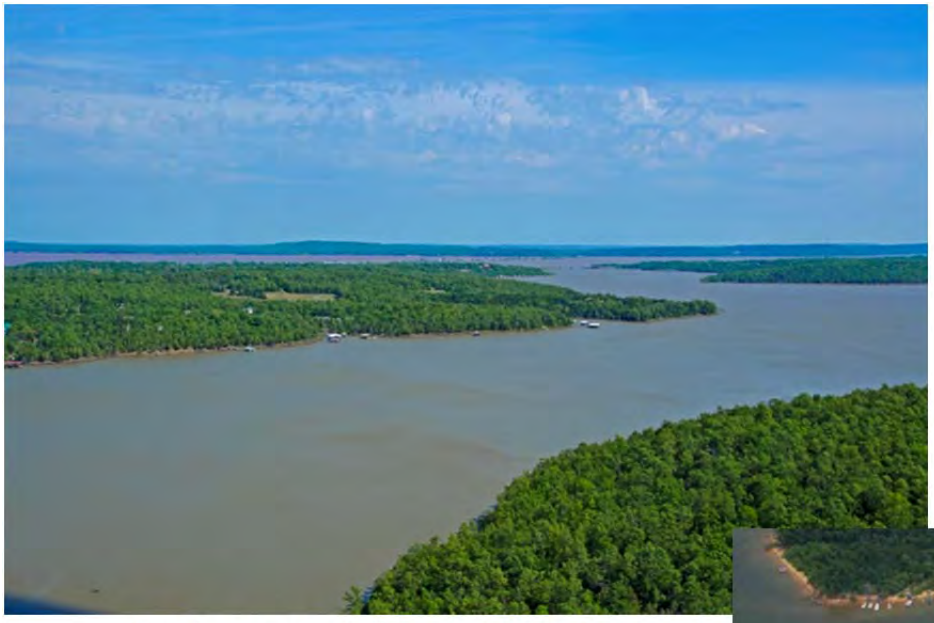

Environmental Impact Statement
Eufaula Lake
Visual Resources Assessment
Technical Report

September 2012

US Army Corps of Engineers ®
Tulsa District

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Acronyms

CFR	Code of Federal Regulations
CWA	Clean Water Act
EIS	Environmental Impact Statement
GIS	Geographic Information System
MP	Master Plan
MSL	Above Mean Sea Level
NEPA	National Environmental Policy Act
SMP	Shoreline Management Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VRAP	Visual Resources Assessment Procedure
WMA	Wildlife Management Area

Chapter 1

Executive Summary

1.1 Introduction

Eufaula Lake is a reservoir on the Canadian River, Oklahoma. The reservoir incorporates several major tributaries including the North Canadian River, South Canadian River, Deep Fork River, and Gaines Creek. The U.S. Army Corps of Engineers (USACE) constructed Eufaula Lake (the project) between 1956 and 1964. The authorized purposes of the lake are flood control, water supply, hydroelectric power, navigation, and recreation. Eufaula Lake has approximately 808 miles of shoreline and contains approximately 105,500 surface acres of water, making it the largest lake located entirely within the state of Oklahoma. The majority of the lake is located within McIntosh and Pittsburg Counties; however, other associated counties include Haskell, Latimer, Muskogee, and Okmulgee. USACE is responsible for managing the lake's land and water resources.

USACE intends to revise the Eufaula Reservoir Shoreline Management Plan (SMP) and to supplement the project Master Plan (MP) land classification maps. In order to initiate and complete these actions, Tulsa District is required to prepare an Environmental Impact Statement (EIS) in order to comply with the National Environmental Policy Act (NEPA) of 1969 (as amended) and the Council on Environmental Quality's (CEQ) Regulations (40 CFR 1500-1508). USACE will also evaluate the potential environmental impacts of specific proposed developments at the reservoir.

The EIS will focus on reservoir-wide impacts, and specific impacts associated directly with the proposed developments identified during the NEPA scoping process. This visual resources assessment is to supplement the EIS by providing a visual inventory of the existing environment and scenic resources of Eufaula Lake. It also addresses the potential visual effects of proposed alternative revisions to the SMP.

1.2 Methods for Impact Evaluation

This visual analysis was conducted using the methodology in the Visual Resources Assessment Procedure (VRAP) for USACE as developed by Smardon *et al.* (1988). This procedure provides a method to evaluate visual resources affected by Corps water resources projects. The procedure uses the visual Management Classification System (MCS) to identify Landscape Similarity Zones (LSZ), inventory visual resources, and establish an assessment framework based on local aesthetic values. This information is then used in a Visual Impact Assessment (VIA), where scenarios under the different alternatives from representative viewpoints are compared. The principal steps required to assess visual impacts were carried out were as follows:

- Management Classification System: The Regional Landscape (visual setting and character of the Eufaula Lake in general) was defined, and LSZs and visual resources of the study area were identified. Each LSZ was assigned a Management Class.
- Visual Sensitivity and Key Views: Key viewpoints for visual assessment were identified at locations where potential land use changes resulting from or enabled by the SMP update would be most visible to viewers.

- Visual Impact Assessment (VIA): The visual appearance of the landscape from the key viewpoints was assessed, and forecasts were performed to predict what the landscape might look like in 25 years under the different alternatives. These forecasts were compared to a forecast of the No Action Alternative.

The Regional Landscape was described based on physiographic and ecoregion characteristics as presented by Woods *et al.* (2005) and based on observations by professional staff expert in visual analyses during visits to the Eufaula Lake area in February and April, 2012. Within the Regional Landscape, ten Landscape Similarity Zones (LSZs) were identified that represent areas of land that share common characteristics of landform, water resources, vegetation/ecosystems, land use, and land use intensity. The LSZs established within the study area were: Forest, Grassland/Prairie/Pasture, Farmland, Wetland, Recreation Area, Residential-Medium Density, Urban-Commercial/Industrial, Transportation, Marinas, and High Density Docks.

To create an assessment framework, judgments were made on the existing visual quality of each zone by identifying examples of resource categories that exhibit each of three levels of visual quality: Distinct, Average, and Minimal. A Management Class (Preservation, Retention, Partial Retention, Modification, or Rehabilitation) was then assigned to each LSZ based on these overall ratings. The potential impact of each alternative was assessed (by the same professional staff that assessed the Regional Landscape) by predicting and creating images of the future visual characteristics of nine selected viewpoints. Potential viewpoints were selected during field reviews in early February, late February, and April, 2012, and were photographed under both leaf on and leaf off conditions. The visual qualities of each alternative were weighted according to VRAP procedures and compared to those that would occur under the No Action Alternative to determine a VIA quotient for each resource category. These quotients were then compared to ranges established by the VRAP as acceptable thresholds for the Management Classifications of the different LSZs.

Public input was used to help determine visual priorities and preferences for viewscapes in the Eufaula Lake study area. Lake users noted that undeveloped wetlands and forested areas are of particular value to them. Park users noted that they value the undeveloped shoreline views from park areas, as well as the surrounding undeveloped forest. Some written public comments complained about litter near docks and the visual quality of areas with dense docks. However, many public comments also complained about the moratorium on new dock construction, and many requested that their particular properties be allowed to have docks. Scenic vistas from bridges and causeways were identified by USACE staff as being of particular importance. These vistas offer views of varying terrain, geologic formations, and vegetative cover that are unique as compared to the surrounding plains. These scenic vistas were considered to be priority visual elements for Eufaula Lake.

1.3 Affected Environment

1.3.1 Regional Landscape

The Eufaula Lake study area falls within four different ecoregions: the Northern Crosstimbers, the Osage Cuestas of the Central Irregular Plains, Scattered High Ridges and Mountains of the Arkansas River Valley, and the Lower Canadian Hills of the Arkansas River Valley (Woods *et al.* 2005). These ecoregions give the study area a varying aesthetic of steep, rocky slopes, sandy lowlands, tall hills with dry forest, and scattered grasslands.

1.3.2 Landscape Similarity Zones

The Forest LSZ largely consists of oak-dominated woodlands. It is most visible on hillsides and ridges, and is a very dominant part of the overall aesthetic of Eufaula Lake. The forests appear rugged and rocky, with large boulders and small escarpments often visible, especially near the shore. The ridges of the many forested hills create a sense of mystery in the lake, hiding large portions of it from view. As a result, the lake appears much smaller to the viewer than it actually is.

The Grassland/Prairie/Pasture LSZ consists of areas with short herbaceous vegetation. These areas include native grasslands and prairie, rangeland for cattle, abandoned farmland, and maintained grasses. The majority of these areas are away from the lakeshore, in the more gently sloping or flat inland areas. This LSZ can offer wide, sweeping views of the landscape, but only occasional views of Eufaula Lake. Grasslands and grazed pasture can have a dry, somewhat barren aesthetic; however, many areas exhibit a wide diversity of colorful wildflowers during part of the year. Such areas with wildflowers are of particular aesthetic value near recreational areas and highways, where they can be viewed by more people.

The Farmland LSZ represents a very small portion of the study area. Views of cropland from Eufaula Lake are most often screened by trees along the lake fringe; however, some cropland is visible from the lake, especially in winter. The view of cropland has a pastoral aesthetic, in keeping with and complimentary to the tranquil feeling of other natural or undeveloped areas surrounding the lake, such as forest and grasslands.

The Wetlands LSZ is located in large areas adjacent to Eufaula Lake, as well as fringing shallows adjacent to other LSZs. Wetland types include forested broad-leaved deciduous, scrub-shrub broad-leaved deciduous, and herbaceous emergent. Most wetland areas are located inside coves where low-lying land and shallowly inundated areas are protected from wind wave action. Large areas of wetlands occur in some of the wildlife management areas. Wetland areas are largely either hidden from view or unnoticeable from the interior of the lake, but are seen up-close by boaters and those fishing near the shore and within coves, as well as people hunting in the wildlife management areas.

The Recreation Area LSZ includes campgrounds, picnic areas, beaches and swimming, and opportunities for fishing, hiking, and nature watching. Many parks are developed with campsites, restrooms, showers, boat ramps, group shelters, playgrounds, and ball fields. Most recreation areas have undeveloped forest and opportunities for viewing wildlife, meadows, and woodlands.

The Residential - Medium Density LSZ includes area subdivisions and residential neighborhoods, ranging from high-end to modest. Many of the neighborhoods are subdivisions of relatively recent construction. Neighborhoods have developed in areas that have lake access for docks, are near lake access points, or have lake views. In general, neighborhoods tend to be more developed and cleared on the north side of the lake, and more wooded on the south side.

The Urban and Industrial/Commercial similarity zone occupies very little area in the study area. It consists of downtown areas, shopping centers, small industrial businesses, and self-storage facilities. These areas are largely paved with little vegetation; some are unpaved.

The Transportation LSZ consists of highway and primary road corridors that are most frequently traveled. Where these roads cross the study area, they offer wide, panoramic views of Eufaula Lake, partially

screened views of secluded coves and wetlands, and often dramatic views of the surrounding topography. This is especially the case on bridges and causeways.

The Marinas LSZ includes the land occupied by marinas as well as associated docks, no-wake zones, and adjacent water where the users' views are dominated by marina activities. The marinas have a somewhat industrial quality due to the materials that the docks are constructed of as well as the general upkeep of the landscape.

The High-Density Docks LSZ consists of areas within the lake itself where there are dense concentrations of private docks and docks are a dominating feature in the viewscape. They are generally in protected coves near residential areas. Some docks are small (for one or two boats) and uncovered - these docks are relatively unobtrusive. Other docks with roofs and storage areas block the view of the surrounding water and landscape and are much more noticeable. Some docks are very large and accommodate many boats. These roofed docks generally have a storage area for each slip. They can be a very dominating feature in the landscape.

1.3.3 LSZ Management Class Assignment

The visual qualities of the Regional Landscape and each LSZ were assessed and assigned to one of the five MCS management classes in accordance with the VRAP methodology: the Forest, Wetland, and Recreation Area LSZs were assigned “Preservation”; the Farmland and Transportation LSZs were assigned “Retention”; the Grassland/Pasture/Prairie, and Residential-Medium Intensity LSZs were assigned “Partial Retention”; the Urban – Commercial/Industrial and High Density Docks LSZs were assigned “Modification”; and the Marinas LSZ was assigned “Rehabilitation.”

1.3.4 Viewpoint Inventory

Viewpoint 1 - Near Duchess Creek Island: This view is from the water of the shoreline and uplands east of Duchess Creek Island, facing east. The landform consists of rolling hills with plains behind. The view consists of a mix of forested land, large maintained lawns with mature trees, and residences.

Viewpoint 2 - Standing Rock Cut – East: This view is from the water of the shoreline and uplands at Standing Rock Cut, facing southwest through the cut. The landform consists of the rolling hills of north and south sides of Standing Rock Cut. The right side of the view (the north side of the cut) consists of a forested land and a shoreline with an undeveloped aesthetic. The left side of the view (the south side of the cut) consists of medium-density residences with large maintained lawns, lots cleared to the shoreline, and scattered trees.

Viewpoint 3 – Roundtree Landing: This view is from the water of the shoreline on the north side of Roundtree Landing, facing west. The view consists of undeveloped forested land and wetlands surrounding a small cove. The growing season vegetation is dense compared to the dry forested slopes that surround Eufaula Lake and the viewscape is welcoming and serene, with a sense of mystery due to the curvature of the cove.

Viewpoint 4 – Carlton Landing: This view is from the water of the cove and shoreline at Carlton Landing, facing northwest. The landform on both sides of the cove is of rolling hills. The left-hand view (the west side of the cove) consists of natural forest (on government-owned property). The understory of this forest is relatively thin, especially in winter, allowing a view into the forest interior; growing season vegetation limits the depth of this view. Further into the cove on this side, on Carlton Landing property, the view

consists of a thinned canopy of trees with a completely cleared midstory and understory. The view in this area extends through the trees until approximately 250 feet from the shore. Construction activity is slightly visible behind and among the remaining trees. The shoreline along the entire west side of the cove is rocky. The shoreline in the middle (north side of the cove) and right-hand sides (east side of the cove), consists of natural forest and wetland. The east side of the cove is the west bank of Roundtree Landing.

Viewpoint 5 - Daisy Hallum Cove, Near Gaines Creek Park: The view is from the water of Daisy Hallum Cove, about 0.8 miles northeast of Gaines Creek Park, facing east. The surrounding land consists of deciduous forest. In winter, this forest appears thin, exposing the craggy hill slope. In the growing season, the boulders and rocks that occur on the steep slope are screened by the leaves of the trees. The landscape rises from the lake's normal pool elevation of 585 ft above mean sea level (MSL) to an elevation up to 700 ft above MSL. A few high-end houses in some cleared areas are present, situated such they have panoramic views of the lake.

Viewpoint 6 – I-40 Bridge and Causeway: The view is from the east causeway of the I-40 bridge over Deep Fork, facing north. The view consists of a wide panorama of Eufaula Lake, the opposite north and northeast shorelines, and the side of the highway. The land on the opposite shore consists of deciduous forest on a craggy hill slope that in places rises somewhat steeply from the from the lake's normal pool elevation of 585 ft above MSL to about 600 feet above MSL. Small residential neighborhoods are present, one with clearing to the shoreline and docks. Mature forested hillsides and small coves are seen between the residential areas. The ruggedness of the terrain and the nearly full screening of residential neighborhoods from view during the growing season give an unspoiled and untamed aesthetic to the general landscape. The view from the bridge affords a sudden, open view of the water and bluffs that provides visual cues to passing travelers that they have come upon a special feature in the landscape.

Viewpoint 7 – US 69 Bridge at Bridgeport: This view is from the north causeway of the US 69 bridge at Bridgeport, facing north. The view consists of a wide panorama of Eufaula Lake, the shoreline at Bridgeport, and the side of the highway. The land on the shore is gently sloping and a protected sandy beach is present. A relatively dense neighborhood sits back from the shore, but it is rather well-hidden due to dense woodland. Extensive thinning and clearing of the forest in some areas exposes some of the homes. The very left side of the viewshed offers an extended viewing distance over the water, which gives a sense of enormity to the Lake.

Viewpoint 8 – Arrowhead State Park: This view is from a picnic area and water access on the west side of Arrowhead State Park, facing west. The view consists of the lake, the opposite shoreline, and some of the picnic area. The land on the opposite shore is hilly with deciduous forest. A few cleared areas are present on the hillside. A few homes on the opposite shore are slightly visible through the trees in the winter, but mostly hidden by foliage during the growing season. Within the park, the picnic area is also used for fishing. An unpaved road parallels the shore and is driven and parked on by people fishing. Some erosion of the bank in the picnic area is evident.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: This view is from the bridge on Highway 31 north of Elm Point Park, facing west. The view consists of the lake, forested tall hills and Elm Point Park on the opposite shoreline, and the Highway 31 causeway. The forested land on the opposite shore is steep and appears undeveloped. Elm Point Park is on the left side of the view, closer to the viewer. The park has mature trees and grass with no understory. A boat ramp is visible, and the shoreline has a section of rip-rap.

1.4 Potential Impacts of the Proposed Action

1.4.1 No Action Alternative

1.4.1.1 Potential Impacts to LSZs

LSZ 1 – Forest: Under the No Action Alternative, the amount of forested land is expected to be reduced in the future. Some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial) as development continues on private lands around the lake and some forested areas are cleared. In addition, some new and existing homeowners will likely request issuance of permits to mow the adjacent government-owned property in order to improve their views of the lake. It is expected that permitted mowed areas adjacent to new homes would look similar to areas that currently have mowing permits. These areas reduce the amount of forest overall, and can have an even larger impact on the visual impression of forested area.

LSZ 2 – Grassland/Prairie/Pasture: The amount of land that is grassland, pasture, or prairie within the study area is expected to be somewhat reduced. Some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial). These lands are likely to be preferred by developers over forested lands, but impacts would be less noticeable, as this LSZ is much less visible from the lake and shorelines.

LSZ 3 – Farmland: The amount of land that is farmed within the study area is expected to decrease slightly due to development. However, conversion of lands from this LSZ would likely not be noticeable from the lake and shoreline. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

LSZ 4 – Wetland: Impacts to this LSZ would likely be relatively small. Although wetlands that form along the narrow shallow fringe of the lake would likely be affected by any new development, these wetlands do not play as large of a role in the viewscape.

LSZ 5 – Recreation Area: Recreation areas are expected to experience higher usership in the future. These lands would not decrease or increase in acreage, but their visual quality could be slightly reduced due to increased use and possible conversion of undeveloped land within recreation areas for high-demand amenities.

LSZ 6 – Residential – Medium Density: The area of land in this LSZ would likely increase, especially in areas adjacent to government-owned lands along shorelines that are allocated to Limited Development. This land would be highly visible from the lake and shorelines. Land converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 7 – Urban – Commercial/Industrial: Under the No Action Alternative, slight increases of land used for urban and commercial/industrial purposes would likely occur to support new development that occurs around the lake. Land converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 8 – Transportation: Views from bridges and causeways would be slightly different, as some new development, land clearing, and docks would be expected resulting in the loss of the natural and wild aesthetic in some places.

LSZ 9 – Marinas: No new marinas would be built under the No Action Alternative. The existing marinas would likely be operated as they are today, and would retain similar visual qualities.

LSZ 10 – High Density Docks: The amount of area of the lake that has a high density of docks would be expected to increase. There were a total of 1,673 docks on Eufaula Lake in 2011. Under the existing USACE policy, an estimated maximum of 8,746 docks could eventually be built. Using historical dock construction rates, it can be reasonably expected that there would be 2,800 docks on Eufaula Lake in the near future of 20 years. The additional area converted to this LSZ would be from within the lake itself.

1.4.1.2 Potential Impacts to Viewpoints

Viewpoint 1 - Near Duchess Creek Island: The viewer would notice slightly more houses and docks under the No Action Alternative than are currently present. The aesthetic would therefore be more rural-residential than rural.

Viewpoint 2 - Standing Rock Cut – East: The viewer would notice a slight increase in the density of docks; however, this would have a minor effect due to the large docks that are already visible.

Viewpoint 3 – Roundtree Landing: No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove.

Viewpoint 4 – Carlton Landing: The area behind the planned waterfront park would consist of multi-family residential buildings that would be visible through the mature trees in the park. The government-owned lands would remain protected but would be slightly less serene due to increased activity in the Carlton Landing waterfront park area.

Viewpoint 5 - Daisy Hallum Cove, Near Gaines Creek Park: Some of the existing undeveloped and untamed feeling of the cove would be lost due to the development of the houses and especially of the more visible docks, and especially during the winter. The viewscape would continue to have an enclosed feeling due to the surrounding tall hills. Although a number of residences would be added, there would likely be limited clearing of lots.

Viewpoint 6 – I-40 Bridge and Causeway: The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Viewpoint 7 – US 69 Bridge at Bridgeport: The visual character of the viewscape under the No Action Alternative would be similar to current conditions. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore.

Viewpoint 8 – Arrowhead State Park: The character of the viewscape under the No Action Alternative would be that of a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: The visual character of the viewscape under the No Action Alternative would be slightly more developed than current conditions. The additional houses and docks on the opposite shore would diminish some of the natural aesthetic of the view.

1.4.2 Alternative 1

1.4.2.1 Potential Impacts to LSZs

LSZ 1 – Forest: Under Alternative 1, the amount of shoreline designated as Limited Development would be reduced from 271 miles (under the No Action Alternative) to 42 miles. This alternative would result in dramatically less conversion of natural forested land to mowed areas, and an extended shoreline buffer would be implemented whereby the majority of shoreline would be required to have a 70-foot non-mowed buffer adjacent to the lake. Under Alternative 1, a some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial); the amount of land converted would likely be much less than under the No Action Alternative.

LSZ 2 – Grassland/Prairie/Pasture: There would likely be fewer developments built on lands adjacent to government property due to the reduced amount of shoreline where docks could be built. This would result in considerably less conversion from this LSZ to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than the No Action Alternative.

LSZ 3 – Farmland: Impacts to this LSZ would likely be similar to those of the No Action Alternative.

LSZ 4 – Wetland: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 5 – Recreation Area: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 6 – Residential – Medium Density: There would likely be considerably less land adjacent to government-owned lands converted to medium-density residential uses than under the No Action Alternative due to the reduced amount of shoreline where docks could be built. In addition, the conservation buffers that would be established under this alternative would effectively screen many of the new developments from view from the lake and shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 7 – Urban – Commercial/Industrial: Less conversion of land into urban and commercial/industrial uses would be expected as compared to the No Action Alternative due to lower demand from reduced development activity. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 8 – Transportation: Views from bridges and causeways would have a more natural and wild aesthetic as compared to the No Action Alternative due to lower development activity of surrounding lands.

LSZ 9 – Marinas: Impacts to this LSZ would likely be similar to those of the No Action Alternative.

LSZ 10 – High Density Docks: The amount of area of the lake that has a high density of docks would be expected to be much less than would occur under the No Action Alternative. Under Alternative 1, no additional docks would be permitted, compared with the 8,746 docks that could be built under the No Action Alternative. However, docks may be modified or replaced under this alternative. Any additional area converted to this LSZ would be from within the lake itself.

1.4.2.2 Potential Impacts to Viewpoints

Viewpoint 1 – Near Duchess Creek Island: The viewscape is expected to remain as it is currently. The viewer would see a much more rural landscape than under the No-Action Alternative.

Viewpoint 2 – Standing Rock Cut – East: Since no additional docks would be permitted, development activity for lakeshore residences is expected to be low. As a result, the viewscape is expected to remain similar to current conditions, with fewer homes and docks than likely under the No Action Alternative.

Viewpoint 3 – Roundtree Landing: No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. This alternative would have the same visual impact as the No Action Alternative.

Viewpoint 4 – Carlton Landing: The overall aesthetic effect would be extremely similar to that of the No Action Alternative.

Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park: More of the existing undeveloped and untamed feeling of the cove would be retained than under the No Action Alternative, and it would appear mostly as it is today.

Viewpoint 6 – I-40 Bridge and Causeway: The visual character of the viewscape would be in sharp contrast to the dry plains and forested bottomlands that are seen along the nearby stretches of the highway. The boulder-strewn shoreline and rocky, rugged bluffs would be much more of a focal point than under the No Action Alternative, and this view would illustrate the special qualities of the Eufaula Lake landscape.

Viewpoint 7 – US 69 Bridge at Bridgeport: The visual character of the viewscape would be the same as under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore. This alternative would also result in the same visual quality as Alternative 2.

Viewpoint 8 – Arrowhead State Park: The character of the viewscape would be the same as under the No Action Alternative with a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural. This alternative would also result in the same visual quality as Alternative 2.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: The visual character of the viewscape under Alternative 1 would be slightly less developed than under the No Action Alternative due to fewer houses visible on the right side of the view as well as the absence of docks in this area.

1.4.3 Alternative 2

1.4.3.1 Potential Impacts to LSZs

LSZ 1 – Forest: Under Alternative 2, the amount of shoreline designated as Limited Development would be reduced from 271 miles (under the No Action Alternative) to 182 miles. In addition, an extended shoreline buffer would be implemented whereby the majority of shoreline would be required to have a 70-foot non-mowed buffer adjacent to the lake. As a result, although the amount of land that is forested would likely be only slightly higher than the No Action Alternative, the visual effect from the lake would give the impression that there is much more forested area. Under Alternative 2, slightly less land in this LSZ would

likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial).

LSZ 2 – Grassland/Prairie/Pasture: Impacts to this LSZ would likely be similar to the No Action Alternative.

LSZ 3 – Farmland: There would likely be slightly less conversion of land from farmland as compared to the No Action Alternative. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

LSZ 4 – Wetland: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 5 – Recreation Area: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 6 – Residential – Medium Density: Impacts to this LSZ would likely be similar to those under the No Action Alternative. However, the 70-foot buffer that would be established in most locations would effectively screen much of the potential new development from view from the lake and shoreline.

LSZ 7 – Urban – Commercial/Industrial: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 8 – Transportation: Impacts to this LSZ would likely be similar to those under the No Action Alternative. However, the 70-foot buffer that would be established in most locations would effectively screen much of the potential new development from view from bridges and causeways.

LSZ 9 – Marinas: Impacts to this LSZ would likely be similar to those of the No Action Alternative.

LSZ 10 – High Density Docks: The amount of area of the lake that has a high density of docks would be expected to be slightly less than would occur under the No Action Alternative. Under the existing USACE regulations, an estimated maximum of 5,873 docks could eventually be built under this alternative, compared with 8,746 docks that could be built under the No Action Alternative. Using historical dock construction rates, it can be reasonably expected that there would be 2,800 docks on Eufaula Lake in the near future of 20 years. Any additional area converted to this LSZ would be from within the lake itself.

1.4.3.2 Potential Impacts to Viewpoints

Viewpoint 1 – Near Duchess Creek Island: The viewscape at this location is expected to be the same as under the No Action Alternative. The aesthetic would be somewhat rural-residential.

Viewpoint 2 – Standing Rock Cut – East: The viewer would notice a slight increase in the density of docks; however, this would have a minor effect due to the large docks that are already visible. This alternative would have the same visual effect as the No Action Alternative.

Viewpoint 3 – Roundtree Landing: No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. This alternative would have the same visual impact as the No Action Alternative.

Viewpoint 4 – Carlton Landing: The overall aesthetic effect would be extremely similar to that of the No Action Alternative.

Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park: The existing undeveloped and untamed feeling of the cove would be slightly decreased, but not nearly as much as under the No Action Alternative.

Viewpoint 6 – I-40 Bridge and Causeway: The visual character of the viewscape would be the same as the No Action Alternative. It would also be the same as Alternatives 3 and 4. The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Viewpoint 7 – US 69 Bridge at Bridgeport: The visual character of the viewscape would be the same as under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore. This alternative would also result in the same visual quality as Alternative 1.

Viewpoint 8 – Arrowhead State Park: The character of the viewscape would be the same as under the No Action Alternative with a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural. This alternative would also result in the same visual quality as Alternative 1.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: The visual character of the viewscape would be almost the same as under the No Action Alternative. The 70-foot extended vegetation buffer required for Shoreline Use Permits along Limited Development shorelines would somewhat screen the houses there, but the docks would still be very visible.

1.4.4 Alternative 3

1.4.4.1 Potential Impacts to LSZs

LSZ 1 – Forest: Under Alternative 3, the amount of shoreline designated as Limited Development would be increased from 271 miles (under the No Action Alternative) to 367 miles. A shoreline buffer would be implemented whereby the majority of shoreline (312 miles) would be required to have a 45-foot non-mowed buffer adjacent to the lake. This buffer would help screen development somewhat, especially in areas with less steep slopes, but would likely not be an effective screen where slopes are steeper. As a result, there would be less forestland than under the No Action Alternative. Under Alternative 3, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

LSZ 2 – Grassland/Prairie/Pasture: Development activity would likely be increased as compared to the No Action Alternative and would result in more conversion of land from this LSZ. However, the impact of this conversion would not be very noticeable as this LSZ is much less visible from the lake and shoreline. Under Alternative 3, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

LSZ 3 – Farmland: There would likely be slightly more conversion of land from farmland as compared to the No Action Alternative. However, the difference may not be noticeable from the lake and shoreline. Any

land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

LSZ 4 – Wetland: Impacts to this LSZ would likely be similar to those under the No Action Alternative. However, for wetlands where there is adjacent new development, they would likely appear less wild and unspoiled due to the discontinuity with adjacent undeveloped lands.

LSZ 5 – Recreation Area: Impacts to this LSZ would likely be similar to those under the No Action Alternative.

LSZ 6 – Residential – Medium Density: There would be larger amounts of land converted to medium-density residential uses as under the No Action Alternative due to increased development activity. However, the 45-foot buffer that would be established in most locations would somewhat screen much of this development from view from the lake and shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 7 – Urban – Commercial/Industrial: There would likely be an increase of land conversion into urban and commercial/industrial uses as compared to the No Action Alternative to support increased development activity. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 8 – Transportation: Views from bridges and causeways would be considerably different than they would be under the No Action Alternative, due to the construction of new housing developments, land clearing, and new docks. As a result, the view of the lake from bridges and causeways would appear less wild and natural than under the No Action Alternative.

LSZ 9 – Marinas: Impacts to this LSZ would likely be similar to those of the No Action Alternative.

LSZ 10 – High Density Docks: The amount of area of the lake that has a high density of docks would be expected to be more than would occur under the No Action Alternative. Under the existing USACE regulations, an estimated maximum of 11,844 docks could eventually be built under this alternative, compared with 8,746 docks that could be built under the No Action Alternative. Using historical dock construction rates, it can be reasonably expected that there would be 2,800 docks on Eufaula Lake in the near future of 20 years; however, increased development activity could affect dock construction rates. Additional areas converted to this LSZ would be from within the lake itself.

1.4.4.2 Potential Impacts to Viewpoints

Viewpoint 1 – Near Duchess Creek Island: Since docks would be permitted in areas previously zoned Protected, the amount of development is expected to increase and residences with docks are likely to be constructed. As such, the viewscape at this location is expected to be much more residential than under the No Action Alternative.

Viewpoint 2 – Standing Rock Cut – East: Developed areas would be expected to increase in this newly available area and the viewer would notice a considerable increase in residences and docks as compared to the No Action Alternative. This alternative would have the same visual effect as Alternative 4.

Viewpoint 3 – Roundtree Landing: No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. This alternative would have the same visual impact as the No Action Alternative.

Viewpoint 4 – Carlton Landing: The overall aesthetic effect would be the similar to the No Action Alternative, but with slightly reduced scenic qualities of the government-owned land on the west side of the cove due to increased activity from the building of docks further down that shoreline.

Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park: A few more houses and docks would likely be built as compared to the No Action Alternative due to additional development area created by the nearby Falcon Tree subdivision. The overall aesthetic of the cove would tip towards appearing somewhat densely developed with a high dock density, especially in winter when the trees would not provide as much screening as they do in summer. The viewscape would continue to have enclosed feeling due to the surrounding tall hills. This alternative would result in the same visual qualities as Alternative 4.

Viewpoint 6 – I-40 Bridge and Causeway: The visual character of the viewscape would be the same as the No Action Alternative. It would also be the same as Alternatives 2 and 4. The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Viewpoint 7 – US 69 Bridge at Bridgeport: The visual character of the viewscape would be very different than under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake, but the high dock density would eliminate the sense of relatively unspoiled sandy shore. Although few homes would likely be visible, it would be clear to the viewer that this is a densely developed area. This alternative would also result in the same visual quality as Alternative 4.

Viewpoint 8 – Arrowhead State Park: The character of the viewscape would be more developed than it would under the No Action Alternative. The cove and opposite shore would be slightly more active. The user experience in the park would still be relatively peaceful at most times, with the aesthetic of domesticated nature. Noise from other park users would be expected to be the same as under the No Action Alternative, and would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. Opportunities for viewing wildlife would remain excellent.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: The visual character of the viewscape would be more developed than it would under the No Action Alternative. The 45-foot baseline buffer required for Shoreline Use Permits in the Limited Development Area would somewhat screen the houses, but the docks would still be very visible. This alternative would also result in the same visual quality as Alternative 4.

1.4.5 Alternative 4

1.4.5.1 Potential Impacts to LSZs

LSZ 1 – Forest: Under Alternative 4, the amount of shoreline designated as Limited Development would be increased from 271 miles (under the No Action Alternative) to 479 miles. A shoreline buffer would be implemented whereby the majority of shoreline would be required to have a 45-foot non-mowed buffer

adjacent to the lake. This buffer would help screen development somewhat, especially in areas with less steep slopes, but would likely not be an effective screen where slopes are steeper. As a result, there would be considerably less forestland than the No Action Alternative. Under Alternative 4, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

LSZ 2 – Grassland/Prairie/Pasture: Development activity would likely be greatly increased as compared to the No Action Alternative because of the considerably increased area where docks would be permitted, resulting in considerably more conversion of land from this LSZ. However, the impact of this conversion would not be as noticeable as this LSZ is much less visible from the lake and shorelines. Under Alternative 4, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

LSZ 3 – Farmland: There would likely be slightly more conversion of land from farmland as compared to the No Action Alternative. However, the difference may not be noticeable from the lake and shoreline. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

LSZ 4 – Wetland: Impacts to this LSZ would likely be similar to those under the No Action Alternative. However, for wetlands where there is adjacent new development, they would likely appear less wild and unspoiled due to the discontinuity with adjacent undeveloped lands.

LSZ 5 – Recreation Area: A total of six miles of shoreline would change from Protected to Public Recreation zoning at Carlton Landing and Roundtree Landing. Recreational facilities would include both passive and active recreation and a public beach. The addition of these recreational areas would likely reduce some of the pressure that other recreational areas around Eufaula Lake would experience under the No Action Alternative. The new recreational areas on government-owned land would be highly visible from the lake and nearby shoreline.

LSZ 6 – Residential – Medium Density: There would be much larger amounts of land converted to medium-density residential uses as under the No Action Alternative due to increased opportunities for developments to have private docks. The 45-foot buffer that would be established in most locations would somewhat screen some of this development from view from the lake and shoreline, but the overall visual effect would likely still be that of much more medium-density residential land, due to the acreage that would likely be converted. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

LSZ 7 – Urban – Commercial/Industrial: There would likely be an increase of land conversion into urban and commercial/industrial uses as compared to the No Action Alternative to support greatly increased developed areas.

LSZ 8 – Transportation: Views from bridges and causeways would be considerably different than they would be under the No Action Alternative, due to the construction of new housing developments, land clearing, and new docks. As a result, the view of the lake from bridges and causeways would appear much less wild and natural than under the No Action Alternative.

LSZ 9 – Marinas: A new marina with approximately 275 to 300 slips would be built on the north side of Roundtree Landing. It and other marinas around Eufaula Lake would likely be operated as they would be

under the No Action Alternative, and would have similar visual qualities. Area that would be converted to this LSZ would be from LSZ 1 (Forest) and from the lake itself.

LSZ 10 – High Density Docks: The amount of area of the lake that has a high density of docks would be expected to be greater than would occur under the No Action Alternative. Under the existing USACE regulations, an estimated maximum of 15,459 docks could eventually be built under this alternative, compared with 8,746 docks that could be built under the No Action Alternative. Using historical dock construction rates, it can be reasonably expected that there would be 2,800 docks on Eufaula Lake in the near future of 20 years; however, greatly increased area available for development could affect dock construction rates.

1.4.5.2 Potential Impacts to Viewpoints

Viewpoint 1 – Near Duchess Creek Island: Since docks would be permitted in areas previously zoned Protected, the developed area is expected to increase and residences with docks are likely to be constructed. As such, the viewscape at this location is expected to be much more residential than under the No Action Alternative.

Viewpoint 2 – Standing Rock Cut – East: Developed areas would be expected to increase in this newly available area and the viewer would notice a considerable increase in residences and docks as compared to the No Action Alternative. This alternative would have the same visual effect as Alternative 3.

Viewpoint 3 – Roundtree Landing: The overall aesthetic of this location would be dramatically different than the No Action alternative. The view would be dominated by the marina. It would likely have a somewhat industrial quality due to the materials docks generally are constructed of as well as the general upkeep of the marina landscape. Litter may accumulate. The viewer would experience unpleasant noise and odor (typical of marinas) that would not be experienced under the No Action alternative. Spilled fuel and oil would likely occasionally occur and would create an occasional sheen on the water. The serene aesthetic of the cove would be lost and wildlife would likely be disturbed due to the activity in the area. Fishing from boats would most likely not often occur at this location, as users would motor to more remote locations to fish due to the increased noise, water disturbance, and in-lake timber clearing.

Viewpoint 4 – Carlton Landing: The overall aesthetic effect would be dramatically different than the No Action Alternative. The serene natural aesthetic of the cove would be greatly reduced and the user experience would be more typical of an active waterfront area with beach recreating, sporting activities, and other public amenities.

Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park: A few more houses and docks would likely be built as compared to the No Action Alternative due to additional development area created by the nearby Falcon Tree subdivision. The overall aesthetic of the cove would tip towards appearing somewhat densely developed with a high dock density, especially in winter when the trees would not provide as much screening as they do in summer. The viewscape would continue to have enclosed feeling due to the surrounding tall hills. Opportunities for viewing wildlife would begin to decline due to habitat fragmentation. This alternative would result in the same visual qualities as Alternative 3.

Viewpoint 6 – I-40 Bridge and Causeway: The visual character of the viewscape would be the same as the No Action Alternative. It would also be the same as Alternatives 2 and 3. The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this

landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Viewpoint 7 – US 69 Bridge at Bridgeport: The visual character of the viewscape would be very different than under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake, but the high dock density would eliminate the sense of relatively unspoiled sandy shore. Although few homes would likely be visible, it would be clear to the viewer that this is a densely developed area. This alternative would also result in the same visual quality as Alternative 3.

Viewpoint 8 – Arrowhead State Park: The character of the viewscape would be more developed than it would under the No Action Alternative. The cove and opposite shore would be slightly more active. The user experience in the park would still be relatively peaceful at most times, with the aesthetic of domesticated nature. Noise from other park users would be expected to be the same as under the No Action Alternative, and would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore.

Viewpoint 9 – Highway 31 Bridge North of Elm Point Park: The visual character of the viewscape would be more developed than it would under the No Action Alternative. The 45-foot baseline buffer required for Shoreline Use Permits along Limited Development shorelines would somewhat screen the houses, but the docks would still be very visible. This alternative would also result in the same visual quality as Alternative 3.

1.4.6 Visual Impact Assessment Ratings

VIA ratings were calculated based on comparing each alternative to the No Action Alternative by averaging across viewpoints and comparing to impact thresholds established in the VRAP for each MCS classification.

1.4.6.1 Alternative 1

The VIA quotient for Alternative 1 of +0.89 represents an improvement in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is also higher than the quotients for Alternatives 2, 3, and 4. This alternative preserves much of the existing character of Eufaula Lake, especially aspects of the lake that are considered visually desirable.

1.4.6.2 Alternative 2

The VIA quotient for Alternative 2 of +0.22 represents an small improvement in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is also higher than the quotients for Alternatives 3, and 4, but lower than Alternative 1. Alternative 2 preserves some of the existing character of Eufaula Lake, but would generally have a similar visual effect as the No Action Alternative.

1.4.6.3 Alternative 3

The VIA quotient for Alternative 3 of -1.67 represents an decrease in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is lower than that of Alternatives 1 and 2, but higher than that of Alternative 4. Alternative 3 would result in a change of visual character of Eufaula Lake, to one that would be less wild and natural, with less of an emphasis on the

unique geologic formations of the region, than the No Action Alternative. Residential development and docks would be much more dominant features than they would be under the No Action Alternative.

1.4.6.4 Alternative 4

The VIA quotient for Alternative 4 of -2.89 represents a considerable decrease in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is lower than that of Alternatives 1 2, and 3. Alternative 4 would result in a change of visual character of Eufaula Lake, to one that would be considerably less wild and natural, with less of an emphasis on the unique geologic formations of the region, than the No Action Alternative. Residential development and docks would be considerably more dominant features than they would be under the No Action Alternative.

1.4.7 LSZ Threshold VIA Values

Each MCS classification has a threshold for acceptable VIA values. These thresholds represent the lowest VIA value each alternative should have within that zone. All zones have the potential to have a VIA of +10, although this is unlikely in any alternative. The threshold values for the LSZs for the various alternatives under consideration are shown in **Table 1-1**.

Table 1-1. Threshold Visual Impact Analysis Values for each LSZ

Landscape Similarity Zone		MCS Classification	Threshold VIA	Alt. 1 VIA +0.89	Alt. 2 VIA +0.22	Alt. 3 VIA -1.67	Alt. 4 VIA -2.89
1	Forest	Preservation	+10 to 0	Acceptable	Acceptable	**Adverse**	**Adverse**
2	Grassland/Pasture/ Prairie	Partial Retention	+10 to -5	Acceptable	Acceptable	Acceptable	Acceptable
3	Farmland	Retention	+10 to -2	Acceptable	Acceptable	Acceptable	Acceptable
4	Wetland	Preservation	+10 to 0	Acceptable	Acceptable	Acceptable	Acceptable
5	Recreation Area	Preservation	+10 to 0	Acceptable	Acceptable	Acceptable	Acceptable
6	Residential - medium density	Partial Retention	+10 to -5	Acceptable	Acceptable	Acceptable	Acceptable
7	Urban - Commercial/Industrial	Modification	+10 to -7	Acceptable	Acceptable	Acceptable	Acceptable
8	Transportation	Retention	+10 to -2	Acceptable	Acceptable	Acceptable	Acceptable
9	Marinas	Rehabilitation	+10 to -10	Acceptable	Acceptable	Acceptable	Acceptable
10	High density docks	Modification	+10 to -7	Acceptable	Acceptable	Acceptable	Acceptable

The VIA values of +0.98 for Alternative 1 and +0.22 for Alternative 2 are within the threshold values for all LCZs and as such are considered acceptable. The VIA values of -1.67 for Alternative 3 and -2.89 for Alternative 4 are considered adverse for the Forest LSZ, but acceptable for all others. It should be noted that almost half of the land in the study area is within the Forest LSZ (approximately 91,712 acres). As such, threshold ratings for this LSZ could be considered to be of greater magnitude than similar ratings for other LSZs.

1.5 Potential Mitigation Measures

USACE can only control aspects of land use that occur on government-owned property. Potential additional mitigation measures for areas receiving mowing permits are not considered, since the amount of clearing is determined by each alternative. However, considerable mitigation of visual and aesthetic

impacts could be accomplished by focusing on higher-intensity land uses. USACE could implement the following measures for activities on government-owned property in all LSZs:

Docks: There are currently no restrictions on the size of docks that may be built, so long as they are in keeping with USACE regulations for distance from adjacent docks and from the shore, and the minimum amount of open cove remaining. Some docks have a very high number of boat slips. In addition, some docks with many slips are built with the intention of selling slips to others. The practice of building roofs over docks makes them much more dominant to the viewer and blocks the view of the adjacent landscape. The aesthetic impact of additional docks under any of the alternatives could be reduced by the following measures:

- Limiting the number of slips per dock
- Prohibiting or limiting permit holders from selling slips to anyone other than a purchaser of the permit holder's adjacent property.
- Prohibiting or limiting the size of dock roofs
- Requiring that floats for new docks be encased in plastic to reduce litter caused by deterioration of styrofoam floats, and placing the same requirement on existing docks if/when they are repaired or replaced.

Marinas: Marinas can have an industrial and unattractive quality due to the nature of boat storage and maintenance activities, storage of miscellaneous material, and accumulation of litter. The negative aesthetic impact of marinas on the lake and adjacent shorelines could be reduced by the following measures:

- Prohibiting the accumulation of miscellaneous materials and/or junk piles
- Prohibiting driving on unimproved surfaces
- Prohibiting the storage of boats and trailers on unimproved surfaces
- Planting vegetation and/or installing fencing to screen upland marina areas from the lake
- Prohibiting mowing of land not used for marina amenities
- Requiring dock floats to be encased in plastic as they are repaired or replaced
- Prohibiting the use of tires or other waste materials as breakwaters
- Requiring the removal of litter from adjacent shoreline and wetland areas

Recreation Areas: Although recreational areas are generally attractive and consistent with the natural character of Eufaula Lake, some heavily used areas can experience wear and deterioration. The aesthetic impact of such areas on the lake, adjacent shorelines, and other spaces within recreational areas could be reduced by the following measures:

- Prohibiting driving on unimproved surfaces

- Strategic screening of play areas, restrooms, dumpsters, and other facilities with vegetation from adjacent areas with less compatible uses, such as nature trails and fishing areas.

1.6 Conclusions

Eufaula Lake is considered a special resource in the region, with vistas of water, hills, rugged forest, and geological formations that are unique to the area. The lake also provides opportunities for water-based recreation that are popular among local residents and visitors. Tourism and housing construction are important parts of the local economy that are highly dependent upon this combination of water recreation and visual aesthetics.

The forest LSZ is perhaps the most important in that it contains the majority of elements that are considered desirable of Eufaula Lake – natural woodland that complements the rugged hills and unique geological formations of the area. Lake users noted in particular that they enjoyed the wooded atmosphere of the lake. As such, impacts to this LSZ could be considered to be of higher importance than other LSZs.

Under the No Action Alternative, the aesthetics of Eufaula Lake could change considerably in areas currently zoned Limited Development. As development continues on private lands around the lake and requests for docks and mowing permits are granted, many areas of forest are likely to become developed with permanent improvements that would have visual impacts. The majority of viewpoints would experience slightly more development and docks under the No Action Alternative.

Under Alternative 1, much less development would be visible from the lake, shorelines, and other vantage points as is likely under the No Action Alternative. As a result, the area of Forest LSZ would not be reduced nearly as much as it would under the No Action Alternative, and the High Density Dock LSZ would likely not increase. The majority of viewpoints would retain much of the natural lake aesthetic they exhibit today.

Under Alternative 2, development and visual impacts would be similar to what is likely under the No Action Alternative, with a decrease in the area of Forest LSZ and an increase in the High Density Docks LSZ. Most viewpoints would have visual qualities very similar to what is likely under the No Action Alternative.

Under Alternative 3, more development and visual impacts would be likely as compared to the No Action Alternative, especially as viewed from the lake, shorelines, and other vantage points, with a considerable decrease in the area of Forest LSZ and increase in the High Density Docks LSZ. The majority of viewpoints would experience more development and docks than under the No Action Alternative.

Under Alternative 4, more development and visual impacts would be likely as compared to the No Action Alternative, especially as viewed from the lake, shorelines, and other vantage points, with a considerable decrease in the area of Forest LSZ and increase in the High Density Docks LSZ. The areas of Carlton Landing and Roundtree Landing would be dramatically affected. The majority of viewpoints would experience more development and docks than under the No Action Alternative.

VIA Values calculated for the various resource components compare the visual qualities under each alternative to the No Action Alternative. Under Alternative 1 (total VIA value of +0.89), an improvement of visual quality is likely as compared to the No Action Alternative, and a slight improvement is likely under Alternative 2 (total VIA value of +0.22). A decrease in aesthetic quality is likely under Alternative 3 (total

VIA value of -1.67) as compare to the No Action Alternative, and a larger decrease in aesthetic quality is likely under Alternative 4 (total VIA value of -2.89).

All VIA values fall under the range of "acceptable" for each LSZ with the exception of Alternatives 3 and 4, which fall under the range of "adverse" for the Forest LSZ. It should be noted that almost half of the land in the study area is within the Forest LSZ (approximately 91,712 acres). As such, threshold ratings for this LSZ could be considered to be of greater magnitude than similar ratings for other LSZs.

Mitigation measures that could be considered are limited to those that can be implemented on government-owned property. The majority of potential mitigation measures are related to reducing the visual impact of docks along the shoreline and adjusting the management requirements and vegetation planted at marinas and public recreation areas.

Chapter 2
Introduction

Eufaula Lake is a reservoir located in the upper Arkansas River basin, on river mile 27 of the Canadian River, in McIntosh and Pittsburg Counties, Oklahoma. The reservoir incorporates several major tributaries of the Arkansas River including the North Canadian River, South Canadian River, Deep Fork River, and Gaines Creek, all of which confluence in east-central Oklahoma immediately south of the Arkansas River. The U.S. Army Corps of Engineers (USACE) constructed Eufaula Lake (the project) between 1956 and 1964. The authorized purposes of the lake are flood control, water supply, hydroelectric power, navigation, and recreation. Eufaula Lake has approximately 808 miles of shoreline and contains approximately 105,500 surface acres of water, making it the largest lake located entirely within the state of Oklahoma. The majority of the lake is located within McIntosh and Pittsburg Counties; however, other associated counties include Haskell, Latimer, Muskogee, and Okmulgee. USACE is responsible for managing the lake's land and water resources.

The U.S. Army Corps of Engineers, Tulsa District intends to revise the Eufaula Reservoir Shoreline Management Plan (SMP) and to supplement the project Master Plan (MP) land classification maps. The Tulsa District preparing an Environmental Impact Statement (EIS) in order to comply with the National Environmental Policy Act (NEPA) of 1969 (as amended) and the Council on Environmental Quality's (CEQ) Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2. Although the EIS is required to address the impacts of the SMP revision and MP supplement from a lake-wide perspective, the Tulsa District will also evaluate the environmental impacts of specific proposed developments at the reservoir.

Proposed developments may exhibit a wide range of features, all of which may be addressed in this EIS. These features may include, but may not be limited to, the following: single and multi-family residences; hotel and conference facilities; golf courses; public boat ramps; beach and yacht clubs and associated facilities; marinas and associated boat storage facilities; retail, commercial, and light industry facilities; parks; beach and entertainment facilities; boat docks; and improved pathways and hiking trails. In addition to these features, there may be connected actions such as upgrades to the state highway and county road network, and potentially, electrical, water, and sewer network upgrades.

It is expected that different aspects of the physical and cultural environment will be affected differently by each proposed development, and by the revisions of the SMP and MP as a whole. The study area should, therefore, be expanded as appropriate to each aspect of the environment, and the level of environmental analysis should be commensurate with the study area and the potential effects, including cumulative effects, of the SMP revision and associated proposed developments. For example, the EIS might focus specifically within the proposed development areas in an assessment of likely direct impacts on individuals. Alternately, the EIS may focus on the entire reservoir where appropriate. In every case, however, the EIS should logically and appropriately describe and defend the size and composition of the study area addressed in assessment of different aspects of the physical and cultural environment.

This visual resources assessment is to supplement the EIS by providing a visual inventory of the existing environment and scenic resources of Eufaula Lake. It also addresses the potential visual effects of proposed alternatives to revisions of the SMP. The objective of this assessment is to evaluate potential effects and mitigation measures related to the proposed alternatives. The alternatives assessed are outlined in detail in the EIS. As this study precedes the final EIS, subsequent iterations of this document will be closely coordinated between USACE, Tulsa District and other federal, state, and local agencies, interested parties, and affected individuals.

The procedures used for this assessment were those outlined in the USACE Visual Resources Assessment Procedure (VRAP) (Smardon, *et al.* 1988). This procedure provides a method to evaluate visual resources affected by USACE water resources projects. The VRAP was developed to be used in the planning process as input to plan formulation, design, and operations. The method and analysis used by the VRAP are intended to be responsive to the planning and environmental policies set out in the Principles and Guidelines (P&G) adopted by the U.S. Water Resources Council (US Water Resources Council 1983) and the USACE Planning Guidance Notebook (USACE 1982, since revised).

Chapter 3

Methods for Impact Evaluation

3.1 Regulatory Framework

The following laws, regulations and policies provide guidance to and serve as the regulatory framework for the visual resources assessment.

3.1.1 Rivers and Harbors Act of 1894, as Amended

The Rivers and Harbors Act applies to activities within navigable waters of the U.S. Actions that may affect the navigability of waters of the U.S., such as bridge or causeway construction, aids to navigation, or dock construction, are regulated under this Act. This Act also regulates the management and modification of flood control structures.

3.1.2 Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Section 404 of the Clean Water Act requires permits for the discharge of dredged or fill material into any water of the US, including wetlands (33 USC 1344). Section 404(b)(1) guidelines prohibit discharges of dredged or fill material into waters of the US, including wetlands, if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem (provided that the alternative does not cause other significant adverse environmental impacts) (40 CFR 230[a]).

3.1.3 Flood Control Act of 1944, as Amended

Section 4 of this Act authorizes USACE, under the supervision of the Secretary of the Army, to construct, maintain, and operate public park and recreational facilities at water resources development projects (16 U.S.C. 460(d)). Local interests are also permitted to construct, operate, and maintain such facilities with permission from the Secretary of the Army. Water areas of all such projects shall be open to public use generally, for boating, swimming, bathing, fishing, and other recreational purposes; and ready access to and exit from such water areas along the shores of such reservoirs shall be maintained for general public use, when such use is not found to be contrary to the public interest. The lease of public lands and structures at water projects is also authorized. Recreational uses must be consistent with state laws for the protection of fish and game.

3.1.4 Federal Water Project Recreation Act of 1965, as Amended

This Act requires federal agencies to consider potential outdoor recreational opportunities and fish and wildlife enhancement when planning navigation, flood control, reclamation, hydroelectric, or multipurpose water resource projects.

3.1.5 Rules and Regulations Governing Public Use of Water Resources Development Projects Administered by the Chief of Engineers

Title 36 CFR Part 327 regulates activities at Civil Works projects. Part 327.30 regulates shoreline management and specifically requires preparation of an SMP for each USACE project where private

shoreline use is allowed. The purpose of the plan is to protect and manage shorelines of all Civil Works water resources development projects under USACE jurisdiction in a manner that will promote the safe and healthful use of these shorelines by the public while maintaining environmental safeguards to ensure a quality resource for use by the public. The objectives of all management actions are to achieve a balance between permitted private uses and resource protection for general public use. The SMP must honor past written commitments. It must be reviewed at least once every five years and revised as necessary. Private shoreline uses may be allowed through a shoreline use permit review and approval process.

3.1.6 Local Zoning

Local counties and cities may enact zoning regulations to guide development within their jurisdictional areas. These development rules can considerably affect the aesthetic quality of the landscape. Local zoning determines the type of land uses that are permitted in each area of the jurisdiction and can include restrictions on the specifics of development, such as housing density, housing size, types of businesses allowed, commercial signage, and lot setbacks. The degree to which zoning regulations dictate specific requirements varies by locality. Requirements can be few, with each landowner able to use their land as they see fit. Restrictions can also be many, such as those requiring certain building styles, driveway sizes, types of fencing, and even exterior paint colors. The degree to which zoning requirements dictate specifics of development depends on the goals of the community that establishes them.

Within the study area, the counties surrounding Eufaula Lake and the City of Crowder have not enacted zoning ordinances although most of the land uses immediately adjacent to the lake are residential. The City of Eufaula has established land use zones adjacent to the lake, which include residential and commercial zones.

3.2 Study Area

The study area for the visual resources assessment includes Eufaula Lake below the normal pool elevation of 585 MSL, and all land within 3,000 feet from that boundary. This distance was selected to attempt to include most land that is visible from the lake. Although government-owned property around Eufaula Lake exceeds this distance in some locations, such as in Wildlife Management Areas (WMAs), this report focuses on the areas that might be affected visually by changes in the SMP. Land within the study area was evaluated to determine its basic visual character and develop a framework for assessing specific viewpoints. In forecasting future conditions, the primary focus areas were those that are visible from the lake, shoreline, and bridges. Representative locations were selected to predict the likely overall impact of the different shoreline management alternatives under consideration for the SMP update.

3.3 Study Methods

The visual analysis was conducted using the methodology in the Visual Resources Assessment Procedure (VRAP) for USACE as developed by Smardon *et al.* (1988). The procedure uses the visual Management Classification System (MCS) to identify Landscape Similarity Zones (LSZ), inventory visual resources, and establish an assessment framework based on local aesthetic values. This information is then used in a Visual Impact Assessment (VIA), where scenarios under the different alternatives from representative viewpoints are compared.

Visual or scenic resources are the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Visual or scenic impacts are generally defined in terms of

a plan or activity's physical characteristics and their potential visibility, as well as the extent to which it would change the perceived visual character and quality of the environment in which it will be located. The principal steps required to assess visual impacts are as follows:

- Management Classification System: The Regional Landscape (visual setting and character of the Eufaula Lake in general) was defined, and LSZs and visual resources of the study area were identified. Each LSZ is assigned a Management Class.
- Visual Sensitivity and Key Views: Key viewpoints for visual assessment were identified where potential land use changes resulting from the SMP update would be most visible to viewers.
- Visual Impact Assessment (VIA): The visual appearance of the landscape from the key viewpoints was assessed, and forecasts were performed to predict what the landscape might look like in 25 years under the different alternatives. These forecasts were compared to a forecast of the No Action Alternative.

3.3.1 Management Classification System

The Regional Landscape provides a frame of reference for the inventory and evaluation of visual resources. Within the Regional Landscape, landforms, water resources, vegetation, and climate tend to exhibit common characteristics (Smardon *et al.* 1988). The Regional Landscape was described based on physiographic and ecoregion characteristics as described by Woods *et al.* (2005), as well as observations from visits to the Eufaula Lake area in February and April, 2012.

Within the Regional Landscape, Landscape Similarity Zones (LSZs) were identified that represent areas of land that share common characteristics of landform, water resources, vegetation/ecosystems, land use, and land use intensity. LSZs are determined from the visual impression that is created when topography, form, color, and texture are combined together. The LSZs are established to provide a more specific framework with which to define and evaluate the visual resources of the study area (Smardon *et al.* 1988).

Ten LSZs were established within the study area: Forest, Grassland/Prairie/Pasture, Farmland, Wetland, Recreation Area, Residential-Medium Density, Urban-Commercial/Industrial, Transportation, Marinas, and High Density Docks. GIS data from the USGS 2006 National Land Cover Dataset (USGS 2011) and aerial photography were used to identify and map the similarity zones within the study area. The LSZs and their component land use and/or cover type are summarized in **Table 3-1**. A map of the Eufaula Lake study area and the LSZs is presented in **Figures 3-1 through 3-6**.

Table 3-1. Landscape Similarity Zones Established for Eufaula Lake

Landscape Similarity Zone		Acres*	Component Land Cover or Use	Data Source
1	Forest	91,712	Deciduous forest, evergreen forest, mixed forest	USGS 2011
2	Grassland/Pasture/Prairie	60,777	Grasslands/herbaceous, pasture/hay, shrubland, urban/recreational grasses	USGS 2011
3	Farmland	726	Orchards/Vineyards, row crops, small grains, fallow	USGS 2011
4	Wetland	4,080	Emergent herbaceous wetlands, woody wetlands	USGS 2011
5	Recreation Area	12,128	Parkland areas	USACE 2011a
6	Residential - medium density	14,218	developed, open space; developed, low intensity	USGS 2011
7	Urban - Commercial/Industrial	281	developed, high intensity; railroad corridors	USGS 2011; USACE 2011b
8	Transportation	1,150	highways and bridges	ESRI 2005
9	Marinas	194	marinas	Aerial photography
10	High density docks	2,111	high density docks	Aerial photography
	Total Acres	**187,378**		

** Values are rounded to the nearest acre.*

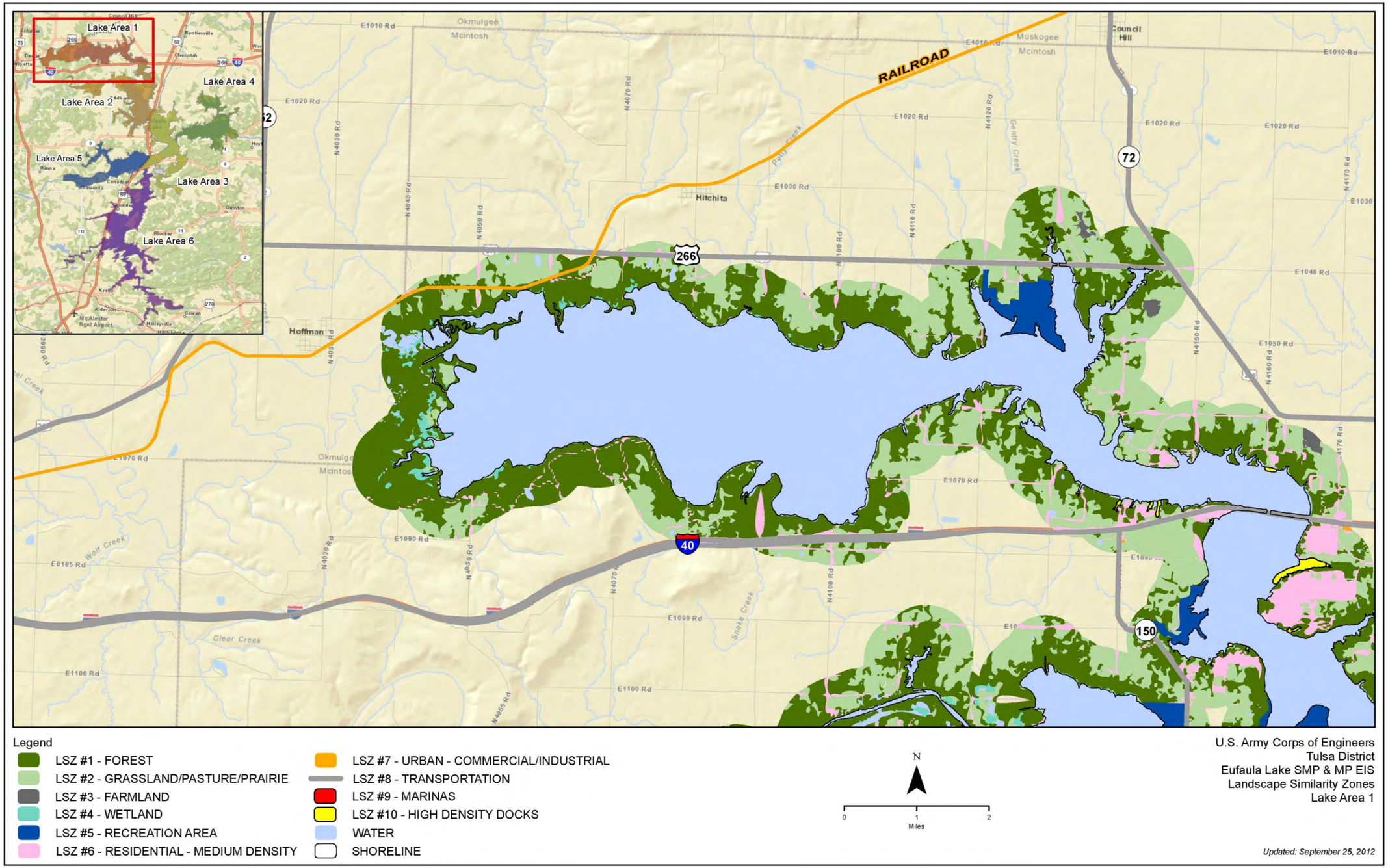

Figure 3-1. Eufaula Lake Landscape Similarity Zones Lake Area 1

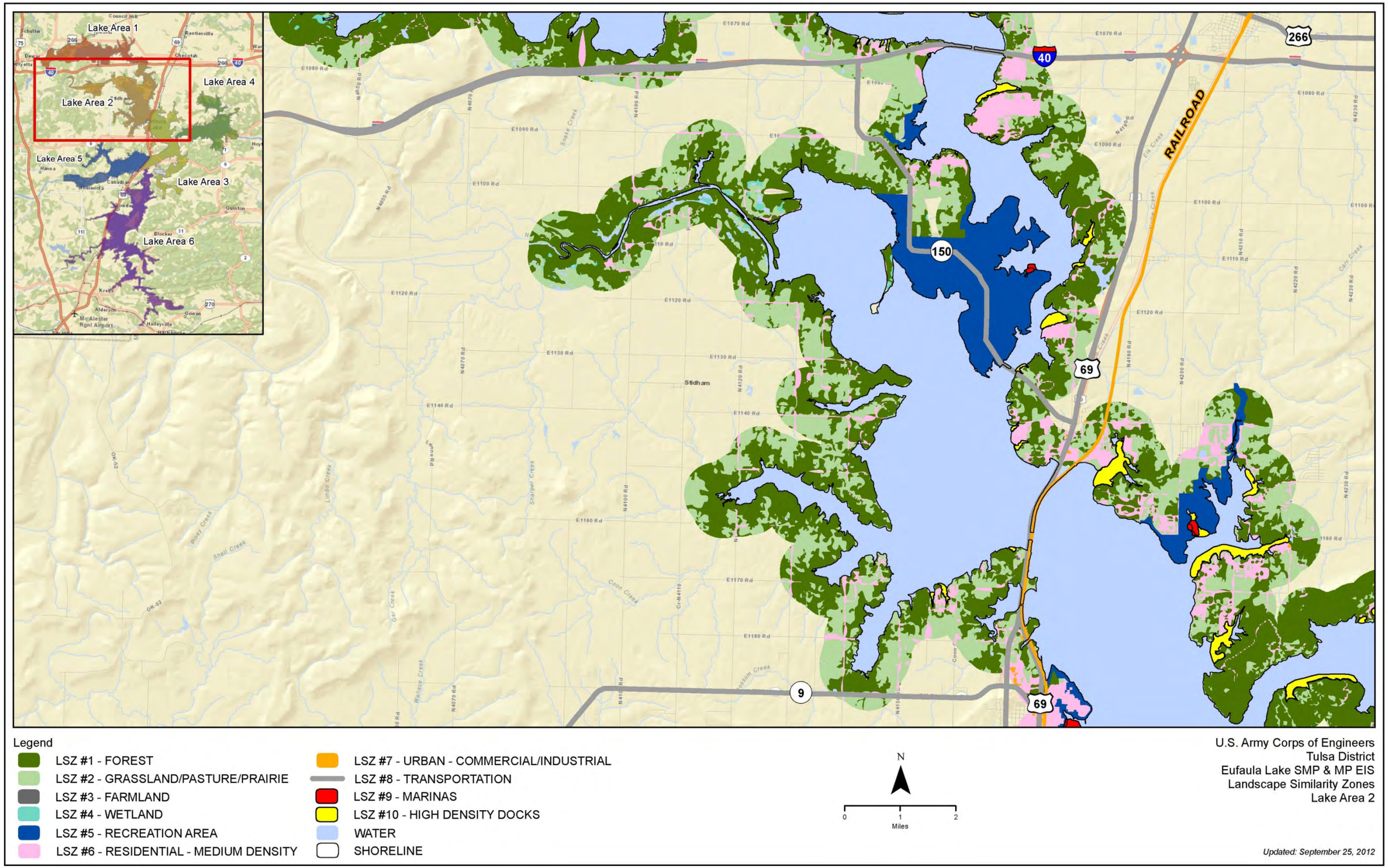

Figure 3-2. Eufaula Lake Landscape Similarity Zones Lake Area 2

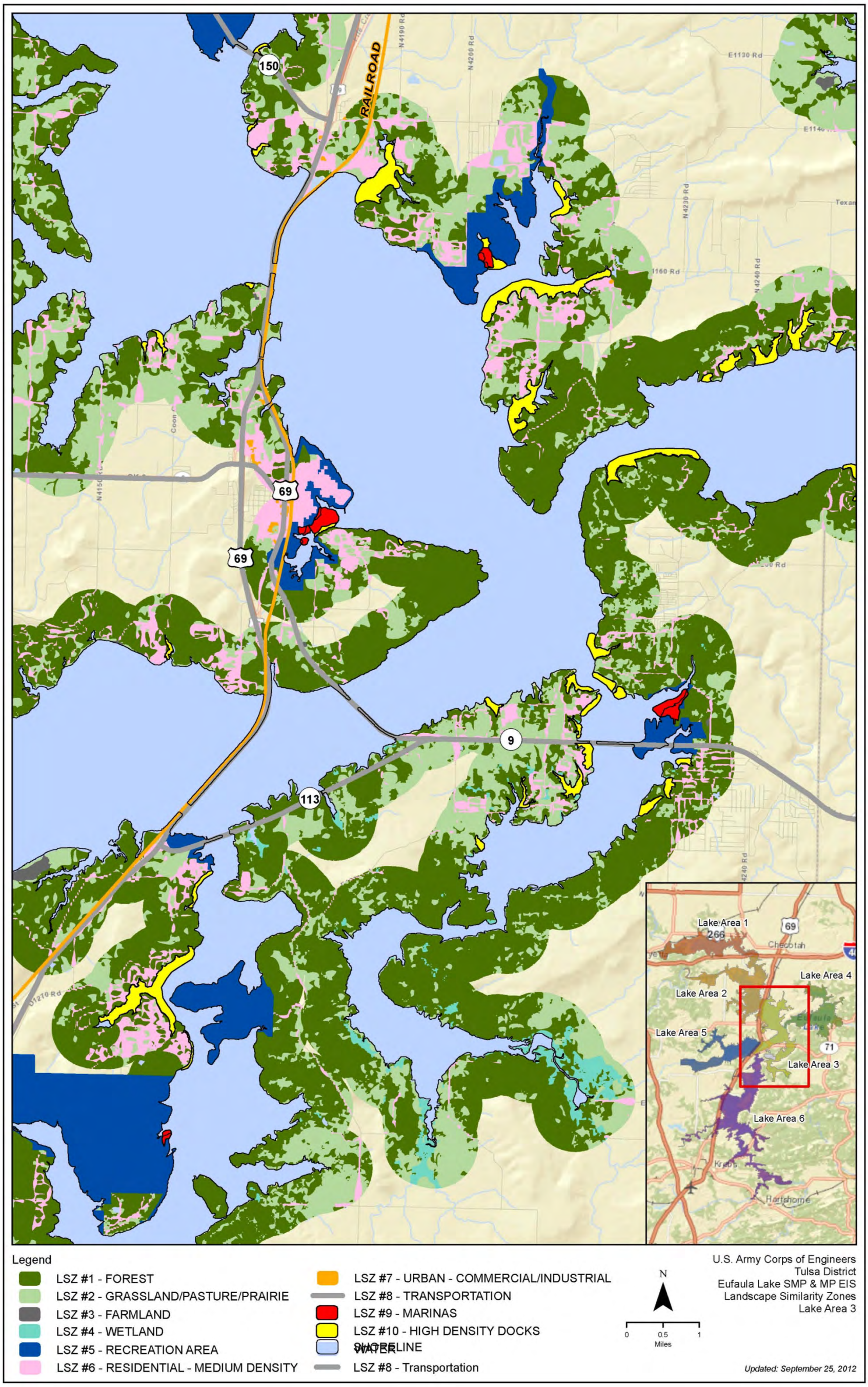

Figure 3-3. Eufaula Lake Landscape Similarity Zones Lake Area 3

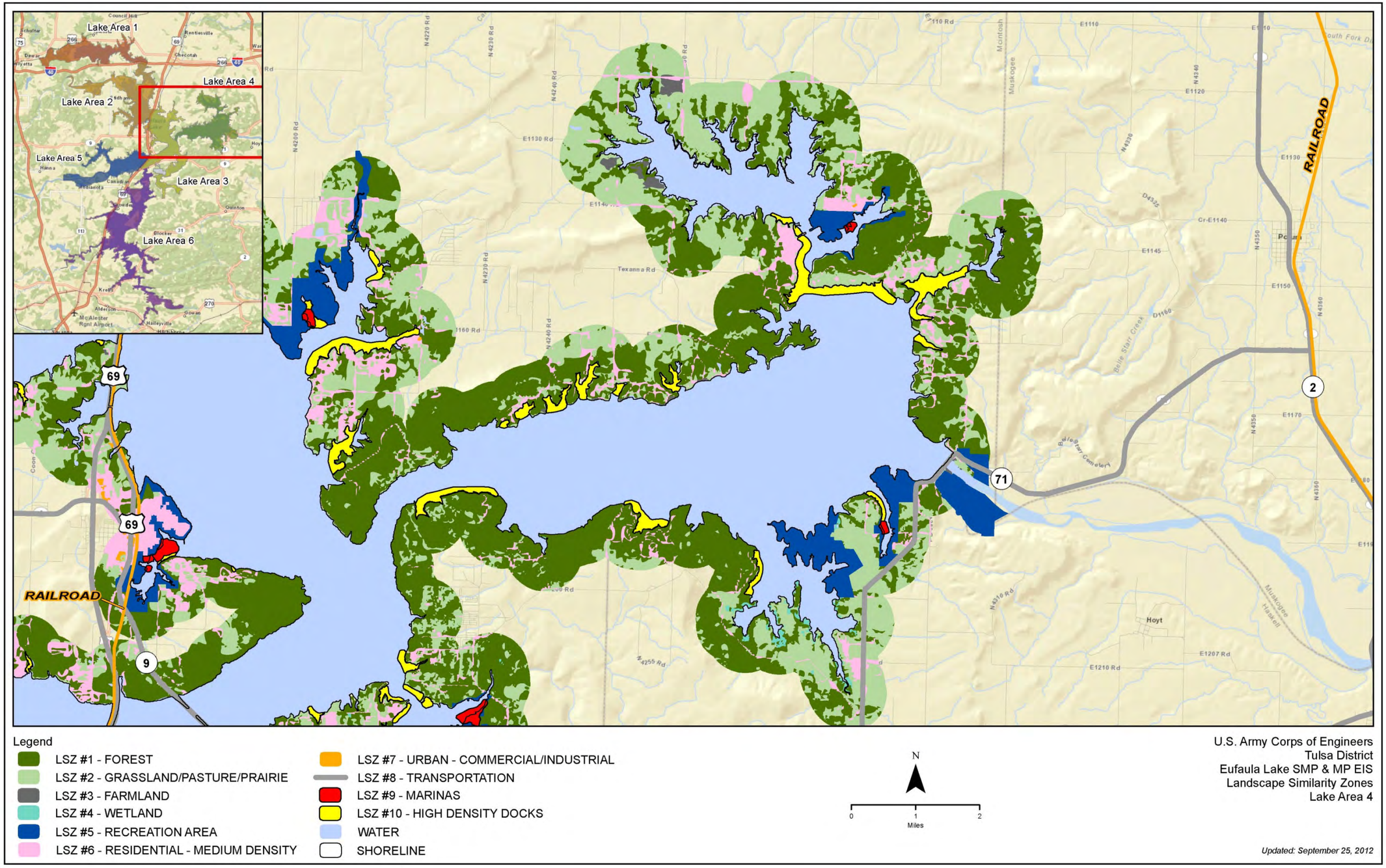

Figure 3-4. Eufaula Lake Landscape Similarity Zones Lake Area 4

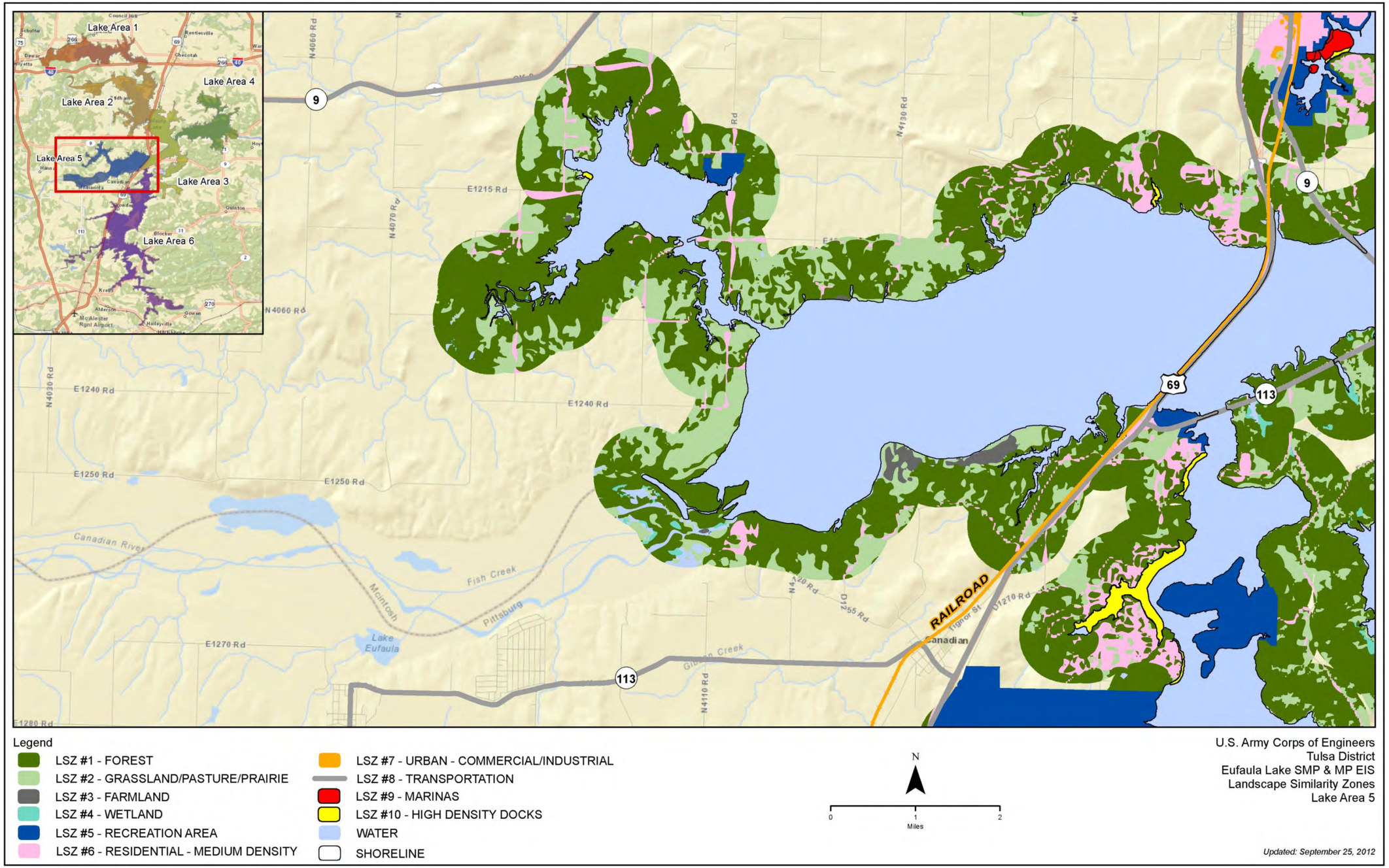

Figure 3-5. Eufaula Lake Landscape Similarity Zones Lake Area 5

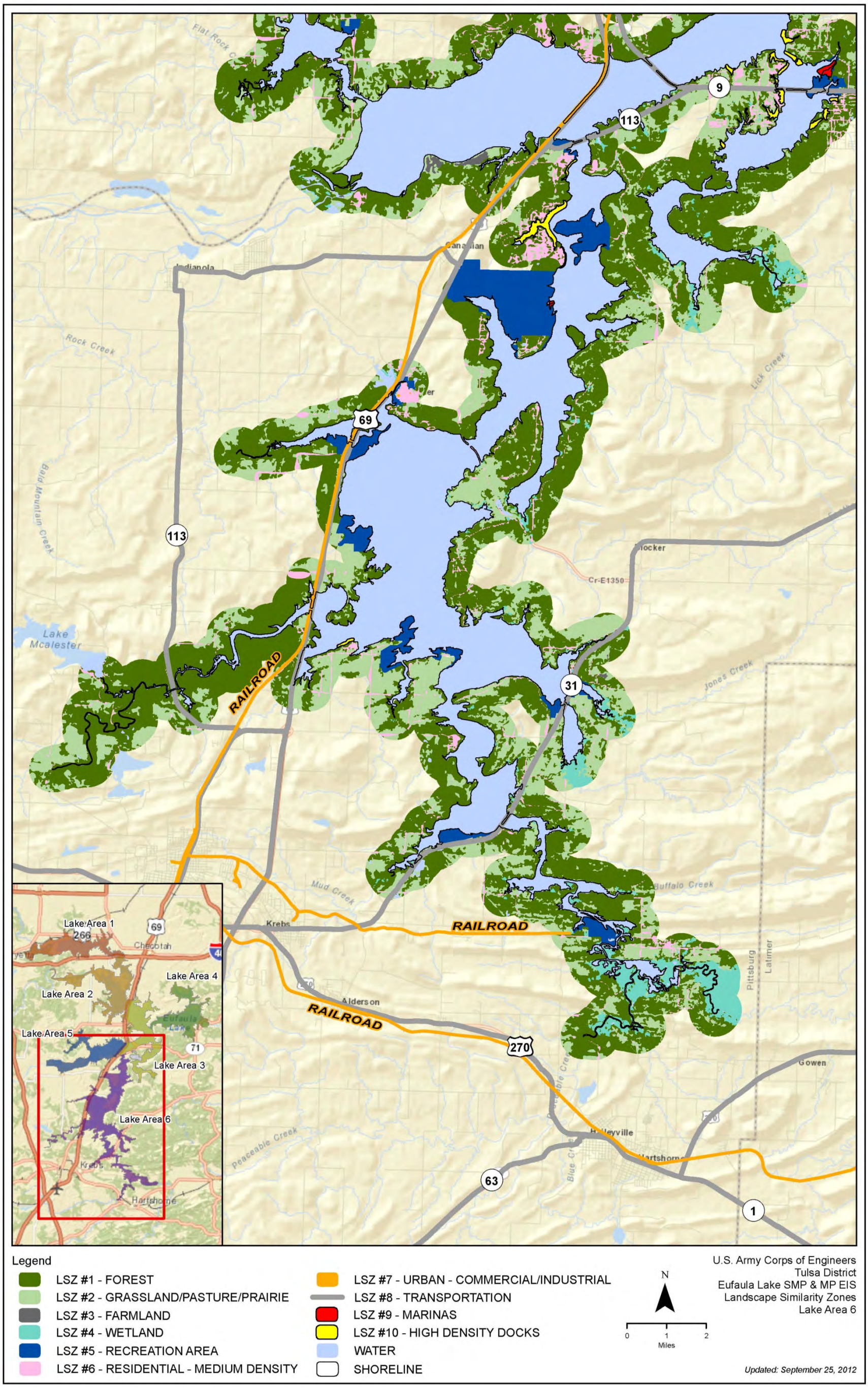

Figure 3-6. Eufaula Lake Landscape Similarity Zones Lake Area 6

The USGS 2006 National Land Cover Dataset (USGS 2011) was used to map most LSZs due to the large size of the study area. It should be noted, however, that some mapped land use types do not seem consistent with that which is seen on aerial photography. These exceptions and other considerations used for determining LSZ areas are noted as follows:

- Additional cropland can be seen in aerial photography that was identified in the dataset as being in the Grassland/Prairie/Pasture; this land appears to be most often used for hay.
- The Residential – Medium Density LSZ consists of USGS-mapped areas for developed-open space, developed-low intensity, and developed-medium intensity. Although some of the data is termed "open space" and "low intensity", the level of development seen from aerial photography is consistent with medium-density development in the Eufaula Lake area, such as residential subdivisions.
- The Urban – Commercial/Industrial LSZ consists of USGS-mapped areas for developed - high intensity land use. Aerial photography shows that, in the Eufaula Lake area, this data corresponds to urban centers, small industrial facilities, and shopping areas. It should be noted that, although there are urban centers other than Eufaula near Eufaula Lake, these areas are not within the 3,000-ft buffer study area.
- The Marina LSZ, delineated from aerial photography, includes the land occupied by the marinas as well as its docks, no-wake zones, and adjacent water where the users' views are dominated by marina activities.
- Quantitative criteria were not used to define areas within the High Density Docks LSZ; rather, the size of the viewscape, length of shoreline, distance between docks, and sightlines were considered. Areas were delineated from aerial photography based on whether the existing docks would be a dominating feature in the viewscape.

To create an assessment framework, judgments are made on the existing visual quality of each zone by identifying examples of resource categories that exhibit each of three levels of visual quality: Distinct, Average, and Minimal (Smardon *et al.* 1988). These levels are defined by Smardon *et al.* (1988) as follows:

- **Distinct** – something that is considered unique and is an asset to the area. It is typically recognized as a visual/aesthetic asset and may have many positive attributes. Diversity and variety are characteristics in such a resource.
- **Average** – something that is common in the area and not known for its uniqueness, but rather is representative of the typical landscape of the area.
- **Minimal** – something that may be looked upon as a liability in the area. It is basically lacking any positive aesthetic attributes and may actually diminish the visual quality of surrounding areas.

The assessment framework is then used as a basis for evaluating the visual impacts of the different alternatives. Using this framework, each resource category in each LSZ is assigned an overall rating of Distinct, Average, or Minimal based on the dominating characteristics of the category within that LSZ. A Management Class is assigned to each LSZ based on these overall ratings (Smardon *et al.* 1988). These classes are defined by Smardon *et al.* (1988) as follows:

- **Preservation** – Areas considered to be unique and to have the most distinct visual quality in the region. They are highly valued and are often protected by federal and state policies and laws. These areas include wilderness areas, some natural areas, portions of wild and scenic rivers, historic sites and districts, and similar situations where changes to existing resources are restricted. While limited activity from plans or developments is not precluded, it should not be readily evident. Structures, operations, and use activities should appear to be extensions of the protected resource and should faithfully represent, repeat, or reinforce the visual character of that resource.

- **Retention** – These areas are regionally recognized as having distinct visual quality, but may not be institutionally protected. Activity from plans or developments may be evident, but should not attract attention. Structures, operations, and use activities should remain subordinate to the existing visual resources and should repeat the form, line, color, texture, scale, and composition characteristics of the resource.

- **Partial Retention** – These areas are locally valued for above average visual quality, but are rarely protected by institutional policies. Activity from plans or developments may be evident and begin to attract attention. Structures, operations, and use activities should remain subordinate to the existing visual resources. Form, line, color, texture, scale, and composition may differ from but should be compatible with the visual characteristics of the existing resource.

- **Modification** – These areas are not noted for their distinct qualities and are often considered to be of average visual quality. Activity from plans or developments may attract attention and dominate the existing visual resource. Structures, operations, and use activities may display characteristics of form, line, color, texture, scale, and composition that differ from those of the existing visual resources. However, the plans and activities should exhibit good design and visual compatibility with its surroundings.

- **Rehabilitation** – These areas are noted for their minimal visual quality and are often considered blighted areas. Activities from plans or developments should alter the existing undesirable visual resources. Structures, operations, and use activities should exhibit good design and display characteristics of form, line, color, texture, scale, and composition that contribute to making the area compatible with the visual character of adjacent higher quality landscapes.

VRAP Forms 1 through 3 (used to create the framework) for the Regional Landscape and LSZs, and Forms 4 and 5 (used to establish the Management Class for each LSZ) are included in Appendix A.

3.3.2 Visual Impact Assessment

The potential impact of each alternative was assessed by predicting the future characteristics of selected viewpoints. Potential viewpoints were selected during field reviews in early February, late February, and April, 2012, and were photographed under both leaf on and leaf off conditions. Viewpoints were specifically selected to include locations with viewer/user groups that would potentially view and be impacted by changes to shoreline allocations imposed by the different alternatives. Areas considered visually sensitive and those that would be seen by many people were preferred. Viewpoints of Carlton Landing and Roundtree Landing were also selected as government-owned land in these areas would change from Protected to Public Recreation under Alternative 4. Both water-based and land-based views were selected to represent the range of views that are seen by lake users. **Figure 3 -7** shows the locations of the selected viewpoints and **Table 3-2** outlines the viewpoint locations selected for analysis.

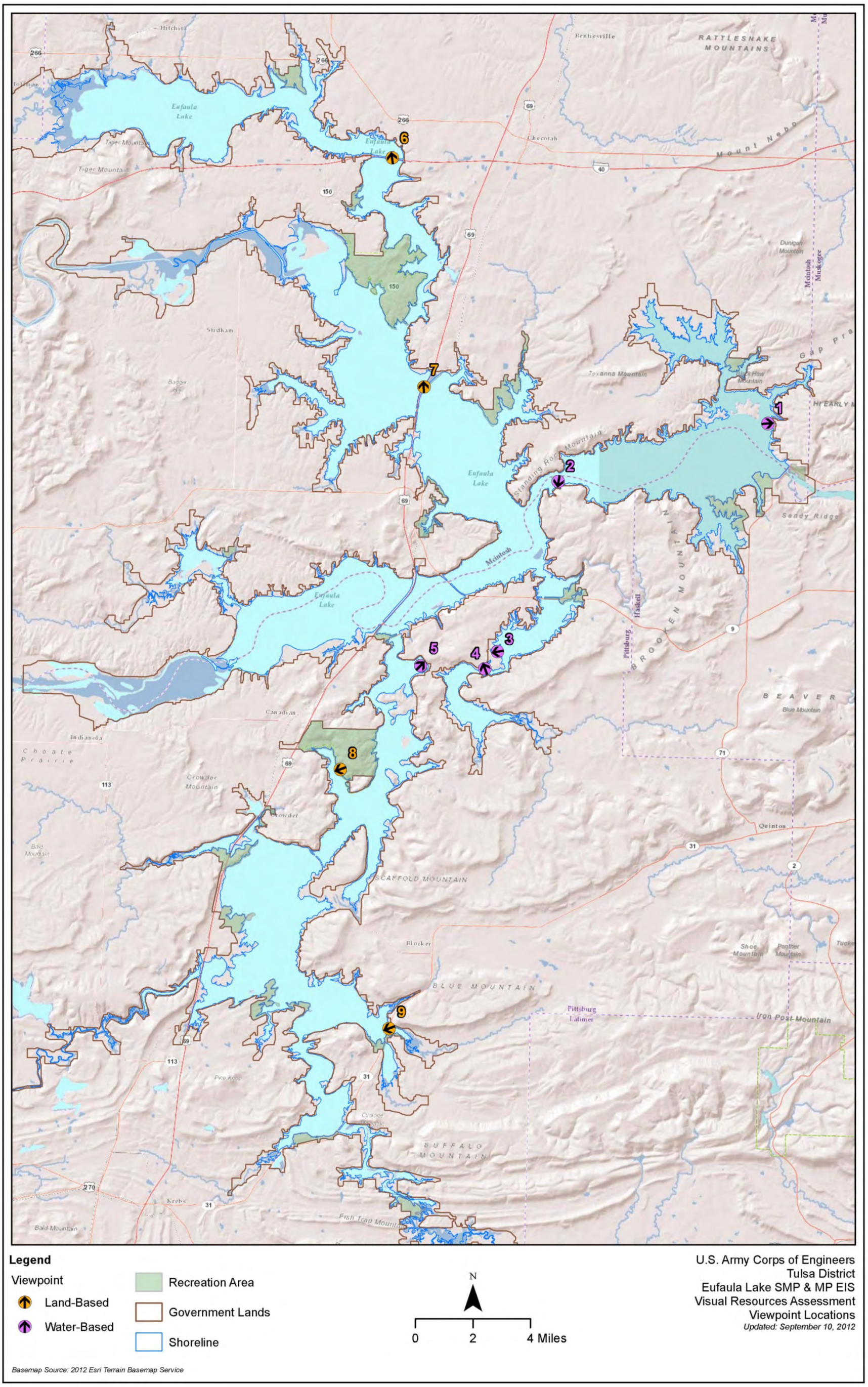

Figure 3-7 Eufaula Lake Visual Analysis Viewpoints

Table 3-2. Viewpoints Selected for Analysis under Each Alternative for Eufaula Lake

Viewpoint Location		Direction Faced	Viewpoint Type
1	Near Duchess Creek Island	East	Water-based view
2	Standing Rock Cut – East	Southwest	Water-based view
3	Roundtree Landing	West	Water-based view
4	Carlton Landing	Northwest	Water-based view
5	Daisy Hallum Cove, near Gaines Creek Park	East	Water-based view
6	I-40 Bridge and Causeway	North	Land-based view
7	US-39 Bridge at Bridgeport	North	Land-based view
8	Arrowhead State Park	West	Land-based view
9	Highway 31 Bridge North of Elm Point	West	Land-based view

The likely characteristics that would be present at each viewpoint under each alternative in a 25-year timeframe were determined. Photo simulations of each viewpoint were created to illustrate the likely viewscape under each alternative in 25 years. A number of factors were considered for predicting the likely future characteristics of each viewpoint under each alternative. Many of these factors related to potential development of surrounding land. These factors included:

- Topography and ease of development/shore access
- Whether docks would be permitted for adjacent landowners
- Water depth and wind fetch adjacent to areas where docks could be built
- Presence and type of nearby development and transportation networks
- Current rezoning requests

It was assumed that the ability to build docks and clear lake views from houses would increase development activity, as would gentle topography/ease of construction and nearby transportation networks.

VRAP Forms 1, 2, and 6 were completed for each location to compare the likely viewscape characteristics under each alternative to the No Action Alternative. Aspects from these forms are summarized on VRAP Form 7. These forms are included in Appendix B.

The visual qualities of each alternative were weighted according to VRAP procedures for various resource categories for each viewpoint. These categories are water, landform, vegetation, land use, user activity, and special considerations. These qualities were compared to those that would occur under the No Action Alternative to determine a VIA quotient for each resource category. These quotients were then compared to ranges established by the VRAP as acceptable thresholds for the management classifications of the different LSZs.

Public input was used to help determine visual priorities and preferences for viewscapes in the Eufaula Lake study area. During the February and April visual resources surveys, people encountered within the study area were asked about their visual preferences for the lake. These stakeholders noted that

undeveloped wetlands and forested areas are of particular value to them. Park users questioned during the surveys noted that they value the undeveloped shoreline views from park areas, as well as the surrounding undeveloped forest. Most people encountered were fishing or camping. However, other users not observed during the surveys, for example, beach-goers, may value some of the more developed or tamed nature aspects of the recreational areas.

Comments submitted by the public during scoping sessions were also used to help determine visual priorities and preferences. Some public comments complained about litter near docks, including pieces of styrofoam floats that have broken off. A few comments complained about the visual quality of areas with dense docks. However, many public comments complained about the moratorium on new dock construction, and many requested that their particular properties be allowed to have docks. Although some of these comments were from people who live adjacent to the lake, many were from developers looking to develop lakefront property for sale. Regardless, it is clear that many adjacent landowners want to construct a dock so they can have a boat at their property so they can enjoy many of the scenic and aquatic amenities Eufaula Lake has to offer.

Scenic vistas from bridges and causeways were also identified as being of particular importance. These vistas offer views of varying terrain, geologic formations, and vegetative cover that are unique as compared to the surrounding plains. A goal of the Eufaula Lake Master Plan is to protect and maintain "natural vegetation and shorelines in both undeveloped and underdeveloped areas of the lake ... so as to provide a visual quality and ecological quality that is lacking in many other recreation projects throughout the nation" (USACE 2010). As such, these scenic vistas were considered to be priority visual elements for Eufaula Lake.

Chapter 4

Affected Environment

4.1 Regional Landscape

The upland vegetation and terrestrial habitats present within the Eufaula Lake study area are described below as presented in *Ecoregions of Oklahoma* (Woods *et al.* 2005). Oklahoma contains vast plains, elevated karst plains, hills, and folded, low mountains. There is a strong east-west zonation of vegetation and climate in Oklahoma. Precipitation increases eastward, rainfall variability increases westward, and both the mean annual temperature and the length of the growing season increase southward. Soils influence the degree to which moisture is available for plant life (Woods *et al.* 2005). Much of Oklahoma's natural upland vegetation has been lost to overgrazing, burning, logging, erosion, and cultivation. Today, the state is a mosaic of grazing land, cropland, woodland, forests, and abandoned farmland. Wheat and alfalfa are the main crops with grain sorghum, soybeans, cotton, and corn grown in lesser quantities (Woods *et al.* 2005).

The Eufaula Lake study area falls within four different ecoregions: the Northern Crosstimbers, the Osage Cuestas of the Central Irregular Plains, Scattered High Ridges and Mountains of the Arkansas River Valley, and the Lower Canadian Hills of the Arkansas River Valley (Woods *et al.* 2005). These ecoregions give the study area a varying aesthetic of steep, rocky slopes, sandy lowlands, tall hills with dry forest, and scattered grasslands.

The Northern Crosstimbers are located on the northern and western portions of the Eufaula Lake study area, to the north of the main channel of the South Canadian River. The Northern Crosstimbers consist of hills, cuestas, and ridges that are naturally covered by a mosaic of oak savanna, scrubby oak forest, eastern redcedar (*Juniperus virginiana*), and tall grass prairie. Post oak (*Quercus stellata*), blackjack oak (*Quercus marlandica*), and understory grasses dominate on porous, course-textured soils derived from sandstone, while tall grass prairie occurs on fine-textured soils derived from limestone or shale. Streams are typically shallow and have sandy substrates. Today, livestock farming and large oilfields are the main land uses of this ecoregion; however, they are not highly visible from within the study area (Woods *et al.* 2005).

The Osage Cuestas ecoregion is located on the very northern section of the study area. This ecoregion is an irregular to undulating plain that is underlain by interbedded, westward-dipping sandstone, shale, and limestone. East-facing cuestas and low hills occur. Topography and vegetation are distinct from nearby ecoregions. Natural vegetation is mostly tall grass prairie, but a mix of tall grass prairie and oak–hickory forest occurs in eastern areas. Forests and woodlands are native on stony hilltops and are dominated by post oak, blackjack oak, and black hickory (*Carya texana*). Today, rangeland, cropland, riparian forests, and on rocky hills, oak woodland or oak forest occur (Woods *et al.* 2005).

The Lower Canadian Hills ecoregion covers the majority of the study area south of the Northern Crosstimbers. This ecoregion is underlain by Pennsylvanian-age shale, sandstone, and coal. It acts as a transition between the drier Crosstimbers to the west and moister parts of the Arkansas Valley to the east. Native vegetation is a mixture of oak woodland, tall grass prairie, oak–hickory forest, and oak–hickory–pine forest. In general, wooded hills are more widespread than in the nearby Arkansas Valley Plains and Osage Cuestas. Streams tend to have deeper pools and more habitat diversity than in the Northern Crosstimbers.

Today, steep slopes are wooded and used for timber, woodland grazing, or recreation. Gently sloping uplands are used as pastureland or hayland. Cropland or pastureland occur on bottomlands. Other main land uses include poultry farming, coal mining, and natural gas production.

The Scattered High Ridges and Mountains ecoregion represents a small southeastern portion of the study area just south of the community of Blocker. This ecoregion is more rugged and wooded than the surrounding ecoregions. It is covered by savannas, open woodlands, or forests dominated or co-dominated by upland oaks, hickory, and shortleaf pine (*Pinus echinata*); loblolly pine (*Pinus taeda*) occurs but is not native. This ecoregion is largely underlain by Pennsylvanian sandstone and shale. Land uses are similar to those in the Lower Canadian Hills.

4.2 Landscape Similarity Zones

4.2.1 LSZ 1 - Forest

The Forest LSZ largely consists of oak-dominated woodlands. The different ecoregions exhibit slightly different dominant species assemblages due to differences in water availability, soils, geology, and topography. The understory of most upland forested areas is somewhat thin and can be seen through, especially in the winter. The understory of forested wetlands may be denser. The Northern Crosstimber ecoregion is dominated by oak savanna and scrubby oak forest with post oak (*Quercus stellata*) and blackjack oak (*Quercus marlandica*). The Osage Cuestas ecoregion forests are dominated by post oak, blackjack oak, and black hickory (*Carya texana*). The Lower Canadian Hills ecoregion forests are dominated by oak woodland, oak–hickory forest, and oak–hickory–pine forest. The Scattered High Ridges and Mountains forests are dominated by upland oaks, hickory, and shortleaf pine (*Pinus echinata*).

The Forest LSZ is most visible on hillsides and ridges, and is a very dominant part of the overall aesthetic of Eufaula Lake. The forests appear rugged and rocky, with large boulders and small escarpments often visible, especially near the shore. The ridges of the many forested hills create a sense of mystery in the lake, hiding large portions of it from view. As a result, the lake appears much smaller to the viewer than it actually is.

From within the Forest LSZ, the view of the lake depends on the exact topography and vegetation of the location. In some locations, the lake is hidden behind hills and ridges. Where the lake is not screened by hills, however, it is often only partially screened by trees. Since the understory in the forest is most often rather thin, the lake and opposite shoreline are very visible, especially in winter.

This zone includes scattered residential homes on wooded or partially cleared lots. Many homes are situated to view a panorama of the lake and forestlands. The forested areas also include many wildlife management areas and are used extensively for hunting and fishing. Lake users queried during the February and April visual resources surveys noted that undeveloped wetlands and forested areas are of particular value to them.

Some of the forested areas are quite littered. Remote areas with access roads have been reported to attract illegal activity. During the visual surveys, it was noted that some remote areas are littered with bottles and cans, food containers, shotgun shells, and miscellaneous refuse. In general, however, this litter can only be seen when the user is within the littered area, and is not seen from the lake or nearby shorelines.

4.2.2 LSZ 2 – Grassland/Pasture/Prairie

The Grassland/Prairie/Pasture LSZ consists of areas with short herbaceous vegetation. These areas include native grasslands and prairie, rangeland for cattle, abandoned farmland, and maintained grasses in urban/recreational areas that do not fall under other LSZs (such as Park/Recreational, Residential, and Commercial/Industrial). The majority of these areas are away from the lakeshore, in the more gently sloping or flat inland areas. This type of land use covers extensive areas in the region; however, it covers only about half the land use in the study area due to the topography surrounding the lake. It should be noted that the study area only includes such lands that are within 3,000 feet of the lakeshore and that this characterization does not necessarily apply to other areas away from the lake.

This LSZ, especially areas that are pastured, can offer wide, sweeping views of the landscape, but only occasional views of Lake Eufaula, since it is generally at a much lower elevation. Views of the lake sometimes occur near the top of gentle slopes, where a portion of the lower slope is also kept as short vegetation such that trees do not block the view. However, in most locations, the surrounding topography and lakeside forested areas screen the view of the lake. Streams are not common in this LSZ, as their surrounding hill slopes are generally wooded.

Native prairie openings can be found in undisturbed, protected areas and areas with a higher frequency of fire; however, prairie land has been much reduced from its historic distribution due to conversion to other land uses and fire suppression (Woods 2005). Where they do occur, they are typically small and surrounded by forested areas.

Grasslands and grazed pasture can have a dry, somewhat barren aesthetic; however, many areas exhibit a wide diversity of colorful wildflowers during part of the year. Such areas with wildflowers are of particular aesthetic value near recreational areas and highways, where they can be viewed by more people.

Much of this area is dotted with natural gas and oil extraction wells, which can sometimes detract from the overall aesthetic. Where they are present, their industrial appearance is incongruous with the surrounding rangeland landscape. However, the oil wells do contribute to a sense of place; a somewhat nostalgic reminder of American history and culture.

4.2.3 LSZ 3 - Farmland

The Farmland LSZ represents a very small portion of the study area. Cropland occurs in stream valleys and bottomlands in the Lower Canadian Hills, Scattered High Ridges and Mountains, and Northern Crosstimbers ecoregions; whereas it occurs on nearly level plains in the Osage Cuestas ecoregion (Woods 2005).

Cropland was identified in McIntosh and Pittsburg Counties. A good portion of the farmland is located on government-owned property. Although information regarding the type of crops grown at specific locations was not available, general information about crop types grown in these counties was obtained from the 2007 Census of Agriculture (USDA 2009). Crops grown in these counties included corn (over 430 acres), wheat (1,113 acres), oats (144 acres), soybeans (over 185 acres), peanuts (156 acres), and vegetables (203 acres). Forageland (*e.g.* hay and greenchop) covered 112,356 acres, and orchards covered 1,847 acres. It should be noted that these values are for the entire area of the two counties, not just the study area. However, the data is likely representative of the type and relative amounts of different crops in the study area. It should also be noted that some of the farmland likely represents food plots established for wildlife within WMAs on government-owned land in the study area.

Views of cropland from Eufaula Lake are most often screened by trees along the lake fringe; however, some cropland is visible from the lake, especially in winter. The view of cropland has a pastoral aesthetic, in keeping with and complimentary to the tranquil feeling of other areas surrounding the lake, such as forest and grasslands.

4.2.4 LSZ 4 - Wetland

The Wetlands LSZ is located in large areas adjacent to Eufaula Lake, as well as fringing shallows adjacent to other LSZs. Wetland types include forested broad-leaved deciduous, scrub-shrub broad-leaved deciduous, and herbaceous emergent (as classified by Cowardin *et al*. 1979).

Dominant forested wetland trees include river birch (*Betula nigra*), pond cypress (*Taxodium distichum* var. *imbricarium*), and sycamore (*Platanus occidentalis*), with river birch, American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), and sugarberry (*Celtis laevigata*) in the sub canopy. Dominant species in scrub-shrub wetlands included black willow (*Salix nigra*), buttonbush (*Cephalanthus occidentalis*), green ash, water locust (*Gleditsia aquatica*), American germander (*Teucrium canadense*), common rush (*Juncus effusus*), fox sedge (*Carex vulpinoidea*), hop sedge (*Carex lupulina*), and roundleaf greenbriar (*Smilax rotundifolia*). Dominant species found in emergent wetlands included cattail (*Typha latifolia*), common rush, poverty rush, (*Juncus tenuis*), spikerush (*Eleocharis palustris*), duckweed (*Lemna Minor*), and salvinia (*Salvinia molesta*).

Most wetland areas are located inside coves where low-lying land and shallowly inundated areas are protected from wind wave action. Large areas of wetlands occur in some of the wildlife management areas. Wetland areas are largely either hidden from view or unnoticeable from the interior of the lake, but are seen up-close by boaters and those fishing near the shore and within coves, as well as people hunting in the wildlife management areas.

Wildlife is particularly evident in all wetland areas, not just in the wildlife management areas. Wildlife particularly visible within the study area include waterfowl, wading birds, songbirds, birds of prey, beaver, muskrat, and deer.

4.2.5 LSZ 5 – Recreation Area

Recreation areas surrounding Eufaula Lake include campgrounds, picnic areas, beaches and swimming areas, and opportunities for fishing, hiking, and nature watching. Marinas located within public recreation areas are considered separately as they have a character distinct from other recreational areas. Many parks are developed with campsites, restrooms, showers, boat ramps, group shelters, playgrounds, and ball fields.

Most recreation areas have undeveloped forest, but only a few have official hiking trails. Recreation area users most often drive through forested areas on their way to more developed park areas. Opportunities for viewing wildlife, meadows, and woodlands are still abundant, however, since the more developed areas are usually bordered by forest, wetland, or Eufaula Lake. Some recreation areas have very developed facilities, with playgrounds and group shelters; these facilities can experience very high usership. As a result, the overall aesthetic the user experiences varies from active play area to tamed nature to back country. Some litter can be present, especially during high use periods, but in general the recreational areas are kept free of significant litter.

4.2.5 LSZ 6 – Residential – Medium Density

The Residential - Medium Density LSZ includes area subdivisions and residential neighborhoods, ranging from high-end to modest. A few areas have neglected homes. Many of the neighborhoods are subdivisions of relatively recent construction. This zone includes homes with medium to large size lots; most lots have a lawn. Neighborhoods have developed in areas that have lake access for docks, are near lake access points, or have lake views. In general, neighborhoods tend to be more developed and cleared on the north side of the lake, and more wooded on the south side.

4.2.5 LSZ 7 – Urban – Commercial/Industrial

The Urban and Industrial/Commercial similarity zone occupies very little area in the study area. It consists of downtown areas, shopping centers, small industrial businesses, and self-storage facilities. It is mostly concentrated around Eufaula and includes the downtown area of Eufaula and small commercial/industrial operation northwest of Eufaula near the intersection of US 69 and Highway 9. Other areas include those near the intersection of US 69 and Highway 150, and small areas in Crowder and north of Porum Landing. The areas in this similarity zone are not adjacent to Eufaula Lake; rather, they are set back from the shoreline and are typically not visible from the lake nor have a view of it.

These areas are largely paved with little vegetation; some are unpaved. Downtown Eufaula is well-maintained and attractive for tourism. Shopping areas outside of downtown Eufaula vary from well-maintained to somewhat neglected. Industrial areas are generally unattractive to passers-by. Downtown Eufaula has some litter, although not a lot. The few industrial areas can often be very littered or have junk piles. Shopping areas can vary from having little litter to being rather littered.

4.2.5 LSZ 8 – Transportation

This zone consists of highway and primary road corridors that are most frequently traveled. These corridors include the following: US 69, I-40, Highways 9, 9A, 31, 72, 113, and 150, and Old Highway 69. The zone also includes railways.

US 69 and I-40 are both divided limited-access highways with wide, cleared edges. State highways are two-lanes with cleared shoulders. Where these roads cross the study area, they offer wide, panoramic views of Eufaula Lake, partially screened views of secluded coves and wetlands, and often dramatic views of the surrounding topography. This is especially the case on bridges and causeways.

4.2.5 LSZ 9 – Marinas

The Marinas similarity zone includes the following:

- Eufaula Lake Marina at Lake Eufaula State Park
- Belle Starr Marina at Belle Starr Park
- Eufaula Cove Marina in Eufaula
- Duchess Creek Marina at Porum Landing
- Cole's Evergreen Marina near Brooken Cove
- Highway 9 Marina at Highway 9 Landing

- Area 51 Marina at Arrowhead State Park

This zone includes the land occupied by the marinas as well as docks, no-wake zones, and adjacent water where the users' views are dominated by marina activities.

The marinas have a somewhat industrial quality due to the materials the docks are constructed of (sheet metal, metal poles, plastic floats, etc) as well as the general upkeep of the landscape. The marinas are kept as functional places where users are not generally expected to linger. Rather, the marinas are simply an embarkation point for recreational activities. The degree to which the marinas accumulate litter depend on location and seasonality. Litter can especially accumulate where it is wind-blown into wetland areas. Trailers and boat storage can detract considerably from views both from within the marinas and from the water. Many marinas have piles of miscellaneous materials and/or junk. At some locations, such as Belle Starr Marina and portions of Cole's Evergreen Marina, users driving on undefined unpaved areas have left the ground barren, eroding, and unattractive.

Marina users experience unpleasant noise and odor more often than in the other similarity zones. Revving boat motors and exhaust are commonplace. Spilled fuel and oil is common in marinas and can create a sheen on the water.

While the overall aesthetic of marinas is not particularly attractive, they do allow users to keep and access their boats so that they can enjoy many other unique scenic qualities and recreational opportunities of Eufaula Lake.

4.2.5 LSZ 10 – High Density Docks

The High-Density Docks LSZ consists of areas within the lake itself where there are dense concentrations of docks. Quantitative criteria were not used to define these areas; rather, the size of the viewscape, length of shoreline, distance between docks, and sightlines were considered. Areas were delineated based on whether the presence of docks would be a dominating feature in the viewscape.

High-density dock areas are generally in protected coves near residential areas. When in small coves, these areas are not very visible to lake users as the surrounding landscape and vegetation screens their view; however, larger coves are more easily seen by people boating on the lake and on opposite shores.

The size of docks varies greatly. Some docks are small (for one or two boats) and uncovered - these docks are relatively unobtrusive. Other docks with roofs and storage areas block the view of the surrounding water and landscape and are much more noticeable. Some docks are very large and accommodate many boats. These roofed docks generally have a storage area for each slip. They can be a very dominating feature in the landscape.

Noise levels can at times be obtrusive in high-density dock areas due to the number of people, use of radios, revving boat motors, and the fact that the water allows sound to travel well. Exhaust fumes can also occasionally be obtrusive.

High-density dock areas can be unattractive in the landscape, especially when they block views of the shore and the surrounding topography does not offer views of the unique landscape and geology of the Eufaula Lake area. However, many public comments complained about the moratorium on new dock construction, and many requested that their particular properties be allowed to have docks. It is clear that many

adjacent landowners want to construct a dock so they can have a boat at their property so they can enjoy many of the scenic and aquatic amenities Eufaula Lake has to offer.

4.3 LSZ Management Class Assignment

The visual qualities of the Regional Landscape and each LSZ were assessed, and examples of each resource category were identified within each of the visual quality levels (Distinct, Average, and Minimal). These examples were tabulated on VRAP Form 3 for each LSZ and are included in Appendix A. Each resource category of the Regional Landscape and the LSZs was assigned an overall rating of Distinct, Average, or Minimal based on the dominant characteristics of the category within that zone. The individual ratings of each resource category were then weighted according to the VRAP and used to calculate a numerical total assessment value for the LSZ. The total assessment value for each LSZ was then used to assign it to one of five management classes (MCS classification): preservation, retention, partial retention, modification, or rehabilitation; these classifications are used to provide guidelines for different aspects of visual change. The resource category ratings are tabulated on Form 4 for each LSZ and summarized on Form 5 (included in Appendix A). The Management Classes assigned for the Regional Landscape and each LSZ are presented in **Table 4-1**. The Management Classifications are defined in Chapter 3, Section 3.1 of this report.

Table 4-1. Management Classifications for Landscape Similarity Zones and the Regional Landscape at Eufaula Lake

Landscape Similarity Zone		MCS Assessment Score	Classification
1	Forest	18	Preservation
2	Grassland/Pasture/Prairie	12	Partial Retention
3	Farmland	14	Retention
4	Wetland	17	Preservation
5	Recreation Area	17	Preservation
6	Residential - medium density	12	Partial Retention
7	Urban - Commercial/Industrial	10	Modification
8	Transportation	15	Retention
9	Marinas	7	Rehabilitation
10	High density docks	9	Modification
Regional Landscape		15	Retention

The individual classifications of each resource category were then weighted according to the VRAP and used to calculate a numerical total assessment value for the LSZ. The total assessment value for each LSZ was then used to determine appropriate MCS treatment classifications.

4.3 Viewpoint Inventory

Inventory sheets for each viewpoint are included in Appendix B

4.3.1 Viewpoint 1 – Near Duchess Creek Island

This view is from the water of the shoreline and uplands east of Duchess Creek Island, facing east. The landform consists of rolling hills with plains behind. The view consists of a mix of forested land, large maintained lawns with mature trees, and residences. This viewscape is typical of moderately developed shores on this lake in the Northern Crosstimbers ecoregion, with a mix of oak forest and grassland on a

terrain of low hills and plains. The residences and lawns are most visible in the winter season, when there is less screening provided by vegetation. When trees are in leaf, they screen the residences and yards such that they are not very noticeable, giving a rural aesthetic. The shoreline itself has an undeveloped aesthetic; one dock with what appears to be two slips is present.

The water of Lake Eufaula and the sky are dominant features in this viewscape. During the winter visit, migratory waterfowl were present. No user activity was noted during any of the visits, but user activity is known to be high in the summer months and consists of boating recreation.

Photos of Viewpoint 1 in winter and late spring are presented in Appendix C.

4.3.2 Viewpoint 2 – Standing Rock Cut – East

This view is from the water of the shoreline and uplands at Standing Rock Cut, facing southwest through the cut. The landform consists of the rolling hills of north and south sides of Standing Rock Cut. The right side of the view (the north side of the cut) consists of forested land and a shoreline with an undeveloped aesthetic. The left side of the view (the south side of the cut) consists of medium-density residences with large maintained lawns, lots cleared to the shoreline, and scattered trees. As a result, the shoreline on the south side has a highly developed aesthetic. Four large covered docks are present on this side. Summer leaves on the trees provide minor screening of residences, but they are largely visible and a dominating feature in that section of the viewscape.

The water of Lake Eufaula and the sky are also dominant features in this viewscape. During the winter visit, migratory waterfowl were present. No user activity was noted during any of the visits, but user activity is known to be high in the summer months and consists of boating recreation.

Photos of Viewpoint 2 in winter and late spring are presented in Appendix C.

4.3.3 Viewpoint 3 – Roundtree Landing

This view is from the water of the shoreline on the north side of Roundtree Landing, facing west. The view consists of undeveloped forested land and wetlands surrounding a small cove. The landform gently slopes towards the shore, such that only the land near the shoreline is visible. The growing season vegetation is dense compared to the dry forested slopes that surround Eufaula Lake and the viewscape is welcoming and serene, with a sense of mystery due to the curvature of the cove. Vegetation in winter is slightly less dense, allowing glimpses into a few more open areas within deciduous trees. Small areas of shoreline are eroding with vertical banks, but combined with the wild aesthetic of the land, they lend a sense of the sublime (especially in winter) as small demonstrations of the power of nature. This view offers excellent opportunities for viewing wildlife.

The water of Eufaula Lake and the sky are dominant features in this viewscape. During the winter visit, migratory waterfowl were present. No user activity was noted during any of the visits; however, USACE staff noted that this location is popular for fishing.

Photos of Viewpoint 3 in winter and late spring are presented in Appendix C.

4.3.4 Viewpoint 4 – Carlton Landing

This view is from the water of the cove and shoreline at Carlton Landing, facing northwest. The landform on both sides of the cove is of rolling hills, so the land adjacent to the shoreline is most dominant. The left-

hand view (the west side of the cove) consists of natural forest (on government-owned property). The understory of this forest is relatively thin, especially in winter, allowing a view into the forest interior; growing season vegetation limits the depth of this view. Further into the cove on this side, on Carlton Landing property, the view consists of a thinned canopy of trees with a completely cleared midstory and understory. The view in this area extends through the trees until approximately 250 feet from the shore. Construction activity is slightly visible behind and among the remaining trees. The shoreline along the entire west side of the cove is rocky.

The shoreline in the middle (north side of the cove) and right-hand sides (east side of the cove), consists of natural forest and wetland. The east side of the cove is the west bank of Roundtree Landing.

The natural undisturbed portions of the view are serene and offer excellent opportunities for viewing wildlife. The construction activity at Carlton Landing detracts from the scenic quality considerably, but this activity is temporary.

The enclosure of the cove makes the land and shoreline dominant features in this viewscape. During the winter visit, migratory waterfowl were present. One small boat with fishermen was observed during the late February and April visits.

Photos of Viewpoint 4 in winter and late spring are presented in Appendix C.

4.3.5 Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park

The view is from the water of Daisy Hallum Cove, about 0.8 mile northeast of Gaines Creek Park, facing east. The surrounding land consists of deciduous forest. In winter, this forest appears thin, exposing the craggy hill slopes. In the growing season, the boulders and rocks that occur on the steep slope are screened by the leaves of the trees. A portion of the shoreline has a narrow band of forested bottomland. The hill behind it rises, in some places sharply, from the lake's normal pool elevation of 585 ft above MSL to an elevation up to 700 ft above MSL. A few high-end houses are present, situated such they have panoramic views of the lake. The houses do have some cleared areas surrounding them; however, extensive lawns are not present likely due to the uneven and rocky terrain. As such the houses are partially screened by winter trees, and considerably screened when the trees are in leaf. Three docks with roofs are present, two of which have associated walkways from the house to the shoreline.

The viewscape has an enclosed feeling due to the surrounding tall hills, which are a dominant part of the viewscape. The rocks and boulders on the hill slopes are examples of the interesting geological features present in the Eufaula Lake area. No user activity was noted during any of the visits, but user activity is likely high in the summer months and would consist of boating recreation and fishing.

Photos of Viewpoint 5 in winter and late spring are presented in Appendix C.

4.3.6 Viewpoint 6 – I-40 Bridge and Causeway

The view is from the east causeway of the I-40 bridge over Deep Fork Arm, facing north. The view consists of a wide panorama of Eufaula Lake, the opposite north and northeast shorelines, and the side of the highway. The land on the opposite shore consists of deciduous forest on a hill slope that in places rises somewhat steeply from the lake. In winter, the vegetation in the forest is thin, exposing the craggy hill slope. The majority of the shoreline is rocky with boulders and bluffs rising directly from the water in some places. Additional boulders and bluffs on the hillside are visible through the thin forest. The slopes rise

from the lake's normal pool elevation of 585 ft above MSL to about 600 feet above MSL, where they meet broad plains. The plains are not visible behind the trees at the top of the slope.

A small densely developed residential neighborhood is present on the north shore, in the left side of the viewscape. This neighborhood is located on a small area where the slope allows for yards to be cleared close to the shoreline. A row of close-set modest homes is very visible through the winter trees. Four covered docks are associated with this neighborhood; one of these has six slips. Although this neighborhood and its associated docks are highly visible in winter, they are a small part of the viewshed. The rocky bluffs are much more dominant and the main focus of the view, and the houses are largely screened by vegetation during the growing season. A small cluster of homes is located at the top of the hill on the northeast shore. These homes are partly visible through the trees in winter, but they are completely screened by the forest canopy during the growing season. There is one dock at this cluster of homes, partially hidden within the bend of a small cove. Almost equidistant between these two communities is one modest home. It is only slightly visible during the growing season, but in winter is highly visible. Pickup trucks and what appear to be storage trailers are visible through the winter trees next to this home.

Mature forested hillsides and small coves are seen between the residential areas. The ruggedness of the terrain and the nearly full screening of residential neighborhoods from view during the growing season give an unspoiled and untamed aesthetic to the general landscape.

The highway corridor is highly littered and loud with traffic. However, the dramatic landscape is so prominent that the viewers gaze is pulled across the lake to the opposite shore. Regular clearing of vegetation is apparent so that this view is maintained. No user activity was noted on the lake during any of the visits, but user activity is known to be high in the summer months and consists of boating recreation.

This view is particularly interesting as a feature along I-40 as it stands in sharp contrast to the open dry plains or forested bottomlands that are seen along nearby stretches of the highway. The boulder-strewn shoreline and rocky, rugged bluffs are examples of the interesting geological features present in the Eufaula Lake area. This draws the viewer's eye and is particularly dramatic. The bridge affords a sudden, open view of the water and bluffs that provides visual cues to passing travelers that they have come upon a special feature in the landscape.

Photos of Viewpoint 6 in winter and late spring are presented in Appendix C.

4.3.7 Viewpoint 7 – US 69 Bridge at Bridgeport

This view is from the north causeway of the US 69 bridge at Bridgeport, facing north. The view consists of a wide panorama of Eufaula Lake, the shoreline at Bridgeport, and the side of the highway. The land on the shore is gently sloping and a protected sandy beach is present. In many areas, scrubby willows flank the shoreline.

Beyond the shoreline, the land is relatively flat. A relatively dense neighborhood sits back from the shore, but it is rather well-hidden due to dense woodland and the flat terrain. Extensive thinning of the understory on the west side of the viewshed exposes some of the homes there. A large mowed area extends from homes on the east side of the viewshed to the water's edge, but a small spit of scrub-shrub/forested wetland provides some screening. Some small meadow areas are also present near the shoreline.

The highway corridor is highly littered and loud with traffic. The wide vista of the lake draws the viewer's attention, but the bridge and causeway are still prominent features in the viewshed. Some deciduous trees and shrubs have grown along the causeway but are easily seen through in winter.

The very left side of the viewshed offers an extended viewing distance over the water, which gives a sense of enormity to the Lake. The flatness of the land in the center and right of the viewshed are accentuated by this view. The leaves on the trees during the growing season screen the nearby community almost completely from view. Overall, the effect is of relatively unspoiled sandy shore.

Photos of Viewpoint 7 in winter and late spring are presented in Appendix C.

4.3.8 Viewpoint 8 – Arrowhead State Park

This view is from a picnic area and water access on the west side of Arrowhead State Park, facing west. The view consists of the lake, the opposite shoreline, and some of the picnic area. The land on the opposite shore is hilly with deciduous forest. A few cleared areas are present on the hillside, as is a utility easement. A few homes on the opposite shore are slightly visible through the trees in the winter, but mostly hidden by foliage during the growing season.

The picnic area is also used for fishing. An unpaved road parallels the shore and is driven and parked on by people fishing. Some erosion of the bank in the picnic area is evident.

The overall effect of this viewscape is of a large but relatively quiet cove and the opposite shore. It is peaceful and has the aesthetic of domesticated nature within the park. People driving and parking on the dirt road next to the shore decrease the overall tranquility of the location somewhat. The opposite shore and hill slope appear undeveloped and natural. Opportunities for viewing wildlife are excellent.

Photos of Viewpoint 8 in winter and late spring are presented in Appendix C.

4.3.9 Viewpoint 9 – Highway 31 Bridge North of Elm Point Park

This view is from the bridge on Highway 31 north of Elm Point Park, facing west. The view consists of the lake, forested tall hills and Elm Point Park on the opposite shoreline, and the Highway 31 causeway. The forested land on the opposite shore is steep and appears undeveloped. Elm Point Park is on the left side of the view, closer to the viewer. The park has mature trees and grass with no understory. A boat ramp is visible, and the shoreline has a section of rip-rap.

The highway has frequent traffic and the shoulder is highly littered. The wide vista of the lake draws the viewer's attention, but the bridge and causeway are still prominent features in the viewshed. Some deciduous trees and shrubs have grown along the causeway but are easily seen through in winter.

The overall effect of the viewscape is that of developed parkland and undeveloped opposite shore. The park is peaceful, but looks like it is heavily used. The opposite shore and hill slope appear undeveloped and natural. Opportunities for viewing wildlife are good.

Photos of Viewpoint 9 in winter and late spring are presented in Appendix C.

Chapter 5

Potential Impacts of the Proposed Action

5.1 Impacts to Landscape Similarity Zones

Changes to the different LSZs would occur mostly due to development activity. This activity would vary greatly between the different alternatives and would be related to the amount of shoreline zoned as Limited Development. Private property adjacent to the government-owned lands along Limited Development shorelines is attractive for development due to the ability to have private docks and clear views to the lake. As such, private land adjacent to government-owned land with other zoning is likely to be less preferred for development. For comparison between alternatives, miles of shoreline is used for discussion, as shoreline length would be a determining factor in how many docks could be built. **Table 5-1** details the miles of shoreline that would fall under each shoreline designation for each alternative.

Table 5-1. Shoreline Allocations (Miles) by Alternative for Eufaula Lake

Shoreline Allocation	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Limited Development	271	42	182	367	479
Protected	430	657	517	332	214
Public Recreation	106	108	108	108	114
Prohibited	1	1	1	1	1

5.1.1 Impacts to LSZ 1 - Forest

No Action Alternative

Under the No Action Alternative, the amount of forested land is expected to be reduced in the future. Some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial) as development continues on private lands around the lake, and some areas are cleared. In addition, some new and existing homeowners will likely request issuance of permits to mow the adjacent government-owned property in order to improve their views of the lake. Current vegetation management policies allow the Lake Manager to issue vegetative modification permits on a case-by-case basis. These permits currently allow mowing of government-owned land from the private property to the shoreline within the width of the private property extended into the public land. Current regulations restrict the removal of trees larger than four inches in diameter, as well as any flowering trees, or shrubs, regardless of size. When there is significant wildlife or scenic/aesthetic areas that could be impacted by mowing, the mowing is required to be restricted to no more than a 30-foot strip of government-owned land adjacent to the private property.

It is expected that permitted mowed areas adjacent to new and/or existing homes would look similar to areas that currently have mowing permits. These areas reduce the amount of forest overall, and can have an even larger impact on the visual impression of forested area. If a number of homes mow to the shoreline in an area, even if there is forested land between them, the overall visual effect is the loss of natural forestland.

Alternative 1

Under Alternative 1, the amount of shoreline designated as Limited Development would be reduced from 271 miles (under the No Action Alternative) to 42 miles. This alternative would result in dramatically less conversion of natural forested land to mowed areas, since mowing permits would be granted only in areas designated as Limited Development. In addition, there would likely be fewer developments built on lands adjacent to government property due to the reduction of shoreline where private docks could be built. In addition, an extended shoreline buffer would be implemented whereby the majority of shoreline (37 miles) would be required to have a 70-foot non-mowed buffer adjacent to the lake. In areas without steep slopes, this buffer would effectively screen development and mowed areas from view. Where slopes are steeper, some clearing may be visible depending on the amount of mowed area. Under Alternative 1, some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial); the amount of land converted would likely be much less than under the No Action Alternative.

Alternative 2

Under Alternative 2, the amount of shoreline designated as Limited Development would be reduced from 271 miles (under the No Action Alternative) to 182 miles. In addition, an extended shoreline buffer would be implemented whereby the majority of shoreline (159 miles) would be required to have a 70-foot non-mowed buffer adjacent to the lake. Development activity would be similar in this alternative to the No Action Alternative, but the 70-foot buffer that would be required in most locations would considerably screen development. In areas without steep slopes, this buffer would effectively screen development and mowed areas from view. Where slopes are steeper, some clearing may be more visible depending on the amount of mowed area. As a result, although the amount of land that is forested would likely be only slightly higher than the No Action Alternative, the visual effect from the lake would give the impression that there is much more forested area. Under Alternative 2, slightly less land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial).

Alternative 3

Under Alternative 3, the amount of shoreline designated as Limited Development would be increased from 271 miles (under the No Action Alternative) to 367 miles. As a result, development activity would be increased as compared to the No Action Alternative because of the increased area where private docks would be permitted. A baseline shoreline buffer would be implemented whereby the majority of shoreline (312 miles) would be required to have a 45-foot non-mowed buffer adjacent to the lake. This buffer would help screen development somewhat, especially in areas with less steep slopes, but would likely not be an effective screen where slopes are steeper. As a result, there would be less forestland than the No Action Alternative. Under Alternative 3, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

The visual impression of loss of forestland would be tempered somewhat due to the buffers; however, if a number of homes mow to the 45-foot buffer in an area, even if there is forested land between them, the overall visual effect would be the loss of natural forestland in many locations.

Alternative 4

Under Alternative 4, the amount of shoreline allocated as Limited Development would be increased from 271 miles (under the No Action Alternative) to 479 miles. As a result, development activity would be

greatly increased as compared to the No Action Alternative because of the increased area available for building docks. A baseline shoreline buffer would be implemented whereby the majority of shoreline (395 miles) would be required to have a 45-foot non-mowed buffer adjacent to the lake. This buffer would help screen development somewhat, especially in areas with less steep slopes, but would likely not be an effective screen where slopes are steeper. As a result, there would be considerably less forestland than under the No Action Alternative. Under Alternative 4, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

The visual impression of loss of forestland would be tempered somewhat due to the buffers; however, new housing developments would likely result in a high number of homes being visible to lake users. If these homes mow to the 45-foot buffer in an area, even if there is forested land between them, the overall visual effect would be a dramatic loss of natural forestland as compared to the No Action Alternative.

5.1.2 Impacts to LSZ 2 – Grassland/Pasture/Prairie

No Action Alternative

Under the No Action Alternative, the amount of land that is grassland, pasture, or prairie within the study area is expected to be somewhat reduced. Some land in this LSZ will likely be converted to LSZ 6 (Residential-Medium Density) and, to a small extent, LSZ 7 (Urban-Commercial/Industrial). Development costs are likely to be lower for land in this LSZ because it is cleared of trees and occurs on relatively flat terrain. As a result, these lands are likely to be preferred by developers over forested lands. Due to the fact that this land type is extensive in the region, the visual effect to those within the LSZ would only be moderate. The impact would be even less noticeable from the lake or shoreline, as this LSZ is much less visible from these areas.

Alternative 1

Under Alternative 1, there would likely be fewer developments built on lands adjacent to government property due to the reduced amount of shoreline where private docks could be built. This would result in considerably less conversion from this LSZ to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

Alternative 2

Under Alternative 2, development activity would likely be similar to that of the No Action Alternative. As such, impacts to this LSZ would also be similar to the No Action Alternative.

Alternative 3

Under Alternative 3, development activity would likely be increased as compared to the No Action Alternative because of the increased area where docks would be permitted. This activity would result in more conversion of land from this LSZ than would occur under the No Action Alternative. However, the impact of this conversion would not be as noticeable from the lake and shoreline, as this LSZ is much less visible from these areas. Under Alternative 3, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

Alternative 4

Under Alternative 4, development activity would likely be greatly increased as compared to the No Action Alternative because of the considerably increased area where docks would be permitted. This activity would result in considerably more conversion of land from this LSZ than would occur under the No Action Alternative. However, the impact of this conversion would not be as noticeable from the lake and shoreline, as this LSZ is much less visible from these areas. Under Alternative 4, more land in this LSZ would likely be converted to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial) than under the No Action Alternative.

5.1.3 Impacts to LSZ 3 - Farmland

No Action Alternative

Under the No Action Alternative, the amount of land that is farmed within the study area is expected to decrease slightly. This land type is typically popular for building; development costs can be lower because it is cleared of trees and typically occurs on relatively flat terrain. In addition, some farms are sold to developers as farmers retire if their children are engaged in other occupations. As a result, these lands are likely to be preferred by developers over forested lands. Development activity on farmland would likely higher in the study area than elsewhere in the region, due to the popularity of Eufaula Lake. Lands that are farmed as food plots for wildlife in the WMAs would not face this pressure. Conversion of lands from this LSZ would likely not be noticeable from the lake and shoreline. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

Alternative 1

Impacts to this LSZ under Alternative 1 would likely be similar to those of the No Action Alternative because development activity on farmland within the study area would likely be similar.

Alternative 2

Under Alternative 2, there would likely be slightly less conversion of land from farmland as compared to the No Action Alternative, due to the reduced amount of shoreline available for docks. However, since this LSZ represents a very small portion of the study area, the difference may not be noticeable to lake users. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

Alternative 3

Under Alternative 3, there would likely be slightly more conversion of land from farmland as compared to the No Action Alternative, due to the increased amount of shoreline available for docks. However, since this LSZ represents a very small portion of the study area, the difference may not be noticeable to lake users. In addition, Lands that are farmed as food plots for wildlife in the WMAs would not face this pressure. Conversion of lands from this LSZ would likely not be noticeable from the lake and shoreline. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

Alternative 4

Under Alternative 4, there would likely be slightly more conversion of land from farmland as compared to the No Action Alternative, due to the greatly increased amount of shoreline available for docks. However, since this LSZ represents a very small portion of the study area, the difference may not be noticeable to lake users. In addition, Lands that are farmed as food plots for wildlife in the WMAs would not face this

pressure. Conversion of lands from this LSZ would likely not be noticeable from the lake and shoreline. Any land that is converted from this LSZ would likely be to LSZ 6 (Residential-Medium Density) and LSZ 7 (Urban-Commercial/Industrial).

5.1.4 Impacts to LSZ 4 - Wetland

No Action Alternative

Under the No Action Alternative, impacts to this LSZ would likely be relatively small. Wetlands are protected by federal regulations, and permits are required from USACE for the discharge of dredge or fill material. Such permits also require a water quality certification from the state. In addition, most of the wetland land within the study area occurs on government-owned property. Although mowing permits can be issued for homeowners on adjacent lands, these permits would likely not allow mowing of wetland areas. Although wetlands that form along the narrow shallow fringe of the lake would likely be affected by any new development, these wetlands do not play as large of a role in the viewscape as do wetlands that extend further back from the shoreline.

Alternative 1

Under Alternative 1, impacts to this LSZ would likely be similar to those under the No Action Alternative due to permitting requirements and USACE policy for mowing permits. Although wetlands that form along the narrow shallow fringe of the lake would likely be affected by any new development, these wetlands do not play as large of a role in the viewscape as do wetlands that extend further back from the shoreline.

Alternative 2

Under Alternative 2, impacts to this LSZ would likely be similar to those under the No Action Alternative due to permitting requirements and USACE policy for mowing permits. Although wetlands that form along the narrow shallow fringe of the lake would likely be affected by any new development, these wetlands do not play as large of a role in the viewscape as do wetlands that extend further back from the shoreline.

Alternative 3

Under Alternative 3, impacts to this LSZ would likely be similar to those under the No Action Alternative due to permitting requirements and USACE policy for mowing permits. However, for wetlands where there is adjacent new development, they would likely appear less wild and unspoiled due to the discontinuity with adjacent undeveloped lands. In addition, in areas where development results in slightly increased litter, this litter may accumulate in wetlands as it can be blown in by wind.

Alternative 4

Under Alternative 4, impacts to this LSZ would likely be similar to those under the No Action Alternative due to permitting requirements and USACE policy for mowing permits. However, for wetlands where there is adjacent new development, they would likely appear less wild and unspoiled due to the discontinuity with adjacent undeveloped lands. In addition, in areas where development results in slightly increased litter, this litter may accumulate in wetlands as it can be blown in by wind.

5.1.5 Impacts to LSZ 5 – Recreation Area

No Action Alternative

Under the No Action Alternative, recreation areas are expected to experience higher usership in the future. These lands would not decrease or increase in acreage, but their visual quality could be slightly reduced

due to increased litter, trampling of vegetation, and possible conversion of undeveloped land within recreation areas for high-demand amenities such as playing fields.

Alternative 1

Under Alternative 1, impacts to this LSZ would be expected to be the same as under the No Action Alternative. Recreation areas would be expected to experience higher usership in the future. These lands would not decrease or increase in acreage, but their visual quality could be slightly reduced due to increased litter, trampling of vegetation, and possible conversion of undeveloped land within recreation areas for high-demand amenities such as playing fields.

Alternative 2

Under Alternative 2, impacts to this LSZ would be expected to be the same as under the No Action Alternative. Recreation areas would be expected to experience higher usership in the future. These lands would not decrease or increase in acreage, but their visual quality could be slightly reduced due to increased litter, trampling of vegetation, and possible conversion of undeveloped land within recreation areas for high-demand amenities such as playing fields.

Alternative 3

Under Alternative 3, impacts to this LSZ would be expected to be the same as under the No Action Alternative. Recreation areas would be expected to experience higher usership in the future. These lands would not decrease or increase in acreage, but their visual quality could be slightly reduced due to increased litter, trampling of vegetation, and possible conversion of undeveloped land within recreation areas for high-demand amenities such as playing fields.

Alternative 4

Under Alternative 4, additional area would be zoned as Public Recreation. This alternative would grant a lease to Carlton Landing for a marina and other shoreline recreational facilities adjacent to the proposed Carlton Landing development. Approximately six miles of shoreline would change from Protected to Public Recreation at Carlton Landing. Recreational facilities would include passive recreation (such as hiking, camping, and equestrian trails) and active recreation (such as sporting fields), as well as a beach and outdoor classroom activities. In addition, since all phases of planned construction would likely occur at Carlton Landing under this alternative, additional small recreation areas would be developed that are within the Carlton Landing private lands. The addition of these recreational areas would likely reduce some of the pressure that other recreational areas around Eufaula Lake would experience under the No Action Alternative. However, this new recreational area would likely result in an increase of litter within the area that is rezoned, as well as the trampling of vegetation. The new recreational areas on government-owned land would be highly visible from the lake and nearby shoreline.

5.1.6 Impacts to LSZ 6 – Residential – Medium Density

No Action Alternative

Under the No Action Alternative, the area of land in this LSZ would likely increase. Land converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland). Development would be expected to increase around Eufaula Lake due to its popularity, especially in areas adjacent to government-owned lands that are zoned Limited Development. Since mowing permits under this alternative would allow mowing to the shoreline (excepting the removal of

trees larger than four inches in diameter, as well as any flowering trees or shrubs, regardless of size), this land would be highly visible from the lake and shorelines.

Alternative 1

Under Alternative 1, there would likely be fewer developments built on lands adjacent to government property due to the reduced amount of shoreline where private docks could be built. As a result, there would be considerably less land converted to medium-density residential uses than under the No Action Alternative. In addition, the conservation buffers that would be established under this alternative would effectively screen many of the new developments from view from the lake and shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

Alternative 2

Under Alternative 2, development activity would be similar to the No Action Alternative. As a result, there would be similar amounts of land converted to medium-density residential uses as under the No Action Alternative. However, the 70-foot buffer that would be established in most locations would effectively screen much of this development from view from the lake and shoreline.

Alternative 3

Under Alternative 3, development activity would be increased as compared to the No Action Alternative. As a result, there would be larger amounts of land converted to medium-density residential uses than under the No Action Alternative. However, the 45-foot buffer that would be established in most locations would somewhat screen much of this development from view from the lake and shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

Alternative 4

Under Alternative 4, development activity would likely be greatly increased as compared to the No Action Alternative. As a result, there would be much larger amounts of land converted to medium-density residential uses than under the No Action Alternative. The 45-foot buffer that would be established in most locations would somewhat screen some of this development from view from the lake and shoreline, but the overall visual effect would likely still be that of much more medium-density residential land, due to the acreage that would likely be converted. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

5.1.7 Impacts to LSZ 7 – Urban – Commercial/Industrial

No Action Alternative

Under the No Action Alternative, slight increases of land used for urban and commercial/industrial purposes would likely occur to support new development that occurs around the lake. Land converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland). While such newly converted areas could have a slightly decreased visual quality within the study area, the majority of urban, commercial, and industrial lands would likely not be visible from the lake or shoreline.

Alternative 1

Under Alternative 1, less conversion of land into urban and commercial/industrial uses would be expected as compared to the No Action Alternative due to lower demand from reduced development activity. As a result, only a small amount of land would be expected to be converted. While such newly converted areas could have a slightly decreased visual quality within the study area, the majority of urban, commercial, and industrial lands would likely not be visible from the lake or shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

Alternative 2

Under Alternative 2, a similar amount of land would be expected to be converted to urban and commercial/industrial uses as under the No Action Alternative. While such newly converted areas could have a slightly decreased visual quality within the study area, the majority of urban, commercial, and industrial lands would likely not be visible from the lake or shoreline.

Alternative 3

Under Alternative 3, increased development activity around Eufaula Lake would likely result in an increase of land conversion into urban and commercial/industrial uses as compared to the No Action Alternative. While such newly converted areas could have a slightly decreased visual quality within the study area, the majority of urban, commercial, and industrial lands would likely not be visible from the lake or shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

Alternative 4

Under Alternative 4, the greatly increased development activity expected around Eufaula Lake would likely result in an increase of land conversion into urban and commercial/industrial uses as compared to the No Action Alternative. While such newly converted areas could have a slightly decreased visual quality within the study area, the majority of urban, commercial, and industrial lands would likely not be visible from the lake or shoreline. Land that is converted to this LSZ would likely come from LSZ 1 (Forest), LSZ 2 (Grassland/Prairie/Pasture), and, to a small extent, LSZ 3 (Farmland).

5.1.8 Impacts to LSZ 8 - Transportation

No Action Alternative

Under the No Action Alternative, the amount of land within this LSZ would not change, nor would its visibility from the lake and shoreline. However, views from bridges and causeways would be slightly different, as some new development would be expected. Since mowing permits under this alternative would allow mowing to the shoreline (except for the removal of trees larger than four inches in diameter, as well as any flowering trees or shrubs, regardless of size), the view of the lake in these locations would appear less wild and natural than it is now. In addition, docks built adjacent to newly built homes would add to the loss of the natural and wild aesthetic.

Alternative 1

Under Alternative 1, the amount of land within this LSZ would not change, nor would its visibility from the lake and shoreline. However, views from bridges and causeways would have a more natural and wild aesthetic as compared to the No Action Alternative due to lower development activity of surrounding

lands. Since any mowing permits under this alternative would require a 70-foot vegetation buffer in most locations, some of this development would be screened from view from bridges and causeways.

Alternative 2

Under Alternative 2, the amount of land within this LSZ would not change, nor would its visibility from the lake and shoreline. Views from bridges and causeways would be expected to be similar to those under the No Action Alternative, as some new development would be expected. However, since any mowing permits under this alternative would require a 70-foot vegetation buffer in most locations, some of this development would be screened from view from bridges and causeways. Nevertheless, the view of the shoreline in these locations would appear less wild and natural than under the No Action Alternative due to docks built adjacent to newly built homes.

Alternative 3

Under Alternative 3, the amount of land within this LSZ would not change, nor would its visibility from the lake and shoreline. However, views from bridges and causeways would be considerably different than they would be under the No Action Alternative, due to the construction of new housing developments. Mowing permits issued under this alternative would require a 45-foot vegetation buffer in most locations; however, due to the elevation of the bridges and causeways, this buffer would likely not screen new developments from view. As a result, the view of the lake from bridges and causeways would appear less wild and natural than under the No Action Alternative. In addition, docks built adjacent to newly built homes would add to the loss of the natural and wild aesthetic.

Alternative 4

Under Alternative 4, the amount of land within this LSZ would not change, nor would its visibility from the lake and shoreline. However, views from bridges and causeways would be considerably different than they would be under the No Action Alternative, due to the construction of many new housing developments. Mowing permits issued under this alternative would require a 45-foot vegetation buffer in most locations; however, due to the elevation of the bridges and causeways, this buffer would likely not screen new developments from view. As a result, the view of the lake from bridges and causeways would appear considerably less wild and natural than under the No Action Alternative. In addition, a large number of new docks would be expected to be built, adding greatly to the loss of the natural and wild aesthetic.

5.1.9 Impacts to LSZ 9 - Marinas

No Action Alternative

Under the No Action Alternative, no new marinas would be built. The existing marinas would likely be operated as they are today, and would retain similar visual qualities. These marinas would be as visible from the lake and shoreline as they are currently.

Alternative 1

Under Alternative 1, no new marinas would be built. The existing marinas would likely be operated as they would be under the No Action Alternative, and would retain similar visual qualities. These marinas would be as visible from the lake and shoreline as under the No Action Alternative.

Alternative 2

Under Alternative 2, no new marinas would be built. The existing marinas would likely be operated as they would be under the No Action Alternative, and would retain similar visual qualities. These marinas would be as visible from the lake and shoreline as under the No Action Alternative.

Alternative 3

Under Alternative 3, no new marinas would be built. The existing marinas would likely be operated as they would be under the No Action Alternative, and would retain similar visual qualities. These marinas would be as visible from the lake and shoreline as under the No Action Alternative.

Alternative 4

Under Alternative 4, a new marina with approximately 275-300 slips would be built on the north side of Roundtree Landing. It and other marinas around Eufaula Lake would likely be operated as they would be under the No Action Alternative, and would have similar visual qualities. The new marina would be a dominant feature in the landscape around Roundtree Landing and would affect the user experience in the lake and nearby shoreline due to the increase in boating activity. Litter and noise in the area would also increase as compared to the No Action Alternative. As a result, this area would not have the wild and natural aesthetic it would have under the No Action Alternative. Area that would be converted to this LSZ would be from LSZ 1 (Forest) and from the lake itself.

5.1.10 Impacts to LSZ 10 – High Density Docks

USACE regulations require docks to be placed a minimum of 50 feet from other docks. Although in reality, the average distance between docks would be greater than 50 feet because of factors such as irregular shorelines or shallow water depths, this 50-foot spacing provides a maximum density. The average boat dock width at Eufaula Lake is 31.8 feet. If the docks are spaced 50 feet apart, then there would be a minimum of 81.8 feet of shoreline length per boat dock. In addition, the regulations require that only 50 percent of the shoreline allocated as Limited Development be allowed to have docks built along it. The maximum potential number of boat docks by alternative is then based on half of the number of shoreline miles allocated as Limited Development under each alternative. Future dock construction rates can be estimated from past rates. The number of docks constructed at Eufaula Lake experienced a surge in the early 1980s, but the rate of new construction proceeded at a much lower rate of 10 percent every five years in the past two decades. As such, it is assumed that dock construction could increase the number of docks by 10 percent over each future five-year period. Using this construction rate, it can be reasonably expected that there would be as many as 2,800 docks on Eufaula Lake in the reasonably foreseeable planning horizon of 20 years. It should be noted, however, that the actual rate of dock construction would likely be greatly affected by development activity on private lands adjacent to the lake. The number of docks predicted within the next 20 years is consistent with the average rate of subdivision development around the lake over the past several decades. Future development activity may vary by alternative, as discussed for impacts to other LSZs.

No Action Alternative

Under the No Action Alternative, the amount of area of the lake that has a high density of docks would be expected to increase. The additional area converted to this LSZ would be from within the lake itself. There were a total of 1,673 docks on Eufaula Lake in 2011. Under the existing USACE regulations, an estimated maximum of 8,746 docks could eventually be built. Using the estimated construction rate that would increase the number of docks by 10 percent every five years, the maximum potential number of docks

allowed under the No Action Alternative would be reached in just over 70 years. However, a compounded growth rate of 10 percent every five years over a span of 70 years or more is also probably unrealistic. Therefore, it is likely that full build-out would take much longer than estimated here. Another limitation on the total number of boat docks and/or the timing at which that number might be reached is the processing time needed to review and approve shoreline permits. With a compounded rate of 10 percent every five years, the Eufaula Lake Project Office would need to process almost 170 applications a year during the final decade. The number of staff that would be required to process the new applications in addition to dock renewal permits and required inspections would indicate that reaching a milestone of over 8700 docks in approximately 70 years is unlikely.

Alternative 1

Under Alternative 1, the amount of area of the lake that has a high density of docks would be expected to be much less than would occur under the No Action Alternative. Under the existing USACE regulations, an estimated maximum of 2,278 docks could be built under this alternative. This would only be about 605 more new docks than currently exist.

Alternative 2

Under Alternative 2, the amount of area of the lake that has a high density of docks would be expected to be slightly less than would occur under the No Action Alternative. Any additional area converted to this LSZ would be from within the lake itself. Under the existing USACE regulations, an estimated maximum of 5,873 docks could eventually be built under this alternative. Using an estimated construction rate that would increase the number of docks by 10 percent every five years, the time expected for the maximum potential number of docks allowed under Alternative 2 to be built would be just over 50 years. It should be noted, however, that limitations on the rate of docks built, especially further in the future, would be the same as those under the No Action Alternative. The total number of docks that might be expected on Eufaula Lake in 20 years would be similar to the number under the No Action Alternative.

Alternative 3

Under Alternative 3, the amount of area of the lake that has a high density of docks would be expected to be more than would occur under the No Action Alternative. Additional areas converted to this LSZ would be from within the lake itself. Under the existing USACE policy, an estimated maximum of 11,844 docks could eventually be built under this alternative. Using an estimated construction rate that would increase the number of docks by 10 percent every five years, the time expected for the maximum potential number of docks allowed under Alternative 2 to be built would be approximately 85 years. It should be noted, however, that limitations on the rate of docks built, especially further in the future, would be the same as those under the No Action Alternative.

Alternative 4

Under Alternative 4, the amount of area of the lake that has a high density of docks would be expected to be considerably more than would occur under the No Action Alternative. Additional areas converted to this LSZ would be from within the lake itself. Under the existing USACE policy, an estimated maximum of 15,459 docks could eventually be built under this alternative. Using an estimated construction rate that would increase the number of docks by 10 percent every five years, the time expected for the maximum potential number of docks allowed under Alternative 2 to be built would be approximately 100 years. It should be noted, however, that limitations on the rate of docks built, especially further in the future, would be the same as those under the No Action Alternative. However, the total number of docks that might be

expected on Eufaula Lake in 20 years would likely be about the same as the number under the No Action Alternative in this shorter timeframe.

5.2 Impacts to Viewpoints and Viewpoint Photo Simulations

5.2.1 Viewpoint 1 – Near Duchess Creek Island

This view is from the water of the shoreline and uplands east of Duchess Creek Island, facing east. Photo simulations of Viewpoint 1 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline allocations would remain as they are currently. The left side of the viewscape would be zoned Protected, and the right side would be zoned Limited Development. It is likely that a small number of docks would be built adjacent to some existing residences in the Limited Development area. Since the area is moderately developed with residences and has supporting roadways, it is likely that a couple additional houses and docks would be built on this shoreline. It was assumed that the yards of the new houses would be cleared similar to others nearby; extending close to the shore while keeping larger landscape trees as well as those over four-inches diameter within the government-owned shoreland. As such, the houses would be rather visible from the water during the winter but relatively well screened during the growing season.

The viewer would notice slightly more houses and docks under the No Action Alternative than are currently present. The aesthetic would therefore be more rural-residential than rural.

Alternative 1

Under Alternative 1, the shoreline allocations in this viewscape would all be zoned as Protected and owners of any houses that might be built would not be able to clear within the government-owned shoreline, and they would be screened from view. The viewscape is expected to remain as it is currently. The viewer would see a much more rural landscape than under the No-Action Alternative.

Alternative 2

Under Alternative 2, the shoreline allocations in this viewscape would be the same as under the No Action Alternative, with the exception that the Limited Development zone would have a 70-foot vegetation buffer. As such, houses that would be built would not be able to mow to the water's edge. This buffer is unlikely to provide much additional screening, however, since the native vegetation in this area consists of thin dry oak forest.

The viewscape at this location is expected to be the same under Alternative 2 as under the No Action Alternative. The aesthetic would be somewhat rural-residential.

Alternative 3

Under Alternative 3, the Protected shoreline allocation in this viewscape would be changed to Limited Development. The shoreline in this view would have a 45-foot vegetation buffer. As such, houses that would be built would not be able to mow to the water's edge. This buffer is unlikely to provide much additional screening, however, since the native vegetation in this area consists of thin dry oak forest.

Since docks would be permitted in areas previously zoned Protected, development activity is expected to increase and residences with docks are likely to be constructed. As such, the viewscape at this location is expected to be much more residential than under the No Action Alternative.

Alternative 4

Under Alternative 4, the Protected shoreline allocation in this viewscape would be changed to Limited Development. The shoreline in this view would have a 45-foot vegetation buffer. As such, houses that would be built would not be able to mow to the water's edge. This buffer is unlikely to provide much additional screening, however, since the native vegetation in this area consists of thin dry oak forest.

Since docks would be permitted in areas previously zoned Protected, development activity is expected to increase and residences with docks are likely to be constructed. As such, the viewscape at this location is expected to be much more residential than under the No Action Alternative.

5.2.2 Viewpoint 2 – Standing Rock Cut – East

This view is from the water of the shoreline and uplands at Standing Rock Cut, facing southwest through the cut. Photo simulations of Viewpoint 2 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline allocations would remain as they are currently. The left and right sides of the viewscape would be zoned Limited Development, and the center would be zoned Protected. The left-hand side of the view is developed, but a couple more docks would be likely to be built. On the right-hand side, a dock would be likely to be built at the existing residence, but this area is slightly further in the distance.

The viewer would notice a slight increase in the density of docks; however, this would have a minor effect due to the large docks that are already visible.

Alternative 1

Under Alternative 1, the Limited Development shoreline allocations would change to Protected. Existing docks would be grandfathered. Since only a few additional docks would be permitted, development activity for new lakeshore residences is expected to be low. As a result, the viewscape is expected to remain similar to current conditions.

Alternative 2

Under Alternative 2, the shoreline allocations would remain as they are currently. The left and right sides of the viewscape would be zoned Limited Development, and the center would be zoned Protected. The left-hand side of the view is developed, but a couple more docks would be likely to be built. On the right-hand side, a dock would be likely to be built at the existing residence, but this area is slightly further in the distance.

The viewer would notice a slight increase in the density of docks; however, this would have a minor effect due to the large docks that are already visible. This alternative would have the same visual effect as the No Action Alternative.

Alternative 3

Under Alternative 3, the Protected shoreline would change to Limited Development. The shoreline in this view would have a 45-ft vegetation buffer. A large portion of the viewscape would become available for docks. Private land in this new Limited Development area is located close to the shoreline, and the topography is conducive to development. As such, development activity would be expected to increase in this newly available area, and the viewer would notice a considerable increase in residences and docks as compared to the No Action Alternative. This alternative would have the same visual effect as Alternative 4.

Alternative 4

Under Alternative 4, the Protected shoreline would change to Limited Development. The shoreline in this view would have a 45-ft vegetation buffer. A large portion of the viewscape would become available for docks. Private land in this new Limited Development area is located close to the shoreline, and the topography is conducive to development. As such, development activity would be expected to increase in this newly available area, and the viewer would notice a considerable increase in residences and docks as compared to the No Action Alternative. This alternative would have the same visual effect as Alternative 3.

5.2.3 Viewpoint 3 – Roundtree Landing

This view is from the water of the shoreline on the north side of Roundtree Landing, facing west. Photo simulations of Viewpoint 3 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline allocations would remain as they are currently. No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. Opportunities for viewing wildlife would remain excellent.

Alternative 1

Under Alternative 1, the shoreline allocations would remain as they are currently. No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. Opportunities for viewing wildlife would remain excellent. This alternative would have the same visual impact as the No Action Alternative.

Alternative 2

Under Alternative 2, the shoreline allocations would remain as they are currently. No development would be permitted, and the viewscape would remain serene with a sense of mystery due to the curvature of the cove. Opportunities for viewing wildlife would remain excellent. This alternative would have the same visual impact as the No Action Alternative.

Alternative 3

Under Alternative 3, the shoreline allocations would change to Limited Development; however, no development would be permitted because there would be no adjacent private lots as the adjacent private lands are dedicated to the community wastewater treatment plant. The viewscape would remain serene with a sense of mystery due to the curvature of the cove. Opportunities for viewing wildlife would remain excellent. This alternative would have the same visual impact as the No Action Alternative.

Alternative 4

Under Alternative 4, the shoreline allocations in this view would change to Public Recreation. A lease to the Carlton Landing development would be granted for the construction and operation of a public marina. The marina would offer 275 to 300 slips in several large covered docks. The marina would occupy a large portion of the water in the cove and would dominate the visual landscape. Tent campsites and passive recreation would be offered on the right-hand side of the view, but these areas would not be as noticeable as the marina.

The marina would likely to be very active during summer months. If this marina is similar to other marinas on Eufaula Lake, it would have a somewhat industrial quality due to the materials the docks are constructed of (sheet metal, metal poles, plastic floats, etc) as well as the general upkeep of the marina landscape. The degree to which the marina and cove might accumulate litter would depend on management practices and seasonality. Litter can especially accumulate where it is wind-blown into wetland areas.

Under Alternative 4, the viewer would experience unpleasant noise and odors (typical of marinas) that would not be experienced under the No Action alternative. Revving boat motors and exhaust would be commonplace. Spilled fuel and oil is common in marinas and would likely create an occasional sheen on the water in some areas of the cove.

The overall aesthetic of this location under Alternative 4 would be dramatically different than the No Action alternative. The serene aesthetic of the cove would be lost, opportunities for viewing wildlife would be restricted to the right-hand side, and wildlife would likely be disturbed due to the activity in the area. Fishing from boats would most likely not often occur at this location under Alternative 4, as users would motor to more remote locations to fish due to the increased noise and water disturbance.

5.2.4 Viewpoint 4 – Carlton Landing

This view is from the water of the shoreline at Carlton Landing, facing northwest. Photo simulations of Viewpoint 4 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline allocations would remain as they are currently. The shoreline would be zoned Protected; however, the Carlton Landing private lands extend below the shoreline elevation. A waterfront park is planned for this area. Use of the park by residents would increase noise levels and some litter would be expected; however, the park would be expected to be an amenity favored by Carlton landing residents.

The No Action Alternative would not grant Carlton Landing the requested lease for a marina of 275 to 300 slips. As a result, it is expected that the development at Carlton Landing would be much smaller than the developer's current plan for a mixed-use community. It is expected that the developer would build 170 lots, and that the proposed town center would not be limited to several multifamily buildings. Under this alternative, the developer has indicated that the area behind the planned waterfront park would consist of multi-family residential buildings. These buildings would be visible through the mature trees of the waterfront park.

The government-owned lands would remain Protected under the No Action Alternative and would exhibit many of the same qualities that are currently present. These areas would be slightly less serene, however,

due to increased activity in the Carlton Landing waterfront park area. Opportunities for viewing wildlife would remain excellent on the government-owned lands.

Alternative 1

Under Alternative 1, the shoreline allocations would remain as they are currently at this location. Shorelines would be zoned Protected; however, the Carlton Landing private lands extend below the shoreline elevation. A waterfront park is planned for this area. Use of the park by residents would increase noise levels and some litter would be expected; however, the park would be expected to be an amenity favored by Carlton landing residents.

Alternative 1 would not grant Carlton Landing the requested lease for a marina of 275 to 300 slips. In addition, the government-owned lakeshore adjacent to other parts of Carlton Landing (i.e. the south side of Longtown Arm) would change from Limited Development to Protected and docks would not be permitted. As a result, it is expected that the development at Carlton Landing would be much smaller than the developer's current plan for a mixed-use community. It is expected that the developer would build 170 lots and that their proposed town center would not be constructed (similar to the No Action Alternative). The area behind the planned waterfront park would consist of multi-family residential buildings. These buildings would be visible through the mature trees of the waterfront park. There would be fewer docks and less development on adjacent private lands than the No Action Alternative; however, these areas are not part of the viewshed assessed for this location. As a result under Alternative 1, the overall aesthetic of the viewpoint is essentially the same as the No Action Alternative.

The government-owned lands in this view would remain Protected under Alternative 1 and would exhibit many of the same qualities that are currently present. These areas would be slightly less serene, however, due to increased activity in the Carlton Landing waterfront park area. Opportunities for viewing wildlife would remain excellent on the government-owned lands.

The overall aesthetic effect of Alternative 1 would be extremely similar to that of the No Action Alternative.

Alternative 2

Under Alternative 2, the shoreline allocations would remain as they are currently at this location. Shorelines would be zoned Protected; however, the Carlton Landing private lands extend below the shoreline elevation. A waterfront park is planned for this area. Use of the park by residents would increase noise levels and some litter would be expected; however, the park would be expected to be an amenity favored by Carlton landing residents.

Alternative 2 would not grant Carlton Landing the requested lease for a marina of 275 to 300 slips. As a result, it is expected that the development at Carlton Landing would be much smaller than the developer's current plan for a mixed-use community. It is expected that the developer would build 170 lots and that the proposed town center would not be constructed (similar to the No Action Alternative). The area behind the planned waterfront park would consist of multi-family residential buildings. These buildings would be visible through the mature trees of the waterfront park.

The government-owned lands in this view would remain Protected under Alternative 2 and would exhibit many of the same qualities that are currently present. These areas would be slightly less serene, however, due to increased activity in the Carlton Landing waterfront park area. Opportunities for viewing wildlife would remain excellent on the government-owned lands.

The overall aesthetic effect of Alternative 2 would be the same as that of the No Action Alternative.

Alternative 3

Under Alternative 3, the shoreline allocations for government-owned lands would change from Protected to Limited Development at this location. The Carlton Landing private lands extend below the shoreline elevation. A waterfront park is planned for the private lands in this area. Use of the park by residents would increase noise levels and some litter would be expected; however, the park would be expected to be an amenity favored by Carlton landing residents.

Alternative 3 would not grant Carlton Landing the requested lease for a marina of 275 to 300 slips. As a result, it is expected that the development at Carlton Landing would be much smaller than the developer's current plan for a mixed-use community. It is expected that the developer would build 170 lots and that the proposed town center would not be constructed (similar to the No Action Alternative). The area behind the planned waterfront park would consist of multi-family residential buildings. These buildings would be visible through the mature trees of the waterfront park.

Under Alternative 3, the shorelines in this view would change from Protected to Limited Development. However, within the viewshed assessed for this location, these areas are not expected to become developed or have docks. The peninsula of Roundtree Landing (to the east) consists entirely of government-owned property, so houses would not be built, and docks would not be permitted where the shoreline is not adjacent to developed private land. Docks would also not be likely to be built on the government-owned land to the west (within the assessed viewshed), as docks outside the cove (on the south-facing shore) would be in more suitable locations for developed areas given the Carlton Landing plan and street layout.

The government lands on Roundtree landing would exhibit many of the same qualities that are currently present. These areas would be slightly less serene, however, due to increased activity in the Carlton Landing waterfront park area. Opportunities for viewing wildlife would remain excellent on Roundtree Landing. However, the government lands within the assessed viewshed on the west side of the cove would most likely have a slightly altered aesthetic. Although a buffer of trees at least 45 feet wide would be required, and there would likely be an even larger forested area remaining between the viewer and residences with shoreline use permits due to the Carlton Landing street layout, views through the trees of cleared areas would be likely. In addition, it would be likely that Carlton Landing residents would walk through and/or recreate at this location, which could result in trampling vegetation and the accumulation of litter as sometimes occurs on other non-maintained lands that have public access to Eufaula Lake.

Docks and development on other adjacent land (i.e. the south side of Longtown Arm) would be permitted, as those areas would be zoned Limited development. However, these lands are not part of the viewshed assessed for this location.

The overall aesthetic effect of Alternative 3 would be the similar to the No Action Alternative, but with slightly reduced scenic qualities on the government-owned land on the west side of the cove.

Alternative 4

Under Alternative 4, the shoreline allocations for government-owned lands would change from Protected to Public Recreation at this location. In addition, the Master Plan classification for portions of this land would change from Low Density Recreation to High Density Recreation. It should be noted that Carlton

Landing private lands extend below the shoreline elevation and are not subject to USACE land use classifications. A waterfront park is planned for the private lands at this viewpoint.

Alternative 4 would also grant Carlton Landing a lease for a marina of 275 to 300 slips on the opposite (northeast) side of Roundtree Landing. Although not visible from this location, the marina would support the development of the full 950-acre Carlton Landing plan proposed by the developer. Accordingly, the Carlton Landing development would be expected to eventually include 2,570 homes, a school, organic farm, town center, community pools, open spaces, and dog parks. It would be expected that development would occur at a rate of approximately 79 lots per year over a 25- to 30-year timeframe. The town center would consist of multi-story buildings that would be visible through the mature trees of the waterfront park. Noise from the town center would also travel through the park to the viewpoint location.

Alternative 4 also includes recreational development of government-owned lands on Roundtree Landing and those adjacent to Carlton Landing to the southwest. The Carlton Landing plan includes a water park or equestrian stables, a 35-acre group/summer camp for up to 300 campers, tennis center, sports field, tent camp sites, picnic tables, and walking and equestrian trails on Roundtree Landing (in addition to the marina). The government-owned land southwest of the Carlton Landing development would be developed into a nature center and recreation area with a swim beach, sports field, outdoor classrooms, an amphitheater, lakeshore observation towers, natural playground, and walking and biking trails. These amenities would be centered on the east side of the government-owned land, near the viewpoint location.

The changes to the government-owned lands would result in a dramatic change in the character of this location as compared to the No Action Alternative. Although most of the existing wooded area on Roundtree Landing is expected to remain, the understory would likely be much less dense due to trampling around trails and camping areas. In addition, this area might attract illegal activity, loitering, and the accumulation of litter, as is sometimes seen in other remote wooded locations that have public have access on Eufaula Lake. The visible government-owned land on the south side of Carlton Landing would change dramatically as compared to the No Action Alternative due to the development of the swim beach, picnic area, and filtered views of the sports field through the trees. Although the other public amenities west of the swim beach would not be visible at this location, they would result in a much higher usership of the overall area with increases in noise and litter and a corresponding decrease in wildlife observation opportunities from the viewpoint.

The overall aesthetic effect of Alternative 4 would be dramatically different than the No Action Alternative. The serene natural aesthetic of the cove would be greatly reduced and the user experience would be more typical of an active waterfront area.

5.2.5 Viewpoint 5 – Daisy Hallum Cove, Near Gaines Creek Park

This view is from the water in Daisy Hallum Cove, facing east. Photo simulations of Viewpoint 5 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline along the cove would continue to be zoned Limited Development. There is an area of the shoreline, approximately 200 feet long, where private lands extend below the shoreline elevation and are not subject to land use classification under the MP. A number of houses would be expected to be built on the hillside under this alternative. Although the surrounding area is somewhat rural, there are roads positioned to provide access to property along the top and some of the

sides of the hills. Medium-density residential housing currently exists on the north point of the cove (off the left hand side of the view). Additional access drives have already been cleared for future development in a few places near the existing high-end houses, so it would be likely that houses would be built on these lots in the future, as well as on additional nearby land that does not yet have cleared access drives. It is assumed that these houses would be in keeping with the style of the other recently-constructed high-end houses nearby, and would similarly be tucked into the trees with only small lawns in most locations due to the rocky and uneven terrain. An exception might be for the property that extends below the shoreline elevation, as there would be no restrictions on removing trees between the house and the water, the terrain at this location is not overly steep. The ability to clear the land to the water's edge is popular among a number of area residents. Docks would likely be built for each of these houses similar to the docks at the adjacent houses. Shoreline Use Permits issued under the No Action Alternative would not require a shoreline buffer, so some clearing or mowing could occur up to the lakeshore.

Under the No Action Alternative, some of the existing undeveloped and untamed feeling of the cove would be lost due to the development of the houses and of the more visible docks, and especially during the winter. The viewscape would continue to have an enclosed feeling due to the surrounding tall hills. Although a number of residences would be added, opportunities for viewing wildlife would likely still be excellent due to the limited clearing of lots.

Alternative 1

Under Alternative 1, the shoreline zoning along the cove would change from to Limited Development to Protected. However, there is an area of the shoreline, approximately 200 feet long, where private lands extend below the shoreline elevation and are not subject to land use classification under the MP; although, docks would not be permitted in this location because the shoreline allocation would still apply to shoreline uses. Although there are roads positioned to provide access to property along the top and some of the sides of the hills in this view, development activity is likely to be low if additional docks are not permitted on the lake. Any houses that would be built would be at least partially screened since the vegetation on the government-owned property would remain intact. These houses would also likely clear only small lawns due to the rocky and uneven terrain in most locations.

Development activity would be expected to be higher for the property which extends below the shoreline elevation. Since this section of shore would not subject to the vegetation buffer requirements under the revised SMP, the vegetation could still be cleared down to the water for views. As such, this property would likely be developed in keeping with the style of other recently-constructed high-end houses nearby.

Under Alternative 1, more of the existing undeveloped and untamed feeling of the cove would be retained than under the No Action Alternative, and it would appear mostly as it is today. Opportunities for viewing wildlife would continue to be excellent.

Alternative 2

Under Alternative 2, the shoreline zoning along the sides of the cove would change from to Limited Development to Protected, while the zoning in the back of the cove would remain as Limited Development. In the center of the back of the cove there is an area of the shoreline, approximately 200 feet long, where private lands extend below the shoreline elevation and are not subject to land use classification under the MP.

Although the surrounding area is somewhat rural, there are roads positioned to provide access to property along the top and some of the sides of the hills. Development activity would likely be low on the sides of the cove under Alternative 2, since docks would not be permitted in these areas. Development would likely occur, however, in the back of the cove in the Limited Development zone. Access drives have already been cleared in this area for future development in a few places near the existing high-end houses. It is assumed that new houses would be in keeping with the style of the other recently-constructed high-end houses nearby, and would similarly be tucked into the trees with only small lawns in most locations due to the rocky and uneven terrain. An exception might be for the property that extends below the shoreline elevation, as there would be no restrictions on removing trees between the house and the water, the terrain at this location is not overly steep. The ability to clear the land to the water's edge is popular among a number of area residents. Docks would likely be built for each of these houses similar to the docks at the adjacent houses. Some additional docks could be expected to be built for houses that are there now. Shoreline Use Permits issued under Alternative 2 would require a 70-foot vegetation buffer, so some screening would occur even if Shoreline Use Permits were issued.

Under Alternative 2, the existing undeveloped and untamed feeling of the cove would be slightly decreased, but not nearly as much as under the No Action Alternative. Opportunities for viewing wildlife would continue to be excellent.

Alternative 3

Under Alternative 3, the shoreline along the cove would continue to be zoned Limited Development. There is an area of the shoreline, approximately 200 feet long, where private lands extend below the shoreline elevation and are not subject to land use classification under the MP. In addition, the rezone request for the shoreline of the proposed Falcon Tree subdivision would be granted. This area is on the opposite side of the ridge that makes up the back right corner of the cove in this viewpoint analysis. The distance between the shoreline of Daisy Hallum Cove and that of Falcon Tree is about 0.25 mile.

A number of houses would be expected to be built on the hillside under this alternative. Although the surrounding area is somewhat rural, there are roads positioned to provide access to property along the top and some of the sides of the hills. Medium-density residential housing currently exists on the north point of the cove (off the left hand side of the view). The development of a subdivision at Falcon Tree would likely stimulate additional housing development in the area, including on the side of the ridge in the assessed viewpoint.

Additional access drives have already been cleared for future development in a few places near the existing high-end houses, so it would be likely that houses will be built on these lots in the future, as well as on additional nearby land that does not yet have cleared access drives. It is assumed that these houses would be in keeping with the style of the other recently-constructed high-end houses nearby, and would similarly be tucked into the trees with only small lawns in most locations due to the rocky and uneven terrain. An exception might be for the property that extends below the shoreline elevation, as there would be no restrictions on removing trees between the house and the water, the terrain at this location is not overly steep. The ability to clear the land to the water's edge is popular among a number of area residents. Docks would likely be built for each of these houses similar to the docks at the adjacent houses. Shoreline Use Permits issued under Alternative 3 would require a 45-foot vegetation buffer. The buffer would provide some visual screening; however, most development would be further up on the hill, where any screening would be provided by hillside vegetation.

Under Alternative 3, a few more houses and docks would likely be built as compared to the No Action Alternative due to additional development pressure created by the nearby Falcon Tree subdivision. The overall aesthetic of the cove would tip towards appearing somewhat densely developed with a high dock density, especially in winter when the trees would not provide as much screening as they do in summer. The viewscape would continue to have an enclosed feeling due to the surrounding tall hills. A number of residences would be added and opportunities for viewing wildlife would begin to decline due to habitat fragmentation. This alternative would result in the same visual qualities as Alternative 4.

Alternative 4

Under Alternative 4, the shoreline along the cove would continue to be zoned Limited Development. There is an area of the shoreline, approximately 200 feet long, where private lands extend below the shoreline elevation and are not subject to land classification under the MP. In addition, the rezone request for the shoreline of the proposed Falcon Tree subdivision would be granted. This area is on the opposite side of the ridge that makes up the back right corner of the cove in this viewpoint analysis. The distance between the shoreline of Daisy Hallum Cove and that of Falcon Tree is about 0.25 mile.

A number of houses would be expected to be built on the hillside under this alternative. Although the surrounding area is somewhat rural, there are roads positioned to provide access to property along the top and some of the sides of the hills. Medium-density residential housing currently exists on the north point of the cove (off the left hand side of the view). The development of a subdivision at Falcon Tree would likely stimulate additional housing development in the area, including on the side of the ridge in the assessed viewpoint.

Additional access drives have already been cleared for future development in a few places near the existing high-end houses, so it would be likely that houses will be built on these lots in the future, as well as on additional nearby land that does not yet have cleared access drives. It is assumed that these houses would be in keeping with the style of the other recently-constructed high-end houses nearby, and would similarly be tucked into the trees with only small lawns in most locations due to the rocky and uneven terrain. An exception might be for the property that extends below the shoreline elevation, as there would be no restrictions on removing trees between the house and the water, the terrain at this location is not overly steep. The ability to clear the land to the water's edge is popular among a number of area residents. Docks would likely be built for each of these houses similar to the docks at the adjacent houses. Shoreline Use Permits issued under Alternative 4 would require a 45-foot vegetation buffer. The buffer would provide some visual screening, but most development would be further up on the hill, where any screening would be provided by hillside vegetation.

Under Alternative 4, a few more houses and docks would likely be built as compared to the No Action Alternative due to additional development pressure created by the nearby Falcon Tree subdivision. The overall aesthetic of the cove would tip towards appearing somewhat densely developed with a high dock density, especially in winter when the trees would not provide as much screening as they do in summer. The viewscape would continue to have an enclosed feeling due to the surrounding tall hills. A number of residences would be added and opportunities for viewing wildlife would begin to decline due to habitat fragmentation. This alternative would result in the same visual qualities as Alternative 3.

5.2.6 Viewpoint 6 – I-40 Bridge and Causeway

The view is from the east causeway of the I-40 bridge over Deep Fork, facing north. Photo simulations of Viewpoint 6 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, the shoreline on the opposite shore would continue to be zoned Limited Development. A number of houses would be expected to be built on the opposite hillside under this alternative, as county roads provide easy access for development and an intersection with I-40 is close by. The location would be desirable for building, with homes having panoramas of Deep Fork. Docks would likely be built, but they would require stairs or ramps from the rocky shore in some places. Homes would likely be partially screened by tree canopies during the growing season, but would be highly visible during the winter. The No Action Alternative would not impose a vegetation buffer along the shoreline.

The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

The characteristics of the I-40 causeway itself would not be expected to change. These characteristics are a minor component of the overall view.

Alternative 1

Under Alternative 1, future development and land use patterns would be considerably different than under the No Action Alternative. The zoning for most of the shoreline on the opposite shore would change from Limited Development to Protected. The small community located on the north side of the cove (in the left side of the viewscape) would remain zoned as Limited Development, as would approximately 550 feet of adjacent shoreline to the east.

Development activity would be lower under this alternative as compared to the No Action Alternative because only a few new private docks would be permitted. Two homes might be built on private lands adjacent to areas zoned Limited Development. These areas would be desirable for development since county roads provide easy access and an intersection with I-40 is close by. The new homes would likely be partially screened by tree canopies during the growing season, but would be highly visible during the winter. These homes, along with the adjacent existing neighborhood, would be only a small part of the viewshed.

The development of an estimated two additional homes in this viewshed would not considerably change the character of the viewshed. The rugged terrain between the new and existing homes would continue to give a generally unspoiled and untamed aesthetic to the general landscape. The rocky bluffs would continue to be a dominant feature in the landscape, much more so than under the No Action Alternative.

Under Alternative 1, a 70-foot vegetation buffer would be enacted along the shoreline, where no clearing of vegetation would be allowed. Due to the distance from the viewer, as well as the vegetation and topographical features of the hillside, this buffer would not have a different visual impact than the non-buffered No Action Alternative.

The characteristics of the I-40 causeway itself would not be expected to change, and would be the same as under the No Action Alternative. These characteristics are a minor component of the overall view.

The visual character of the viewscape under Alternative 1 would be in sharp contrast to the dry plains and forested bottomlands that are seen along the nearby stretches of the highway. The boulder-strewn

shoreline and rocky, rugged bluffs would be much more of a focal point than under the No Action Alternative, and this view would illustrate the special qualities of the Eufaula Lake landscape.

Alternative 2

Under Alternative 2, future development and land use patterns would be the same as under the No Action Alternative. The shoreline on the opposite shore would continue to be zoned Limited Development. A number of houses would be expected to be built on the opposite hillside under this alternative, as county roads provide easy access for development and an intersection with I-40 is close by. The location would be desirable for building, with the homes having panoramas of Deep Fork. Docks for these homes would likely be built, but they would require stairs or ramps from the rocky shore in some places. Some additional docks would likely be built for existing homes. Both the new and existing homes would likely be partially screened by tree canopies during the growing season, but would be highly visible during the winter.

The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Under Alternative 2, a 70-foot vegetation buffer would be enacted along the shoreline, where no clearing of vegetation would be allowed. Due to the distance from the viewer, as well as the vegetation and topographical features of the hillside, this buffer would not have a different visual impact than the non-buffered No Action Alternative.

The characteristics of the I-40 causeway itself would not be expected to change, and would be the same as under the No Action Alternative. These characteristics are a minor component of the overall view.

The visual character of the viewscape under Alternative 2 would be the same as the No Action Alternative. It would also be the same as Alternatives 3 and 4.

Alternative 3

Under Alternative 3, future development and land use patterns would be the same as under the No Action Alternative. The shoreline on the opposite shore would continue to be zoned Limited Development. A number of houses would be expected to be built on the opposite hillside under this alternative, as county roads provide easy access for development and an intersection with I-40 is close by. The location would be desirable for building, with the homes having panoramas of Deep Fork. Docks for these homes would likely be built, but they would require stairs or ramps from the rocky shore in some places. Some additional docks would likely be built for existing homes. Both the new and existing homes would likely be partially screened by tree canopies during the growing season, but would be highly visible during the winter.

The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Under Alternative 3, a 45-foot vegetation buffer would be enacted along the shoreline, where no clearing of vegetation would be allowed. Due to the distance from the viewer, as well as the vegetation and

topographical features of the hillside, this buffer would not have a different visual impact than the non-buffered No Action Alternative.

The characteristics of the I-40 causeway itself would not be expected to change, and would be the same as under the No Action Alternative. These characteristics are a minor component of the overall view.

The visual character of the viewscape under Alternative 3 would be the same as the No Action Alternative. It would also be the same as Alternatives 2 and 4.

Alternative 4

Under Alternative 4, future development and land use patterns would be the same as under the No Action Alternative. The shoreline on the opposite shore would continue to be zoned Limited Development. A number of houses would be expected to be built on the opposite hillside under this alternative, as county roads provide easy access for development and an intersection with I-40 is close by. The location would be desirable for building, with the homes having panoramas of Deep Fork. Docks for these homes would likely be built, but they would require stairs or ramps from the rocky shore in some places. Some additional docks would likely be built for existing homes. Both the new and existing homes would likely be partially screened by tree canopies during the growing season, but would be highly visible during the winter.

The development of additional homes and docks in this viewshed would greatly diminish the unspoiled and untamed aesthetic of this landscape. They would visually compete with and detract from the boulders, bluffs, and mature forest that currently dominate the view. The view would still be a significant departure from other features along the I-40 corridor, but it would not have the same dramatic effect that it currently exhibits.

Under Alternative 4, a 45-foot vegetation buffer would be enacted along the shoreline, where no clearing of vegetation would be allowed. Due to the distance from the viewer, as well as the vegetation and topographical features of the hillside, this buffer would not have a different visual impact than the non-buffered No Action Alternative.

The characteristics of the I-40 causeway itself would not be expected to change, and would be the same as under the No Action Alternative. These characteristics are a minor component of the overall view.

The visual character of the viewscape under Alternative 4 would be the same as the No Action Alternative. It would also be the same as Alternatives 2 and 3.

5.2.7 Viewpoint 7 – US 69 Bridge at Bridgeport

This view is from the north causeway of the US 69 bridge at Bridgeport, facing north. Photo simulations of Viewpoint 7 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, zoning of most of the shoreline in the viewscape would remain Protected. The land on the very left side would remain Limited Development. Most of the private lands in the view are already developed; the only area that might have additional homes built would be on the very right side of the viewscape, behind the sandy beach. The flat nature of the land and the trees on the government-owned lands would help screen the view of these homes; however, the government-owned land is narrow in this location and homes would likely be partially visible.

Although docks would be permitted on the lands on the left side of the view, those lands are on a relatively exposed shoreline with a long wind fetch. Docks would likely not be built in this area due to damaging wave action.

The characteristics of the US 69 causeway itself would not be expected to change. Some of the trees may grow larger, but it is likely that some maintenance clearing would occur to help preserve the lake views.

The visual character of the viewscape under the No Action Alternative would be similar to current conditions. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore.

Alternative 1

Under Alternative 1, the viewscape would be the same as under the No Action Alternative. The shoreline currently zoned Protected would remain so, and the shoreline zoned Limited Development (on the left side) would change to Protected. Most of the private lands in the view are already developed; the only area that might have additional homes built would be on the very right side of the viewscape, behind the sandy beach. The flat nature of the land and the trees on the government-owned lands would help screen the view of these homes; however, the government-owned land is narrow in this location and homes would likely be partially visible. No docks would be permitted on the lands in this viewscape.

The characteristics of the US 69 causeway itself would also be the same as under the No Action Alternative. Some of the trees may grow larger, but it is likely that some maintenance clearing would occur to help preserve the lake views.

The visual character of the viewscape under Alternative 1 would be the same as under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore. This alternative would also result in the same visual quality as Alternative 2.

Alternative 2

Under Alternative 2, the viewscape would be the same as under the No Action Alternative. Zoning of most of the shoreline in the viewscape would remain Protected, and the shoreline on the very left side would remain Limited Development. Most of the private lands in the view are already developed; the only area that might have additional homes built would be on the very right side of the viewscape, behind the sandy beach. The flat nature of the land and the trees on the government-owned lands would help screen the view of these homes; however, the government-owned land is narrow in this location and homes would likely be partially visible.

The characteristics of the US 69 causeway itself would also be the same as under the No Action Alternative. Some of the trees may grow larger, but it is likely that some maintenance clearing would occur to help preserve the lake views.

The visual character of the viewscape under Alternative 2 would be the same as under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake and of relatively unspoiled sandy shore. This alternative would also result in the same visual quality as Alternative 1.

Alternative 3

Under Alternative 3, the viewscape would be very different than under the No Action Alternative. Zoning of the Protected shoreline in the viewscape would change to Limited Development. The land on the very left side would remain Limited Development. Most of the private lands in the view are already developed; the only area that might have additional homes built would be on the very right side of the viewscape, behind the sandy beach. The flat nature of the land and the trees on the government-owned lands would help screen the view of these homes; however, the government-owned land is narrow in this location and homes would likely be partially visible. A 45-foot vegetation buffer would be required, which would help screen homes from view even if the understory of the woodland were to be cleared, especially during the growing season.

The change to Limited Development would allow docks to be built in an area where they had not been previously allowed (and would not be under the No Action Alternative). The shoreline in most of the viewshed is relatively protected from wind fetch due to the US 69 causeway. Docks would likely be desired by those living in the community behind the government-owned property. Other nearby coves that are protected from wind fetch tend to have a high density of docks. A similar dock density would be expected for this viewscape. Litter may become visible in the landscape, as items would be blown off of docks and could accumulate in wetland areas. Similar to areas with docks elsewhere on the lake, pieces of styrofoam could break off of the dock floats and similarly collect along the shoreline.

The characteristics of the US 69 causeway itself would be the same as under the No Action Alternative. Some of the trees may grow larger, but it is likely that some maintenance clearing would occur to help preserve the lake views.

The visual character of the viewscape under Alternative 3 would be very different than under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake, but the high dock density would eliminate the sense of relatively unspoiled sandy shore. Although few homes would likely be visible, it would be clear to the viewer that this is a densely developed area. This alternative would also result in the same visual quality as Alternative 4.

Alternative 4

Under Alternative 4, the viewscape would be very different than under the No Action Alternative. Zoning of the Protected shorelines in the viewscape would change to Limited Development. The land on the very left side would remain Limited Development. Most of the private lands in the view are already developed; the only area that might have additional homes built would be on the very right side of the viewscape, behind the sandy beach. The flat nature of the land and the trees on the government-owned lands would help screen the view of these homes; however, the government-owned land is narrow in this location and homes would likely be partially visible. A 45-foot vegetation buffer would be required, which would help screen homes from view even if the understory of the woodland were to be cleared, especially during the growing season.

The change to Limited Development would allow docks to be built in an area where they had not been previously allowed (and would not be under the No Action Alternative). The shoreline in most of the viewshed is relatively protected from wind fetch due to the US 69 causeway. Docks would likely be desired by those living in the community behind the government-owned property. Other nearby coves that are protected from wind fetch tend to have a high density of docks. A similar dock density would be expected for this viewscape. Litter may become visible in the landscape, as items would be blown off of docks and

could accumulate in wetland areas. Similar to areas with docks elsewhere on the lake, pieces of styrofoam could break off of the dock floats and similarly collect along the shoreline.

The characteristics of the US 69 causeway itself would be the same as under the No Action Alternative. Some of the trees may grow larger, but it is likely that some maintenance clearing would occur to help preserve the lake views.

The visual character of the viewscape under Alternative 4 would be very different than under the No Action Alternative. The wide panorama of Eufaula Lake and the nearby shore would continue to convey a sense of enormity to the lake, but the high dock density would eliminate the sense of relatively unspoiled sandy shore. Although few homes would likely be visible, it would be clear to the viewer that this is a densely developed area. This alternative would also result in the same visual quality as Alternative 3.

5.2.8 Viewpoint 8 – Arrowhead State Park

This view is from a picnic area and water access on the west side of Arrowhead State Park, facing west. Photo simulations of Viewpoint 8 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, shorelines on the opposite shore would remain zoned as Protected. A few houses are likely to be built on the opposite hillside due to the availability of neighborhood roads. These houses and yards would be relatively screened by the forest, but would be slightly more visible in winter. The overall appearance of the hillside would remain largely undeveloped, however.

Park activities would be expected to be the same under the No Action Alternative as they are currently. Some additional bank erosion could be expected due to trampling of the shoreline vegetation and people driving and parking on the dirt road.

The character of the viewscape under the No Action Alternative would be that of a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural. Opportunities for viewing wildlife would remain excellent.

Alternative 1

Under Alternative 1, the viewscape would be the same as under the No Action Alternative. Shorelines on the opposite shore would remain zoned as Protected. A few houses are likely to be built on the opposite hillside due to the availability of neighborhood roads. These houses and yards would be relatively screened by the forest, but would be slightly more visible in winter. The overall appearance of the hillside would remain largely undeveloped, however.

Park activities would be expected to be the same under Alternative 1 as they would be under the No Action Alternative. Some additional bank erosion could be expected due to trampling of the shoreline vegetation and people driving and parking on the dirt road.

The character of the viewscape under Alternative 1 would be the same as under the No Action Alternative with a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the

overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural. Opportunities for viewing wildlife would remain excellent. This alternative would also result in the same visual quality as Alternative 2.

Alternative 2

Under Alternative 2, the viewscape would be the same as under the No Action Alternative. Shorelines on the opposite shore would remain zoned as Protected. A few houses would be likely to be built on the opposite hillside due to the availability of neighborhood roads. These houses and yards would be relatively screened by the forest, but would be slightly more visible in winter. The overall appearance of the hillside would remain largely undeveloped, however.

Park activities would be expected to be the same under Alternative 2 as they would be under the No Action Alternative. Some additional bank erosion could be expected due to trampling of the shoreline vegetation and people driving and parking on the dirt road.

The character of the viewscape under Alternative 2 would be the same as under the No Action Alternative with a relatively quiet cove and the opposite shore. It would be peaceful with the aesthetic of domesticated nature within the park; however, noise from other park users would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. The opposite shore and hill slope would appear relatively undeveloped and natural. Opportunities for viewing wildlife would remain excellent. This alternative would also result in the same visual quality as Alternative 1.

Alternative 3

Under Alternative 3, the viewscape would be somewhat more developed than it would be under the No Action Alternative. The zoning for most of the visible shorelines on the opposite shore would change from Protected to Limited Development, with a 70-foot shoreline vegetation buffer. A portion of the opposite shoreline on the right side of the view would remain Protected. Since the private lands on the hillside of the opposite shores are already developed, the same number of new houses would be likely to be built as under the No Action Alternative. However, the change in zoning would allow existing homes to construct docks, which would be visible to park users. The overall appearance of the opposite shore would become slightly developed.

Park activities would be expected to be the same under Alternative 3 as they would be under the No Action Alternative. Some additional bank erosion could be expected due to trampling of the shoreline vegetation and people driving and parking on the dirt road.

The character of the viewscape under Alternative 3 would be more developed than it would under the No Action Alternative. The cove and opposite shore would be slightly more active. The user experience in the park would still be relatively peaceful at most times, with the aesthetic of domesticated nature. Noise from other park users would be expected to be the same as under the No Action Alternative, and would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. Opportunities for viewing wildlife would remain excellent.

Alternative 4

Under Alternative 4, the viewscape would be somewhat more developed than it would be under the No Action Alternative. The zoning for all of the visible shorelines on the opposite shore would change from Protected to Limited Development, with a 70-foot shoreline vegetation buffer. Since the private lands on the hillside of the opposite shores are already developed, the same number of new houses would be likely to be built as under the No Action Alternative. However, the change in zoning would allow existing homes to construct docks, which would be visible to park users. A few more docks could be built than under Alternative 3. The overall appearance of the opposite shore would become slightly developed.

Park activities would be expected to be the same under Alternative 4 as they would under the No Action Alternative. Some additional bank erosion could be expected due to trampling of the shoreline vegetation and people driving and parking on the dirt road.

The character of the viewscape under Alternative 4 would be more developed than it would under the No Action Alternative. The cove and opposite shore would be slightly more active. The user experience in the park would still be relatively peaceful at most times, with the aesthetic of domesticated nature. Noise from other park users would be expected to be the same as under the No Action Alternative, and would at times decrease the overall tranquility of the location, as would people driving and parking on the dirt road next to the shore. Opportunities for viewing wildlife would remain excellent.

5.2.9 Viewpoint 9 – Highway 31 Bridge North of Elm Point Park

This view is from the bridge on Highway 31 north of Elm Point Park, facing west. Photo simulations of Viewpoint 9 in 25 years under each alternative are presented in Appendix C.

No Action Alternative

Under the No Action Alternative, shorelines on the opposite shore would stay zoned as they are currently. Elm Point Park would be zoned Public Recreation. An approximately 700-foot long section of shoreline north of the park (to the right side of the view) would remain Limited Development. The remaining visible shore to the north (within the assessed viewscape) would remain Protected. A few houses would likely be built on the opposite shore due to the availability of roadways; these houses would enjoy panoramic views of the lake. Houses adjacent to land zoned Limited Development would likely have docks. Shoreline Use Permits would allow these houses to clear the forest understory to the water's edge. Houses built adjacent to the land zoned Protected would not be allowed docks nor could they clear the understory of government-owned lands.

The view of Elm Point Park is expected to remain the same under the No Action Alternative. Activity at the park would be noticeable, especially activity around the boat ramp.

The character of Highway 31 would not be expected to change. Some of the vegetation may grow larger, but it is likely that some maintenance clearing would occur to help preserve lake views.

The visual character of the viewscape under the No Action Alternative would be slightly more developed than under current conditions. The additional houses and docks on the opposite shore would diminish some of the natural aesthetic of the view. Opportunities for viewing wildlife would remain good.

Alternative 1

Under Alternative 1, shorelines currently zoned Public Recreation or Protected would stay the same. The land zoned as Limited Development would change to Protected. A few houses would likely be built on the opposite shore due to the availability of roadways; these houses would enjoy panoramic views of the lake. Since the shorelines would be zoned Protected, houses would not be allowed docks nor could they clear the understory of government-owned lands. As a result, the forested hillside would look less developed than it would under the No Action Alternative.

The view of Elm Point Park would be expected to remain the same under Alternative 1 as it would under the No Action Alternative. Activity at the park would be noticeable, especially activity around the boat ramp.

The character of Highway 31 would be the same under Alternative 1 as it would under the No Action Alternative. Some of the vegetation may grow larger, but it is likely that some maintenance clearing would occur to help preserve lake views.

The visual character of the viewscape under Alternative 1 would be slightly less developed than under the No Action Alternative. Opportunities for viewing wildlife would remain good under both alternatives.

Alternative 2

Under Alternative 2, shorelines would be zoned the same as they would be under the No Action Alternative. An approximately 700-foot long section of shoreline north of Elm Point Park (to the right side of the view) would remain zoned as Limited Development, with a 70-foot vegetation buffer. The remaining visible shore to the north (within the assessed viewscape) would remain Protected. A few houses would likely be built on the opposite shore due to the availability of roadways; these houses would enjoy panoramic views of the lake. Houses adjacent to shorelines zoned Limited Development would likely have docks. Shoreline Use Permits would allow these houses to clear the forest understory up to 70 feet from the water's edge. Houses built adjacent to the land zoned Protected would not be allowed docks nor could they clear the understory of government-owned lands.

The view of Elm Point Park would be expected to remain the same under Alternative 2 as it would under the No Action Alternative. Activity at the park would be noticeable, especially activity around the boat ramp.

The character of Highway 31 would be the same under Alternative 2 as it would under the No Action Alternative. Some of the vegetation may grow larger, but it is likely that some maintenance clearing would occur to help preserve lake views.

The visual character of the viewscape under Alternative 2 would be almost the same as under the No Action Alternative. The 70-foot vegetation buffer required for Shoreline Use Permits in the Limited Development Area would somewhat screen the houses there, but the docks would still be very visible. Opportunities for viewing wildlife would remain good under both alternatives.

Alternative 3

The viewshed under Alternative 3 would look much more developed than under the No Action Alternative. Under Alternative 3, shorelines, with the exception of Elm Point Park, would change to Limited Development with a 45-foot vegetation buffer. Development activity for the private lands on the hillside

would increase since docks would be permitted along the shoreline, access roads are present, and private lots would enjoy panoramic views of the lake. Shoreline Use Permits would allow these houses to clear the forest understory up to 45 feet from the water's edge. Although litter would likely increase along the shore due to items blowing off docks and pieces breaking off of styrofoam floats, these items would not be visible from the viewer's location.

The view of Elm Point Park would be expected to remain the same under Alternative 3 as it would under the No Action Alternative. Activity at the park would be noticeable, especially activity around the boat ramp.

The character of Highway 31 would be the same under Alternative 3 as it would under the No Action Alternative. Some of the vegetation may grow larger, but it is likely that some maintenance clearing would occur to help preserve lake views.

The visual character of the viewscape under Alternative 3 would be more developed than it would under the No Action Alternative. The 45-foot vegetation buffer required for Shoreline Use Permits in the Limited Development Area would somewhat screen the houses, but docks would still be very visible. Opportunities for viewing wildlife would remain good under both alternatives. This alternative would also result in the same visual quality as Alternative 4.

Alternative 4

The viewshed under Alternative 4 would look much more developed than under the No Action Alternative. Under Alternative 4, shorelines, with the exception of Elm Point Park, would change to Limited Development with a 45-foot vegetation buffer. Development activity for the private lands on the hillside would increase since docks would be permitted along the shoreline, access roads are present, and private lots would enjoy panoramic views of the lake. Shoreline Use Permits would allow these houses to clear the forest understory up to 45 feet from the water's edge. Although litter would likely increase along the shore due to items blowing off docks and pieces breaking off of styrofoam floats, these items would not be visible from the viewer's location.

The view of Elm Point Park would be expected to remain the same under Alternative 4 as it would under the No Action Alternative. Activity at the park would be noticeable, especially activity around the boat ramp.

The character of Highway 31 would be the same under Alternative 4 as it would under the No Action Alternative. Some of the vegetation may grow larger, but it is likely that some maintenance clearing would occur to help preserve lake views.

The visual character of the viewscape under Alternative 4 would be more developed than it would under the No Action Alternative. The 45-foot vegetation buffer required for Shoreline Use Permits in the Limited Development Area would somewhat screen the houses, but the docks would still be very visible. Opportunities for viewing wildlife would remain good under both alternatives. This alternative would also result in the same visual quality as Alternative 3.

5.3 Visual Impact Assessment Ratings

VIA ratings are calculated based on comparing each alternative to the No Action Alternative. The method for calculation of the VIA value for each resource category in each viewpoint is discussed in Chapter 3 of

this document. To calculate an overall rating for each alternative, the VIA value for each of the five resource categories was averaged across viewpoints and compared to impact thresholds established in the VRAP for each MCS classification.

The visual compatibility viewpoint conditions under each alternative were also assessed in terms of spatial dominance, scale contrast, and general compatibility. These assessments were then combined across viewpoints by selecting the most common assessment value. They are modifiers to the alternative VIA value, to be used to support and explain the VIA value.

Alternative 1

The VIA quotient for Alternative 1 of +0.89 represents an improvement in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is also higher than the quotients for Alternatives 2, 3, and 4. This alternative preserves much of the existing character of Eufaula Lake, especially aspects of the lake that are considered visually desirable. **Table 5-2** summarizes the VIA calculated for the resource categories in each viewpoint as compared to the No Action Alternative. Visual improvements over the No Action Alternative are expected for the resource categories water, vegetation, land use, and user activity. **Table 5-3** summarizes the modifier ratings for the VIA values. The majority compatibility rating for each resource category of "compatible" indicates that the visual effect of Alternative 1 would be generally harmonious within the setting. The majority scale contrast rating of "minimal" indicates that modifications made under Alternative 1 would be generally smaller than surrounding landscape elements. The majority spatial dominance ratings under Alternative 1 vary by resource category. Water would be a dominant feature, while landform, vegetation, and land use would be co-dominant features. User activity would be between a co-dominant and subordinate feature as compared to other categories. The majority landscape composition value is "significant", meaning that most viewpoints would be panoramic or enclosed landscapes that draw the viewer's attention. Viewpoint 5 (Daisy Hallum Cove, Near Gaines Creek Park) would have a prominent landscape composition due to the steep, high hills enclosing the cove.

Table 5-2. VIA Values for Alternative 1

Resource Category	Viewpoint # (VIA Values)									
	1	2	3	4	5	6	7	8	9	Quotient
Water	0	0	0	0	**+1**	**+1**	0	0	0	**+0.22**
Landform	0	0	0	0	0	0	0	0	0	**0**
Vegetation	0	0	0	0	0	**+1**	0	0	0	**+0.11**
Land Use	0	0	0	0	**+1**	**+1**	0	0	**+1**	**+0.33**
User Activity	0	0	0	0	**+1**	**+1**	0	0	0	**+0.22**
Special Considerations	0	0	0	0	0	0	0	0	0	**0**
Total Alternative 1 VIA Value										**+0.89**

Table 5-3. VIA Modifier Ratings for Alternative 1

Resource Category	Modifier Rating Summary																								Majority Rating		
	1			2			3			4			5			6			7			8			9					
	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR
Water	C	MI	D	C	MI	D	C	MI	D	C	MI	C	C	MI	D	C	MI	D	C	MI	D	C	MI	D	C	MI	D	**C**	**MI**	**D**
Landform	C	MI	C	C	MI	C	C	MI	C	C	MI	C	C	MI	D	C	MI	C	C	MI	S	C	MI	C	C	MI	D	**C**	**MI**	**C**
Vegetation	SC	MI	C	SC	MI	C	C	MI	D	C	MI	C	C	MI	D	C	MI	C	C	MI	S	C	MI	C	C	MI	C	**C**	**MI**	**C**
Land Use	SC	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	C	**C**	**MI**	**C**
User Activity	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	C	MI	D	C	MI	C	**C**	**MI**	**S/C**
CR = Compatibility Rating *SC = Scale Contrast Rating* *SDR = Spatial Dominance Rating*													*C = Compatible; SC = Somewhat Compatible; NC = Not Compatible* *MI = Minimal; MO = Moderate; S = Severe* *S = Subordinate; C = Co-Dominant; D = Dominant*																	
Landscape Composition	S			S			S			S			P			S			S			S			S			**S**		
P = Prominent *S = Significant* *I = Inconspicuous*																															

Alternative 2

The VIA quotient for Alternative 2 of +0.22 represents a small improvement in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is also higher than the quotients for Alternatives 3, and 4, but lower than Alternative 1. Alternative 2 preserves some of the existing character of Eufaula Lake, but would generally have a similar visual effect as the No Action Alternative. **Table 5-4** summarizes the VIA calculated for the resource categories in each viewpoint as compared to the No Action Alternative. Visual improvements over the No Action Alternative are expected for the resource categories of land use and user activity. **Table 5-5** summarizes the modifier ratings for the VIA values. The majority compatibility rating for each resource category of "compatible" indicates that the visual effect of Alternative 2 would be generally harmonious within the setting. The majority scale contrast rating of "minimal" indicates that modifications made under Alternative 2 would be generally smaller than surrounding landscape elements. The majority spatial dominance ratings under Alternative 2 vary by resource category. Water would be a dominant feature, while landform, vegetation, and land use would be co-dominant features. User activity would be between a co-dominant and subordinate feature as compared to other categories. The majority landscape composition value is "significant", meaning that most viewpoints would be panoramic or enclosed landscapes that draw the viewer's attention. Viewpoint 5 (Daisy Hallum Cove, Near Gaines Creek Park) would have a prominent landscape composition due to the steep, high hills enclosing the cove.

Table 5-4. VIA Values for Alternative 2

Resource Category	Viewpoint VIA Values									
	1	2	3	4	5	6	7	8	9	Quotient
Water	0	0	0	0	0	0	0	0	0	0
Landform	0	0	0	0	0	0	0	0	0	0
Vegetation	0	0	0	0	0	0	0	0	0	0
Land Use	0	0	0	0	**+1**	0	0	0	0	**+0.11**
User Activity	0	0	0	0	**+1**	0	0	0	0	**+0.11**
Special Considerations	0	0	0	0	0	0	0	0	0	0
Total Alternative 2 VIA Value										**+0.22**

Table 5-5. VIA Modifier Ratings for Alternative 2

Resource Category	Modifier Rating Summary																					Majority Rating
	1			2			3			4			5			6			7			8			9			
	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR SC SDR
Water	C	MI	D	C	MI	D	C	MI	D	C	MI	C	C	MI	D	SC	MI	D	C	MI	D	C	MI	D	C	MI	D	**C MI D**
Landform	C	MI	C	C	MI	C	C	MI	C	C	MI	C	C	MI	D	SC	MI	C	C	MI	S	C	MI	C	C	MI	D	**C MI C**
Vegetation	C	MI	C	C	MI	C	C	MI	D	C	MI	C	C	MI	D	SC	MI	C	C	MI	S	C	MI	C	C	MI	C	**C MI C**
Land Use	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	SC	MI	C	C	MI	S	C	MI	C	C	MI	C	**C MI C**
User Activity	C	MI	S	C	MI	C	C	MI	S	C	MI	C	C	MI	S	SC	MI	C	C	MI	S	C	MI	D	C	MI	C	**C MI S/C**

CR = Compatibility Rating — *C = Compatible; SC = Somewhat Compatible; NC = Not Compatible*
SC = Scale Contrast Rating — *MI = Minimal; MO = Moderate; S = Severe*
SDR = Spatial Dominance Rating — *S = Subordinate; C = Co-Dominant; D = Dominant*

Landscape Composition	S	S	S	S	P	S	S	S	S	**S**

P = Prominent
S = Significant
I = Inconspicuous

Alternative 3

The VIA quotient for Alternative 3 of -1.67 represents an decrease in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is lower than that of Alternatives 1 and 2, but higher than that of Alternative 4. Alternative 3 would result in a change of visual character of Eufaula Lake, to one that would be less wild and natural, with less of an emphasis on the unique geologic formations of the region, than the No Action Alternative. Residential development and docks would be much more dominant features than they would be under the No Action Alternative. **Table 5-6** summarizes the VIA calculated for the resource categories in each viewpoint as compared to the No Action Alternative. Visual quality would be reduced in the resource categories of landform, vegetation, and user activity, and considerably decreased in the resource categories water and land use. **Table 5-7** summarizes the modifier ratings for the VIA values. The majority compatibility rating for each resource category of "somewhat compatible" indicates that new landscape elements would be more or less harmonious with existing landscape elements. The majority scale contrast rating of "minimal" indicates that modifications made under Alternative 3 would be generally smaller than surrounding landscape elements. The majority spatial dominance ratings under Alternative 3 vary by resource category. Water

would be a dominant feature, while landform, vegetation, land use, and user activity would be co-dominant features. The majority landscape composition value is "significant", meaning that most viewpoints would be panoramic or enclosed landscapes that draw the viewer's attention. Viewpoint 5 (Daisy Hallum Cove, Near Gaines Creek Park) would have a prominent landscape composition due to the steep, high hills enclosing the cove.

Table 5-6. VIA Values for Alternative 3

Resource Category	Viewpoint VIA Values									
	1	2	3	4	5	6	7	8	9	Quotient
Water	**-1**	**-1**	0	**-1**	0	0	**-1**	**-1**	0	**-0.56**
Landform	0	0	0	0	0	0	**-1**	0	0	**-0.11**
Vegetation	**-1**	**-1**	0	0	0	0	0	0	**-1**	**-0.33**
Land Use	**-1**	**-1**	0	0	0	0	**-2**	**-1**	0	**-0.56**
User Activity	0	0	0	0	0	0	**-1**	0	0	**-0.11**
Special Considerations	0	0	0	0	0	0	0	0	0	0
Total Alternative 3 VIA Value										**-1.67**

Table 5-7. VIA Modifier Ratings for Alternative 3

Resource Category	Modifier Rating Summary																											Majority Rating
	1			2			3			4			5			6			7			8			9			
	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR SC SDR
Water	SC	MI	D	SC	MI	D	C	MI	D	C	MI	C	C	MI	D	SC	MI	D	SC	MI	D	SC	MI	D	SC	MI	D	**SC MI D**
Landform	C	MI	S	C	MI	C	C	MI	C	C	MI	C	C	MI	D	SC	MI	C	SC	MI	S	SC	MI	C	SC	MI	D	**C MI C**
Vegetation	SC	MI	S	SC	MI	C	C	MI	D	C	MI	C	C	MI	D	SC	MI	C	SC	MI	S	SC	MI	C	SC	MI	C	**SC MI C**
Land Use	SC	MI	C	SC	MI	C	C	MI	S	SC	MI	C	C	MI	S	SC	MI	C	SC	MI	D	SC	MI	C	SC	MI	C	**SC MI C**
User Activity	C	MI	C	C	MI	C	C	MI	S	SC	MI	C	C	MI	S	SC	MI	C	SC	MI	C	SC	MI	D	SC	MI	C	**SC MI C**
CR = Compatibility Rating SC = Scale Contrast Rating SDR = Spatial Dominance Rating													C = Compatible; SC = Somewhat Compatible; NC = Not Compatible MI = Minimal; MO = Moderate; S = Severe S = Subordinate; C = Co-Dominant; D = Dominant															
Landscape Composition	S			S			S			S			P			S			S			S			S			**S**
P = Prominent S = Significant I = Inconspicuous																												

Alternative 4

The VIA quotient for Alternative 4 of -2.89 represents a considerable decrease in the overall visual quality of Eufaula Lake as compared to the No Action Alternative. The quotient for this alternative is lower than that of Alternatives 1, 2, and 3. Alternative 4 would result in a change of visual character of Eufaula Lake, to one that would be considerably less wild and natural, with less of an emphasis on the unique geologic formations of the region, than the No Action Alternative. Residential development and docks would be considerably more dominant features than they would be under the No Action Alternative. **Table 5-8** summarizes the VIA calculated for the resource categories in each viewpoint as compared to the No Action Alternative. Visual quality would be reduced in all resource categories, especially the categories of water

and land use. **Table 5-9** summarizes the modifier ratings for the VIA values. The majority compatibility rating for each resource category of "somewhat compatible" indicates that new landscape elements would be more or less harmonious with existing landscape elements. The majority scale contrast rating of "minimal" indicates that modifications made under Alternative 4 would be generally smaller than surrounding landscape elements. The majority spatial dominance ratings under Alternative 4 vary by resource category. Water would be a dominant feature, while vegetation, land use, and user activity would be co-dominant features. Landform would be between a co-dominant and subordinate feature as compared to other categories. The majority landscape composition value is "significant", meaning that most viewpoints would be panoramic or enclosed landscapes that draw the viewer's attention. Three viewpoints would have a landscape composition value of "prominent": Viewpoint 3 (Roundtree Landing) would have a prominent landscape composition because the marina at Roundtree Landing would dominate the viewer's attention due to its size and scale. Viewpoint 4 (Carlton Landing) would have a prominent landscape composition due to the visibility of the new commercial center, swim beach, and other recreational features. Viewpoint 5 (Daisy Hallum Cove, Near Gaines Creek Park) would have a prominent landscape composition due to the steep, high hills enclosing the cove.

Table 5-8. VIA Values for Alternative 4

Resource Category	Viewpoint VIA Values									
	1	2	3	4	5	6	7	8	9	Quotient
Water	**-1**	**-1**	**-2**	**-2**	0	0	**-1**	**-1**	0	**-0.89**
Landform	0	0	0	0	0	0	**-1**	0	0	**-0.11**
Vegetation	**-1**	**-1**	**-1**	0	0	0	0	0	**-1**	**-0.44**
Land Use	**-1**	**-1**	**-2**	**-1**	0	0	**-2**	**-1**	0	**-0.89**
User Activity	0	0	**-1**	**-1**	0	0	**-1**	0	0	**-0.33**
Special Considerations	0	0	**-1**	**-1**	0	0	0	0	0	**-0.22**
									Total Alternative 4 VIA Value	**-2.89**

Table 5-9. VIA Modifier Ratings for Alternative 4

Resource Category	Modifier Rating Summary																					Majority Rating
	1			2			3			4			5			6			7			8			9			
	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR	SC	SDR	CR SC SDR
Water	SC	MI	D	SC	MI	D	NC	MI	C	NC	MI	C	C	MI	D	SC	MI	D	SC	MI	D	SC	MI	D	SC	MI	D	**SC MI D**
Landform	C	MI	S	C	MI	C	C	MI	SC	C	MI	S	C	MI	D	SC	MI	C	SC	MI	S	SC	MI	C	SC	MI	D	**C MI S/C**
Vegetation	SC	MI	S	SC	MI	C	SC	MI	SC	C	MI	C	C	MI	D	SC	MI	C	SC	MI	S	SC	MI	C	SC	MI	C	**SC MI C**
Land Use	SC	MI	C	SC	MI	C	NC	MI	D	SC	MI	D	C	MI	S	SC	MI	C	SC	MI	D	SC	MI	C	SC	MI	C	**SC MI C**
User Activity	C	MI	C	C	MI	C	SC	MI	D	SC	MI	D	C	MI	S	SC	MI	C	SC	MI	C	SC	MI	D	SC	MI	C	**SC MI C**
CR = Compatibility Rating SC = Scale Contrast Rating SDR = Spatial Dominance Rating							C = Compatible; SC = Somewhat Compatible; NC = Not Compatible MI = Minimal; MO = Moderate; S = Severe S = Subordinate; C = Co-Dominant; D = Dominant																		
Landscape Composition	S			S			P			P			P			S			S			S			S			**S**
P = Prominent S = Significant I = Inconspicuous																												

Each MCS classification has a threshold for acceptable VIA values. These thresholds represent the lowest VIA value each alternative should have within that zone. All zones have the potential to have a VIA of +10, although this is unlikely in any alternative. The threshold values for the LSZs for the various alternatives under consideration are shown in **Table 5-10**.

Table 5-10. Threshold Visual Impact Analysis Values for each LSZ

Landscape Similarity Zone		MCS Classification	Threshold VIA	Alt. 1 VIA +0.89	Alt. 2 VIA +0.22	Alt. 3 VIA -1.67	Alt. 4 VIA -2.89
1	Forest	Preservation	+10 to 0	Acceptable	Acceptable	**Adverse**	**Adverse**
2	Grassland/Pasture/ Prairie	Partial Retention	+10 to -5	Acceptable	Acceptable	Acceptable	Acceptable
3	Farmland	Retention	+10 to -2	Acceptable	Acceptable	Acceptable	Acceptable
4	Wetland	Preservation	+10 to 0	Acceptable	Acceptable	Acceptable	Acceptable
5	Recreation Area	Preservation	+10 to 0	Acceptable	Acceptable	Acceptable	Acceptable
6	Residential - medium density	Partial Retention	+10 to -5	Acceptable	Acceptable	Acceptable	Acceptable
7	Urban - Commercial/Industrial	Modification	+10 to -7	Acceptable	Acceptable	Acceptable	Acceptable
8	Transportation	Retention	+10 to -2	Acceptable	Acceptable	Acceptable	Acceptable
9	Marinas	Rehabilitation	+10 to -10	Acceptable	Acceptable	Acceptable	Acceptable
10	High density docks	Modification	+10 to -7	Acceptable	Acceptable	Acceptable	Acceptable

The VIA values of +0.98 for Alternative 1 and +0.22 for Alternative 2 are within the threshold values for all LCZs and as such are considered acceptable. The VIA values of -1.67 for Alternative 3 and -2.89 for Alternative 4 are considered adverse for the Forest LSZ, but acceptable for all others. It should be noted that almost half of the land in the study area is within the Forest LSZ (approximately 91,712 acres). As such, threshold ratings for this LSZ could be considered to be of greater magnitude than similar ratings for other LSZs.

Chapter 6

Potential Mitigation Measures

Mitigation includes the avoidance, minimization, rectification, reduction, and compensation for impacts associated with an action (40 CFR 1508.20). USACE can only control aspects of land use that occurs on government-owned property. Potential additional mitigation measures for areas receiving mowing permits are not considered, since the amount of clearing is determined by each alternative. However, considerable mitigation of visual and aesthetic impacts could be accomplished by focusing on higher-intensity land uses. USACE could implement the following measures for activities on government-owned property in all LSZs:

Docks:

There are currently no restrictions on the size of docks that may be built, so long as they are in keeping with USACE policies for distance from adjacent docks and from the shore, and the minimum amount of open cove remaining. Some docks have a very high number of boat slips. In addition, some docks with many slips are built with the intention of selling slips to others. The practice of building roofs over docks makes them much more dominant to the viewer and blocks the view of the adjacent landscape. The aesthetic impact of additional docks under any of the alternatives could be reduced by the following measures:

- Limiting the number of slips per dock
- Prohibiting or limiting permit holders from selling slips to anyone other than a purchaser of the permit holder's adjacent property
- Prohibiting or limiting the size of dock roofs
- Requiring that floats for new docks be encased in plastic to reduce litter caused by deterioration of styrofoam floats, and placing the same requirement on existing docks if/when they are repaired or replaced.

Marinas:

Marinas can have an industrial and unattractive quality due to the nature of boat storage and maintenance activities, storage of miscellaneous material, and accumulation of litter. The negative aesthetic impact of marinas on the lake and adjacent shorelines could be reduced by the following measures:

- Prohibiting the accumulation of miscellaneous materials and/or junk piles
- Prohibiting driving on unimproved surfaces
- Prohibiting the storage of boats and trailers on unimproved surfaces
- Planting vegetation and/or installing fencing to screen upland marina areas from the lake
- Prohibiting mowing of land not used for marina amenities
- Requiring dock floats to be encased in plastic as they are repaired or replaced

- Prohibiting the use of tires or other waste materials as breakwaters
- Requiring the removal of litter from adjacent shoreline and wetland areas

Recreation Areas:

Although recreational areas are generally attractive and consistent with the natural character of Eufaula Lake, some heavily used areas can experience wear and deterioration. The aesthetic impact of such areas on the lake, adjacent shorelines, and other spaces within recreational areas could be reduced by the following measures:

- Prohibiting driving on unimproved surfaces
- Strategic screening of play areas, restrooms, dumpsters, and other facilities from with vegetation from adjacent areas with less compatible uses, such as nature trails and fishing areas

Chapter 7
Conclusions

The potential aesthetic qualities of each alternative are related to the visual values of stakeholders including residents, tourists/visitors, local business owners, and developers. Eufaula Lake is considered a special resource in the region, with vistas of water, hills, rugged forest, and geological formations that are unique to the area. The lake also provides opportunities for water-based recreation that are popular among local residents and visitors. Tourism and housing construction are important parts of the local economy that are highly dependent upon this combination of water recreation and visual aesthetics.

Stakeholder comments were taken into consideration when defining visual values. During the visual resources surveys, lake users were asked about their visual preferences and what they hoped to see at the lake in the future. Written comments were solicited from stakeholders as part of the overall EIS process; these comments were reviewed and comments relating to aesthetics were noted. In general, users noted that they enjoyed the natural surroundings of Eufaula Lake and hoped that additional development did not become visually dominant. A few commenters complained that dock density is becoming unsightly, litter is accumulating, and illegal dumping is occurring on government-owned land where the public has access. USACE goals to protect and maintain "natural vegetation and shorelines in both undeveloped and underdeveloped areas of the lake ... so as to provide a visual quality and ecological quality that is lacking in many other recreation projects throughout the nation" were also taken into consideration.

Potential visual impacts were determined to be closely related to the amount of government-owned shoreline that would be allocated to Limited Development as opposed to Protected, as well as vegetated shoreline buffer width and dock density, combined with likely future development activity around Eufaula Lake. Increased dock density and land clearing of government-owned property would be a direct impact of the SMP, whereas development activity and associated visual impacts on adjacent land would be indirect impacts.

The forest LSZ is perhaps the most important in that it contains the majority of elements that are considered desirable at Eufaula Lake – natural woodland that complements the rugged hills and unique geological formations of the area. Lake users noted in particular that they enjoyed the wooded atmosphere of the lake. As such, impacts to this LSZ could be considered to be of higher importance than other LSZs.

Nine viewpoints were selected to forecast future aesthetic conditions likely under each alternative, including the creation of photo simulations. Future development was considered to be more likely in areas where docks and land clearing would be permitted. Even if development activity were to be the same for all lands regardless of shoreline zoning, development that included land clearing and docks would be much more visible from the lake itself, as well as adjacent shorelines and other vantage points such as bridges and causeways.

The No Action Alternative would keep shoreline zoning as it is currently. Under this alternative, the aesthetics of Eufaula Lake could change considerably in areas currently zoned Limited Development. As development continued on private lands around the lake and requests for docks and mowing permits would be granted, many areas of forest would be likely to become developed with permanent

improvements that would have visual impacts (reducing the area of the Forest LSZ). If homeowners were allowed to mow to the shoreline in an area, even if there was forested land between them, the overall visual effect or perception would be the diminishment of natural forestland. The High Density Dock LSZ would be likely to increase in area, as docks would likely be clustered around housing developments and protected coves. The size of other LSZs would also likely change; these potential changes are discussed in Section 1 of Chapter 5.

Under the No Action Alternative, the majority of viewpoints would experience slightly more development and docks under the No Action Alternative (Viewpoints 1, 2, 4, 5, and 9). Much more development would be noticed in Viewpoint 6, and little change from current conditions would be noted in Viewpoints 3, 7, and 8.

Alternative 1 would reduce the government-owned shoreline allocated to Limited Development from 271 miles to 42 miles by changing 227 miles to the Protected designation. Under this alternative, much less development would be visible from the lake, shorelines, and other vantage points than would be likely under the No Action Alternative. As a result, the area of Forest LSZ would not be reduced nearly as much as it would under the No Action Alternative, and the High Density Dock LSZ would likely not increase.

Under Alternative 1, the majority of viewpoints would retain much of the natural lake aesthetic they exhibit today (Viewpoints 1, 2, 3, 5, 6, 7, 8, and 9). Of these, four viewpoints would likely be less developed than they would be under the No Action Alternative (Viewpoints 1, 2, 5, and 6). Some development would be seen in Viewpoint 4, similar to what is likely under the No Action Alternative.

Alternative 2 would very slightly reduce the miles of government-owned shoreline allocated to Limited Development (from 271 to 182) by changing 89 miles to Protected designation. Under this alternative, development and visual impacts would be similar to what would be likely under the No Action Alternative, resulting in a decrease in the area of Forest LSZ and an increase in the High Density Docks LSZ.

Under Alternative 2, all viewpoints would have visual qualities very similar to what is likely under the No Action Alternative with the exception of Viewpoint 5. Most would experience at least slightly more development and docks, similar to that which would be likely under the No Action Alternative (Viewpoints 1, 2, 4, and 9). Much more development would be noticeable in Viewpoint 6. Little change from current conditions would be noted in Viewpoints 3, 7, and 8. Viewpoint 5 would be much less developed than under the No Action Alternative; the existing undeveloped and untamed feeling of the cove would be slightly decreased from conditions today.

Alternative 3 would increase the amount of government-owned shoreline allocated to Limited Development from 271 miles to 367 miles by reducing the Protected allocation by 98 miles. Under this alternative, more development and visual impacts would be likely as compared to the No Action Alternative, especially as viewed from the lake, shorelines, and other vantage points, with a considerable decrease in the area of Forest LSZ and increase in the High Density Docks LSZ.

The majority of viewpoints would experience more development and docks than under the No Action Alternative (Viewpoints 1, 2, 5, 7, and 9), some considerably. Only slightly more development would be noticed in Viewpoint 8 as compared to the No Action Alternative. Viewpoint 3 would appear the same as under the No Action Alternative, with little change from current conditions. Viewpoints 3, 4, and 6 would likely have a similar aesthetic as under the No Action Alternative, with increased development over current

conditions in Viewpoint 4. Aesthetic conditions are likely to be similar between Alternative 3 and Alternative 4 for Viewpoints 2, 5, 6, 7, and 9.

Alternative 4 would increase the amount of government-owned shoreline allocated to Limited Development from 271 miles to 479 miles by changing 208 miles currently zoned Protected. An additional eight miles of shoreline currently allocated to Protected would be changed to Public Recreation. Under this alternative, more development and visual impacts would be likely as compared to the No Action Alternative, especially as viewed from the lake, shorelines, and other vantage points, with a considerable decrease in the area of Forest LSZ and increase in the High Density Docks LSZ. The areas of Carlton Landing and Roundtree Landing would be dramatically affected.

The majority of viewpoints would experience more development and docks than under the No Action Alternative (Viewpoints 1, 2, 3, 4, 5, 7, 8, and 9), with all except Viewpoints 5 and 8 experiencing considerably more development. Viewpoints 3 and 4 would appear strikingly more developed compared to the No Action Alternative, with development of the Roundtree Landing Marina, Carlton Landing commercial district, and Carlton Landing recreational areas. Viewpoint 6 would likely have a similar aesthetic as under the No Action Alternative. Aesthetic conditions are likely to be similar between Alternative 4 and Alternative 3 for Viewpoints 2, 5, 6, 7, and 9.

VIA Values calculated for the various resource components compare the visual qualities under each alternative to the No Action Alternative. Under Alternative 1 (total VIA value of +0.89), an improvement of visual quality would be likely as compared to the No Action Alternative, and a slight improvement would be likely under Alternative 2 (total VIA value of +0.22). A decrease in aesthetic quality would be likely under Alternative 3 (total VIA value of -1.67) as compare to the No Action Alternative, and a larger decrease in aesthetic quality would be likely under Alternative 4 (total VIA value of -2.89). **Table 7-1** summarizes the VIA values for each alternative.

Table 7-1. VIA Values for Each Alternative

Resource Category	VIA Values			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Water	**+0.22**	0	**-0.56**	**-0.89**
Landform	0	0	**-0.11**	**-0.11**
Vegetation	**+0.11**	0	**-0.33**	**-0.44**
Land Use	**+0.33**	**+0.11**	**-0.56**	**-0.89**
User Activity	**+0.22**	**+0.11**	**-0.11**	**-0.33**
Special Considerations	0	0	0	**-0.22**
Total VIA Value	**+0.89**	**+0.22**	**-1.67**	**-2.89**

It should be noted that VIA values have the potential to range from +10 to -10 using the VRAP methodology. This methodology allows higher and lower VIA values in order to appropriately scale impacts across all types of projects, including those that may have marked negative or positive aesthetic impacts, such as the building of tall, long levees through developed areas, new dams on large rivers, or the restoration of ecosystems. Such projects may have aspects that are highly incongruous with the existing development patterns, visual scale, and valued vistas in the landscape. While the VIA values for each alternative for the Eufaula Lake SMP are far removed from these theoretical extremes, they do illustrate

that each would likely result in a different visual appeal, and a ranking of aesthetic value can be made. Although the various alternatives would result in differences of visual quality from the No Action Alternative, these differences are similar to what can be seen in at least some developed areas that currently exist on and near Eufaula Lake.

All VIA values fall under the range of "acceptable" for each LSZ with the exception of Alternatives 3 and 4, which fall under the range of "adverse" for the Forest LSZ. It should be noted that almost half of the land in the study area is within the Forest LSZ (approximately 91,712 acres). As such, threshold ratings for this LSZ could be considered to be of greater magnitude than similar ratings for other LSZs.

Mitigation measures that could be considered are limited to those that can be implemented on government-owned property. The majority of potential mitigation measures are related to reducing the visual impact of docks along the shoreline and adjusting the management requirements and vegetation planted at marinas and public recreation areas.

Chapter 8
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Chapter 9
Glossary

Aesthetic Quality: The distinctive property of a landscape determined by professional, public, or personal values and the intrinsic physical properties of the landscape (Smardon *et al.* 1988).

Aesthetic Resources: Those natural and man-made features of the environment that can be perceived by the senses, that is, what is seen and what is perceived by the other senses. Aesthetic resources elicit one or more sensory reactions and evaluations by the observer, particularly in regards to their pleasurable effects. Aesthetic resources include the combination of what can be perceived at a particular site. This involves the unified combination of water resources, landforms, vegetation, and user characteristics at a site. An aesthetic resource may be a particular landscape, viewshed, or view (Smardon *et al.* 1988).

Average: A resource or activity that is common in the area and not known for its uniqueness but rather as a reflection of the norm of the area (Smardon *et al.* 1988).

Distinct: A resource or activity that is considered unique and an asset to an area. It is typically known as a visual/aesthetic draw and/or has many distinctive attributes. Diversity and compatibility are characteristics in such a resource (Smardon *et al.* 1988).

Ecoregion: A physiographic area of land that is classified by similarity of land-surface form, climate, vegetation, soils, and fauna (Smardon *et al.* 1988).

Harmony: The combination of parts into a pleasing or orderly whole, or a state of agreement or proportionate arrangement of form, line, color, texture, and scale (Smardon *et al.* 1988).

Landscape: Landform, water, and land cover forming a distant visual pattern; an expanse of natural and man-made scenery seen by the eye in one view (Smardon *et al.* 1988).

Landscape Compatibility: The degree to which landscape elements/characteristics are unified within their setting (Smardon *et al.* 1988).

Landscape Composition: The arrangement of objects and voids in the landscape that can be categorized by their spatial arrangement. Some spatial compositions, especially those that are distinctly focal, enclosed, detailed, or feature-oriented landscapes, are more vulnerable to modification than panoramic, canopied, or ephemeral landscapes (Smardon *et al.* 1988).

Land Use: Various human activities that impact the landscape in a variety of ways. Examples of land use types are industrial, commercial, residential, agricultural, recreational, and undeveloped (Smardon *et al.* 1988).

Land Use Intensity: The degree to which a landscape is used by human activities. Examples of landscape intensity are urban, suburban, rural, and wilderness (Smardon *et al.* 1988).

Management Class: The designation given to a landscape resource that reflects its capability to support or assimilate visual impacts caused by projects. The five Management Classes are: Preservation, Retention Partial Retention, Modification, and Rehabilitation (Smardon *et al.* 1988).

Minimal: A resource or activity that may be looked upon as a liability in the area. It typically lacks any positive attributes and may actually diminish the quality of surrounding areas (Smardon *et al.* 1988).

Modification Class: Landscape areas included in this class are not noted for their distinct qualities and are often considered common. Their use is moderate to heavy and typically not directly related to the visual resources of the areas. Management activities in these areas will cause visual change, but design and planning should recognize the need for visual compatibility, and the project itself should not dominate the resource (Smardon *et al.* 1988).

Observer Position: The relationship between the location of the observer and the landscape that is being observed and how it affects the perception of the resource. The three viewer positions are inferior, normal, and superior (Smardon *et al.* 1988).

Panoramic Landscape: A landscape with an unlimited, unobstructed view in all directions (Smardon *et al.* 1988).

Partial Retention Class: Landscape areas included in this Management Class are often looked upon highly by local populations, but may not be protected by laws or institutional measures. Uses in these areas are typically moderate and diverse. Management activities may cause visual change but should retain visual compatibility with the existing landscape. Changes that take place during the implementation of an activity must be unnoticeable within a year (Smardon *et al.* 1988).

Preservation Class: Landscape areas included in this Management Class allow only ecological and natural change to occur. These areas are often protected by institutional policies. Use of the area is typically limited to off-road activities and may be low. Any management activity in these areas must not be visible (Smardon *et al.* 1988).

Rehabilitation Class: Landscape areas included in this Management Class have suffered from previously poor management practices. Use in these areas is typically low or nonexistent, and the area is often considered a misfit or blighted area. Project features that enhance the resource would be included for projects in areas in this class (Smardon *et al.* 1988).

Relative Scale: The apparent size relationship between landscape components and their surroundings (Smardon *et al.* 1988).

Resource Component: A category of elements within the visual landscape, such as water resources, landform, vegetation, land use, and special considerations.

Retention Class: Landscape areas included in this Management Class are considered unique and distinct. Use in this area is typically moderate to low. Any management activity that would increase that use may be detrimental to the quality of the zone. These activities must also remain virtually unseen. Any changes taking place during the implementation of a project should be unnoticeable when the project is completed (Smardon *et al.* 1988).

Scale Contrast: The difference in absolute or relative scale in relation to other distinct objects or areas in the landscape (Smardon *et al.* 1988).

Similarity Zone: A physiographic area of land that has common characteristics of ecoregions, land use, land use intensity, or water resources. Similarity Zones are assigned to a specific Management Classification (Smardon *et al.* 1988).

Spatial Dominance: The prevalent occupation of a space in a landscape by an object(s) or landscape element (Smardon *et al.* 1988).

Total Assessment Value: The numerical value that represents the assessment of the visual resources of a Landscape Similarity Zone. The Total Assessment Value is determined by the Assessment Framework and the inventory of the resources in the Zone. The Total Assessment Value is used to assign a Zone to a Management Class (Smardon *et al.* 1988).

Visual Impact: The significance and/or severity of change in visual resource quality as a result of activities or land use changes (Smardon *et al.* 1988).

Visual Impact Assessment Value: The value that represents the visual impact caused by implementation of a proposed alternative. The Visual Impact Assessment Value is determined by the change in the landscape components, *e.g.*, water resources (Smardon *et al.* 1988).

Visual Quality: The visual significance given to a landscape as determined by professional, public, or personal values and intrinsic physical properties of the landscape (Smardon *et al.* 1988).

Visual Resource: Those natural and cultural features of the environment that can be potentially viewed (Smardon *et al.* 1988).

Visual Resource Considerations: Primary considerations that should be considered prior to implementation of a Visual Impact Assessment Procedure. Institutional, technical, and public factors related to visual quality determine the significance of visual resources and visual impacts (Smardon *et al.* 1988).