State Historic Preservation Officer
Thunder Bay	Thunder Bay Marina

FINAL ENVIRONMENTAL ASSESSMENT

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration and Compliance
Washington, D.C.

Pensacola Project
FERC Project No. 1494-251

1.0 APPLICATION

Application Type:	Non-Project Use of Project Lands and Waters
Date Filed:	March 25, 2003; supplemented May 1 and May 12, 2003 and March 8, 2004
Applicant:	Grand River Dam Authority
Water Body:	Grand Lake O' the Cherokees
Nearest Town:	Ketchum
County & State:	Delaware County, Oklahoma

2.0 PURPOSE AND NEED FOR ACTION

On March 25, 2003, the Grand River Dam Authority (GRDA or licensee), licensee for the Pensacola Project (FERC No. 1494), filed an application for non-project use of project lands and waters. Specifically, GRDA requests Commission approval to permit John Mullen, doing business as Thunder Bay Marina Facility (Thunder Bay or grantee), to reconfigure three previously-permitted-but-not-constructed docks at its existing commercial marina on the Duck Creek arm of Grand Lake O' the Cherokees (Grand Lake), the project reservoir.

Two of the docks in Thunder Bay's proposal cannot be constructed as previously permitted because they have been displaced by the marina's existing docks. Thunder Bay proposes to modify the third dock, as previously permitted, in order to accommodate the two displaced docks. Given that the previous permit for the two displaced docks has been nullified, we are considering Thunder Bay's proposal to be for the addition of two docks and modifications to a third permitted-but-not-constructed dock.

On May 1and May 12, 2003, GRDA filed supplements to the application consisting of copies of letters received in response to its request for comments on the application. On March 8, 2004, GRDA filed another application supplement affirming its approval of Thunder Bay's dock proposal as previously submitted.

The license for the Pensacola Project contains a standard article (Article 410) delegating to the licensee the authority to grant permission for certain types of non-

project use and occupancy of project lands and waters without prior Commission approval (FERC, 1992). However, Thunder Bay's dock proposal is not within the scope of Article 410's provisions and, therefore, can only be permitted if the Commission approves GRDA's application.

The Commission has conducted an environmental review of Thunder Bay's proposal to determine whether and under what conditions GRDA's application should be approved. As part of the review process, Commission staff prepared a Draft Environmental Assessment (DEA) for the application and provided a 30-day period for interested parties to file comments on the DEA. This Final EA (FEA), which considers the comments received on the DEA, will be used to support the Commission's decisions, and action, on the licensee's application.

3.0 PROPOSED ACTION AND ALTERNATIVES

3.1 Dock Proposal

On July 25, 1996, the Commission approved GRDA's application to permit the expansion of Thunder Bay Marina from a 3-dock, 80-slip development to an 8-dock, 209-slip facility.[1] Two of these five additional docks have been constructed. After constructing the three docks shown in figure 1, the marina would contain a total of 204 boat slips instead of 209 slips as originally permitted. However, the marina would occupy more total shoreline than originally permitted. No dredging or other shoreline development activities are proposed in connection with the docks. The 63 boat slips comprising the three docks would be available for rent to the marina's patrons.

GRDA's Board of Directors waives the dock-placement provisions of its Rules and Regulations for most commercial-dock proposals and approves such proposals "as submitted" or "as submitted, subject to modification." GRDA's application contains no licensee-imposed changes to Thunder Bay's proposed dock plan.

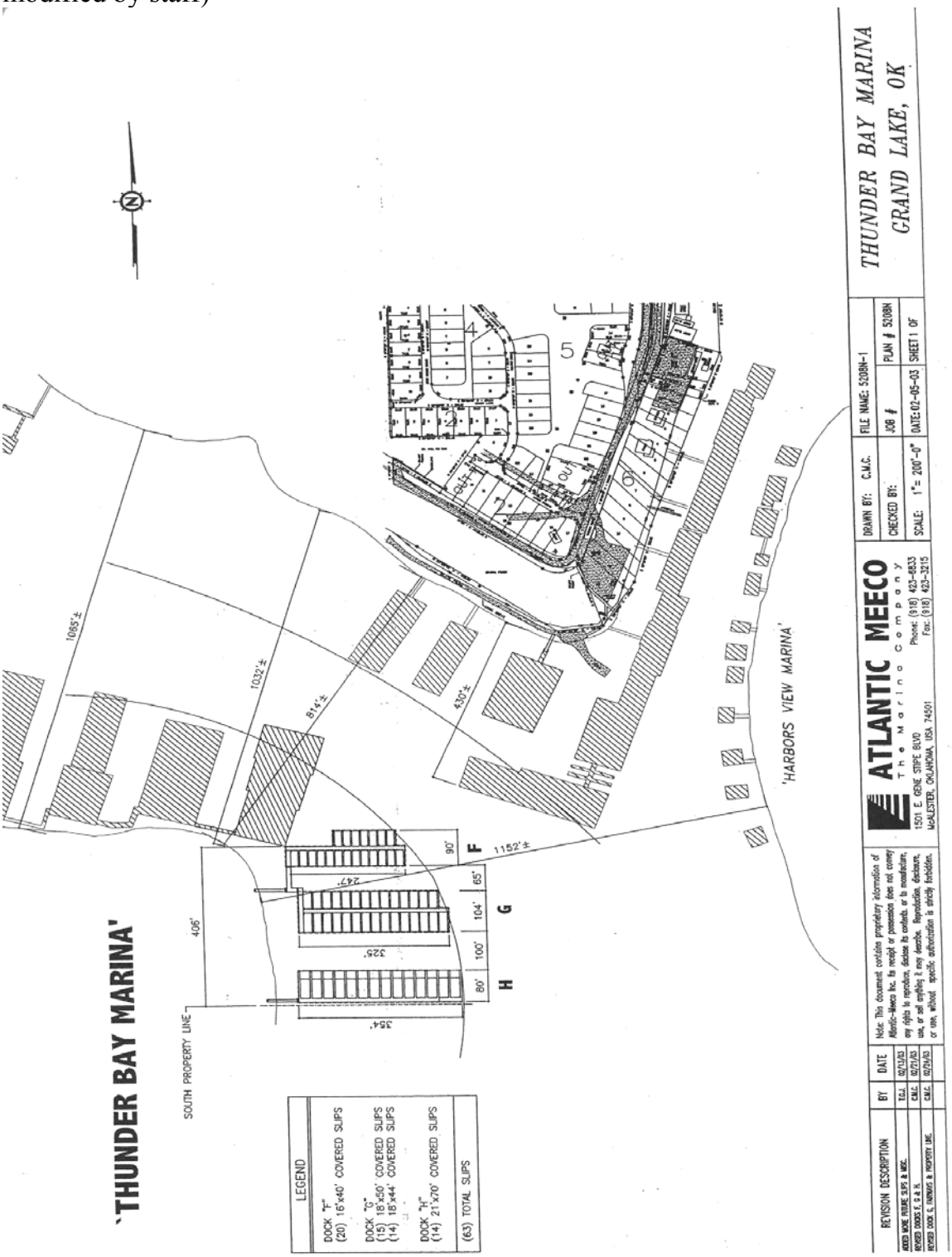
3.2 Action Alternatives

This DEA considers the following measures that are not part of the proposal. These action alternatives have been included in our assessment because they would protect, mitigate adverse effects on, or enhance the project's environmental values.

1. Plant native vegetation at a selected shoreline location to compensate for the incremental adverse effects of the docks and associated boats on terrestrial and aquatic resources.

[1] See Order Approving Non-Project Use of Project Lands, Issued July 25, 1996 (76 FERC ¶ 62,063).

Figure 1. Proposed docks at Thunder Bay Marina. (Source: GRDA, 2003a, as modified by staff)



2. Install artificial habitat structures at a selected shoreline location to provide more shelter and better foraging opportunities for fish, and enhance fishing opportunities for the public.
3. Alter the dock proposal to alleviate further crowding and boat-traffic congestion.
4. Establish contingency procedures for taking into account any archaeological resources discovered during dock construction.

3.3 No-Action Alternative

Under the no-action alternative, the Commission would not approve GRDA's non-project-use application. The licensee, in turn, could not grant Thunder Bay permission toconstruct the three docks, as proposed. However, Thunder Bay could still construct one of the three docks (dock H), as presently configured, since its currently-permitted location does not conflict with existing docks and the adjacent navigation channel.[2]

3.4 Alternative Considered but Eliminated from Further Analysis

In pertinent part, the dock-placement provisions of GRDA's Rules and Regulations: (1) limit docks to a maximum total length, perpendicular to the shoreline, of 125 feet or one-third of the distance from the adjacent shoreline to the nearest opposite shoreline, whichever is less; and (2) require the boat slips of installed docks to be oriented perpendicular to the shoreline, with only one opening to the waterfront side of the dock. For these provisions, the term "shoreline" is defined as contour elevation 750 feet mean sea level (msl) on Grand Lake (GRDA, 2001).

If the above provisions were applied to Thunder Bay's proposal, the three docks would require an extensive amount of additional shoreline. Also, considering the number and size of the docks and slips involved, some amount of near-shore dredging would likely be required to accommodate the larger boats that would use these facilities. Further, a considerable amount of additional on-shore development would be required to secure and provide access to the docks.

Although installing the docks in conformance with GRDA's dock-placement standards would minimize further open-water obstruction and navigational constriction, this type of dock installation would result in: (1) greater construction, operation, and maintenance costs; (2) higher levels of effects on the natural- and scenic-resource values and conditions of the project; and (3) conflicts and encroachments with respect to other

[2]As currently permitted, dock H would: (1) be constructed approximately where dock G is now proposed to be located; (2) be 296 feet long instead of 354 feet long, as now proposed; and (3) consist of 12, 20x60-foot slips instead of 14, 21x70-foot slips, as now proposed.

shoreline uses and occupancies. Therefore, this alternative has been eliminated from further environmental analysis.

4.0 AGENCY CONSULTATION AND PUBLIC INVOLVEMENT

The application documents GRDA's efforts to consult with appropriate resource agencies. By letter dated March 25, 2003, the licensee provided the consulted agencies with information about the proposed docks and requested comments related to their respective interests and expertise. The Oklahoma Archaeological Survey, State Archaeologist (OAS); the Oklahoma Historical Society, State Historic Preservation Officer (OHS); and the U.S. Fish and Wildlife Service (FWS) were the only agencies to respond to the licensee's consultation letter.

By letter dated March 28, 2003, OAS states it has no objection to the proposed docks and that the nature of the proposal is such that it should have no impact on prehistoric archaeological resources. By letter dated April 16, 2003, OHS states that no known historic properties would be affected by the proposal. OHS also states that should OAS conclude there are no archaeological sites or other types of properties eligible for inclusion in the National Register of Historic Places (historic properties) within the project area, and such properties are unlikely to occur, it concurs with that conclusion.

By letter dated May 8, 2003, FWS expresses concern about the cumulative environmental effects of rapid shoreline development at Grand Lake, including reduced public access, increased boat-traffic congestion in the lake's navigational channels, and the loss of terrestrial and aquatic habitat. FWS states that in the past, mitigation has not been provided to offset these cumulative impacts.

Also, the licensee sent notice of the proposed docks to adjacent landowners and to Duck Creek Homeowners Association (DCHA), which had expressed an interest in the proposal. GRDA received the following comment letters in response to the notice:

Entity	Letter Dated
Jack R. Lenhart	April 1, 2003
Roger Tucker	April 15, 2003
Mike Brady	April 22, 2003

In addition to the letters listed above, the licensee also included in its application filings a copy of a letter from Thunder Bay, dated May 1, 2003, responding to the comments submitted by Brady and Tucker.

On September 11, 2003, the Commission issued a notice of GRDA's application. The Notice of Application, which solicited comments, motions to intervene, and protests, was published in the *Federal Register* and the *Delaware County Journal* (Jay,

Oklahoma). The deadline for filing responses to the notice was October 14, 2003. OAS and the U. S. Department of the Interior (Interior) were the only agencies to respond to the notice.

By letter filed September 29, 2003, OAS states that an archaeological field inspection of the area potentially affected by the proposal is considered unnecessary because: (1) no known archeological sites are listed as occurring in this area; and (2) no archaeological materials are likely to be encountered, due to the area's topographic and hydrological setting.

By letter filed October 14, 2003, Interior provides comments similar to those contained in the May 8, 2003 letter from FWS to GRDA concerning the rapid pace of shoreline development around Grand Lake and the lack of monitoring and mitigation of related cumulative impacts on fish and wildlife habitat, recreational boating and angling, and public access to project lands and waters. Interior recommends that appropriate measures be taken to mitigate adverse effects on important environmental resources.

The Commission also received the following filings from other interested entities in response to its application notice. Although several letters were received after the October 14, 2003 deadline, we have considered the information and comments contained in these filings in our review of the application.

Entity	**Filing Date**	**Type of Filing**
Roger Tucker	October 6, 2003	Intervention
Jack R. Lenhart	October 6, 2003	Intervention
Donald W. Read	October 3, 2003	Protest/Comments
Cheryl Lenhart	October 14, 2003	Intervention
Thunder Bay	October 14, 2003	Comments
Roger Tucker	October 14, 2003	Protest/Comments
Mike Brady	October 15, 2003	Intervention
Mike Brady	October 15, 2003	Protest
Roger Tucker	October 20, 2003	Protest/Comments
Jack R. Lenhart	November 3, 2003	Comments
Lowell Caneday, Ph.D.	November 19, 2003	Comments
Mike Brady	December 17, 2003	Comments
Roger Tucker	March 26, 2004	Comments
Roger Tucker	April 7, 2004	Comments
Mike Brady	April 7, 2004	Comments
Mike Brady	June 3, 2004	Comments
Mike Brady	June 3, 2004	Comments

In his October 15, 2003 filing, Mr. Brady requests that all of his previous filings under FERC No. 1494-243 be included as part of the record for this proceeding (FERC No. 1494-251).[3] Commission staff have considered in this proceeding all the filings received in response to its notices under FERC No. 1494-243 to the extent that the information and comments in those filings are still relevant to GRDA's pending application and Thunder Bay's current proposal.

In his October 20, 2003 filing, Mr. Tucker refers to an enclosed copy of his May 28, 2003 letter to GRDA as a protest/intervention against Thunder Bay's dock proposal. Since Mr. Tucker has already intervened in this proceeding through his October 6 filing, we are considering his October 20 filing as a supplement to his October 14 protest and comments.

The above filings express a number of concerns that are relevant to the proposed action. The *Environmental Analysis* section of this DEA considers the information and comments contained in these filings that pertain to the following issues:

- Shoreline stability and soil erosion
- Wildlife and riparian habitat
- Threatened and endangered species
- Water quality and lake-bed sedimentation
- Fisheries and littoral habitat
- Wetland functions and values
- Boat traffic and navigational safety
- Shoreline occupancy and use
- Public access to project lands and waters
- Scenic views and ambient noise levels
- Archaeological sites and other historic properties

[3]On July 15, 2002, GRDA filed a previous application for authorization to permit the reconfiguration of Thunder Bay's docks. The Commission issued public notices of this application on September 12 and October 8, 2002 under FERC No. 1494-243. In response to these notices, the Commission received the following filings: five motions to intervene with opposing comments; three protests with comments; and nine comment letters. By letter to GRDA dated January 31, 2003, the Commission found this application patently deficient and dismissed it without prejudice regarding the licensee's filing of another application for reconfiguring the subject docks.

Other issues raised in the above filings, which are outside the scope of this DEA, include: (1) the licensee's permitting process; (2) GRDA's development of a shoreline management plan for Grand Lake; and (3) compliance matters related to the non-project-use provisions of the project license.

On November 9, 2004, the Commission issued a Notice of Availability of DEA for the subject application. The following entities filed comments pursuant to the notice.

Entity	Filing Date	Type of Filing
U.S. Fish and Wildlife Service	December 6, 2004	Comments
Thunder Bay Marina	December 7, 2004	Comments
Cheryl Lenhart	December 7, 2004	Comments
Oklahoma Department of Wildlife Conservation	December 8, 2004	Comments
Jack Lenhart	December 8, 2004	Comments
Mike Brady	December 9, 2004	Comments
Roger Tucker	December 16, 2004	Comments
National Park Service	December 16, 2004	Comments
Thunder Bay Marina	December 27, 2004	Responses to Comments
Mike Brady	February 24, 2004	Responses to Comments

All comments received on the DEA have been carefully considered. For those DEA filings providing additional relevant information, or resulting in changes to staff's analyses of impacts, the EA has been updated and revised accordingly. Appendix A contains staff's responses to those comments not fully addressed in the EA. Similar comments contained in more than one filing are responded to once in the appendix under the entity with the earliest filing date.

5.0 ENVIRONMENTAL ANALYSIS

5.1 General Setting

The Pensacola Project is located about 78 miles northeast of Tulsa on the Grand (Neosho) River in Craig, Delaware, Mayes, and Ottawa counties, Oklahoma. In addition to hydropower generation, project lands and waters are used for flood control, water supply, recreation, and environmental resource protection (FERC, 1992).

The project dam impounds Grand Lake, which extends approximately 66 miles upstream from the dam and has about 1,300 miles of shoreline. Grand Lake's water levels are managed according to a rule curve established by article 401 of the project's license. License article 401, as amended, requires lake levels to be maintained between

elevations 741 and 744 feet PD, in accordance with seasonal target levels (FERC, 1996). Grand Lake has a surface area of 46,500 acres and a storage capacity of 1,680,000 acre-feet at a normal maximum water surface elevation of 745 feet Pensacola Datum (PD).[4]

In operating the project reservoir for hydropower generation, GRDA controls water levels up to elevation 745 feet PD. Between reservoir elevations 745 feet PD and 755 feet PD, the U.S. Army Corps of Engineers (COE) dictates flow releases from the project dam for flood control (FERC, 1992). Also, COE manages flowage-easement lands around Grand Lake for flood control (letter from R.L. Suthard, Jr., Colonel, Corps, Tulsa District, Tulsa, OK, to J. Harwood, Arrowhead Yacht Club, Ketchum, OK, dated March 8, 2002). Consequently, the shoreline lands around Grand Lake are used for power-pool flowage below the 745-foot contour elevation and for flood-pool flowage over the next 10 vertical feet.

Most land surrounding Grand Lake is privately owned and many areas along its shorelines have become developed with commercial resorts, private homes and condominiums, municipal and state parks, marinas, and private docks. GRDA owns title to the shoreline up to the 750-foot contour elevation. The licensee manages the lake's shorelines with a permitting system and operates a lake patrol to monitor and inspect permitted shoreline uses and to enforce its boating regulations (FERC, 1992).

Duck Creek Cove is located about 3 miles east of the town of Ketchum. The cove is a 3-mile-long arm of Grand Lake that runs approximately north-south and enters the main body of the reservoir about 5 miles north of the project dam. The cove varies in width from about 2,600 feet at its mouth to about 700 feet in its upper reaches. State Highway 85 runs parallel to and 1 mile west of the cove, providing easy access to the extensive residential and recreational developments in the Duck Creek area. The topography of the area is characteristic of the rolling terrain of the Ozark Plateau.

On August 18, 2003, Commission staff visited the project. Staff conducted a site/facility survey of Thunder Bay Marina and toured the shorelines of Duck Creek Cove. Staff observations during the visit have been considered in our environmental analysis of Thunder Bay's proposal.

5.2 Proposed Docks

This section of the DEA analyzes the environmental effects of constructing and operating the three docks, as proposed. The direct and indirect effects of the docks, and associated boating activities, are analyzed first under each resource section. These effects

[4]Pensacola Datum is 1.07 feet higher than National Geodetic Vertical Datum, which is a national standard for measuring elevations above sea level.

are then analyzed within each section, from a cumulative-impact standpoint.[5] The geographic and temporal scopes of these analyses vary with each resource and issue.

5.2.1 Terrestrial Resources

5.2.1.1 Affected Environment

Shoreline Stability and Soil Erosion

The shores of Grand Lake are primarily comprised of stony, silty-loam soils on 5- to 20-percent slopes. This soil composition also occupies timbered upland ridges in cherty limestone areas. The soil surface layer is dark grayish brown in the upper 2 inches and pale brown in the lower horizon. The subsoil, which is a brown, stony, silty, and clay loam, is about 60 percent chert by volume (GRDA, 2002).

Substantial shoreline erosion has occurred in certain areas of the lake as a result of fluctuating water levels and natural weather conditions. Wake-generated waves of powerboats and personal watercraft have also contributed to this erosion (FERC, 2002).

During staff's August 2003 site visit, the shoreline in the vicinity of Thunder Bay Marina was observed as being rocky with little erosion potential. The upper slopes are steep and fairly well vegetated, with no evidence of soil erosion. However, the shoreline where dock H is proposed to be located has been eroded by wave action.

Wildlife and Riparian Habitat

Low areas and stream corridors in the project area are typically dominated by eastern cottonwood, willow, green ash, elm, and maple. Generally, all woody vegetation at or below about elevation 746 feet PD has developed since 1940 because prior to the construction of the reservoir, all woody vegetation around Grand Lake's perimeter and below that elevation was removed.

Wildlife in upland deciduous forests around Grand Lake includes the white-tailed deer, striped skunk, raccoon, fox squirrel, opossum, eastern cottontail, and red fox. Raptors, such as bald eagle, barred owl, red-tailed hawk, and red-shouldered hawk, may also use the area.

---

[5]The Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* define cumulative impact as the impact on the environment that 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 over time.

Migrating and wintering waterfowl frequent Grand Lake and its adjacent wetlands. From September through January, gadwall, green-winged teal, and snow geese are frequent winter residents. During spring migration, blue winged teal, northern shoveler, lesser scaup, and ruddy duck are common on Grand Lake. Canada geese, wood ducks, and mallards are year-round residents, while pelicans frequent the lake from February to November.

In a study included in the 1989 Proceedings of the Oklahoma Academy of Science, Stancill et al. (1989) found that the mallard duck was the only upland-nesting waterfowl species that appeared to reproduce on Grand Lake and its associated wetlands. Mallard broods were observed exclusively in developed areas of the lake. The study estimated that the overall mallard production on the reservoir was about 491. Also, the study suggested that fluctuating water levels would likely destroy nests and limit nesting waterfowl success on adjacent upland sites.

The wood duck was the only cavity-nesting waterfowl species observed and most of the wood duck production occurred on associated wetlands, especially along tributary creeks and rivers. The study suggested that brooding cover is the limiting factor for wood duck production on Grand Lake and that enhancement of brooding cover would be more beneficial to wood duck production than installation of artificial nesting structures. Other waterfowl species observed included northern shovelers and blue-winged teal from March to April, but no nest or broods were noted.

Threatened and Endangered Species

The only federally-listed threatened and endangered species known to occur in Delaware County are the gray bat and the bald eagle (ONHI, 2003).

During the summer, gray bats roost in caves in northeastern Oklahoma, including several around Grand Lake (FWS, 1982). The proposed docks and associated boats would have no affect on any caves or the gray bat.

No bald eagle nests are known to occur along the shoreline of Grand Lake, although a nest may have been located on the west side of Monkey Island, about 8 miles east of Thunder Bay Marina, in 2001 (letter from J. Mallet-Eakin, Fur'n Feathers Sanctuary, regarding the proposed expansion of the Shangri-La Resort, FERC Project No. 1494-228, dated April 12, 2001). Eagles may nest along the river downstream of the Pensacola dam, where food resources are abundant and large trees are available for nesting, perching, and roosting (GRDA, 2003b). Potential nesting sites identified during GRDA's habitat evaluation are located more than 5 miles from the dam. Bald eagles winter on Grand Lake, with numbers peaking in January or February.

The proposed docks would not affect nesting bald eagles because no potential nesting habitat would be removed, and the nearest known nest is located beyond a point

where dock-related noise would cause disturbance. Also, wintering bald eagles would not be affected because construction and operation of the docks, and increased boating activity associated with the docks, would occur during the summer.

5.2.1.2 Environmental Effects

Shoreline Stability and Soil Erosion

Construction of the proposed docks would have no discernable affect on the shoreline in the vicinity of the marina. However, wave action from increases in boating activity associated with the docks would contribute to cumulative effects on shoreline areas that are unstable and susceptible to erosion. The boat-traffic controls GRDA has implemented in Duck Creek Cove and other areas of the lake (see section 5.2.3) have helped to alleviate these cumulative shoreline effects.

Wildlife and Riparian Habitat

Wildlife and waterfowl are not likely to extensively use the proposed site for the docks because of the area's already-developed condition and its ongoing use by marina patrons. Nevertheless, construction of the proposed docks would temporarily displace the existing wildlife community and resultant increases in boat traffic and human disturbance would reduce the potential for wildlife to re-inhabit this area, and would further discourage wildlife use along this section of shoreline. Because no new ground-disturbing or vegetation-clearing activities are required to construct the docks, effects on existing wildlife communities are expected to be minor and temporary. The development would, however, contribute to cumulative adverse effects on Grand Lake's wildlife and riparian habitats.

As observed during the Commission staff's recent visit to the project, there is a lack of contiguous shoreline lands with undeveloped, undisturbed habitat for riparian wildlife species in Duck Creek Cove. The proposed docks would cause further fragmentation and degradation of the terrestrial components of the cove's ecosystem that have occurred, and are continuing to occur, as the result of intensive development and high levels of human activity.[6] The habitat-restoration measure described in section

[6]Regarding continuing ecological impacts within the cove, the Commission recently found GRDA in violation of the project license for permitting the clearing of about nine acres of vegetated wetlands at a shoreline area located less than one mile from the proposed dock site. The Commission has required the licensee to mitigate for the loss of habitat and other resource values resulting from this clearing incident. We have considered this incident, and the Commission's compliance action, in our cumulative-impact analyses of the proposed docks.

5.3.1, and evaluated in section 6.2.1, would compensate for this incremental increase in cumulative impacts on the project's terrestrial resources.

5.2.2 Aquatic Resources

5.2.2.1 Affected Environment

Water Quality and Lake-Bed Sedimentation

The Oklahoma Water Resources Board (OWRB) monitors numerous water quality parameters on Grand Lake under the state's Beneficial Use Monitoring Program. Under OWRB's monitoring program, 12 sites are sampled to represent the riverine, transitional, and lacustrine zones of the lake, as well as the major embayment arms of the water body. The water quality in Grand Lake is typical of large reservoirs.

During the winter, the lake water holds more dissolved oxygen (DO) in comparison to the warmer late spring, summer, and early fall months. The deeper areas of the lake become thermally stratified during the summer, with DO concentrations below 5 mg/l – the water quality standard for the Fish and Wildlife Propagation (FWP) beneficial use – in the hypolimnion.[7] Only a few surface water DO samples in August indicated a concentration below 5 mg/l (OWRB, 2001).

The trophic status of the lake is assessed using Carlson's Trophic State Index (TSI) and chlorophyll *a* as the indicator parameter of primary interest. Calculated TSI values indicate that the lake is eutrophic (FERC, 2002).[8] Nutrient enrichment (e.g., ortho-phosphate and nitrate) is most prevalent in the upper section of the lake and decreases toward the dam. Secci depths are typically in the 3- to 100-cm range and are normally deeper near the dam than upstream areas near Twin Bridges.[9] Algal blooms are more common in the upper sections of the lake than near the dam.

---

[7]Hypolimnion is the lower, cooler layer of a lake during summertime thermal stratification.

[8]Trophic state is the degree of eutrophication of a lake. Eutrophication is the process of physical, chemical, and biological changes associated with nutrient, organic-matter, and silt enrichment and sedimentation of a lake or reservoir. A eutrophic water body typically is rich in dissolved nutrients, has high photosynthetic activity and low transparency, and is often seasonally deficient in oxygen.

[9]Secchi depth is a measure (in meters or feet) of the transparency of water obtained by lowering a black and white, or all white, disk (Secchic disk, 20 cm in diameter) into the water until it is no longer visible.

The high nitrogen concentrations in the lake are primarily attributable to the migration of chicken litter by-products from up-gradient areas states through subterranean aquifers and the lake's tributaries. The state of Oklahoma has been involved in several recent law suits and is currently contemplating additional legal action to address this problem (GRDA, 2002). Other sources of the lake's high-nutrient and seasonally low DO concentrations are surface runoff and leachate from residential lawns and septic systems along the shorelines.

Elevated water-turbidity levels occur in the lake's littoral zone during, and for several days after, moderate to large storm events (FERC, 2002). Turbidity levels are also exacerbated during peak boating periods when wake-generated waves re-suspend accumulated sediment deposits. The boat traffic controls that the GRDA has implemented on the Duck Creek arm of Grand Lake have helped to alleviate this problem (see section 5.2.3).

Boating-related activities also have other degrading effects on the lake's water quality. Petroleum products are released into the water from boat engines and accidental drips and spills during boating, as well as during boat-refueling operations. Overboard discharges of marine-toilet effluent and other pollutants are also thought to occur in violation of the GRDA's Rules and Regulations.

Limited water quality data exist about the extent and composition of possible boating-related pollutants in Grand Lake, such as methyl tertiary butyl ether, or MTBE, and other petroleum-based substances. The licensee conducts regular water-quality monitoring on Grand Lake to determine if boating or other activities are impairing the lake's beneficial uses and values (FERC, 2002). GRDA also has prescribed lake-wide sanitation rules to protect public health and water quality. Among other requirements, these rules prohibit: (1) the discharge, deposit, or dumping of bottles, cans, garbage, rubbish, refuse, debris, wreckage, bilge water containing oil and grease, and any other type of materials into the lake and on the lake's adjacent shorelands; (2) the disposal of sewage in the waters and on the shorelands of the lake; and (3) the operation of a vessel equipped with a marine toilet that is not a total retention system in accordance with federal regulations regarding marine toilets. The licensee's lake patrol is responsible for monitoring user compliance with these requirements; any violations are subject to GRDA enforcement (GRDA, 2001).

Fisheries and Littoral Habitat

In 1999, the Oklahoma Department of Wildlife (ODWC) ranked Grand Lake as 4th of 21 lakes in Oklahoma for its quality bass fishing (GRDA, 2003c). In its comments on the DEA, ODWC says that Grand Lake ranked 13th out of 21 lakes on this list in 2003. Grand Lake's most important game fish species include largemouth bass, spotted bass, crappie, white bass, channel and blue catfish, and paddlefish. The lake and tailwater downstream of the project dam produce consistently good recreational fishing for

paddlefish. The downstream tailwater area produced the 1992 state record paddlefish, weighing 112 pounds (ODWC, 2002). Channel catfish, which were last sampled in 1998, were moderately abundant. Crappie and blue catfish, sampled in 1998 and 1999, had below average numbers. Other species of fish found in Grand Lake, determined either from gill netting or seining efforts, include bluegill, longear sunfish, freshwater drum, smallmouth buffalo, river carpsucker, golden redhorse, flathead catfish, gizzard shad, brook silverside, and logperch (FERC, 2002). During the site visit in August, staff observed drum foraging in the rocky shoals adjacent to the shoreline and juvenile bass and sunfish in the open-water areas.

During the past decade, the Commission staff has examined annual largemouth and spotted bass sampling data collected by ODWC for trends. Data were available for 1990, 1994, 1996, 1998, 2001, and 2001. Calculations included in the data include catch per unit effort, size determination, number of "quality" sized fish, number of "preferred" sized fish[10], and mean relative weight (a condition calculation derived from several elements). Annual changes in the data are not of a significant magnitude. The data describe a healthy bass fishery and do not show any strong trends in bass population size, individual length and weight, or fish condition for the period examined.

The area near the shoreline at the marina site consists of bedrock and cobble. During the site visit, staff observed little to no sediments near the shore, making shoreline areas inadequate for bass and sunfish nesting. However, staff observed juvenile fish using this shoreline area as a nursery. Recruitment likely occurs in areas near the marina site, particularly around the existing boat docks where sands and silts are present. The healthy population of fish observed along the shoreline, including numerous juveniles, suggests that this area is a high-quality littoral habitat.

Wetland Functions and Values

According to National Wetland Inventory maps, no wetlands occur in the immediate vicinity of Thunder Bay Marina.[11] Also, no wetlands were observed during

[10]Quality-sized fish are indicated in ODWC's report to be largemouth bass ranging from 300 to 380 mm in total length and spotted bass ranging from 280 to 350 mm in total length. Preferred-sized largemouth bass are indicated as 380 mm and larger in total length and preferred-sized spotted bass are 350 mm and larger in total length.

[11]In footnote 6 we describe a recent shoreline-clearing incident that resulted in the loss of about nine acres of vegetated wetlands. This shoreline area is located about three-fourths of a mile from the marina.

the Commission staff's site visit in August 2003. For these reasons, we conclude the proposed docks would have no effect on wetland functions and values.

5.2.2.2 Environmental Effects

Water Quality and Lake-Bed Sedimentation

Construction of the proposed docks and boat slips would have localized short-term effects on water quality in Duck Creek Cove. Installation of the docks and associated anchoring points on the lake bottom would cause sediment disturbance and a short-term increase in turbidity and suspended solids in the immediate area.

Long-term effects on Grand Lake's water quality would arise from increased boating-related point sources attributable to the marina's use, including petroleum product leakage from the boats and overboard discharges of wastes. Given the number of additional boats likely to use the marina's docks, there would be a greater potential for accidental fuel spills and oil discharges and leaks from normal boating operations. Also, some of the additional boaters using the marina's dock facilities would likely violate GRDA's sanitation rules, especially the overboard discharging of bilge water and the dumping of waste materials from boat-cleaning activities. These additional sources of pollution would incrementally contribute to the cumulative water-quality impacts that have occurred, and continue to occur, on the lake and in the cove. GRDA's ongoing water-quality and lake-patrol monitoring efforts (see sections 5.2.2.1 and 5.2.3.2) comprehensively address this cumulative-impact concern.

Fisheries and Littoral Habitat

During construction of the proposed docks, fish would likely be temporarily displaced. This displacement could result in a minor short-term effect on the area's fish populations. Following construction of the docks, the new floating structures would provide additional overhead cover for fish.

The increased boat traffic attributable to the proposed docks could cause some additional sedimentation of existing benthic habitat (e.g., stumps, boulders), and increased degradation of water quality (e.g., wave action, fuel and oil spills, and waste discharges) (see above *Affected Environment* discussion on water quality and lake-bed sedimentation). These effects would, in turn, adversely affect the recruitment of baitfish, non-sport species, and game fish that spawn and forage in these types of habitats. The habitat-restoration measure described in section 5.3.1, and evaluated in section 6.2.1, would compensate for this potential adverse effect, which would contribute incrementally to the cumulative impacts of shoreline development on the project's aquatic resources.

5.2.3 Recreation and Other Land and Water Uses

5.2.3.1 Affected Environment

Boating Traffic and Navigational Safety

Grand Lake is the most popular boating destination in Oklahoma. A survey conducted in conjunction with the preparation of project's recreation plan identified boating as the primary recreational activity on Grand Lake. This survey also identified Duck Creek Cove as one of the most frequently used boating areas on the lake. Boaters in all types of boats (fishing and touring boats, keeled sailboats, and large yachts) use the lake and cove. Boating traffic increases dramatically during the summer recreational season, particularly on weekends and holidays (GRDA, 2003a).

In a July 4, 1997 aerial photographic survey of major boat concentrations on Grand Lake, 159 boats were observed using Duck Creek Cove (GRDA, 1997b and 1998). Approximately 410 acres of the cove are available and usable for boating. Therefore, each of the 159 observed boats had about 2.6 acres of open water available for recreational use, or conversely, there was about 0.4 of a boat using the cove per acre of available water. In comparison, a total of 591 boats were observed in all the major boat concentrations on Grand Lake during this July 4 survey, with an overall average of 11.15 acres of usable water per boat, or about 0.1 of a boat per available water acre.

The above data indicate that a larger than average number of boaters recreating on Grand Lake use Duck Creek Cove. These survey results also indicate that boating densities are higher in Duck Creek Cove relative to the lake as a whole. It is expected that these uses and densities have increased since 1997, resulting in corresponding reductions in the quality of recreational boating experiences and boating safety.

Because of the growing popularity of Grand Lake for recreational boating, boat-traffic congestion and navigational safety have become increasingly important issues. Traffic and safety concerns have arisen on the lake primarily as a result of a greater number of larger boats as opposed to the 18- to 30-foot boats that historically populated the lake (GRDA, 2002). GRDA's Rules and Regulations include a number of boating-related requirements to address these concerns. These boating provisions include speed, buffer-zone, time-of-day, and activity restrictions and prohibitions (GRDA, 2001).

The licensee says that most of Grand Lake's large-boat traffic occurs on the Duck Creek arm of the lake (GRDA, 2002). To accommodate the increasing number of large boats docked and operated in Duck Creek, GRDA has implemented the following traffic-control measures for the cove:

- All watercraft legally able to be hauled by a trailer (8.5 feet in width or less) and/or watercraft 30 feet or less in length, shall operate at a planning speed not

to exceed 30 miles per hour. Boats must be up on plane or go slow, producing minimum wake.

- All other watercraft shall operate at slow speed, producing minimum wake.
- All watercraft must stay to the right of the buoys along the centerline of the cove's navigation channel, and at least 150 feet away from docks and the shore.
- Beginning May 1 and ending October 1, a no-wake zone shall be in effect each night between 8:30 pm and 6:30 am.
- Over the 4th of July weekend, all watercraft in Duck Creek Cove must operate at slow speed/minimum wake around the clock (all day and all night).

Recreational-use statistics for Grand Lake for the period 1998 through 2002 indicate that no serious boating accidents occurred in the cove during these five years, and no multi-boat accidents have occurred in the cove since GRDA implemented ingress/egress traffic controls several years ago (GRDA, 2003d). However, numerous boat accidents did occur in the cove during this period. Most of the reported incidents involved either boat operators who were jumping the wakes of other boats, or collisions between personal watercraft when their operators were attempting to splash the occupants of a boat. Brady states that he has witnessed two serious boat accidents in the cove in recent years.

At Thunder Bay Marina, Duck Creek Cove narrows from approximately 1,150 feet to about 800 feet, constricting the navigation channel to a narrow passage way for boats. GRDA has imposed a no-wake-jumping regulation for the cove, and a no-wake-zone rule in the vicinity of the marina, for navigational-safety purposes.

Shoreline Occupancy and Use

Thunder Bay Marina is located on the western shore of Duck Creek Cove, about two miles upstream from its mouth. Harbors View Marina is located directly across the cove from Thunder Bay (see figure 1). Thunder Bay's docks and several of Harbors View's docks line the cove's navigational channel. Residential homes and private boat docks surround these commercial facilities. Seven commercial marinas are located on Duck Creek Cove, along with numerous residential boat dock facilities.

In 1992, 120 commercial boat docks and more than 2,600 private boat docks were permitted on Grand Lake (FERC, 1992). By 1997, the number of private docks had risen to 3,500, but the number of permitted commercial docks remained the same (GRDA, 1997a). Currently, there are about 2,820 commercial boat slips, about 1,350 homeowner-association boat slips, and about 4,180 permitted private boat slips on the lake. The total

number of boat slips on the reservoir has risen from about 7,500 in 1997 to about 8,350 currently installed. The reconfiguration of docks at several of the lake's large marinas in recent years has resulted in a slight decrease in the total number of commercial slips since 1997 (GRDA, 2003c and 2004)

Public Access to Project Lands and Waters

The project license includes Commission Form L-3 entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States" (FERC, 1992). Article 18 of Form L-3 provides that the licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the licensee for navigation and for outdoor recreational purposes. This article also provides that the licensee may reserve from public access such portions of the project's waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

GRDA has developed a boat-launch site on Duck Creek Cove for public use and has not restricted public access to any of the project's lands and waters in the cove. However, the cove's commercial marina developments are generally considered unsuitable for public access due to safety and security concerns. Also, during a recent project visit, staff observed that public access to the cove's shoreline is limited and constrained in many areas by residential docks and other private shoreline facilities.

5.2.3.2 Environmental Effects

Boat Traffic and Navigational Safety

The boats associated with the proposed docks would increase boat traffic in Duck Creek Cove and the proposed docks would further reduce the amount of open water available for boating in the vicinity of Thunder Bay and Harbors View Marinas (see figure 1).

At the proposed location for dock H, the distance from shoreline to shoreline (as measured from the 750-foot contour elevation) is about 1,175 feet (see figure 1). Dock H would extend about 400 feet from the shore, leaving over 700 feet of open water for navigation. However, dock F would be located where the cove – and navigation channel – narrow abruptly, restricting the amount of open water available to boaters. Boaters navigating through this area in a south-to-north direction currently move west to avoid Harbor View's existing dock, then east to avoid Thunder Bay's existing dock. Boaters traveling north to south make similar dock-avoidance maneuvers. The proposed docks, especially dock F, would further reduce the amount of navigable water available to boaters moving through this constricted channel corridor (about 180 feet remaining between dock F and Harbors View's existing dock).

The navigation channel adjacent to the proposed dock site is currently designated as an idle-power zone because it has less open water than needed to accommodate higher boat speeds.[12] Although boats would be operated under no-wake restrictions through this area, there would be no setback between the proposed docks and the navigation channel. With no setback area, and with limited visibility and short sight distances available to boaters, the proposed docks would contribute to the hazardous navigational conditions that already exist at the marina, especially in the confined area around dock F.

Although it is unlikely that all 63 boats using the proposed docks would be on the water simultaneously at any given time, a portion of these boats would contribute to cumulative traffic-congestion impacts in Duck Creek Cove and on Grand Lake. These incremental effects would be most noticeable during peak boating periods on weekends and holidays during the summer.

Altering the layout plan for Thunder Bay's dock proposal, as described in section 5.3.3, and evaluated in section 6.2.3, would alleviate the adverse effects of increased boat-traffic congestion, and reduced navigational safety, in an already-crowded area of the cove. Also, in addition to the boat-traffic-control measures currently in effect in the cove (see section 5.2.3.1), GRDA has recently taken a number of other measures to comprehensively address boater safety in the cove and on the lake. These measures include: (1) producing a video on safe boating practices, focusing on those types of activities that have been the primary causes of serious boating accidents; (2) improving the surveillance capabilities of its Lake Patrol by replacing its fixed-wing aircraft with a variable-speed, amphibious helicopter and obtaining night-vision equipment; (3) shortening the Lake Patrol's incident/complaint-response time by adding four, ultra-high-speed patrol boats to its water-based fleet; and (4) increasing the Lake Patrol's monitoring-and-enforcement capacities by upgrading its land-based fleet to include vehicles capable of securing and transporting arrested individuals, and employing two staggered shifts of patrolmen between Memorial Day and Labor Day to provide coverage until after 2 a.m. (GRDA, 2003c)

Shoreline Occupancy and Use

The footprint for the proposed docks occupies an area of approximately 162,000 square feet and would cover about 430 linear feet of shoreline. The width of the proposed dock footprint is about 400 feet on the south end and about 350 feet on the north end.

[12]Oklahoma boating safety regulations require a minimum of 150 feet on each side of boat traffic lanes to accommodate higher than idle-power boat speeds (ODPS, 2002).

Interveners and other entities opposed to the proposed docks claim that shallow-water areas along the shoreline would force Thunder Bay to extend the proposed docks further out into the cove to provide adequate water depths for the boats using these facilities.[13] Thunder Bay refutes this contention and asserts that all three docks would extend only to the one-third-of-the-cove demarcation line shown in its proposed layout drawing for the docks (figure 1).

Since no dredging is proposed in connection with the proposed docks (see section 3.1), we consider Thunder Bay's proposed placement of the docks to be feasible under existing water-elevation conditions (see section 5.1). To ensure that the docks would not be extended further into the cove than shown in the dock layout drawing included in the application, any permit granted for the docks should specify that the docks can extend into the cove no more than one-third of the distance from the adjacent shoreline to the nearest opposite shoreline, as measured from the 750-foot contour elevation.[14]

The general rule for the sizing of a fairway between docks is to make the clear distance between boat extremities no less than 1.5 times the longest-length boat that would be using the fairway. Often, fairway widths should be 1.75 times the longest boat length, if maneuvering conditions warrant ((Tobiasson and Kollmeyer, 2003). In general, the greater a fairway's width, the better for safe boat maneuvering.

The largest boats using the fairways between docks F and G, and G and H would be about 44 feet and 60 feet in length, respectively.[15] Applying the above sizing rule to these boat lengths, these fairways should be a minimum of 66 feet and 90 feet wide, respectively. The proposed fairway between docks F and G is 65 feet wide, or only one foot less than calculated under the sizing rule. Between docks G and H, the proposed

[13]Minimum water depths suitable to accommodate powerboats of the lengths that would use the proposed docks, including about three additional feet as a margin for safety, are: 8 feet for 40-foot-long boats; 8.5 feet for 50-foot-long boats; and 9 feet for 70-foot-long boats (Tobiasson and Kollmeyer, 2003).

[14] This recommendation is consistent with the dock-placement requirement GRDA included in its original permit for these docks.

[15]Although figure 1 shows the boat slips for dock H to be 70 feet long, Thunder Bay has explained in its comments on the DEA that these slips would contain patios, making the effective slip length 60 feet. These 60-foot-long slips would accommodate the longest boats using the fairway between docks G and H.

fairway is 100 feet wide, or 10 feet more that calculated under the sizing rule. Therefore, these fairways are adequately sized to provide for safe boater ingress and egress to the docks' slips.

The adjacent property owner and another opposing intervener contend there is insufficient room to place the proposed docks in front of Thunder Bay's property. Supporting information submitted by these entities indicates that only 371 feet of space is available between Thunder Bay's southern-most existing dock and its south property line, leaving a space shortage of 28 feet: 399 feet (required) – 371 feet (available) = 28 feet . These entities note that this shortfall does not include any setback that may be required from the common property line between the marina and the abutting private property to the south.

In response to the above contention, Thunder Bay asserts that its layout plan for the proposed docks is drawn to scale on an accurately surveyed map of the site. The dimensions on this dock layout plan (figure 1) show the space required, and space available, for the docks to be 399 feet and 406 feet, respectively.

The information available in the record is not sufficient to resolve the above 35-foot discrepancy regarding the amount of space available for the docks (Thunder Bay - 406 feet; Interveners - 371 feet). Section 6.2.3 further addresses this property-dispute issue.

Public Access to Project Lands and Waters

Because the proposed dock site is surrounded by extensive commercial and residential development, it is unlikely that this shoreline area is presently being used for any recreational or navigational purposes by the public. The private back-lying property abutting the project in this area prevents public access by land, and the developed character of the area likely discourages access by boat. It is more likely that lake visitors who are pursuing recreational activities such as picnicking, swimming, or shoreline fishing would use less developed portions of the cove and the developed public-recreation areas on Grand Lake. However, it is possible that some boat-angling and boat-swimming opportunities could be displaced by the proposed docks.

5.2.4 Aesthetic Resources

5.2.4.1 Affected Environment

Scenic Views and Ambient Noise Levels

The Duck Creek arm of Grand Lake is scenic. Moderately steep slopes rise about 100 feet above water level at the mouth of the cove; the topography gradually flattens

toward the back of the cove. Secondary inlets give the cove's shorelines an undulating appearance, creating a variety of scenic vistas. Numerous shoreline peninsulas are prominent and visible from the main channel of the cove. The cove's shorelands are mostly wooded.

Numerous homes and residential boat docks dot the shorelines of the cove. Five of the cove's seven commercial marinas are situated within a one-mile segment of the cove, further breaking the visual continuity of the shorelines. In the immediate vicinity of the cove's marina developments, the shoreline landscape is visually dominated by large dock facilities. Protrusion of these covered docks into the cove cause portions of the shoreline to be obstructed from view.

Except during major summer holidays and summer weekends, Duck Creek Cove is relatively quiet. GRDA has indicated that there have been excessive-noise incidents in the cove resulting from the operation of large boats. Also, the licensee has noted that noise problems in the cove have been alleviated through increased law enforcement and increased lake-patrol presence.

5.2.4.2 Environmental Effects

Scenic Views and Ambient Noise Levels

During installation of the proposed docks, construction machinery and equipment would be visually obtrusive and would cause noise-producing disturbances. Also, construction lay-down areas would temporarily degrade the visual quality of the area.

The wooded shoreline site for the docks would appear substantially altered following construction. Although the completed docks would be visually in character with the area's existing commercial facilities, the size and density of the additional docks would make the area look overly crowded and out of scale with the surroundings. These effects would be most evident in the immediate area of dock F, which already contains a high concentration of large docks in a confined space (see figure 1). Also, there would be a strong visual contrast in scale between the proposed docks and several small residential docks located immediately adjacent to the site. The increased boating activity associated with the proposed docks would further contribute to the overdeveloped and overused appearance of the area. Altering the layout plan for Thunder Bay's dock proposal, as discussed in section 5.3.3 and recommended in section 6.2.3, would mitigate these adverse aesthetic impacts directly and cumulatively.

The additional boating activity attributable to the docks would cause some intermittent increases in the area's ambient noise levels. The testing of boat motors, and the acceleration of boats leaving the docks, would be the primary sources of noise. Loud conversations among boaters also would be expected to occur.

GRDA's Rules and Regulations include the requirement that all vessels must be muffled pursuant to 63 OSA § 4208. Also, GRDA recently adopted a new noise-abatement rule requiring no operation of a vessel that exceeds 90 decibels on an A-weighted scale when subjected to a sound level test as prescribed by SAE J2005 within fifty feet of any public or private dock, or at any location between the hours of 9:00 pm through 9:00 am. Any noise-emitting boats in violation of these requirements would be subject to compliance enforcement by the licensee's lake patrol.

Consistent with Commission action on other commercial-dock proposals, any permit granted for the proposed docks should include the following conditions adapted from license article 410.[16] These permit conditions would help ensure that the permit grantee would properly monitor and control noise, and other undesirable aesthetic effects, associated with its commercial operation:

1. The grantee's permitted use and occupancy of project lands and waters shall not endanger health, create a nuisance, or otherwise be incompatible with the project's overall purposes, including public recreation and resource protection.
2. The grantee shall take all reasonable precautions to ensure that the permitted use of project lands and waters shall occur in a manner that will protect the scenic, recreational, and other environmental values of the project.

5.2.5 Cultural Resources

Based on the results of consultation with OAS and OHS (see section 4.0), and staff's inspection of the marina site during an August 18, 2003 project visit, no archaeological sites or other historic properties would be affected by the proposed docks. The contingency procedures discussed in section 5.3.4, and recommended in section 6.2.4, address the treatment for potential archaeological discoveries during construction of the proposed docks.

5.3 Action Alternatives

In this section, we examine each of the staff-identified action alternatives listed in section 3.2. Under each alternative, we describe the specific measures Thunder Bay

[16]License article 410 provides that the licensee: (1) has the continuing responsibility to supervise non-project uses and occupancies of project lands and waters; and (2) shall take any action necessary to correct violations of conditions imposed by the licensee for the protection of the project's scenic, recreational, and other environmental values.

would be required to take if included as a condition in GRDA's permit. We further evaluate these alternatives in section 6.2.

5.3.1 Restore Shoreline Habitat

To compensate for the impacts of the proposed docks and associated boating activity on the project's terrestrial and aquatic resources, Thunder Bay would submit to GRDA, for approval, a plan prepared in consultation with ODWC for restoring an appropriate amount of degraded shoreline habitat. Specifically, the plan would provide for the planting of riparian and littoral vegetation at a shoreline site equal to one-half the size to the total land and water area occupied by any docks approved in this proceeding. Plant materials native to the area would be used in order to maintain the natural and aesthetic character of the shoreline landscape. Upon approval, Thunder Bay would implement the plan, including any changes required by GRDA.

5.3.2 Provide Fishery Enhancements

To enhance Grand Lake's fishery resources, Thunder Bay would submit to GRDA, for approval, a plan prepared in consultation with ODWC for installing artificial fish-habitat structures. The structures would be installed at an undeveloped shoreline site that is accessible to the public, and would be sized to cover an area equal to one-half the total development footprint of any docks approved in this proceeding. Building materials such as oak or cedar would be used in order to ensure the long-term structural integrity of the installations. Upon approval, Thunder Bay would implement the plan, including any changes required by GRDA.

5.3.3 Alter the Proposed Dock-Layout Plan

As discussed in sections 5.2.3 and 5.2.4, Thunder Bay's dock proposal would exacerbate the crowded and congested conditions that already exist in this narrow segment of the cove. To alleviate these effects, the dock-layout plan included in GRDA's application (figure 1) would be altered. Specifically, dock F would be eliminated and docks H and G would be shifted 40 feet to the north. Also, dock G would be set back toward the shore 15 feet and two of its slips would be removed to shorten the dock by 18 feet (one 44-foot slip and one 50-foot slip). In addition, one 70-foot slip would be removed from dock H to shorten it by 21 feet.

5.3.4 Establish Procedures for Potential Archaeological Discoveries

OAS advises that if construction activities at the marina expose any buried archaeological materials, it should be immediately contacted so that agency staff can

evaluate the significance of the materials. Also, OAS reminds the Commission of its responsibility under 36 CFR Part 800[17] to consult with appropriate Native American tribes that may ascribe traditional or ceremonial value to such a discovery. Since the discovery of important archaeological resources during dock construction is possible, the OAS's recommendation is reasonable.

OAS staff has expertise in the evaluation and preservation of archaeological resources. Therefore, this agency's advice and assistance would be beneficial in determining the importance of any resources discovered, and the scope of any protection measures that should be taken. Also, consultation with Native American tribes would be a necessary step in identifying whether tribal groups attach any cultural or religious value to discovered archaeological materials, and deciding how to treat such materials.

To ensure that any previously unidentified archaeological resources are properly taken into account during dock construction, Thunder Bay would immediately stop construction activities upon such a discovery and contact GRDA. Pursuant to license article 409, the licensee would consult with OAS and those Native American tribes/groups that may have an interest in the discovery in order to evaluate the significance of the discovery and to determine what steps to take to protect any significant resources. The licensee would advise Thunder Bay as to when, and under what conditions, construction could resume.

5.4 No-Action Alternative

If GRDA's application were denied, Thunder Bay could still construct dock H in its currently-permitted configuration (see section 3.3). This would result in the same types of impact described in section 5.3, but the magnitude and intensity of these effects would be substantially less than those resulting from the proposed action.

6.0 CONCLUSIONS

6.1 Summary of the Proposed Action's Environmental Effects

The following table summarizes the probable environmental effects of Thunder Bay's proposed docks, as discussed in detail in the *Environmental Analysis* section. The table uses the resource issues identified in the *Agency Consultation and Public Involvement* section as a checklist for the impact summary.

[17]Regulations of Advisory Council on Historic Preservation.

Table 1. Probable environmental effects of Thunder Bay's proposal.

Impact Issue	Impact Rating[a]		
Shoreline stability and soil erosion	1	A	S/L
Wildlife and riparian habitat	1	A	S/L
Threatened and endangered species	--	NI	--
Water quality and lake-bed sedimentation	1	A	S/L
Fisheries and littoral habitat	1	A	S/L
Wetland functions and values	--	NI	--
Boating traffic and navigational safety	2	A	S/L
Shoreline occupancy and use		NI	
Public access to project lands and waters	1	A	S/L
Scenic views and ambient noise levels	2	A	S/L
Archaeological and other historic properties	--	NI	--

[a] 1 – Minor A – Adverse S – Short Term
2 – Moderate B – Beneficial L – Long Term
3 – Major NI – No Impact

6.2 Evaluation of Action Alternatives

In this section, we evaluate the action alternatives examined in section 5.3. Our evaluations weigh the tradeoffs of each of the alternatives under consideration.

6.2.1 Restore Shoreline Habitat

As described in section 5.3.1, Thunder Bay would restore an appropriate amount of degraded shoreline habitat to compensate for the impacts of the proposed docks and associated boats on the lake's terrestrial and aquatic resources. Considering the ecological importance of Grand Lake's riparian and littoral habitats, this restoration measure (i.e., planting native shoreline vegetation) would provide valuable long-term benefits to the fish and wildlife that use them. These benefits would be worth the planning and implementation costs involved. Therefore, as a condition for approval of GRDA's application, the licensee should require Thunder Bay to carry out this measure.

6.2.2 Provide Fishery Enhancements

Installing artificial habitat structures along the shoreline in an area that has little natural lake-bottom diversity would provide additional shelter, and better feeding

opportunities for important fish species such as crappie, which ODWC states are below average numbers in this reservoir. Providing this additional fish habitat at an undeveloped shoreline site accessible to the public would also enhance recreational fishing opportunities. These benefits would be worth the planning and implementation costs involved. Therefore, as a condition for approval of GRDA's application, the licensee should require Thunder Bay to carry out this enhancement measure as described in section 5.3.2.

6.2.3 Alter the Proposed Dock-Layout Plan

Altering the proposed dock-layout plan, as described in section 5.3.3, would eliminate 23 boat slips from Thunder Bay's proposal (20, 16x40-foot slips; one 18x44-foot slip; one 18x50-foot slip; and one 21x70-foot slip). Removing these docking facilities from the proposed plan reduces by 36 percent the number of additional slips that would be available for rent to the marina's patrons (63-23=40). The total number of slips that would be available at the marina under the proposed plan would be reduced by 11 percent (204-23=181).

A large number of docks and boats already occupy and use this narrow segment of the cove. The above alterations would alleviate further crowding and would provide more open space for safe navigation in the constricted channel-area between Thunder Bay Marina and Harbors View Marina (about 240 feet instead of about 180 feet). In addition, these alterations would reduce the aesthetic (visual and noise) effects of the dock and boat additions described in section 5.2.4. Although not considered for the purpose of resolving the property dispute described in section 5.2.3.2, these alterations also would close this issue. Therefore, as a condition for approval of GRDA's application, the licensee should require Thunder Bay to make the changes to its dock layout plan described in section 5.3.3.

If the Commission approves GRDA's application without these recommended alterations, GRDA should be required to confirm prior to granting a permit for the docks that dock H, and its associated holding device and walkway, would: (1) not encroach on adjacent private land; and (2) not conflict with the adjacent landowner's permitted use and occupancy of project lands and waters. If GRDA were to find through additional survey results that such an encroachment or conflict would occur, its authorization to grant such a permit should be deemed rescinded without prejudice toward the filing of another dock-development application that corrects these dock-placement deficiencies.

6.2.4 Establish Procedures for Potential Archaeological Discoveries

The discovery of archaeological materials during construction of the proposed docks could result in delays and additional costs to evaluate the significance of the discovery, and mitigate any adverse effects. However, given the potential importance of previously unidentified resources to the area's cultural heritage, the contingency

procedures described in section 5.3.4 are reasonable and justified. Therefore, as a condition for approval of the GRDA's application, the licensee should require Thunder Bay to comply with these procedures.

6.3 Findings

Based on the information, analyses, and evaluations contained in this EA, we find that Thunder Bay's proposal, with staff's recommended environmental measures, would not constitute a major federal action significantly affecting the quality of the human environment. We also find that Thunder Bay's proposal, with staff's recommended measures, would not be inconsistent with the operation and maintenance of the project or with the project's public-recreation and resource-protection purposes.

With staff's recommendations, Thunder Bay's proposal would:

1. help meet the demand for additional boat dock facilities on Grand Lake;
2. compensate for the adverse impacts of the docks and associated boating activity on terrestrial and aquatic resources;
3. enhance fish habitat, and shoreline fishing opportunities;
4. mitigate adverse effects to existing land and water uses, and aesthetic landscape values; and
5. ensure that any archeological resources discovered during dock construction are properly taken into account.

In our judgment, the positive aspects of the staff-modified proposal outweigh its negative environmental consequences. Also, in our judgment, the net benefits of the modified proposal outweigh the alternative of taking no action. Based on these conclusions, we find that the licensee's application should be approved as conditioned by staff's recommendations.

7.0 LITERATURE CITED

FERC (Federal Energy Regulatory Commission). 1992. Order issuing new license and environmental assessment, Pensacola Project, FERC No. 1494-002 (59 FERC ¶ 63,231 at p. 63,231). Federal Energy Regulatory Commission, Washington, D.C. April 29, 1992 (Order); November 19, 1991 (EA).

FERC. 1996. Order amending license and environmental assessment, Pensacola Project, FERC No. 1494-123 (77 FERC ¶ 61,251). Federal Energy Regulatory Commission, Washington, D.C. December 3, 1996.

FERC. 1998a. Order modifying and approving long-term recreation plan. Pensacola Project, FERC No. 1494-148 (84 FERC ¶ 62,144). August 14, 1998.

FERC. 2002. Draft environmental assessment of application for non-project use of project lands and waters, Arrowhead Marina, Pensacola Project, FERC No. 1494-232. Federal Energy Regulatory Commission, Washington, D.C. September, 19 2002.

FERC. 2003. Order approving fish and waterfowl habitat management plan under Article 411 and deleting Article 404. Pensacola Project, FERC Nos. 1494-215, 254. Federal Energy Regulatory Commission, Washington, D.C.

GRDA (Grand River Dam Authority). 1997a. Grand Lake O' the Cherokees recreation management plan, Pensacola Hydroelectric Project FERC No. 1494-002. Grand River Dam Authority, Vinita, OK. September 28, 1997.

GRDA. 1997b. Long-term recreation plan for the Pensacola Project (FERC No. 1494). Grand River Dam Authority, Vinita, OK. Filed October 3, 1997.

GRDA. 1998. Supplemental information on the long-term recreation plan for the Pensacola Project (FERC No. 1494). Grand River Dam Authority, Vinita, OK. Filed January 28, 1998.

GRDA. 2001. Rules and regulations governing use of shorelands and waters of GRDA. Grand River Dam Authority, Vinita, OK. January 17, 2001.

GRDA. 2002. Additional information on the application for non-project use of project lands and waters, Pensacola Project (FERC No. 1494-232). Grand River Dam Authority, Vinita, OK. March 29, 2002.

GRDA. 2003a. Application for non-project use of project lands and waters. Pensacola Project (FERC No. 1494-251). Grand River Dam Authority, Vinita, OK. March 25, 2003.

GRDA. 2003b. Application for new license for Markham Ferry Hydroelectric Project (FERC No. 2183-035). Grand River Dam Authority, Vinita, OK. June 2, 2003.

GRDA. 2003c. Recreation and Shoreline Management Plan Reports. Pensacola Project (FERC No. 1494). Grand River Dam Authority, Vinita, OK. July 1, 2003.

GRDA. 2003d. Amendment to the application for non-project use of project lands and waters, Pensacola Project (FERC No. 1494-232). Grand River Dam Authority, Vinita, OK. March 28, 2003.

GRDA. 2004. Supplemental Report on Implementation of Recreation Management Plan. Grand River Dam Authority, Vinita, OK. March 10, 2004.

ODWC (Oklahoma Department of Wildlife Conservation). 2002. ODWC Oklahoma state record fish web page, www.wildlifedepartment.com/listing.htm. Oklahoma Department of Wildlife Conservation, Oklahoma City, OK.

ODPS (Oklahoma Department of Public Safety). 2002. The handbook of Oklahoma boating laws and responsibilities. 2002–2003 Edition. Oklahoma Department of Public Safety, Highway Patrol Division. Boat Ed, Dallas TX.

ONHI (Oklahoma Natural Heritage Inventory). 2003. Federal and state endangered, threatened and candidate species in Oklahoma by county web page. www.biosurvey.ou.edu/heritage/publicat.html, accessed August 5, 2003.

OWRB (Oklahoma Water Resources Board). 2001. Oklahoma Water Watch, Grand Lake Association Chapter, 1993–2001 data summary. Draft. Oklahoma Water Resources Board, Oklahoma City, OK.

Stancill, W.J., D.M. Leslie, Jr., and R.F. Raskevitz. 1989. Waterfowl production on Grand Lake and associated wetlands in northeastern Oklahoma. pages 33–37. In: Proceeding of the Oklahoma Academy of Sciences Volume 69.

Tobiasson, Bruce O., and Ronald C. Kollmeyer. 2003. Marinas and small craft harbors, second edition. 659 pages. Westviking Press. Medfield, Massachuetts.

8.0 LIST OF PREPARERS

Benjamin Ellis—Project Manager; Recreation, Land Use, Aesthetic Resources (Land Use and Recreation Planner; B.S., Biology and Sociology, M.B.A., Ph.D., Natural Resources)

John Hart ─ Water Quantity and Quality (Hydrologist; B.A., Physics)

Eileen McLanahan ─ Terrestrial Resources, Threatened and Endangered Species (Terrestrial Biologist; M.S., Biology)

Michael Rager ─ Fisheries Biologist (B.S., Biology, M.S., Aquatic Systems Management)

Steve Naugle ─ Environmental Protection Specialist (Task Monitor)

APPENDIX A

RESPONSES TO COMMENTS ON DRAFT ENVIRONMENTAL ASSESSMENT

Application for Non-Project Use of Project Lands and Waters
Pensacola Project - Oklahoma
FERC No. 1494-251

U.S. Fish and Wildlife Service (FWS)

COMMENT 1 – Regarding the staff-identified action alternatives discussed in sections 5.3 and 6.2, FWS supports the proposed restoration of shoreline habitat to mitigate impacts to terrestrial and aquatic resources. However, it has concerns about the proposed fishery-enhancement measure. Instead of placing natural-habitat materials under the permitted docks, FWS recommends installing artificial habitat structures in areas accessible to the public for the purpose of also providing enhanced shoreline fishing opportunities. Also, FWS recommends the use of building materials such as oak and cedar to ensure the long-term structural integrity of these installations.

RESPONSE 1 – We agree with FWS's recommendations, and have revised the FEA accordingly.

Thunder Bay Marina

COMMENT 1 – Regarding staff's proposed alterations to Thunder Bay's dock-layout plan (sections 5.3 and 6.2), Thunder Bay contends that staff erroneously based its calculation of the resulting reduction in boat-slip capacity on the total number of slips that would be available at the marina rather than on the number of slips that would be available from the three additional docks.

RESPONSE 1 – Section 6.2.3 of the DEA presented the percent reduction of total slips (204-23=181, or an 11-percent reduction), and additional slips (63-23=40, or a 36-percent reduction) in order to fully describe the effect the proposed alterations would have on the marina's boat-dock facilities.

COMMENT 2 – Regarding staff's analysis of shoreline occupancy and use (section 5.2.3.2), Thunder Bay contends that staff erroneously calculated the amount of space available between the marina's southern-most existing dock and its south property line. Also, Thunder Bay objects to staff's proposal to provide more open space between the marina's commercial docks and adjoining private property.

RESPONSE 2 – Staff presented in the DEA the measurements of available space submitted by Thunder Bay (406 feet), and by two opposing interveners – Roger Tucker

and Mike Brady (371feet). While Thunder Bay asserts that no credible evidence has been offered that is contrary to the shoreline measurements documented in its certified surveys, staff found in the DEA that there was insufficient information in the record to determine whether either of the above measurements is correct.

Thunder Bay's surveys, which GRDA filed as part of its previous dock application for this marina (P-1494-243), do not establish the location of Thunder Bay's south property line in relation to the marina's southern-most existing dock (Dock E). While Thunder Bay says that Dock H would be located in front of a parcel identified as Tract 5, and that the southern boundary of this parcel is Thunder Bay's south property line, the surveyed location of this parcel is not tied to the location of Dock E. Without establishing these locations from a common survey beginning point, Thunder Bay's measurement of available space between these locations is open to question.

Likewise, the measurements included in the interveners' March 26 and April 7, 2004 filings do not establish, by survey, these relative dock and property-line locations. While the interveners say that they accurately measured the distance between Dock E and Thunder Bay's south property line, and that one of GRDA's lake patrol officers assisted in this measurement, no documentation was submitted confirming that the south property line was accurately located on the ground, by survey, prior to this measurement being taken. Without firmly establishing the location of this measurement end point, the interveners' available-space dimension is also questionable.

Since no additional survey information has been submitted by the above parties to verify their respective available-space measurements, the 35-foot discrepancy between these dimensions still remains. Consequently, if this issue is not resolved through the Commission's adoption of staff's dock-alteration recommendations, we have further recommended that GRDA be required to confirm, prior to granting a permit for the docks, that dock H and its associated holding device and walkway would: (1) not encroach on adjacent private land; and (2) not conflict with the adjacent landowner's permitted use and occupancy of project lands and waters (see FEA section 6.2.3).

Based on staff's recommended dock alterations, there would be 47 feet of open space between Dock H and the marina's south property line instead of the seven-foot setback Thunder Bay proposes. We consider this to be a reasonable and appropriate measure, given the already crowded and congested shoreline conditions surrounding the proposed dock site. Also, we do not consider our recommended setback for Dock H to be excessive, given the dock-placement provisions imposed at some of the Commission's other licensed hydropower projects. For example, the Land Use and Shoreline Management Plan for the Saluda Project (FERC No. 516) specifies that commercial docks must be located a minimum of 150 feet from the common property line between the docks and the adjacent property. In another example, the Shoreline Management Plan for the Catawba-Wateree Project (FERC No. 2232) specifies that commercial docks shall

be setback along the shoreline at least 200 feet from the outermost property corners on the waterfront, or according to county zoning requirements, whichever provides for a greater distance.

COMMENT 3 – Regarding staff's proposed 105-foot width for the fairway between Docks G and H, Thunder Bay explains that this fairway, in reality, should be 90 feet wide because the slips proposed for Dock H contain patios, making the effective length of these slips 60 feet instead of 70 feet. However, Thunder Bay has not changed its originally proposed 100-foot width for this fairway.

RESPONSE 3 – As discussed in staff's analysis of shoreline occupancy and use (see section 5.2.3.2), a fairway's width should be at least 1.5 times the length of the longest boat expected to use the fairway. Based on the above additional information for Dock H, the 100-foot-wide fairway Thunder Bay proposes between Docks G and H is adequate. The EA has been revised to remove staff's previously proposed 105-foot width for this fairway, as well as our finding that the fairway between Docks G and F is slightly undersized.

Cheryl and Jack Lenhart

COMMENT 1 – The Lenharts state that the no-action alternative should be selected because Dock H is the only dock Thunder Bay should be allowed to construct. The Lenharts further state that Thunder Bay should not be rewarded with the relocation of two additional docks from the original permit because these docks: (1) have been displaced by other docks that Thunder Bay chose to install larger than originally permitted; and (2) would be located in front of property Thunder Bay did not own at the time of its original permit application. Also, the Lenharts contend that the pending application is not for the "reconfiguration of docks" because it involves more than a slight variation from the original permit.

RESPONSE 1 – We agree that Docks F and G have been displaced by the marina's existing docks. As a result, Thunder Bay's previous permit for these docks has been nullified. Given this nullification, we have revised our description of Thunder Bay's proposal in the FEA from "a reconfiguration of three previously-permitted-but-not-constructed docks" to "the addition of two docks and modifications to one permitted-but-not-constructed dock." Based on the information, analyses, and evaluations contained in the FEA, we have found that the benefits of Thunder Bay's proposal, with staff's recommended environmental measures, outweigh the no-action alternative.

COMMENT 2 – Section 5.2.1.1 of the DEA notes that the shoreline in the vicinity of Thunder Bay Marina as being rocky. Where dock H is proposed to be located is not rocky, and is a slope to the waterline with erosion by wave action.

RESPONSE 2 – We have revised section 5.2.1.1 of the EA to indicate this existing shoreline condition.

COMMENT 3 – Section 5.2.1.2 of the DEA states that GRDA has implemented boat traffic controls in Duck Creek to alleviate cumulative effects. GRDA changed its boating rules for Duck Creek in 2004, as indicated on its website.

RESPONSE 3 – We have revised section 5.2.1.2 of EA to reflect GRDA's current boating controls.

COMMENT 4 – The effects on water quality and lake-bed sedimentation should be described in section 5.2.2 of the DEA as being long term instead of short-term, and should be characterized as being probable instead of potential effects.

RESPONSE 5 – Our description of short-term effects from construction-related activities is correct. We have revised our characterization of long-term operational effects as being likely to occur instead of possibly occurring.

COMMENT 6 – A recent rule adopted by GRDA places a noise limit of 90 decibels only on boats within 50 feet of a dock. All others have no noise level limit.

RESPONSE 6 – We have revised section 5.2.4.1of the EA to reflect GRDA's new noise-abatement rule.

COMMENT 7 – Section 5.2.3.1 of the DEA identifies the number of commercial slips on Grand Lake as being about 2,820. Then it quotes GRDA as stating that the reconfiguration of docks at several large marinas has resulted in a slight decrease in the total number of commercial slips since 1997. This quote is based on the number of commercial slips GRDA submitted to the Commission in 2003 (2,180), not on the corrected number (2,821) submitted in 2004. Therefore, this statement should say that the reconfiguration and permitting of commercial docks has resulted in an increase in the number of commercial slips of 641, or over 30 percent.

RESPONSE 7 - GRDA's 2004 submittal states that: (1) the 1997 report understated the number of slips that actually existed at that time; and (2) the 2003 report failed to include 641 slips at small marinas. This submittal also states that with the reconfiguration of commercial docks that was referenced in its 2003 submittal, there appears to be a total of 56 less slips than were included in its 1997 report. We consider our discussion of commercial docks in the EA to be consistent with this statement.

Oklahoma Department of Wildlife Conservation (ODWC)

COMMENT 1 – ODWC agrees with the habitat-restoration measure described in section 5.3.1 of the DEA, but requests the Commission to specify the amount of shoreline area to be restored. Also, ODWC expresses its willingness to provide consultation for this restoration proposal.

RESPONSE 1 – We have revised the EA to specify the size of the shoreline area to be restored. We appreciate ODWC's willingness to provide technical advice and assistance in the planning and implementation of this measure.

COMMENT 2 – ODWC considers the fishery-enhancement measure described in section 5.3.2 of the DEA to be inadequate to mitigate for the dock- and boat-related impacts to aquatic habitat. ODWC recommends implementing this measure at a near-shore location to provide for nursery cover, and greater public access, instead of under the proposed docks.

RESPONSE 2 – The fishery-enhancement measure described in section 5.3.2 is intended to address the degraded habitat conditions that currently exist along Grand Lake's shorelines, not the impacts that would be caused by Thunder Bay's dock proposal. These impacts would be mitigated by the habitat-restoration measure described in section 5.3.1. We have revised the EA to incorporate the recommendations of both ODWC and FWS to more effectively enhance the lake's fishery.

Mike Brady

COMMENT 1 – Brady asserts that all of his filings under P-1494-251 and P-1494-243 have not be taken into consideration in the DEA.

RESPONSE 1 – As noted on pages 6 and 7 of the DEA, all of Brady's filings under P-1494-251 and P-1494-243 have been considered in our review of Thunder Bay's pending application.

COMMENT 2 – Section 3.1 of the DEA needs to be corrected to remove any inference that the total number of boat slips currently proposed at the marina (204) is actually smaller and less displacing that the 209 slips originally permitted.

RESPONSE 2 – We have revised section 3.1 of the EA to reflect the fact that more shoreline area would be occupied under Thunder Bay's current proposal than originally permitted.

COMMENT 3 – I have yet to see the Commission consider the economic effect on adjacent neighbors who find their property greatly diminished by the loss of view, noise,

traffic, and swimming opportunities triggered by a covered marina dock for 70-foot boat slips protruding 400 feet into the water. This is a fully non-compatible use of shoreline and a 40-foot setback is grossly insufficient for such a protrusion.

RESPONSE 3 – As we have stated in our review of other marina-development proposals for Grand Lake (P-1494-232, for example), the value of private properties located near the marina may be adversely affected due to additional aesthetic disturbances and water-use conflicts. Also, the proposed docks may have an appreciating effect on residential property values in Duck Creek Cove in general, due to the additional recreational facilities and services that would be provided. These factors have been considered in our assessment of Thunder Bay's proposal. Staff's recommended 47-foot setback between Dock H and the marina's south boundary line (the seven-foot setback proposed by Thunder Bay plus staff's recommendation to shift Docks H and G 40 feet to the north) is considered adequate, given that: (1) Dock H only has slips on its north side, thereby restricting all related boating activity to the interior fairway between Docks H and G; and (2) one on Dock H's slips would be eliminated under staff's recommendation, thereby reducing the dock's length by 21 feet.

COMMENT 4 – Referring to FWS and ODWC comments regarding fish and wildlife-related issues, Brady notes that both agencies have recommended that commercial shoreline development be sharply curtailed in this area of Duck Creek cove. Brady also notes that regular bald eagle resting and hunting areas are located less than one-half mile from the marina.

RESPONSE 4 – We have carefully considered and weighed all FWS and ODWC comments and recommendations concerning the cumulative effects of shoreline development on fish and wildlife resources. Both of these agencies have commended staff for recognizing and addressing these concerns in the DEA. As discussed above, the FEA incorporates additional agency recommendations to improve the terrestrial and aquatic habitat measures proposed by staff. Bald eagle-related issues have been appropriately addressed in section 5.2.1.1 of the EA.

COMMENT 5 –Brady says the additional displacement of wildlife by the proposed docks to less populated areas of the cove, as referenced in the DEA, is an unrealistic expectation. Brady also says a recent wetland-clearing incident that occurred in Duck Creek Cove is cause for more aggressive oversight, and that the loss of habitat and aesthetic values as a result of this incident should be considered from a cumulative impact standpoint.

RESPONSE 5 – There is no reference in the DEA to the movement of displaced wildlife to less populated areas of the cove. Instead, the DEA states that the proposed docks would cause further fragmentation and degradation of the terrestrial components of the cove's ecosystem. In a separate compliance action (P-1494-263), the Commission

has required GRDA to take appropriate steps to mitigate the resource impacts caused by the referenced wetland-clearing incident. We have considered the resource effects resulting from this incident in our cumulative-impact analyses of Thunder Bay's proposal.

COMMENT 6 – Brady requests the Commission to approve "a modified version of the no-action alternative" (see section 3.3. of the DEA). Specifically, Dock H would be aligned parallel, instead of perpendicular to the shoreline as currently permitted. Also, Dock H would contain thirteen 20- by 70-foot slips, instead of twelve 20- by 60-foot slips as currently permitted, and all of the slips would open to the water side of the dock. Brady contends that the reality of this cove requires unusual mitigation and failure to acknowledge this fails to give reasonable weight to the provisions of the project's recreation plan. Accordingly, Brady asserts that this is the only alternative that retains the public's right to safe and unfettered navigation.

RESPONSE 6 – We agree that from a navigational-safety standpoint, the above reconfiguration of Dock H would be preferable to its currently permitted arrangement. However, we have concluded that the net benefits of Thunder Bay's proposal, with staff's recommended measures, outweigh the no-action alternative (see section 6.3 of the FEA). In our judgment, the navigational improvements provided by reconfiguring Dock H do not change this conclusion.

National Park Service (NPS)

COMMENT 1 – NPS recommends that the Commission consult with the administrator of the Land and Water Conservation Fund (L&WCF) program in the State of Oklahoma to determine any potential conflicts with this program.

RESPONSE 1 – No L&WCF lands are located in the vicinity of the proposed docks. Therefore, no L&WCF-related conflicts would occur.

Roger Tucker

COMMENT 1 – Tucker asserts that Thunder Bay's current dock proposal (P-1494-251) should be rejected for the same reasons that its previous proposal (P-1494-243) was rejected: conflicts with existing dock facilities and the adjacent navigation channel.

RESPONSE 1 – In our judgment, the alternative recommended in section 6.3 of the FEA adequately mitigates conflicts with existing docks and the navigation channel.

COMMENT 2 –In regard to staff's alterations to Thunder Bay's dock layout plan described in section 5.3.3 of the DEA, Tucker asserts that three additional slips would

need to be removed from Dock H, and five additional slips would need to be removed from both sides of Dock G to maintain minimum water depths for boat operation.

RESPONSE 2 – We recommend in section 5.2.3.2 of the EA that any permit granted for the proposed docks specify that the docks can extend into the cove no more than one-third the distance from the adjacent shoreline to the nearest opposite shoreline, as measured from the 750-foot contour elevation. If, as a consequence of this permit condition, water depths would be too shallow for boats to access certain slips, then Thunder Bay would not be able to install those slips without further approval from GRDA or the Commission.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Grand River Dam Authority Project No. 1494-251

(Issued June 21, 2005)

KELLY, Commissioner, *dissenting*:

Today's order approves the request of Grand River Dam Authority (GRDA) to permit a private developer to construct three boat docks at Thunder Bay Marina Facility's existing commercial marina on the Duck Creek arm of the project's reservoir. I believe that the request should be denied because the request violates GRDA's own rule prohibiting construction of docks that extend more than 125 feet or one-third the distance from shore, and GRDA has provided no reason to ignore this prohibition. In addition, the record reveals that congestion in the cove area presents many traffic and safety concerns.

Because the marina facilities are not part of the uses for the project set forth in the license, GRDA is required to obtain Commission approval for the uses and facilities at issue. As part of the Commission's review of the application, we consider the impact of the proposed docks on navigational safety in the vicinity. In my opinion, it is of utmost significance that the licensee itself has a rule in place, developed pursuant to state law, prohibiting the construction of structures that will protrude more than 125 feet, or one-third of the distance from the adjacent shoreline to the opposite shoreline, whichever is less. Both the proposed dock structures, and the structures as modified by staff, will violate this rule by extending more than 125 feet from shore.[1]

Clearly, this prohibition was put in place as a safety precaution to limit structures that narrow an already busy cove where safety concerns exist. The Environmental Assessment (EA) prepared by Commission staff indicates that "[t]raffic and safety concerns have arisen on the lake primarily as a result of a greater number of larger boats as opposed to the 18- to 30-foot boats that historically populated the lake" and that "most of Grand Lake's large-boat traffic occurs on the Duck Creek arm of the lake."[2]

---

[1] Today's order correctly notes that the licensee has waived its rule, however, I believe that the Commission should take this rule into account when conducting its independent review of the effect of GRDA's proposal on navigational safety in the cove.

[2] EA Section 5.2.3.1.

According to the EA, "[a]t Thunder Bay Marina, Duck Creek Cove narrows from 1,150 feet to about 800 feet, constricting the channel to a narrow passage way for boats."[3] Moreover, the EA indicates that during the period 1998 through 2002 numerous boating accidents occurred in the cove.[4] Finally, the EA reports that the situation has continued to deteriorate: "It is expected that these uses and densities have increased since 1997, resulting in corresponding reductions in the quality of recreational boating experiences and boating safety."[5]

Given the traffic and safety concerns identified in the EA, the licensee's own safety rule prohibiting docks of this length, and the licensee's failure to explain why we should overlook its rule, I do not believe that approving either the original or the modified proposal is in the public interest. For this reason, I respectfully dissent.

	_____ Suedeen G. Kelly

[3] *Id.*

[4] *Id.*

[5] *Id.*