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## 1 **EXECUTIVE SUMMARY**

### 2 **INTRODUCTION**

3 The United States Army Corps of Engineers (USACE), Little Rock District, proposes to  
4 implement a revision of the Greers Ferry Lake Shoreline Management Plan (SMP). The SMP is a  
5 comprehensive plan for managing the shoreline at Greers Ferry Lake. The SMP is required by  
6 Federal regulations found at Title 36 of the *Code of Federal Regulations* (CFR), Section 327.30,  
7 and contains a set of requirements for an SMP review. The current version of the Greers Ferry  
8 Lake SMP became effective on November 21, 1994. The new SMP might revise various elements  
9 of the 1994 SMP. These elements include zoning of limited development areas, vegetation  
10 modification, provisions for grandfathered docks, and restrictions on boats with sleeping quarters  
11 and/or marine sanitation devices. As part of its decision-making process, the Corps is preparing  
12 an Environmental Impact Statement (EIS) to determine the potential environmental effects of  
13 SMP revision.

14 USACE regulations require that an SMP, as described in 36 CFR 327.30(e), will be prepared for  
15 each Corps project where private shoreline use is allowed; will honor past written commitments;  
16 and will be reviewed at least once every 5 years and revised as necessary. The regulations further  
17 state that shoreline uses that do not interfere with authorized project purposes, pose public safety  
18 concerns, violate local norms, or result in significant environmental effects should be allowed  
19 unless the public participation process identifies problems in these areas; and that if sufficient  
20 demand exists, consideration should be given to revising the shoreline allocations (e.g., increases,  
21 decreases). The last review of the SMP began on January 26, 1999. Because 36 CFR and the 1994  
22 SMP required the Corps to accept rezoning requests, a deadline for acceptance of such requests  
23 was established. The deadline was set at April 1, 1999. An open house was conducted on June 15,  
24 1999, allowing members of the public to express their views on rezoning and other issues. This  
25 meeting was also the means of presenting the scores assigned to each of the rezoning requests. A  
26 30-day public comment period followed the meeting. On January 11, 2000, the Greers Ferry Lake  
27 Project Office hosted a 5-hour public workshop to present the draft revision to the Greers Ferry  
28 Lake SMP and a Draft Environmental Assessment (EA) on the effects of implementing the  
29 proposed revised plan. The Corps Southwestern Division approved the 2000 SMP for  
30 implementation on March 14, 2000.

1 Subsequently, an organization known as Save Greers Ferry Lake, Inc., filed suit in federal court,  
2 claiming that the Corps had failed to comply with the National Environmental Policy Act  
3 (NEPA). In May 2000 the U.S. District Judge issued a temporary injunction that ruled the Corps  
4 EA did not support an overall finding of no significant impact. Following the injunction, the  
5 Corps withdrew the 2000 SMP, reverted to the 1994 SMP, and publicly announced that it would  
6 conduct a full EIS to continue the process. On August 24, 2000, the court issued a final order that  
7 ruled that the 32 permits for boat docks that had been issued under the 2000 plan were invalid.  
8 The order also stated that the five completed docks could remain on the lake temporarily. These  
9 docks may remain until July 3, 2002, or later if approved in a revised SMP. Although the permits  
10 for the 32 docks in the additional zones were declared invalid, permits may continue to be granted  
11 in areas zoned for docks under the 1994 plan.

12 The extensive 14-month public process identified the need for changes to the proposed SMP, and  
13 36 CFR requires that the changes be implemented if they do not interfere with authorized project  
14 purposes, pose public safety concerns, violate local norms, or result in significant environmental  
15 effects. Therefore, the Little Rock District and the Corps Greers Ferry Lake Project Office are  
16 obligated to continue the process with the necessary studies and to prepare an EIS before a new  
17 SMP may be implemented.

## 18 ***SETTING***

19 The Greers Ferry Lake Project area is located in the foothills of the Ozark Mountains in north-  
20 central Arkansas. The project area is about 65 miles from Little Rock, Arkansas, and 130 miles  
21 from Memphis, Tennessee. The lake lies within Cleburne and Van Buren Counties. Large  
22 portions of Stone and Searcy Counties and small portions of Pope and Conway Counties also  
23 contribute to the lake's watershed. Beyond the lake the area is principally rural in character. More  
24 than 80 percent of the land in the watershed is forested and 12 percent is agricultural.

25 Greers Ferry Lake was constructed between March 1959 and July 1964. The project area includes  
26 45,548 acres (slightly more than 71 square miles). Within the project area, the government owns  
27 flowage easements over 4,634 acres. The lake's waters cover 31,500 acres when measured at the  
28 "conservation pool" level of 461 feet above mean sea level. When waters must be held to prevent  
29 flooding of areas below the dam, the surface of the lake may rise to 487 feet above mean sea  
30 level. When this happens, the lake's surface area increases to 40,500 acres, and adjacent lands  
31 subject to the flowage easements become inundated.

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## 1 **ALTERNATIVE IDENTIFICATION PROCESS**

2 Identification of alternative SMP elements followed a two-step process. First, the individual  
3 elements that make up shoreline management were identified. These elements were analyzed, and  
4 four elements were identified for consideration as integral parts of revised SMP alternatives:

- 5 • *Limited Development Zoning.* This management element determines the amount of  
6 shoreline where docks may be permitted. Several variations or options are possible. A  
7 revised SMP could stabilize or “freeze” the amount of shoreline zoned for limited  
8 development by no longer accepting rezoning requests during periodic reviews of the  
9 SMP. Conversely, the SMP could provide for an increase in the extent of limited  
10 development area (LDA) shoreline, either by favorably acting on 93 rezoning requests  
11 received during the present SMP review or by otherwise increasing the amount of  
12 shoreline classified as LDA.<sup>1</sup> A revised SMP also could include a determination of the  
13 physical capacity of the shoreline and use existing rezoning criteria to limit development  
14 areas. If the baseline was “recalibrated” in this manner, use of this option could lead to a  
15 greater percentage of LDA shoreline around the lake.
- 16 • *Vegetation Modification.* This management element involves the issuance and terms of  
17 permits for vegetation modification in protected and limited development shoreline  
18 management zones. These permits could include clearing permits for fire protection, with  
19 various subelements such as mowing and sapling and/or underbrush removal. The extent  
20 of permissible removal also needs to be considered. The current SMP allows a vegetation  
21 modification permit to be granted to enable building owners to protect their premises  
22 from fire. The purpose must be for fire protection and not for landscape enhancement.  
23 Underbrush, such as broom sedge, green brier, and some saplings, may be removed. Only  
24 hand operated tools and noncommercial lawn mowers may be used. The use of heavy  
25 equipment such as tractors and bulldozers is not permitted. Trees and shrubs with trunk  
26 diameters equal to or exceeding 2 inches may not be removed. Flowering trees and

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<sup>1</sup> In connection with the SMP review, the Little Rock District accepted permit applications for limited development area actions. The Project Office received 123 requests by the April 1999 deadline. Of this number, 103 met 80 percent of the evaluation criteria and thus were found eligible for approval. The number of approved sites was subsequently lowered to 93 because some requests were consolidated and others were found to pertain to shoreline already zoned for limited development.

1 shrubs, regardless of size, may not be removed. No plantings will be authorized, except at  
2 the specific direction of the Corps of Engineers Project Office to mitigate erosion. Under  
3 these permits, vegetation may be modified no farther than 50 feet from the foundation of  
4 habitable structures. Options under this element include decreasing the 50-foot limitation  
5 or increasing the 50-foot limitation to as much as 200 feet. A requirement could be added  
6 to the SMP that no vegetation modification may occur within a designed vegetative  
7 buffer strip along the shoreline.

- 8 • *Grandfathered Docks.* Grandfathered docks are docks that existed before the first  
9 management plan and are not located in an LDA. The current SMP restricts each  
10 grandfathered dock to its original footprint, although owners may request dock  
11 expansions. An option would be to allow grandfathered docks to be reconstructed to  
12 alternative dimensions.<sup>2</sup> Another option would be to reallocate the locations of existing  
13 grandfathered docks outside the buffer zones or prohibited areas to limit development.
  
- 14 • *Restriction on Boats with Sleeping Quarters and/or Marine Sanitation Devices.* The  
15 current SMP contains restrictions on use of all boats with sleeping quarters and/or marine  
16 sanitation devices. This management element provides controls on a particular use of the  
17 lake that has a high potential to degrade the quality of the environment. All such boats  
18 must be moored at commercial marinas. An option would be to delete adherence to the  
19 sleeping quarters map from the SMP. The restricted area from the mouth of Peter Creek  
20 to the Dam would be eliminated. Additionally, the restricted area around municipal water  
21 intakes could be changed to conform to Arkansas State regulation.<sup>3</sup> Similarly, the  
22 requirement that all such boats continue to be moored at commercial marinas would be  
23 retained.

24 In the second step of alternative development, again reflecting authorized project purposes, SMP  
25 objectives, and public input, the four key SMP elements were combined into five alternative  
26 configurations, including the No Action Alternative. After consideration of public and agency

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<sup>2</sup>A Little Rock District memorandum provides revised guidance concerning grandfathered dock alterations. The memorandum states that changes may be considered. Although the number of boats or slips cannot be changed, a slip may be enlarged up to a maximum width of 14 feet. No other changes to grandfathered docks, such as the addition of swimming platforms or diving boards, are eligible for approval.

1 comments received on the Draft EIS, a sixth alternative was added. These six SMP alternative  
2 configurations are described in the following subsection.

### 3 ***ALTERNATIVES***

4 The Little Rock District and the Greers Ferry Project Office propose to implement an SMP  
5 following consideration of public comments and completion of appropriate environmental impact  
6 analyses. The new SMP would adhere to USACE policy and 36 CFR. The purpose of the  
7 proposed action is to implement an SMP that accomplishes congressionally authorized project  
8 purposes while balancing permitted private uses, community social and economic needs, and the  
9 application of sound environmental stewardship to managed resources.

10 The EIS examines five action alternatives for revision of the SMP and a No Action Alternative.  
11 These alternatives are described below.

- 12 • *Alternative 1 (No Action Alternative)*. Inclusion of the No Action Alternative is  
13 prescribed by Council on Environmental Quality (CEQ) regulations.<sup>4</sup> The No Action  
14 Alternative is evaluated in detail in this EIS. Under the No Action Alternative, the Little  
15 Rock District would make no changes to the existing 1994 Greers Ferry Lake SMP. No  
16 new management elements would be adopted, and no existing management elements  
17 would be modified. Rezoning applications received during the current SMP review would  
18 not be allowed but would be returned to the applicants at the completion of the current  
19 review. Applicants would be advised that they could reapply during the next review.  
20 Permit applications for placement of private floating facilities within present LDA's  
21 could be approved. Treatment of applications concerning grandfathered docks would  
22 proceed based on the 1994 SMP, which means no changes or enlargements would be  
23 allowed. The allowance for vegetation modification would permit mowing up to a  
24 maximum of 50 feet from habitable structures, as currently allowed under the 1994 SMP.

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<sup>3</sup>The current State regulation requires a 300-foot standoff on the water marked with buoys and 0.25 mile on each side of the intake on land.

<sup>4</sup> Congress established CEQ within the Executive Office of the President as part of the National Environmental Policy Act of 1969 (NEPA) (The White House, 2001). The CEQ coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives (The White House, 2001). The CEQ reports annually to the President on the state of the environment; oversees federal agency implementation of the environmental impact assessment process; and acts as a referee when agencies disagree over the adequacy of such assessments (The White House, 2001).

1 Restrictions on the locations for boats with sleeping quarters and/or marine sanitation  
2 devices would remain in effect.

3 It should be noted that if the No Action Alternative was adopted, no new rezoning  
4 requests would be approved during the period that would begin following issuance of the  
5 Record of Decision (ROD) upon completion of this EIS. However, during future reviews  
6 of the SMP, rezoning applications could be approved to the extent of the level described  
7 in Alternative 5 (Maximum Modification). It is expected that under the No Action  
8 Alternative, some growth would occur over a much longer period of time than that  
9 described under Alternative 3 (No Growth).

- 10 • *Alternative 2 (Approval of Rezoning Requests Meeting the 80 Percent Criteria)*. No  
11 future rezoning requests would be accepted under Alternative 2. The 93 rezoning requests  
12 that met the 80 percent criteria during the 1999 review of the 1994 SMP would be  
13 allowed. A minimum 50-foot vegetative buffer strip would be established; that is,  
14 mowing would be prohibited from the vegetated edge of the shoreline for 50 feet. This  
15 prohibition would involve only Corps property. Authorization for mowing from habitable  
16 structures would be increased from 50 to 100 feet, except where it would conflict with the  
17 vegetative buffer strip. The project rules on use of boats with sleeping quarters and/or  
18 marine sanitation devices would be deferred to State and Federal regulations, except that  
19 the requirement that such boats be moored at commercial docks would remain in effect.  
20 Grandfathered docks would be allowed to be reconstructed to alternative dimensions, or  
21 the locations of existing grandfathered docks would be reallocated outside the buffer  
22 zones or prohibited areas to limited development.

- 23 • *Alternative 3 (No Growth Alternative)*. This alternative, which is the most restrictive to  
24 lake access and recreational use, would seek to maintain the Corps land around the lake  
25 as it currently exists. Rezoning applications would not be accepted. No new shoreline use  
26 permits would be allowed. Expiring permits could be renewed, but only according to the  
27 permit's current terms (e.g., a permit for a two-slip dock could be renewed only as a  
28 permit for a two-slip dock; it could not be changed to a permit for a community dock).  
29 No new permits for vegetation modification would be issued, and expiring permits would  
30 not be renewed. Restrictions on the locations for boats with sleeping quarters and/or  
31 marine sanitation devices would remain in effect.

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- 1           • *Alternative 4 (Approval of Rezoning Requests Meeting the 90 Percent Criteria)*. This  
2 alternative would implement the same measures as described under Alternative 2;  
3 however, only rezoning requests that met 90 percent of the rezoning criteria would be  
4 approved. A minimum 100-foot vegetative buffer strip would be established; that is,  
5 mowing would be prohibited from the vegetated edge of the shoreline for 100 feet.
- 6           • *Alternative 5 (Maximum Modification)*. This alternative would allow the maximum  
7 rezoning from “protected” to “limited development.” The shoreline would be rezoned to  
8 increase the LDA’s from 7 to 33 percent. Rezoning would be based on suitable  
9 topography (shoreline with a 20 to 49 percent slope). No rezoning requests would be  
10 accepted or approved at future SMP reviews. Authorization for mowing would be  
11 increased from 50 to 200 feet from habitable structures. Restrictions on use of boats with  
12 sleeping quarters and/or marine sanitation devices would be abolished, but the  
13 requirement for such boats to be moored at commercial docks would remain in effect.  
14 Grandfathered docks would be allowed to be reconstructed to alternative dimensions, or  
15 the locations of existing grandfathered docks would be reallocated outside the buffer  
16 zones or prohibited areas.
- 17           • *Alternative 6 (Revised Preferred Alternative)*. The Corps Revised Preferred Alternative  
18 was created in response to the comments received on the Draft EIS from the public and  
19 Federal and State agencies. Under this new alternative, the Corps of Engineers would  
20 approve 56 rezoning requests, including 41 of the rezoning requests that met 90 percent  
21 of the rezoning criteria. Four of the requests that originally met the 90 percent criteria  
22 would not be approved based on two additional elimination criteria. Two boat dock  
23 rezoning requests in the Narrows, a heavy use area, would be denied out of concerns for  
24 boater safety. Two rezoning requests would be denied along lakeshore areas that would  
25 be designated as *very high scenic integrity protected areas*. Three areas of the lake  
26 would receive this designation under the Revised Preferred Alternative, based on  
27 extensive public concern about development in the majority of open areas of the lake that  
28 are not currently allocated as LDA, and moreover that spot zoning in these areas could  
29 create a precedent of reallocations in the future, even with a “no rezoning” clause.  
30 Grandfathered boat docks in these protected areas would not be removed, and could be  
31 improved as per the existing SMP.

1 Additionally, to be equitable to those individuals whose docks were permitted during the  
2 time the 2000 SMP was approved, the Corps would conditionally approve 15 of the 16  
3 permits that did not meet the 90 percent rezoning criteria but which did meet the 80  
4 percent criteria. One of these 16 previously permitted sites would be eliminated due to  
5 the new elimination criterion of safety in the Narrows, leaving 15 conditionally approved  
6 permits. The “condition” of permit approval would be a restriction on any future  
7 expansion of the boat docks once permitted. The permits would only be approved for  
8 construction of a boat dock meeting the specifications of size and slip number as  
9 indicated in the original rezoning request.

10 As described in Section 4.0, all of the alternatives analyzed in this Final EIS would result  
11 in some adverse effect on the environment. In designating Alternative 6 as the preferred  
12 configuration of key SMP elements for incorporation into and implementation through a  
13 revised SMP, the Little Rock District is guided by Corps regulations and policy  
14 governing Shoreline Management Plans, the District’s objectives for the Greers Ferry  
15 Lake SMP, public input to the SMP and EIS development processes, and court-ordered  
16 mandates. The District views the Revised Preferred Alternative as the alternative that  
17 conforms with existing laws and regulations and best balances public uses of lake  
18 shoreline for recreational opportunity, public safety, and environmental protection.

19 A variety of other alternatives also were identified but were not carried forward for detailed  
20 analysis for reasons described in the Final EIS.

## 21 **CONCLUSIONS**

22 Direct, indirect, and cumulative environmental and socioeconomic effects that would likely occur  
23 upon implementation of each of the six alternatives were analyzed. Cumulative effects were  
24 analyzed taking into account past, present, and future actions in the Greers Ferry area. A  
25 summary of the findings is presented below and in Table ES-1 (at the end of the Executive  
26 Summary). Table ES-2 provides a visual comparison of the impacts of the alternatives considered  
27 in the Final EIS.

### 28 **Alternative 1 (No Action Alternative)**

- 29 • **Impact Summary.** No significant effects would be expected under this alternative.  
30 Implementation of the No Action Alternative would result in a variety of short- and long-

1 term minor beneficial and adverse effects on both the natural and human environments.  
2 Most effects on resource areas under the No Action Alternative would be negligible or  
3 minor. Long-term direct and indirect moderate effects on land use, land cover, and land  
4 use controls would be expected. Long-term direct minor adverse effects on visual and  
5 aesthetic resources would be expected. No direct effects would be expected to the  
6 watershed, air quality, hazardous and toxic substances, or noise. No indirect effects  
7 would be expected on recreation and recreational resources. Detailed information is  
8 provided in Table ES-1.

- 9 • **Mitigation Summary.** The Corps of Engineers' *Greers Ferry Lake Rezoning Request*  
10 *Evaluation Criteria*, provided in Appendix A, describes elimination factors as well as  
11 physical and managerial criteria employed in determining whether a rezoning request  
12 could be approved or otherwise denied. The use of these elimination factors serves as  
13 mitigation in that implementing these criteria and denying a rezoning request avoids  
14 adverse impacts. For example, if any significant environmental, ecological, or cultural  
15 features are present, the rezoning request would be denied. The Corps of Engineers  
16 would continue to apply the Evaluation Criteria in reviewing and approving requests for  
17 rezoning and permits. The Corps also would continue to conduct annual inspections of  
18 permits to ensure compliance with permit provisions.

19 The Corps, in coordination with the Arkansas Department of Environmental Quality  
20 (ADEQ), should continue to monitor water quality for pollutants to assess present  
21 conditions and evaluate future changes and effects of activity on water quality.

22 Where soils would be disturbed by anchoring docks, installing access paths, and  
23 constructing homes, best management practices (BMPs) for reducing sediment runoff—  
24 such as installing silt fences, revegetating disturbed areas as soon as possible, and  
25 phasing construction to minimize the total area of soil disturbed at any one time—could  
26 be used by those performing the work.

27 Before any disturbance or land use change on or adjacent to the shoreline, the State  
28 Historic Preservation Officer (SHPO) should be contacted concerning the presence of  
29 historic and cultural resources on the proposed site. Mitigation measures recommended  
30 by the SHPO should be used.

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**Alternative 2 (Approval of Rezoning Requests Meeting the 80 Percent Criteria)**

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2       • **Impacts Summary.** No significant effects would be expected under this alternative.  
3       Implementation of Alternative 2 would result in beneficial and adverse effects on both  
4       the natural and human environments. Most effects on resource areas under Alternative 2  
5       would be negligible or minor. Long-term negligible to moderate direct and indirect  
6       adverse effects would be expected on cultural resources, and long-term major direct  
7       adverse effects on visual and aesthetic resources would be expected. No direct effects to  
8       the watershed, air quality, hazardous and toxic substances, or noise would be expected.  
9       Detailed information is provided in Table ES-1.

10       • **Mitigation Summary.** The Corps of Engineers' *Greers Ferry Lake Rezoning Request*  
11       *Evaluation Criteria*, provided in Appendix A, describes elimination factors as well as  
12       physical and managerial criteria employed in determining whether a rezoning request  
13       could be approved or otherwise denied. The use of these elimination factors serves as  
14       mitigation in that implementing these criteria and denying a rezoning request avoids  
15       adverse impacts. For example, if there are any significant environmental, ecological, or  
16       cultural features present, the rezoning request would be denied. The Corps would  
17       continue to conduct annual inspections of permits to ensure compliance with permit  
18       provisions.

19       The Corps, in coordination with ADEQ, should continue to monitor water quality for  
20       pollutants to assess present conditions and evaluate future changes and effects of activity  
21       on water quality.

22       The requirement to maintain a 50-foot vegetative buffer strip between upland  
23       development and the conservation pool would provide some interception of nutrient  
24       loadings to the lake system as well as maintain habitat. This buffer would help to avoid  
25       water quality impacts.

26       Where soils would be disturbed by anchoring docks, installing access paths, and  
27       constructing homes, BMPs for reducing sediment runoff—such as installing silt fences,  
28       revegetating disturbed areas as soon as possible, and phasing construction to minimize  
29       the total area of soil disturbed at any one time—could be used by those performing the  
30       work.

1 Mitigation measures for cultural resources should be discussed with the Arkansas SHPO  
2 early in the project process, and with the public and interested American Indian tribes or  
3 organizations. Any mitigation measures should be proposed or considered in accordance  
4 with the provisions of 36 CFR Part 800, Protection of Historic Properties. Mitigation  
5 measures for historic structures or districts that would be altered or demolished or whose  
6 viewsheds would be adversely affected include photographic documentation, scale  
7 drawings, and archival research. Other mitigation means are also possible. Avoidance,  
8 however, is preferred.

9 ***Alternative 3 (No Growth Alternative)***

- 10 • ***Impacts Summary.*** No significant effects would be expected under this alternative.  
11 Implementation of the No Growth Alternative would result in beneficial and adverse  
12 effects on both the natural and human environments. Long-term direct minor beneficial  
13 effects on visual and aesthetics resources and ecological systems would be expected.  
14 Long-term indirect minor beneficial effects on geology and soils would be expected.  
15 Long-term indirect negligible adverse effects on visual and aesthetics resources would be  
16 expected. Long-term minor adverse cumulative effects on infrastructure would be  
17 expected. No direct, indirect, or cumulative significant impacts would result from  
18 implementation of the No Growth Alternative. Detailed information is provided in Table  
19 ES-1.
- 20 • ***Mitigation Summary.*** No direct adverse effects would be expected; therefore, no  
21 mitigation measures are required.

22 ***Alternative 4 (Approval of Rezoning Requests Meeting the 90 Percent Criteria)***

- 23 • ***Impacts Summary.*** No significant effects would be expected under this alternative.  
24 Implementation of Alternative 4 would result in beneficial and adverse effects on both  
25 the natural and human environments. Most effects on resource areas under Alternative 4  
26 would be negligible or minor. Long-term negligible to moderate direct and indirect  
27 adverse effects would be expected on cultural resources. Long-term major direct  
28 beneficial and adverse effects on visual and aesthetic resources would be expected. No  
29 direct effects on the watershed, air quality, hazardous and toxic substances, or noise  
30 would be expected. Detailed information is provided in Table ES-1.

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- 1           • **Mitigation Summary.** The Corps of Engineers' *Greers Ferry Lake Rezoning Request*  
2           *Evaluation Criteria*, provided in Appendix A, describes elimination factors as well as  
3           physical and managerial criteria employed in determining whether a rezoning request  
4           could be approved or otherwise denied. The use of these elimination factors serves as  
5           mitigation in that by implementing these criteria and denying a rezoning request adverse  
6           impacts are avoided. For example, if there are any significant environmental, ecological,  
7           or cultural features present, the rezoning request would be denied.

8           The Corps, in coordination with ADEQ, should continue to monitor water quality for  
9           pollutants to assess present conditions and evaluate future changes and effects of activity  
10          on water quality.

11          The requirement to maintain a 100-foot vegetative buffer strip between upland  
12          development and the conservation pool would provide some interception of nutrient  
13          loadings to the lake system as well as maintain habitat. This buffer would help to avoid  
14          water quality impacts and enhance scenic integrity.

15          Where soils would be disturbed by anchoring docks, installing access paths, and  
16          constructing homes, BMPs for reducing sediment runoff—such as installing silt fences,  
17          revegetating disturbed areas as soon as possible, and phasing construction to minimize  
18          the total area of soil disturbed at any one time—could be used by those performing the  
19          work.

20          Before to any disturbance or land use change on or adjacent to the shoreline, the  
21          Arkansas SHPO should be contacted concerning the presence of historic and cultural  
22          resources on the proposed site. Mitigation measures recommended by the SHPO should  
23          be used.

24          ***Alternative 5 (Maximum Modification).***

- 25           • **Impacts Summary.** Some significant effects would be expected under this alternative.  
26           Implementation of the Maximum Modification Alternative would result in beneficial and  
27           adverse effects on both the natural and human environments. Many of the effects on  
28           resource areas under Alternative 5 would be major or significant. Greers Ferry Lake is  
29           considered a unique geographic area. The public has stated its desire to preserve the  
30           beauty, shoreline, and pristine conditions of the lake. A change of the magnitude

1 anticipated under this alternative would irretrievably change that character and likely be  
2 highly controversial.

3 Long-term major or significant direct effects on land use, land cover, and land use  
4 controls; and visual and aesthetic resources would be expected. Long-term negligible to  
5 moderate direct and indirect adverse effects on cultural resources would be expected.  
6 Short- and long-term major indirect adverse effects to infrastructure would be expected.  
7 Short- and long-term major indirect beneficial effects to socioeconomics would be  
8 expected. Long-term major indirect adverse effects on the watershed; land use, land  
9 cover, and land use controls; and visual and aesthetic resources would be expected. No  
10 direct effects on air quality, hazardous and toxic substances, or noise would be expected.  
11 Long-term moderate, major, or significant adverse cumulative effects would be expected  
12 on the watershed; land use, land cover, and land use controls; infrastructure;  
13 socioeconomics; visual and aesthetic resources; and cultural resources would be  
14 expected. Detailed information is provided in Table ES-1.

- 15 • **Mitigation Summary.** The following measures are proposed to help mitigate the impacts  
16 of potentially increasing the number of boat docks by 372 percent under the Maximum  
17 Modification Alternative. This alternative would allow rezoning of areas of shoreline  
18 with slopes between 20 and 49 percent to LDA's. The Corps of Engineers' *Greers Ferry  
19 Lake Rezoning Request Evaluation Criteria*, provided in Appendix A, describes  
20 elimination factors as well as physical and managerial criteria employed in determining  
21 whether a rezoning request could be approved or otherwise denied. The use of these  
22 elimination factors serves as mitigation in that by implementing these criteria and  
23 denying a rezoning request adverse impacts are avoided. For example, if any significant  
24 environmental, ecological, or cultural features are present, the rezoning request would be  
25 denied.

26 A compilation of suggested mitigation measures for individual resource areas follows.  
27 The introduction of pollutants and sediment to surface water bodies from surface water  
28 runoff can be reduced if BMPs are used during construction, agricultural operations,  
29 industrial operations, and daily household operations in the Greers Ferry Lake watershed.  
30 Proper operation and maintenance of septic systems in the watershed is critical, as is  
31 proper operation and maintenance of boats and personal watercraft (PWC). Planting a

1 grassy cover would help minimize soil erosion and nonpoint source pollution associated  
2 with surface water runoff following vegetation removal if the vegetation modification  
3 (mowing) distance from habitable structures is increased. Maintaining an intact  
4 vegetative buffer strip within 50 feet of the vegetated edge of the shoreline would also  
5 reduce the likelihood of soil erosion and nonpoint source pollution. Visual and aesthetic  
6 impacts could be mitigated by using earth tone or green-colored materials, particularly  
7 for roofs and siding, depending on the color of the background vegetation. Mitigation  
8 measures for archeological sites include data recovery excavations at archeological sites  
9 that would be destroyed by construction or soil disturbance. Boater conflicts and accident  
10 rates could be reduced by increasing the message of boater safety and tolerance for  
11 multiple uses during patrols on the lake and encounters between law enforcement  
12 officials and lake visitors and area residents. If conflicts between adjacent homeowners  
13 and boaters (for instance, concerning fishing by private docks or PWC use in coves)  
14 became too common, some form of use regulation might be desirable. The use of a lake  
15 surface can be regulated by zoning different parts of the lake for different activities or by  
16 allowing conflicting activities on a lake at different times.

17 ***Alternative 6 (Revised Preferred Alternative)***

- 18 • ***Impacts Summary.*** No significant effects would be expected under this alternative.  
19 Implementation of the Revised Preferred Alternative would result in beneficial and  
20 adverse effects on both the natural and human environments. Most effects on resource  
21 areas under the Revised Preferred Alternative would be negligible or minor. Long-term  
22 major direct adverse effects on visual and aesthetic resources would be expected. Long-  
23 term negligible to moderate direct and indirect adverse effects on cultural resources  
24 would be expected. No direct effects on the watershed, air quality, hazardous and toxic  
25 substances, or noise would be expected. Detailed information is provided in Table ES-1.
- 26 • ***Mitigation Summary.*** The Corps of Engineers' *Greers Ferry Lake Rezoning Request*  
27 *Evaluation Criteria*, provided in Appendix A, describes elimination factors as well as  
28 physical and managerial criteria employed in determining whether a rezoning request  
29 could be approved or otherwise denied. The use of these elimination factors serves as  
30 mitigation in that by implementing these criteria and denying a rezoning request adverse  
31 impacts are avoided. For example, if there are any significant environmental, ecological,  
32 or cultural features present, the rezoning request would be denied.

1 The Corps, in coordination with ADEQ, should continue to monitor water quality for  
2 pollutants to assess present conditions and evaluate future changes and effects of activity  
3 on water quality.

4 The requirement to maintain a 100-foot vegetative buffer strip between upland  
5 development and the conservation pool would provide some interception of nutrient  
6 loadings to the lake system as well as maintain habitat. This buffer would help to avoid  
7 water quality impacts and enhance scenic integrity. Designation of three open water  
8 areas of the lake as highly scenic would help preserve the visual and aesthetic appeal of  
9 these areas.

10 Where soils would be disturbed by anchoring docks, installing access paths, and  
11 constructing homes, BMPs for reducing sediment runoff—such as installing silt fences,  
12 revegetating disturbed areas as soon as possible, and phasing construction to minimize  
13 the total area of soil disturbed at any one time—could be used by those performing the  
14 work.

15 Before to any disturbance or land use change on or adjacent to the shoreline, the  
16 Arkansas SHPO should be contacted concerning the presence of historic and cultural  
17 resources on the proposed site. Mitigation measures recommended by the SHPO should  
18 be used.

## 19 ***AREAS OF CONTROVERSY***

20 On June 15, 2001, the Little Rock District, US Army Corps of Engineers announced that it was  
21 withdrawing its 2000 Shoreline Management Plan and would reexamine the plan's environmental  
22 aspects by preparing an EIS. In addition, the 1994 plan would remain in effect.

23 The withdrawal resulted from a May 30, 2001, temporary injunction issued by U.S. District Judge  
24 William R. Wilson after a not-for-profit corporation called Save Greers Ferry Lake, Inc., filed suit  
25 to block the Corps from implementing portions of the 2000 SMP. In issuing the injunction, the  
26 judge found that the EA conducted, as part of the 14-month shoreline management review did not  
27 adequately support an overall finding of no significant impact because long-term environmental  
28 impacts were cited.

1 On August 24, 2000, the court issued a final order that, among other things, ruled that the 32  
2 permits for boat docks issued under the 2000 plan were invalid. Five of those docks had been  
3 built and placed on the lake before the injunction was issued. The others were in various stages of  
4 construction. The order allows the five completed docks to remain temporarily. The Corps will  
5 monitor them and notify the court of any violations. These docks may remain until July 3, 2002,  
6 or later if approved in a revised plan. Construction of the other docks will not be completed  
7 unless subsequently permitted under an approved SMP. Some dock builders refunded permit  
8 holders' money. Other permit holders are attempting to locate buyers for their docks and recover  
9 their investment or are relocating their docks to areas previously zoned for docks. Although the  
10 permits for the 32 docks in the additional zones were declared invalid, permits may continue to be  
11 granted in areas zoned for docks under the 1994 plan.

12 Public participation in the NEPA process in the first 14-month review revealed various public  
13 opinions. More than half of the comments received indicated a desire to change the current SMP  
14 to allow additional boat dock zones and to increase vegetation modification limits on public  
15 property. In fact, there was widespread support for the 2000 SMP. Out of the 41 broad categories  
16 of issues identified during the scoping process for the EIS, dock-related issues were the primary  
17 concern of Greers Ferry Lake property owners and other recreational users of the lake. The issue  
18 of the Corps approving rezoning requests to allow for 93 new boat dock permits stimulated  
19 passions both in favor of and against approval. The issues related to private docks include impact  
20 of increasing the number of docks, lake property owners' responsibility for dock maintenance,  
21 and access for Greers Ferry Lake property owners. Many also indicated that they would like the  
22 dock permits previously approved by the Corps, but later revoked by the court order, to be  
23 reinstated. Other issues mentioned include support for and opposition to the number of new dock  
24 permit approvals mentioned in the SMP 2000, dock design, and grandfathered dock issues.

25 Other major issues of concern were water quality, vegetation modification, aesthetics and beauty,  
26 mowing, the Corps, and marinas. Comments on water quality expressed a desire for more  
27 research to be done on all the possible sources of pollution and how the lake's water quality  
28 would be affected. Vegetation modification (mowing) was both supported and opposed. Some  
29 lakeshore residents believed vegetation modification would improve the view of the lake and  
30 would be good for fire safety and other safety reasons, whereas other residents believed that it  
31 would ruin the natural beauty of the lake and increase shoreline erosion. Almost all of the

1            comments about aesthetics and beauty indicated concerns about preserving the natural beauty,  
2            shoreline, or pristine conditions of Greers Ferry Lake.

3            ***ISSUES TO BE RESOLVED***

4            No issues related to the proposed action remain unresolved.

**Table ES-1  
Comparison of Alternatives**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
<b>Greers Ferry Lake Watershed</b>	Short- and long-term indirect minor adverse effects. Minor increase in loadings for certain parameters with periodic violation of water quality standards. Less than 1% increase in total phosphorus (TP) and total suspended solids (TSS) for the entire system. Negligible change in fecal coliform (FC) loads. Localized impacts on areas with high-density marina operations. No effects to groundwater.	Short- and long-term indirect minor adverse impacts. Less than 1% increase in TP, TSS, and FC for the entire system. Localized impacts on areas dependent on the degree of exposure of erodible soil through construction of paths and walkways. No effects to groundwater.	No effects. Any changes in water quality would be due to baseline growth in the region, not implementation of the No Growth Alternative. No effects to groundwater.	Short- and long-term indirect minor adverse effects. Less than 1% increase in TP and TSS for the entire system. Negligible change in FC loads. Localized impacts on areas with high-density marina operations. No effects to groundwater.	Short-term direct minor adverse and long-term indirect major adverse effects. Major effects assuming Corps actions induce 100% growth. TP could increase up to 16% to 25%, TSS could increase up to 2% to 3%, BOD could increase up to 8% to 12%, and FC could increase up to 5%, assuming Corps actions induce 100% growth. Minor effects for the lake if Corps actions only partly induce growth (e.g., 20%). No effects to groundwater.	Short- and long-term indirect minor adverse effects. Impacts would be more than those under Alternative 4, but less than those under Alternative 2	Adverse cumulative effects on water quality could result from an increase in development in areas adjacent to the lake within the project area. Additional construction related to resort areas, housing, and new infrastructure in the Greers Ferry Lake watershed would contribute additional pollutant loadings to the lake. In addition, the proposed construction of a 400-slip boat marina in Cove Creek would cause cumulative impacts on water quality. No effects to groundwater.
<b>Land Use and Land Cover</b>	Long-term direct and indirect moderate adverse effects. New homes, new access paths, and clearing around additional homes would affect land use and vegetative cover.	Long-term direct and indirect minor beneficial and adverse effects. New homes, new access paths, and clearing around additional homes would affect land use and vegetative cover. A 50-foot vegetative buffer strip would protect vegetation.	Long-term direct and indirect minor beneficial effects. Reduced clearing around homes would improve vegetative cover.	Long-term direct and indirect minor beneficial and adverse effects. New homes, new access paths, and clearing around additional homes would affect land use and vegetative cover. A 100-foot vegetative buffer strip would protect vegetation.	Long-term direct and indirect major adverse effects. Many new homes, new access paths, and clearing around additional homes to 200 feet would change land use and vegetative cover.	Long-term direct and indirect minor beneficial and adverse effects. Impacts would be more than those under Alternative 4, but less than those under Alternative 2.	Long-term adverse effects. Continued development around the lake would add to any effects of implementation of one of the alternatives.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Infra-structure	Long-term direct negligible beneficial effects and long-term indirect negligible and minor adverse effects. Additional boat docks would relieve some pressure on existing boat launch facilities and ease traffic circulation around them. However, building new docks would result in negligible amounts of construction wastes in landfills and additional energy usage. Induced development will generate minor increased demand for roads, potable water supply, wastewater treatment, solid waste disposal, landfill space, and fire and rescue services.	Long-term direct negligible beneficial effects and long-term indirect negligible and minor adverse effects. Additional boat docks would relieve some pressure on existing boat launch facilities and ease traffic circulation around them. However, building new docks would result in negligible amounts of construction wastes in landfills and additional energy usage. Induced development will generate minor increased demand for roads, potable water supply, wastewater treatment, solid waste disposal, landfill space, and fire and rescue services.	No effects. Implementation of the No Growth Alternative would not place additional demands on regional infrastructure resources.	Long-term direct negligible beneficial effects and long-term indirect negligible and minor adverse effects. Additional boat docks would relieve some pressure on existing boat launch facilities and ease traffic circulation around them. However, building new docks would result in negligible amounts of construction wastes in landfills and additional energy usage. Induced development will generate minor increased demand for roads, potable water supply, wastewater treatment, solid waste disposal, landfill space, and fire and rescue services.	Long-term direct minor beneficial and short- and long-term indirect major adverse effects. Additional boat docks would relieve some pressure on existing boat launch facilities and ease traffic circulation around them. However, building new docks would result in minor amounts of construction wastes in landfills and additional energy usage. Induced development would have major adverse effects by generate increased demand for roads, potable water supply, wastewater treatment, solid waste disposal, landfill space, and fire and rescue services. Expected growth under this alternative could take as many as 50 years to build out to expected levels.	Long-term direct negligible beneficial effects and long-term indirect negligible and minor adverse effects. Impacts would be more than those under Alternative 4, but less than those under Alternative 2.	Alternative 5 would likely create cumulative effects on infrastructure that might need to be considered in future county planning. Those effects might include a need to expand roads to handle more traffic year-round in Greers Ferry, Heber Springs, and other surrounding towns; increases in electrical and water supply capacities; and expanded communication systems (including wired and cellular telephone and Internet access). If recreational activity at the lake increased under Alternative 5, it might be desirable to increase the availability of sewage disposal facilities for boaters and expand enforcement of no discharge regulations.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Socio-economics	Short-term direct minor and short-term and long-term indirect minor effects. Employment and gross regional product (GRP) to increase by 1% and personal income by 2%. Population increases by 2.7% more than baseline by end of 5-year period. No effects to environmental justice or protection of children.	Short-term direct minor beneficial and short- and long-term indirect minor beneficial effects. Employment and GRP to increase by 1% and personal income by 2%. Population increase by 2.9% more than the baseline by the end of the 5-year period. No effects to environmental justice or protection of children.	No effects. Economic growth in the region of influence (ROI) would remain consistent with the baseline projections. No effects to environmental justice or protection of children.	Short-term direct minor beneficial and short- and long-term indirect minor beneficial effects. Projected changes to most indicators would be less than 2%. No effects on environmental justice or protection of children.	Short-term direct minor beneficial effects and short- and long-term indirect major beneficial effects. Major long-term indirect effects if Corps actions induce 100% of lakeshore growth. Local population could increase by more than 16 % from the baseline projection. Employment and GRP are projected to increase by about 6 % and 5%, respectively. Personal income increase by 10% over the baseline projection. Effects may not occur for several decades. No effects to environmental justice or protection of children.	Short-term direct minor beneficial effects and short- and long-term indirect minor beneficial effects. Impacts would be more than those under Alternative 4, but less than those under Alternative 2.	Future development of marinas and other public facilities would be expected to have a minor beneficial effect on the local economy. If marinas and parking facilities were expanded, more people would visit the lake. These visitors would spend money on food, lodging, gas, recreation, and other services in the ROI.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Visual and Aesthetic Resources	Long-term direct minor adverse impacts. <i>Scenic attractiveness</i> affected with 58% potential increase in docks. Addition of 170 boat docks <sup>1</sup> would reduce <i>scenic integrity</i> . <i>Landscape visibility</i> affected by 18% increase in lake acreage where 1 or more boat docks would be clearly visible. No new net visual and aesthetic impacts from vegetation modification, grandfathered docks, or boats with sleeping quarters and/or marine sanitation devices (MSDs).	Long-term direct minor adverse impacts. <i>Scenic attractiveness</i> affected with 89% potential increase in docks. Addition of 263 boat docks would reduce <i>scenic integrity</i> . <i>Landscape visibility</i> affected by 49% increase in lake acreage where 1 or more boat docks would be clearly visible. 50-foot vegetation modification zone would have adverse visual and aesthetic impacts. No new net visual and aesthetic impacts from grandfathered docks, or boats with sleeping quarters and/or MSDs.	Long-term direct minor beneficial and indirect negligible adverse effects. Not adding new private boat docks and eliminating mowing would have a beneficial effect on the scenic attractiveness of the lake's shoreline. The need for additional dryland boat storage could lead to some loss of the surrounding area's scenic attractiveness as natural settings give way to more dry-dock boat storage buildings.	Long-term direct minor adverse and beneficial effects. <i>Scenic attractiveness</i> affected with 73% potential increase in docks. Addition of 215 boat docks would reduce <i>scenic integrity</i> . <i>Landscape visibility</i> affected by 35% increase in lake acreage where 1 or more boat docks would be clearly visible. 100-foot vegetative buffer strip would enhance the natural scenic integrity of the shoreline by hiding housing and other structures along the shore.	Long-term direct significant and indirect major adverse effects. <i>Scenic attractiveness</i> significantly affected with 372% potential increase in docks. Addition of 1,098 boat docks would significantly reduce <i>scenic integrity</i> . <i>Landscape visibility</i> affected by 55% increase in lake acreage where 1 or more boat docks would be clearly visible. The 200-foot vegetation modification zone would detract from the natural scenic attractiveness of the shoreline by visually contrasting with the surrounding natural vegetation.	Long-term direct minor beneficial and adverse effects and major direct adverse effects. Effects on boat dock visibility would be more than Alternative 4, but less than those under Alternative 2, and effects on vegetative clearing would be slightly more than those under Alternative 1.	Construction and operation of the proposed Cove Creek marina would have a minor effect on the scenic attractiveness and scenic integrity of the lake's shoreline over and above the introduction of new private boat docks. Significant cumulative impacts under Alternative 5.
Recreation and Recreational Facilities	Long-term direct minor beneficial effects due to the potential increase to on-lake boating recreational opportunities.	Long-term direct minor beneficial effects due to the potential increase to on-lake boating recreation opportunities.	Short-term direct minor adverse effects and long-term direct minor beneficial effects. No change in recreational activities, but increased demand for recreational facilities.	Long-term direct minor beneficial effects due to the potential increase in on-lake boating recreational opportunities.	Long-term direct minor beneficial and indirect adverse effects. Additional 209 boats on the water surface during peak use periods in boating density (14.4%). Some increase in recreational opportunities.	Long-term direct minor beneficial effects. Effects would be more than those under Alternative 4, but less than those under Alternative 2.	Long-term minor adverse effects due to the upper level of boating due to new marina in addition to more boat docks.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Geology and Soils	Short- and long-term direct minor adverse and long-term direct minor beneficial effects.	Long-term direct and indirect minor adverse effects with vegetation modification (mowing) increase to 100 feet from homes. Long-term minor beneficial effects from 50-foot vegetative buffer strip from conservation pool.	Long-term indirect minor beneficial effects. Existing vegetative modification permits would expire and, over time, the regrowth of the vegetative buffer would naturally help prevent soil erosion.	Long-term direct and indirect minor adverse effects with vegetation modification (mowing) increase to 100 feet from homes. Long-term minor beneficial effects from 100-foot vegetative buffer strip from conservation pool.	Short- and long-term direct minor adverse and long-term indirect minor adverse effects. Maximizing development of all areas of shoreline with slopes between 20% and 49% would cause increase in soil disturbance and soil erosion. Increase in impervious surfaces, such as rooftops and roads, would increase surface runoff, thereby also increasing potential for soil erosion. Long-term minor adverse effects with vegetation modification (mowing) increase to 200 feet from homes.	Short- and long-term direct minor adverse effects and long-term direct minor beneficial effects. Effects would be less than those under Alternative 4.	Development behind Corps property along the lake is likely to continue to increase; therefore, soil disturbance and subsequent increased sediment runoff would occur during construction of new structures. Increase in impervious surfaces, such as rooftops and roads, would increase surface runoff and, consequently, the potential for soil erosion. Minor impacts from construction of proposed Cove Creek marina would occur through soil erosion. Fluctuating water levels from lake level management and increased boating activity on the lake would be likely to contribute to soil erosion through wave action and increased surface runoff.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Ecological Systems	Long-term direct and indirect minor adverse effects. LDA development would affect vegetation, wildlife, and sensitive species. No effect from mowing 50 feet from homes.	Long-term direct and indirect minor adverse and long-term minor direct beneficial affects. LDA development would affect vegetation, wildlife, and sensitive species. Adverse effect on vegetation from mowing 100 feet from homes. 50-foot vegetative buffer strip from the shoreline would preserve habitat.	Long-term direct minor beneficial effects. Not issuing new vegetation modification permits and not renewing expiring permits would preserve habitat.	Long-term direct and indirect minor adverse and long-term minor direct beneficial effects. LDA development would affect vegetation, wildlife, and sensitive species. Adverse effect on vegetation from mowing 100 feet from homes. 50-foot vegetative buffer strip from the shoreline would preserve habitat.	Long-term direct and indirect minor to moderate adverse effects. LDA development would affect vegetation, wildlife, and sensitive species. Adverse effect on vegetation from mowing 200 feet from homes. Loss of lakeshore vegetation would reduce quality of habitat.	Long-term direct and indirect minor adverse effects and long-term minor direct beneficial effects. Effects would be less than Alternative 4.	Alternatives that allow for more development along the shoreline (more private docks) could lead to increased development of adjacent land, which would result in a localized reduction of habitat.
Cultural Resources	Long-term direct and indirect minor adverse effects. Construction could demolish potential NRHP-eligible archeological sites.	Long-term direct and indirect negligible to moderate adverse effects. Construction could demolish potential NRHP-eligible archeological sites.	No effects. Any effects on cultural resources would be due to baseline growth in the region, not implementation of this alternative.	Long-term direct and indirect negligible to moderate adverse effects. Construction could demolish potential NRHP-eligible archeological sites.	Long-term direct and indirect negligible to moderate adverse effects. Construction could demolish potential NRHP-eligible archeological sites.	Long-term direct and indirect minor adverse effects. Effects would be more than those under Alternative 4, but less than those under Alternative 2.	Additional construction related to resort areas, housing, and new infrastructure would disturb the soil and might affect archeological sites that could be NRHP-eligible. Development pressure could also affect historic structures.
Air Quality	No effects. Air emissions would not increase due to construction or automobile traffic.	Long-term indirect negligible adverse effects due to increased automobile traffic.	No effects. No increase of stationary or mobile air emissions relative to baseline.	Long-term indirect negligible adverse effects due to increased automobile traffic.	Long-term indirect minor adverse effects because of increased automobile traffic due to additional recreational traffic and increase in population in the ROI.	Long-term indirect negligible adverse effects. Effects would be more than those under Alternative 4, but less than those under Alternative 2.	No effects.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Hazardous and Toxic Substances	Long-term indirect minor beneficial and adverse effects. New docks would either not affect or decrease recreational activity in parks on the lake and, therefore, either not affect or decrease the quantities of pollutants spilled onto parking lots at these facilities, potentially resulting in a beneficial effect. Activities on docks would be expected to increase quantities of potentially harmful substances used on or near the lake.	Short- and long-term indirect minor adverse effects and long-term indirect minor beneficial effects. Due to 1% increase in boating activity, expect increase in quantities of potentially harmful substances used on or near the lake. New docks would either not affect or decrease recreational activity in parks on the lake and, therefore, either not affect or decrease the quantities of pollutants spilled onto parking lots at these facilities, potentially resulting in a beneficial effect.	No effects.	Short- and long-term indirect minor adverse effects and long-term indirect minor beneficial effects very similar to those described under Alternative 2 would be expected.	Short- and long-term indirect moderate adverse and long-term indirect minor beneficial effects. New boat docks would increase by about 3 times the quantities of dock materials along the shoreline, which would increase quantities of potentially harmful substances used on or near the lake. Six percent increase in boating activity would have minor effects on quantities of oil and fuel from boat motors released to the lake. New docks would either not affect or decrease recreational activity in parks on the lake and, therefore, either not affect or decrease the quantities of pollutants spilled onto parking lots at these facilities, potentially resulting in a beneficial effect.	Short- and long-term indirect minor adverse effects and long-term indirect minor beneficial effects. Effects would be more than those under Alternative 4, but less than those under Alternative 2.	Long-term indirect minor adverse cumulative effects could result from increased number of boats using lake related to the use and potential spills of oil, fuel, and solvents from boat fueling operations and maintenance activities. Short-term minor adverse effects related to installation of new docks from use and spillage of fuel, oil and grease, and solvents. Potential use of antifouling paint on boat hulls could have minor adverse effects due to metals leaching into the water.

**Table ES-1  
Comparison of Alternatives (continued)**

<b>Resource Area</b>	<b>Alternative 1: No Action Alternative</b>	<b>Alternative 2: 80% Rezoning Criteria</b>	<b>Alternative 3: No Growth</b>	<b>Alternative 4: 90% Rezoning Criteria</b>	<b>Alternative 5: Maximum Modification</b>	<b>Alternative 6: Revised Preferred Alternative</b>	<b>Cumulative Effects</b>
Noise	No effects. Noise would not be expected to increase due to increased boating activities.	Short- and long-term direct and indirect minor adverse effects. Increases in noise and annoyance levels would be likely due to increased boat traffic and induced residential growth.	No effects. No direct change to noise levels relative to baseline conditions.	Short- and long-term indirect minor adverse impacts. Increases in noise and annoyance levels would be likely due to increased boat traffic and induced residential growth.	Short- and long-term direct and indirect minor adverse effects. Increases in noise and annoyance levels would be likely due to increased boat traffic and induced residential growth.	Short- and long-term indirect minor adverse effects. Effects would be more than those under Alternative 4, but less than those under Alternative 2.	Adverse cumulative effects could result from an increase in development in areas adjacent to the lake within the project area and from an increase in boater activities.
<sup>1</sup> Although a potential increase of 170 boat docks is indicated here, possible rezoning approvals under future 5-year reviews could lead to more rezoning actions and additional docks.							

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**Table ES-2  
Impact Summary and Comparison**

Resource Areas	Alternative 1: No Action Alternative			Alternative 2: 80% Rezoning Criteria			Alternative 3: No Growth Alternative			Alternative 4: 90% Rezoning Criteria			Alternative 5: Maximum Modification			Alternative 6: Preferred Alternative		
	Direct Effects	Indirect Effects	Cumulative Effects	Direct Effects	Indirect Effects	Cumulative Effects	Direct Effects	Indirect Effects	Cumulative Effects	Direct Effects	Indirect Effects	Cumulative Effects	Direct Effects	Indirect Effects	Cumulative Effects	Direct Effects	Indirect Effects	Cumulative Effects
Greers Ferry Lake Watershed		⊖	⊖		⊖	⊖					⊖	⊖	⊖	⊖	⊖		⊖	⊖
Land Use, Land Cover, & Land Controls	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Infrastructure	⊕	⊕	⊕	⊕	⊕	⊕			⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Socioeconomics	⊕	⊕	⊕	⊕	⊕	⊕				⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Visual and Aesthetic Resources	⊖		⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Recreation & Recreational Facilities	⊕		⊕	⊕		⊕	⊕		⊕	⊕		⊕	⊕		⊕	⊕		⊕
Geology & Soils	⊖	⊖	⊖	⊖	⊖	⊖		⊕		⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Ecological Systems	⊖	⊖	⊖	⊖	⊖	⊖	⊕			⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Cultural Resources	⊖	⊖	⊖	⊖	⊖	⊖				⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Air Quality		⊖	⊖		⊖	⊖				⊖			⊖	⊖	⊖		⊖	⊖
Hazardous and Toxic Substances & Wastes		⊖	⊖	⊖	⊖	⊖				⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Noise		⊖	⊖	⊖	⊖	⊖				⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖

**Impact Legend**

- Long-term Effect
- Short-term Effect
- Minor to Negligible Effect
- Major to Moderate Effect
- Significant Effect
- + Beneficial Effect
- Adverse Effect

**Examples:**

- ⊖ Long-term negligible/minor adverse effects
- ⊖ Short- and long-term major/moderate adverse effects
- ⊕ Short- and long-term major adverse & long-term minor beneficial effects
- No effects