

Appendix I: Responses to Comment on the Draft EIS

Responses to comments from the public are provided below. Where appropriate, changes have also been made to the Final EIS. Responses to comments from agencies and tribes follow the public comments.

Comments from members of the public were reviewed, grouped by topic, and summarized. Where only one person raised a particular comment, the comment may be shown below as it appears in the comment letter. In these cases, the comment is shown within quotation marks. Comments were grouped into the following categories:

- Category A: Vegetation buffers/mowing permits page I-6
- Benefits of Vegetated Buffers page I-8
- Category B: Erosion page I-17
- Category C: Recreation/Number of boats and boat docks page I-19
- Category D: Carlton Landing page I-24
- Category E: Economic Effects: page I-26
- Category F: Fish and Wildlife page I-28
- Category G: Water Quality page I-29
- Category H: Preference for a Specific Alternative page I-31
- Category I: Individual Zoning Requests page I-33
- Category J: Additional Specific Comments page I-34

The complete texts of each comment letter or statement are located in the following appendices:

- Public comments are located in Appendix J
- Agency comments are located in Appendix K.

The following table identifies each commenter and summarizes comments by comment category. For example, the general topic or comment category is located across the top of the table and the sub-comment or specific comment is identified within the table. The comment responses are organized in the same manner. For example, the first comment letter in the table commented on topics in Categories A and B. The response to comment A1 would be found in the first section under Category A, Comment A1.

Agency comments are delineated into a table and responses are provided for each comment starting on page I-43.

Table I-1. Summary of Public Comments on DEIS

First Name	Last Name	Organization	Comment File Name	Alternative Preference (if stated) (Comment Category H)	Specific Issues Noted in Comment									Specific Comments not included in Other Categories (Comment Category J)
					Vegetation buffers/mowing permits (Comment Category A)	Erosion (Comment Category B)	Recreation/ Number of boats and boat docks (Comment Category C)	Carlton Landing (Comment Category D)	Economic Effects (Comment Category E)	Fish and Wildlife (Comment Category F)	Water Quality (Comment Category G)	Individual Zoning Requests (Comment Category I)		
Joe	Mitcho		2012-12-10 MitchoJ.pdf		A1	B1								
Carrie	Pennington	O.C.F.D. Public Education Unit	2012-12-13 PenningtonC.pdf		A2			D1						J3, J4, J5
Deanna	Hamilton		2012-12-15 HamiltonD.pdf	1			C1	D2, D3						
Andy	Tefertiller	Developer, Stone Ridge Estates	2012-12-17 TefertillerA.pdf	No Action								I1		J6, J7, J8, J9
Turner	Hunt		2012-12-18 HuntT.pdf									I3		
Todd	Johnson		2012-12-18 JohnsonT.pdf					D2, D3		F1				
Andy	Tefertiller		2012-12-19 TefertillerA.pdf									I1		J7, J8
Marlin (Ed)	Edwards	Bridgeport Dunes Condominiums	2012-12-20 EdwardsM.pdf		A1		C2							J10
Thomas P and Dorothy J	Swisher		2012-12-21 SwisherT&D.pdf	1										
Robin	Woodley		2012-12-21 WoodleyR.pdf				C7	D2		F5				J2, J11
George B	Ellison	Co owner Eufaula Tri-County Real Estate and Former Board Member of Save Our Water, Lake Eufaula	2012-12-22 EllisonG.pdf	No Action	A2, A3			D1						J1, J12
Carrie	Pennington		2012-12-31 PenningtonC.pdf	No Action										
Lagaylia	Alfonso		2013-01-02 AlfonsoL.pdf	1				D2						
Orville	Edwards		2013-01-03 EdwardsO.pdf	1										
Robert	Fankboner		2013-01-03 FankbonerR.pdf	1										
Garland R	Hooper		2013-01-03 HooperG.pdf	2			C2	D2						J13, J14
Ron	Lawrence	Safe Harbor Products	2013-01-03 LawrenceR.pdf	4										
Billy Lee	McClellan		2013-01-03 McClellanB.pdf	3										
James	Raynor		2013-01-03 RaynorJ.pdf	No Action	A4, A5			D4						
Steve	Woodley		2013-01-04 WoodleyS.pdf	No Action				D2						J2
Faye	Cole		2013-01-06 ColeF.pdf						E1, E2	F2				
J L	McGuire		2013-01-07 McGuireJ.pdf		A6		C3		E3					
John	Goodin		2013-01-08 GoodinJ.pdf	3 or 4										
Bob and Ann	Green		2013-01-08 GreenBA.pdf	3 or 4										
Alan and Kim	Hardin		2013-01-08 HardinAK.pdf	3 or 4										
Bob	Roberts		2013-01-08 RobertsB.pdf	3 or 4								I4		
Zane	Box	Developer, Breckenridge Estates	2013-01-09 BoxZ.pdf									I2		
Rick and Sandra	Faulk		2013-01-09 FaulkRS.pdf	3 or 4										
Michael	Sarrault		2013-01-13 SarraultM.pdf	No to 1	A2									
Larry	Bright		2013-01-14 BrightL.pdf	4										
Bo	Channel		2013-01-14 CLA ChannelB.pdf	4 - support for a nature center										
London	Peterson		2013-01-14 CLA PetersonL.pdf	4 - support for a nature center										

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		Students at Carlton Landing Academy	2013-01-14 CLA.pdf	4 - support for a nature center										
Gary	Larson	Developer, Rocky Creek Estates	2013-01-14 LarsonG.pdf	No to 1	A2									
Steve and Tammy	Newman		2013-01-14 NewmanS.pdf	4										
Donald Dee	Nichols	Nichols Marine of McAlester	2013-01-14 NicholsDD.pdf	No Action	A3	B2								J15
B.J.	Roberts		2013-01-14 RobertsBJ.pdf	3 or 4										
Michael	Saltsman		2013-01-14 SaltsmanM.pdf	4										
Steve	Swadley		2013-01-14 SwadleyS.pdf	3 or 4										
Hunt	Turner		2013-01-15 HuntT.pdf									I3		
Bill	Hart		2013-01-16 HartB.pdf	1		B3				F3				J17
Bill and Susie	Hines		2013-01-16 HinesBS.pdf	No Action	A2									
Randy	Shannon		2013-01-16 ShannonR.pdf	1				D1, D2						
Karen	Steele-Hart		2013-01-16 Steele-HartK.pdf			B3					G1			
Jon	Tomlinson		2013-01-16 TomlinsonJ.pdf	No Action	A2									
David and Kari	Verner		2013-01-16 VernerDK.pdf	No Action	A2, A4, A7			D1						
Merrie	Brenner	ABC Appraisals/A Brenner Co.	2013-01-17 BrennerM.pdf											J16
Lester and Valerie	Cashmere		2013-01-17 CashmereLV.pdf	No Action	A8			D1						
Hunt	Turner		2013-01-17 HuntT.pdf									I3		
Gary D.	Nichols	Nichols Marine	2013-01-17 NicholsG.pdf	3	A3	B2, B5, B6	C4, C5, C8	D1, D2, D4	E3	F2, F4				
Richard	Moore		2013-01-18 MooreR.pdf	1			C2							
Connie	Morris	Executive Director, Lake Eufaula Association	2013-01-18 MorrisC LEA.pdf	3 or 4			C4	D2, D3, D4		F1		I5		
Steve	Stangl		2013-01-18 StanglS.pdf					D2, D4						
Larry and Michelle	Wallace		2013-01-18 WallaceLM.pdf	1			C1	D2, D3						
Kathy	Brown		2013-01-19 BrownK.pdf		A3	B2, B4	C2, C6, C9				G2			J18
Kenny and Donna	Beale		2013-01-20 BealeKD.pdf		A4, A9	B5, B7	C8	D4		F4				J3
Penny	Embry	Coordinator, Oklahomans for Responsible Water Policy	2013-01-20 EmbryP ORWP.pdf	2, 3 or 4			C4	D4		F1, F4		I6		J19
Debbie	McCauley		2013-01-20 McCauleyD.pdf					D2						
Jon	McCauley		2013-01-20 McCauleyJ.pdf					D2, D4						
Chris and Donna	McRee		2013-01-20 McReeCD.pdf		A4, A9	B5, B7	C8	D4		F4				J3
Edward	Pearson		2013-01-20 PearsonE.pdf		A4, A7	B2, B5	C10							
John	Polkinghorne		2013-01-20 PolkinghorneJ.pdf			B5, B8	C6, C8, C10, C11	D1, D4						
Daniel	Adams	VP, Atlantic-Meeco	2013-01-21 Atlantic Meeco AdamsD.pdf	4				D4	E4					
Carlton	Bass	Chairman, First National Bank	2013-01-21 BassC.pdf		A4, A8			D4				I4		

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		and Trust Company											
R. Todd	Brock		2013-01-21 BrockT.pdf	3 or No Action; No on 1									
Jeff	Click	Owner, Jeff Click Homes	2013-01-21 Click Homes ClickJ.pdf	4					E4				
Timothy	Diehl	Hidden Ridge Estates	2013-01-21 DiehlT.pdf										J5
Donald L.	Edgar		2013-01-21 EdgarD Part 1.pdf				C12, C13	D4					J20, J21, J22, J23
Donald L.	Edgar		2013-01-21 EdgarD Part 2.pdf							G3			
Donald L.	Edgar		2013-01-21 EdgarD Part 3.pdf		A3	B4							J24, J25
Grant	Humphreys	Town Founder, Carlton Landing	2013-01-21 HumphreysG.pdf	4					E4				
Jessica Victoria	Hunt		2013-01-21 HuntJ.pdf									I3	
Pamela Turner	Hunt		2013-01-21 HuntP.pdf									I3	
Ronald and Linda	Matlock		2013-01-21 MatlockR.pdf		A4		C1, C14, C15	D3					J1
Shari	Cooper	Executive Director, M Power Economic Development	2013-01-21 MPower CooperS.pdf	4					E4				
Steve	Stephens		2013-01-21 StephensS.pdf		A2, A3			D1					J1
Angel	Bernhardt	Angel's Diner	2013-01-22 BernhardtA.pdf	4									
Richard	Chastain		2013-01-22 ChastainR.pdf	3 or 4	A4		C1						
Lisa	Kemp-Hazlewood		2013-01-22 Kemp-HazlewoodL.pdf									I3	
John P	Lauer	President, Beacon Point Development	2013-01-22 LauerJ.pdf	4				D1					
Marion	Peters		2013-01-22 PetersM.pdf									I3	
Rebecca	Peters		2013-01-22 PetersR.pdf									I3	
Kittie	Richardson		2013-01-22 RichardsonK.pdf	1			C1, C11						
George A.	Shear		2013-01-22 ShearG.pdf		A4								
Rebecca	Tinker		2013-01-22 TinkerR.pdf	4									
Jerry and Norma	Bowles		2013-01-23 BowlesNJ.pdf				C2, C16	D2, D4					J25, J26
Billy G.	Baden		2013-01-24 BadenB.pdf	1				D4			G4		J27
Leo W.	Cravens		2013-01-24 CravensL.pdf	No Action									
Dave	Chambers		Public Meeting Comment Cards 12-19-12.pdf	1 or 2						F1			
Billy	Stanford		Public Meeting Comment Cards 12-19-12.pdf	1 or 2; No on 4				D4					
Renee	Standford		Public Meeting Comment Cards 12-19-12.pdf	Something between Alt 3 and 4									
Cathi	Taylor		Public Meeting Comment	No on 3 and 4									

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			Cards 12-19-12.pdf											
James	Gross		Public Meeting Comment Cards 12-19-12.pdf	1			C1, C2							
Mary Ann	French		Public Meeting Comment Cards 12-19-12.pdf	1 or 2			C1			F1				
Leon	French		Public Meeting Comment Cards 12-19-12.pdf	1 or 2			C1			F1				
Tom	Baldwin		Public Meeting Comment Cards 12-19-12.pdf			A4								
Neva Eileen and Dean	Snyder		Public Meeting Comment Cards 12-19-12.pdf	1										
Jim	Doyle		Public Meeting Comment Cards 12-19-12.pdf	No on 4		A4	C1							
JT	Stubbs		Public Meeting Comment Cards 12-19-12.pdf						D2, D4					
Parker	Saltsman	Saltsman's Orchard	Public Meeting Comment Cards 12-19-12.pdf	4								I7		
Bert	Albers		Public Meeting Comment Cards 12-19-12.pdf	No Action		A8								
Dewayne	Kalin		Public Meeting Comment Cards 12-19-12.pdf	3			C6			F6				
Rick	Woods		Public Meeting Comment Cards 12-19-12.pdf	1										
Bela	Csendes		V 2012-12-19 CsendesB			A1	B8	C2						
Fred	Jackson		V 2012-12-19 JacksonF											J10
Bill	Neal		V 2012-12-19 NealB											J27
Greg	Shirey		V 2012-12-19 ShireyG											J28
Stephanie	Sellers		V 2012-12-19 SellersS										I8	
Norma and Jerry	Bowles		V 2012-12-19 BowlesN and BowlesJ	No on 4					D2, D4					
Jason	Moore		V 2012-12-19 MooreJ						D1					
David and Lori	Arion		V 2012-12-19 ArionD and ArionL	1		A - no change to mowing permits, no reasons given	C1, C4							
Mike	Green		V 2012-12-19 GreenM	1 or 2		A4	C1, C4							

Category A: Vegetation Buffers/ Mowing Permits

Many commenters expressed the concern that the current mowing permit conditions should not change. In response to these concerns, additional documentation is provided at the end of Category A on the value of vegetated buffers. Responses to the specific reasons provided for concern about the proposed buffers are provided below.

Comment A1: Adjacent property owners should be able to clear dead trees, branches, and brush from government lands to reduce fire risk and remove potential hazards to pedestrians:

***A1 Response:** The current SMP already allows for the removal of dead trees that pose hazards upon approval of the Lake Office. There are no plans to eliminate this option. Similarly the current SMP allows for the clearing of a fire break adjacent to structures. "Firebreaks" allowed under a shoreline use permit for vegetation modification would allow mowing, clearing of trees less than 3 inches in diameter, and limbing of trees up to 8 feet above the ground within the first 30- feet of government land immediately adjacent to the private property for fire break purposes only. This is determined on a case by case basis. The ability to create firebreaks as necessary would still be allowed under the revised SMP.*

Comment A2: Several people expressed concern that the proposed vegetation buffer would make access to boat docks and beaches difficult and that the natural vegetation would harbor dangerous animals such as snakes.

***A2 Response:** The current SMP already allows for the creation and maintenance of 6-foot wide meandering paths. There is no plan to eliminate this so it would still exist in a new SMP. The lake office would still have the ability to approve a pathway so people can safely access their dock and the lakeshore.*

Comment A3: Some commenters stated that maintained Bermuda grass is more stable and results in less erosion than natural vegetation and does not impact wildlife use of the shoreline areas.

***A3 Response:** Vegetated buffers filter runoff by slowing water velocity and increasing infiltration by 10 to 15 times compared to grass turf. The use of vegetated buffers in this way has been proven to trap 80 to 90 percent of sediment and pollutants. While grass turf does have dense roots, when it is mowed it doesn't provide the roughness needed to slow overland flow of stormwater runoff and filter out the sediments that are carried by the stormwater runoff from adjacent development. Native grasses and woody vegetation assist with slowing the velocity of runoff and reducing scouring. Additional information to explain these processes has been added at the end of this section on Category A comments.*

Comment A4: Many commenters suggested that current mowing permits should be grandfathered if the proposed change is applied or that the buffers should not be implemented in areas where mowing is currently allowed.

***A4 Response:** The Preferred Alternative would implement this policy change immediately for any new vegetative modification requests. However, there would be a five year transition program for all existing permit holders. That way USACE can assure that any written commitments to existing permit holders are honored until their permit expires. Current shoreline use permit holders would be able to get another 5 year permit to continue mowing as done previously. Any of those permits that expire in 2018 or beyond*

would be required to incorporate a buffer zone. Under the Preferred Alternative, woody vegetation within the buffer less than 3 inches in diameter would still be allowed to be removed, and trees could be limbed up to one third of the tree height to a maximum of 8 feet.

Comment A5: In response to the proposal that variable buffers might be applied, commenters expressed the opinion that a 45 foot buffer would be sufficient and that larger buffers would not be necessary.

A5 Response: *The Preferred Alternative would apply a uniform 45 foot buffer as this was determined to provide sufficient water quality and shoreline protection.*

Comment A6: Some commenters suggested that modifications to the proposed buffers should be allowed on a case-by-case basis where erosion barriers such as a rocked shoreline exist or where the shoreline is watered and mulched to maintain a good grass cover.

A6 Response: *Vegetation modification permits are currently issued on a case-by-case basis. There is no plan to eliminate this required site review prior to approval of shoreline use permits. Buffer zones have been found to be a natural erosion control methodology. That is one of the reasons why the Preferred Alternative incorporates buffer zones. This change would help control erosion on a lake-wide basis and would be applied regardless of what other shoreline stabilization measures might be present. Vegetated buffers filter runoff and remove nutrients and sediments that are carried by stormwater that runs off from adjacent private lands. This filtering benefit prevents sediments and nutrients from reaching the lake. Rocked shorelines do not provide these benefits. See also the "Benefits of Vegetated Buffers" section at the end of the responses to Category A comments.*

Comment A7: Several commenters are concerned that the proposed vegetation buffers would adversely impact views of the lake.

A7 Response: *If structures are at the same elevation as the shoreline, then views in the summer may be filtered through a narrow fringe of trees that may occur on the 45-foot buffer. Under the Preferred Alternative, woody vegetation within the buffer less than 3 inches in diameter would still be allowed to be removed, and trees could be limbed up to one third of the tree height to a maximum of 8 feet. Winter views with leaves off, would be virtually unobstructed.*

Comment A8: Several commenters are concerned that the proposed vegetation buffers would adversely impact property values.

A8 Response: *It is difficult to predict whether the proposed vegetative buffer would adversely affect property values as home values are more strongly influenced by the proximity to the water and the ability to have a boat dock.*

Comment A9: A commenter stated: "The Corps already struggles to maintain the shoreline, and a Buffer Zone would only collect trash and be detrimental to the beauty, environmental safety, and commercial recreational use of the shoreline. A Buffer Zone would cause undue hardship on the Corp requiring the substantial expense of surveys to even establish such zone."

A9 Response: *Buffer strips are a linear band of permanent vegetation adjacent to an aquatic ecosystem intended to maintain or improve water quality by trapping and removing various nonpoint source pollutants (e.g., contaminants from herbicides and pesticides; nutrients from fertilizers; and sediment*

from upland soils) from both overland and shallow subsurface flow. A buffer strip may provide habitat for a variety of plants and animals if sufficient land area is retained to meet the life history needs of those species. Buffer strips may also function as movement corridors if they provide suitable connections between larger blocks of habitat. The review indicates that a buffer would help water quality. However, it is apparent that having a sliding buffer zone width based on natural settings would be difficult to manage. Therefore, a minimum 45-foot buffer was selected as the only one necessary to be utilized lake wide. This buffer would not be surveyed lake-wide, but would be established on each parcel as shoreline vegetation modification permits are approved.

Benefits of Vegetated Buffers

Due to the level of concern generated by the proposal to implement a vegetated buffer strip along the lake edge, the following information is provided to document the value of vegetated buffers in protecting water quality, reducing erosion and sedimentation, and enhancing wildlife habitat.

Eufaula Lake is a critical water resource for recreation, wildlife, and the communities that benefit from flood control and drinking water supply provided by Eufaula Lake. Water quality is crucial to the overall health of the Lake and its continued ability to meet the demands of these uses. Existing water quality in Eufaula Lake was evaluated in depth in the Appendix D (Water Quality Technical Report) of the Environmental Impact Statement. Overall, water quality in Eufaula Lake is such that certain uses of the Lake are compromised. Elevated levels of nutrients are a concern and are contributing to toxic algae blooms which are widespread throughout Eufaula Lake and impede recreational activities. High levels of sediment and erosion are also a concern. Turbidity frequently exceeds water quality standards, indicating an excess of sediment is entering the Lake. Potential sources of nonpoint source pollution that contribute to nutrients, sediment, and algal blooms are discussed in more detail in **Section 4.1.6 of Appendix D.**

General Application of Vegetated Buffers

Nonpoint source pollution can be a challenge to address because it is, by nature, diffuse and occurs across private and public lands, making it difficult for a governmental entity to address effectively. Increased development and impervious surfaces result in an increase in the amount of runoff flowing directly into Eufaula Lake. When land within a watershed cannot be directly managed for nonpoint source pollution management, developing and maintaining vegetated buffers between development and the water body is a viable option to improve water quality. Vegetated buffers are used to slow the velocity of runoff and allow excess water to be absorbed back into the soil. This is important to control erosion and sediment as well as reducing the amount of pollutants entering a water body (Tjaden and Weber 1998b). In addition, vegetated buffers provide crucial habitat for aquatic and terrestrial wildlife (Wegner 1999; EPA 2005).

Vegetated buffers are areas of land bordering a body of water capable of filtering pollution in runoff from adjacent lands (Yu 2010; EPA 2005). Buffers can be managed to reduce the impact nonpoint source pollution and adjacent land use on water quality (Tjaden and Weber 1998a; Castelle, Johnson, and Conolly 1994). Research shows that vegetated buffers are vital ecological resources that serve many roles (Wegner 1999; Desbonnet *et al.* 1994). Vegetated buffers have three major functions that related to water quality:

- to control numerous elements of the aquatic environment, including temperature, light, habitat, the food web, and erosion;
- to slow water velocity so that sediment settles and buffers can then trap sediment and pollutants
- to remove nutrients from surface and ground water.

In addition to water quality benefits, vegetated buffers provide wildlife habitat and improve overall function of the ecosystem.

Vegetated buffers filter pollutants out of runoff through a variety of processes including infiltration, deposition, dilution, sorption, uptake by vegetation, and microbial activity (Dosskey 2001; Krutz *et al.* 2005). Although it is widely documented in recent research that buffers effectively trap pollutants, debate continues over the removal rate for various pollutants and the best way to manage these buffers (Wegner 1999; Yu 2010). The ability of vegetated buffers to meet specific objectives is a function of their position in the watershed, the composition and density of vegetation present, buffer width and length, soil type, and slope (Fischer and Fischenich 2000; Yu 2010; Yuan *et al.* 2009). Buffer characteristics that result in a longer residence time of runoff within the buffer (i.e. larger buffer width, lower slope, increased “roughness” of the vegetation) result in higher removal of pollutants since the filtration processes have more time to occur. For the Eufaula Lake watershed, the most important functions of vegetated buffers include sediment and nutrient removal, erosion reduction, and wildlife habitat. While many factors are important for effective vegetated buffers, two of the most important factors are vegetation type and buffer width.

Vegetation Type

According to the literature, the most commonly suggested approach to a vegetated buffer that will successfully remove sediment and pollutants from ground and surface water is to use a three-zone system for vegetation type (Alliance for the Chesapeake Bay 2004; Palone and Todd 1997; Eastern Canada Soil and Water Conservation Centre 2002). **Figure 1** illustrates the zoned approach to vegetated buffer management. Zone 1 consists of unmanaged forest, which is nearest to the water body, is composed of native trees to provide shelter and shade and to prevent erosion. Zone 2 (i.e. managed forest) consists of forests with trees, selectively harvested to remove nitrogen concentration and promote growth. Zone 3 (i.e. native grasses) consists of native grasses to slow the surface water velocity so that it infiltrates into the soil (Alliance for the Chesapeake Bay 2004; Palone and Todd 1997; Tjaden and Weber 1998a). The use of native vegetation is preferred over non-native vegetation (Fischer and Fischenich 2000; Wegner 1999).

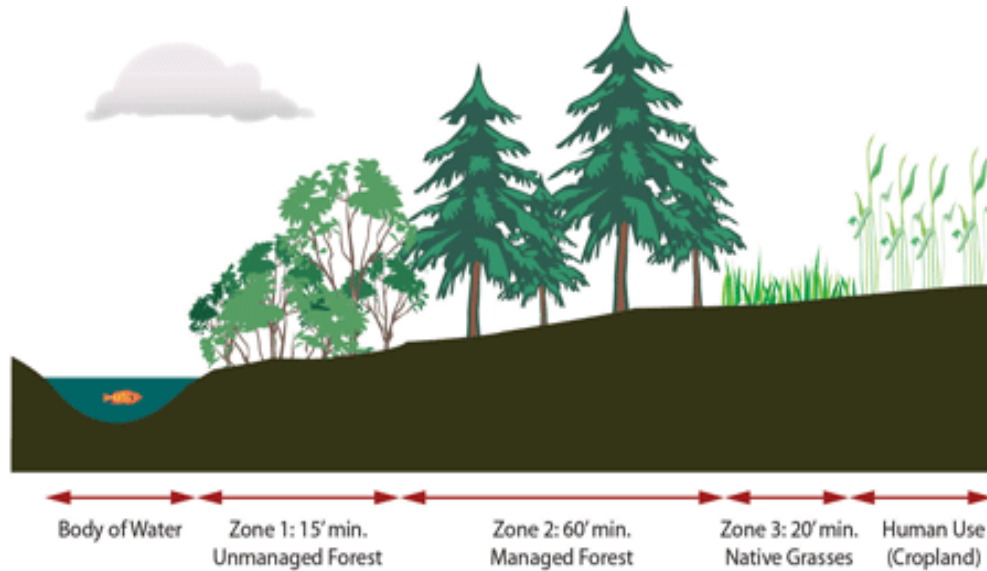


Figure I-1. Buffer Zones

Source: http://www4.ncsu.edu/~acpierc3/world_forestry/

Table I-2 presents the relative effectiveness of vegetation types for water quality benefits. It is important to note that the effectiveness of vegetation types is variable and would require a more detailed assessment to determine what species would be most effective in the Eufaula Lake watershed.

Table I-2. Relative Effectiveness of Different Vegetation Types for Specific Benefits

Benefit	Vegetation Type		
	Grass	Shrub	Tree
Stabilize bank erosion	Low/Medium	Medium/High	High
Filter Sediment	High	Low/Medium	High
Filter Nutrients, pesticides, microbes: sediment bound	High	Low/Medium	High
Filter nutrients, pesticides, microbes: soluble	Medium	Low	Medium
Aquatic habitat	Low	Medium	High
Wildlife habitat: range/pasture	High	Medium	Low
Wildlife habitat: forest wildlife	Low	Medium	High
Economic products	Medium	Low/Medium	High
Visual diversity	Low	Medium	High
Flood protection	Low	Medium	High

Source: Tjaden and Weber 1998b

Nutrients

Vegetated buffers are an effective means of buffering aquatic ecosystems against nutrient stressors such as nitrogen. Both forested and grassed buffers have been shown to reduce nutrients effectively, although grassed buffers have been more heavily studied (Wegner 1999). While buffers are capable of removing nitrogen from runoff, phosphorus removal is more difficult. If phosphorus is not managed at the source, vegetated buffers may become saturated and less effective at phosphorus removal.

The attenuation of nitrogen from groundwater flow can be rapid in forested riparian buffer zones. Schoonover and Willard (2003) found that 10-meter forested buffers reduced nitrate concentrations in groundwater by 61 percent. Furthermore, research indicates that mature forests are two to five times more effective than “managed” (i.e. clearcut or selectively thinned) forests at reducing nutrient concentrations (Lynch, Corbett, and Mussallem 1985; Hubbard and Lowrance 1997).

Fennessy and Cronk (1997) found that forested buffer strips are more efficient at nutrient removal from groundwater than herbaceous buffers because tree roots produce more carbon at greater depths. In addition, the woody parts of trees provide long-term nitrogen storage. The Minnesota Pollution Control Agency (2000) found that forest buffers work best in removing nutrients, with 99% nitrogen removal, as compared to 85% for grass buffers.

A review of recent research indicates that there is an ongoing debate about the dominant mechanism for nitrogen removal: denitrification or vegetative uptake. Denitrification removes nitrogen from a system permanently by breaking the nutrient molecules down and releasing the nitrogen as a gas into the atmosphere (Fennessy and Cronk 1997; Groffman, Gold, and Simmons 1992). Studies show most denitrification occurs in the forested zone of the buffer in close proximity to a grass field, between 10 and 50 feet from the grassy zone (i.e. Zone 3) of the buffer (Gilliam, Osmon, and Evans 1997; Ambus and Lowrance 1991).

Sediment

Sediment retention by vegetated buffers is well documented in the research (Wegner 1999; Tjaden and Weber 1998a; Palone and Todd 1997; Welsch 1991; Yu 2010). Vegetated buffers can reduce the amount of sediment that reaches streams in a variety of ways:

- by moving sediment-producing activities away from the water body;
- by trapping sediments in surface runoff within the buffer;
- by reducing the velocity of runoff, allowing sediment to settle out; and
- by stabilizing banks and preventing channel erosion.

Reducing sediment also reduces erosion because the sediment that would have contributed to scouring and erosion is removed from the runoff (Wegner 1999). Tjaden and Weber (1998a) found that native grasses (Zone 3) are most effective at reducing sediment loads because the surface runoff velocity is slowed and sediment settles out. Palone and Todd (1997) found that unmanaged and managed forest (Zones 1 and 2, respectively) provide sheet flow and subsurface filtering. Grasses are more likely to be inundated by runoff with very high levels of sediment, but are capable of maintaining sheet flow and preventing erosion. To achieve maximum sediment reduction in a vegetated buffer, a combination of native grasses and forest are recommended (Welsch 1991, Lowrance *et al.* 1997; Yu 2010).

Erosion Control

Vegetated buffers moderate soil moisture conditions along banks and enhance bank stability, which reduces erosion (Fisher and Fischenich 2000). In addition, buffers slow the velocity of runoff that would otherwise exacerbate erosion (Wegner 1999). All three zones of a vegetated buffer contribute to erosion control. Unmanaged forests near the water body should have a deep root structure to be effective, which holds soil in place (Wegner 1999). Shields *et al.* (1995) evaluated various vegetation

type configurations in stabilizing banks and found that native woody species are best adapted to stabilizing banks. Native grasses assist with slowing the velocity of runoff and reducing scouring.

Wildlife

Buffers, particularly those that include diverse shrubs and trees, provide food and shelter for a wide variety of wildlife. Forested buffers are essential for wildlife habitat (Fischer and Fischenich 2000). To provide optimal habitat, native forest vegetation should be preserved or restored (Wegner 1999).

Buffer Widths

Lack of data is one of the greatest challenges in recommending buffer widths. Although the research is clear that a positive correlation exists between buffer width and the ability to trap pollutants (Wegner 1999; Mayer *et al.* 2007; Castelle, Johnson, and Conolly 1994), most studies only evaluate a few buffer widths, which makes it difficult to recommend an optimal width.

Nutrients

Excess nutrients adversely impact aquatic ecosystems and in some cases pose risks to human health. Nutrients are a contributor to toxic algal blooms that affect Eufaula Lake. These algal blooms have limited recreational activity in the areas of the Lake where blooms are present. Riparian buffers can significantly reduce nutrient loads entering streams and lakes and thus represent important nutrient reduction best management practices.

Nitrogen removal in surface runoff has been correlated with buffer width. The necessary buffer width for nitrate reduction depends on hydrologic flow paths, and further studies would be required to determine ideal buffer widths. However, existing research indicates that wider buffers will, on average, result in greater nitrogen removal (**Table I-3**).

Table I-3. Removal of Total Nitrogen by Grass Buffers

	Total Nitrogen Removal	
	4.6 m Buffer	9.1 m Buffer
Dilaha et al 1988	67%	74%
Dilaha et al 1989	54%	73%
Magette et al 1987	17%	51%
Magette et al 1989	0%	48%

Source: Wegner 1999

Buffers can effectively trap phosphorus in runoff, but they do not provide long term storage and are not effective at filtering out soluble phosphate. Buffer widths adequate for sediment removal (15 – 30 meters, increasing with slope) should provide adequate removal of phosphorus (Wegner 1999). Research demonstrates phosphorus removal is accomplished with vegetated buffers (**Table I-4**).

Table I-4. Removal of Total Phosphorus by Grass Buffers

Study	Total Phosphorus Removal	
	4.6 m Buffer	9.1 m Buffer
Dilaha et al 1988	71.5%	57.5%
Dilaha et al 1989	61%	79%
Magette et al 1987	41%	53%
Magette et al 1989	18%	46%

Source: Wegner 1999

A variety of studies have found varying results as they relate to buffer widths and many of these studies recognize that many other factors are important besides width (e.g. soil type, slope, climate, water table elevation). According to Mayer *et al.* (2007), while some narrow buffers (up to 25 meters) proved effective, buffers wider than 50 meters more consistently removed significant amounts of nutrients. Research shows differing opinions regarding width requirements for a buffer, but most agree that buffers intended to reduce nutrients should be no less than 20 meters wide (Wegner 1999).

Sediment

Vegetated buffers filter runoff by slowing water velocity and increasing infiltration by 10 to 15 times compared to grass turf. The use of vegetated buffers in this way has been proven to trap 80 to 90 percent of sediment and pollutants (Alliance for the Chesapeake Bay 2004). Research shows that the first three to six meters of a buffer plays a dominant role in sediment removal (Daniels and Gilliam 1996; Robinson *et al.* 1996). In a 1994 review, Desbonnet *et al.* found that increasing buffer width by a factor of 3.5 resulted in a 10 percent improvement in sediment removal.

According to Wegner (1999), five studies (Dillaha *et al.* 1988; Dillaha *et al.* 1989; Magette *et al.* 1989; Peterjohn and Correll 1984; Young *et al.* 1980) have examined the effectiveness of buffers of two widths in trapping total suspended solids, and in every case, buffer effectiveness increased with buffer width (**Table I-5**). The efficiency of buffers to trap sediment varies based on slope, soil, infiltration rate, and other factors. Studies recommend a range of for buffer widths from 15 feet and up. A 30-meter buffer is sufficiently wide to trap sediments under most circumstances (Wegner 1999).

Table I-5. Riparian Buffer Width, Slope, and TSS Removal Rates

Author	Width (m)	% Slope	% Removal of TSS
Dillaha <i>et al.</i> (1988)	4.6	11	87
Dillaha <i>et al.</i> (1988)	4.6	16	76
Dillaha <i>et al.</i> (1988)	9.1	11	95
Dillaha <i>et al.</i> (1988)	9.1	16	88
Dillaha <i>et al.</i> (1989)	4.6	11	86
Dillaha <i>et al.</i> (1989)	4.6	16	53
Dillaha <i>et al.</i> (1989)	9.1	11	98

Dillaha <i>et al.</i> (1989)	9.1	16	70
Magette <i>et al.</i> (1989)	4.6	3.5	66
Magette <i>et al.</i> (1989)	9.1	16	70
Peterjohn & Correll (1984)	19	5	90
Peterjohn & Correll (1984)	60	5	94
Young <i>et al.</i> (1980)	21.3	4	75-81
Young <i>et al.</i> (1980)	27.4	4	66-93

Source: Wegner 1999

Erosion Control

One of the most important roles of vegetated buffers is to stabilize banks. Buffers are useful for maintaining sheet flow and preventing erosion (Wegner 1999). Good erosion control may require that the width of the bank be protected, unless there is active bank erosion, which will require a wider buffer (Fisher and Fischenich 2000). Fischer and Fischenich (2000) also found that bank stability requires a buffer width of 10 to 20 meters. Wegner (1999) suggests that buffer widths sufficient for other purposes, such as sediment or nutrient removal, should also be sufficient to prevent bank erosion.

Wildlife

Vegetated buffers have the potential to support exceptional biodiversity by providing wildlife habitat. Recommended buffer widths for wildlife habitat are much wider than those recommended for water quality concerns (Fischer *et al.* 1999, Fischer 2000). According to Wegner (1999), protecting diverse terrestrial riparian wildlife communities requires buffer widths considerably larger than those needed for water quality, some as large as 100 meters. Because these large buffers are not always practical, minimal buffer widths, in practice, have been based on water quality requirements. Buffers that are a minimum of 30 meters wide provide adequate habitat for reptiles, amphibians, mammals, fish, and invertebrates (Fisher and Fischenich 2000). In order to protect bird habitat, buffer widths need to be a minimum of 40 meters wide and research has found that the wider the buffer the healthier the bird population.

Conclusion

This summary prevents general trends in the research; however, the efficiency and removal rate of pollutants in vegetated buffers depends on many site specific factors. Based on the literature cited above, guidelines for vegetated buffers are as follows:

Extent: Buffers should be placed and maintained along the lakeshore of Eufaula Lake to the maximum extent feasible. The larger the vegetated buffer, the greater the water quality and wildlife habitat benefits.

Vegetation Type: Vegetated buffers should consist of a mix of trees, shrubs, and grasses that are native to the region and well-adapted to the climactic, soil, and hydrologic conditions of the site. Various vegetation types should be maintained following the zone approach illustrated in **Figure I-1**. Some harvesting of woody vegetation and trees may be undertaken to remove stored nutrients. Establishing a

diverse vegetative cover either directly or through succession would support a diverse habitat for wildlife and increase water quality benefits.

Width: While some buffer functions do not require large widths, other functions (*i.e.* wildlife habitat) require greater widths. In the Eufaula Lake watershed, buffer widths should be as large as practical in order to produce various water quality benefits (e.g. removal of sediment and nutrients, control erosion).

References

- Alliance for the Chesapeake Bay. 2004. Riparian forest buffers: Linking land and water. Accessed at: http://www.chesapeakebay.net/content/publications/cbp_12999.pdf
- Ambus, P., and R. Lowrance. 1991. Comparison of denitrification in two riparian soils. *Soil Science Society of America Journal* 55(4):994-997.
- Castelle, A.J., A.W. Johnson, and C. Conolly. 1994. Wetland and stream buffer size requirements - A review. *Journal of Environmental Quality* 23:878-882.
- Desbonnet, A., P. Pogue, V. Lee and N. Wolf. 1994. Vegetated Buffers in the Coastal Zone: A Summary Review and Bibliography. Providence, RI: University of Rhode Island.
- Dillaha, T. A., J. H. Sherrard, D. Lee, S. Mostaghimi, V.O. Shanholtz. 1988. Evaluation of vegetative filter strips as a best management practice for feed lots. *Journal of the Water Pollution Control Federation* 60(7):1231-1238.
- Dillaha, T. A., R. B. Reneau, S. Mostaghimi, D. Lee. 1989. Vegetative Filter Strips for Agricultural Nonpoint Source Pollution Control. *Transactions of the ASAE* 32(2):513-519.
- Dosskey, M. G. 2001. Toward Quantifying Water Pollution Abatement in Response to Installing Buffers on Crop Land. *Environmental Management* 28:577-598.
- Eastern Canada Soil and Water Conservation Centre. 2002. Buffer strips and water quality: A review of the literature. Eastern Canada Soil and Water Conservation Centre. Saint-Andre, New Brunswick. Accessed at: <http://www.ccse-swcc.nb.ca/>.
- Environmental Protection Agency (EPA). 2005. Riparian Buffer Width, Vegetative Cover, and Nitrogen Removal Effectiveness: A Review of Current Science and Regulations. Accessed at: http://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=140503
- Fennessy, M.S., and J.K. Cronk. 1997. The effectiveness and restoration potential of riparian ecotones for the management of nonpoint source pollution, particularly nitrate. *Critical Reviews in Environmental Science and Technology* 27(4):285-317.
- Gilliam, J.W., D.L. Osmond, and R.O. Evans. 1997. Selected agricultural best management practices to control nitrogen in the Neuse River Basin. *North Carolina Agricultural Research Service Technical*

Bulletin 311 North Carolina State University, Raleigh, NC. Accessed at:
<http://www.soil.ncsu.edu/publications/BMPs/>

- Groffman, P.M., A.J. Gold, and R.C. Simmons. 1992. Nitrate dynamics in riparian forests: Microbial studies. *Journal of Environmental Quality* 21:666-671.
- Haycock, N.E., and G. Pinay. 1993. Groundwater nitrate dynamics in grass and poplar vegetated riparian buffer strips during the winter. *Journal of Environmental Quality: ASA* 22:273-278
- Jacinte, P., P.M. Groffman, A.J. Gold, and A. Mosier. 1998. Patchiness in microbial nitrogen transformations in groundwater in a riparian forest. *Journal of Environmental Quality* 27:156-164.
- Klapproth, J.C., and J.E. Johnson. 2000. *Understanding the science behind riparian forest buffers: Effects on water quality*. Virginia Cooperative Extension. Publication Number 420-151
- Krutz, L. J., Senseman, S. A., Zablotowicz, R. M., & Matocha, M. A. 2005. Reducing herbicide runoff from agricultural fields with vegetative filter stripes: a review. *Weed Science* 53:353-367.
- Lowrance, R. 1992. Groundwater nitrate and denitrification in a coastal plain riparian forest. *Journal of Environmental Quality* 21(3): 401-405.
- Lowrance, R., G. Vellidis, R. D. Wauchope, P. Gay and D. D. Bosch. 1997. Herbicide transport in a managed riparian forest buffer system. *Transactions of the ASAE* 40 (4): 1047-1057.
- Lynch, J., E. Corbett, and K. Mussallem. 1985. Best management practices for controlling nonpoint source pollution of forested watersheds. *Journal of Soil and Water Conservation* 1:164-167.
- Magette, W. L., R. B. Brinsfield, R. E. Palmer and J. D. Wood. 1989. Nutrient and sediment removal by vegetated filter strips. *Transactions of the ASAE* 32(2): 663-667.
- Minnesota Pollution Control Agency. 2000. Vegetative buffers for protecting and improving ground water quality. Environmental Outcomes Division, Ground Water Monitoring and Assessment Program, Saint Paul, MN.
- Palone, R.S., and A.H. Todd (editors). 1997; Revised June 1998. Chesapeake Bay riparian handbook: A guide for establishing and maintaining riparian forest buffers. USDA Forest Service. NA-TP-02-97. Radnor, PA.
- Peterjohn, W.T., and D.L. Correll. 1984. Nutrient dynamics in an agricultural watershed: observations on the role of a riparian forest. *Ecology* 65(5):1466-1475.
- Schoonover, J.E., and K.W.J. Williard. 2003. Ground water nitrate reduction in giant cane and forest riparian buffer zones. *Journal of the American Water Resources Association* 39:347-354.
- Tjaden, R.L., and G.M. Weber. 1998a. Riparian forest buffer design, establishment, and maintenance. Maryland Cooperative Extension Service. Publication number FS-725.

Tjaden, R.L., and G.M. Weber. 1998b. Riparian buffer management riparian buffer systems. Maryland Cooperative Extension Service. Publication number FS-733.

Vellidis, G., R. Lowrance, P. Gay, and R.K. Hubbard. 2003. Nutrient transport in a restored riparian wetland. *Journal of Environmental Quality* 32(2):711-726.

Wegner, Seth. 1999. A Review of the Scientific Literature on Riparian Buffer Width, Extent, and Vegetation. University of Georgia, Institute of Ecology, Office of Public Service & Outreach.

Welsch, D.J. 1991. Riparian forest buffers: Function and design for protection and enhancement of water resources. United States Department of Agriculture Forest Service. NA-PR-07-91. Radnor, PA. Accessed at: http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/cover.htm

Young, R. A., T. Huntrods, and W. Anderson. 1980. Effectiveness of vegetated buffer strips in controlling pollution from feedlot runoff. *Journal of Environmental Quality* 9(3):483-487.

Yuan, Y., R. L. Bingner, and M. A. Locke. 2009. A Review of Effectiveness of Vegetative Buffers on Sediment Trapping in Agricultural Areas. *Ecohydrology* 2(3):321-336.

Category B: Erosion

Many people recognized that erosion is an important concern at Eufaula Lake. Specific comments with respect to erosion included the following concerns.

Comment B1: Some commenters noted that allowing the use of concrete or asphalt paths to boat docks would reduce erosion.

B1 Response: *The current SMP requires pathways to “follow a route, taking topographic conditions into account that will prevent soil erosion.” There are no plans to change this requirement from the revised SMP. Therefore, a properly located and maintained pathway should not need to be armored with concrete or asphalt to prevent erosion.*

Comment B2: Many commenters expressed the opinion that natural vegetation along the lakeshore would be more susceptible to erosion than managed or mowed landscapes.

B2 Response: *Vegetated buffers protect against erosion by slowing water velocity and increasing infiltration of stormwater runoff. While the effectiveness of different vegetation types is variable, natural vegetation is preferred over non-native vegetation and may increase infiltration of stormwater runoff by 10 to 15 times compared to grass turf. The use of vegetated buffers has been proven to trap 80 to 90 percent of sediment and pollutants. When grass turf is mowed it doesn’t provide the roughness needed to slow overland flow of stormwater runoff and filter out the sediments that are carried by the stormwater runoff from adjacent development. Native grasses and woody vegetation assist with*

slowing the velocity of runoff and reducing scouring. Please also see the additional information on the benefits of buffers at the end of Category A in these responses.

Comment B3: Development and gravel roads were recognized as sources of erosion and suggestions included better controls on development or the placement and management of gravel roads to reduce erosion.

B3 Response: *Development (e.g. boat docks) or gravel roads that are located on government property may only be constructed with an approved shoreline use permit. Such permits will require the implementation of Best Management Practices (BMPs) to reduce and prevent erosion, both during construction and throughout the life of the structure. Other types of development and roads on lands adjacent to USACE-owned lands are not reviewed or approved by USACE; therefore, the Corps cannot condition those projects with appropriate BMPs.*

Comment B4: Several commenters noted that low lake levels or water level fluctuations are resulting in shoreline erosion.

B4 Response: *As a reservoir, water level fluctuations may occur due to drought, retention of flood waters to protect downstream resources and people, or water releases to generate hydropower or provide downstream flows for navigation and resource protection. Eufaula Lake is one unit of several on the Arkansas River Basin and is designed to fluctuate up to 12 feet depending on current conditions. While water level fluctuations can result in shoreline erosion, lake level management is not within the scope of the SMP or MP revisions under consideration.*

Under the current drought conditions, the water levels in the lake have been abnormally low for an extended period of time. Shoreline erosion may occur at whatever elevation the water surface is at in a lake or reservoir. Since a prolonged drought has been experienced over the last several years it may appear that erosion has gotten worse because there is more un-vegetated shoreline exposed. In actuality, however, the erosion rate has not changed, it is just occurring at a lower elevation.

Comment B5: Several commenters suggested that USACE should provide expert engineering advice to property owners wishing to implement erosion control projects.

B5 Response: *Funds appropriated for Eufaula Lake are designated for the routine Operations and Maintenance of the project. Use of these funds to assist private citizens with engineering support would be contrary to current laws unless specifically congressionally authorized.*

Comment B6: Several commenters opposed the proposed vegetation buffer concept, with one stating that “it is a one size fits all policy that does not directly address a multitude of issues regarding erosion and water quality. It would be implemented without addressing other alternatives such as Rip Raping or proper lawn care. In some cases even sea walls could be installed.”

B6 Response: *While other alternatives that armor the shoreline, such as riprap or seawalls, may reduce erosion of the shore at the water’s edge, they do not address issues related to runoff from adjacent development or reduction of nutrient inputs that also affect water quality. In addition, these types of hard structures are very expensive to install and maintain and often create issues for adjacent landowners by accelerating erosion or accretion of nearby shorelines.*

Vegetated buffers protect against erosion by slowing water velocity and increasing infiltration of stormwater runoff. While the effectiveness of different vegetation types is variable, natural vegetation is preferred over non-native vegetation and may increase infiltration of stormwater runoff by 10 to 15 times compared to grass turf. The use of vegetated buffers has been proven to trap 80 to 90 percent of sediment and pollutants. When grass turf is mowed it doesn't provide the roughness needed to slow overland flow of stormwater runoff and filter out the sediments that are carried by the stormwater runoff from adjacent development. In addition, grass turf often requires the use of fertilizers and pesticides which then runoff into the lake and increase the pollutant loads in the lake and contribute to blue-green algal blooms. Native grasses and woody vegetation assist with slowing the velocity of runoff and reducing scouring. Please also see the additional information on the benefits of buffers at the end of the Category A responses in this Appendix.

Comment B7: A couple of commenters felt that the Corps should allow more dredging. Some felt that “removing dirt from the lake will allow it to hold more water and help slow erosion.”

B7 Response: *Dredging addresses the result of erosion by removing sediment from the lake bottom. However, the practice does not address the sources or the rate of erosion. Dredging may be necessary in some locations to maintain access to docks or boat ramps and would be allowed under an approved permit from USACE. Persons interested in dredging permits would need to submit an application to the Tulsa District Regulatory Branch for a Section 404 permit under the Clean Water Act and a Section 10 permit under the Rivers and Harbors Act.*

Comment B8: A few commenters noted that erosion is the most significant issue facing Eufaula Lake and they did not feel that the Draft EIS adequately addressed the issue. Arguments that it may be an issue beyond the control of the Corps were viewed as an inadequate response.

B8 Response: *Erosion impacts are discussed in the EIS in Section 3.3.4, Section 3.4, Section 4.3, and Section 4.4. These sections identify erosion as an important impact on water quality and soils and that it may result from additional residential development adjacent to the lake and from construction and operation of docks and boats on the lake. More information on water quality including modeling results that compare the potential effects of sedimentation for each alternative is located in Appendix D. A number of mitigation measures to address impacts from erosion are proposed in Section 4.3.9 and Section 4.4.9. The most significant mitigation measure for the control of erosion is the proposed vegetation buffer, which would be implemented immediately under the Preferred Alternative. Unfortunately, USACE is limited in its ability to apply mitigation measures to developments on private lands adjacent to government lands. Sediment, erosion, stormwater runoff, application of pesticides and fertilizers on adjacent private lands can all impact the water quality of the lake. Maintenance of vegetated buffers along the lakeshore is the best protection that USACE can provide on government lands for the protection of lake water quality.*

Category C: Recreation/Number of boats and boat docks

A number of people commented on issues related to recreation and most commonly on the number of boats and boat docks. Some people felt that there are currently too many boat docks on the lake, others felt that there could be many more, while others felt that the current levels are about right.

Comment C1: Several people expressed concerns that there are already too many boat docks on the lake and particularly at certain times and in certain places, such as Longtown Arm, the lake is overcrowded.

C1 Response: *Perception of congestion is very personal and comments on the Draft EIS included responses from people who feel that the lake is too crowded now, to those who feel that there is room for many more boats. Using accepted standards for boat density, the EIS concludes that while Alternatives 2, 3, and 4 may ultimately exceed a reasonable level of use of the lake, the addition of a marina on Longtown Arm would not be a significant impact.*

Most likely current boating use patterns will continue to persist. So, regardless of the boating origination source (e.g. marina, private boat dock, or public boat ramp) or location, during heavy use periods, approximately 75 percent of the boats on the water will end up recreating in lake areas 3 and 4. Also, at current use rates, one can reasonably expect that 26 percent of the boats from marina slips will be on the water during heavy use periods.

Comment C2: Low lake levels were identified as a factor that adversely impacts recreation and several people suggested that the lake levels should be maintained to support recreational activities. One commenter suggested that a lake level of 587 feet should be maintained for visitor safety. Another commenter notes that shorelines allocated for boat docks should be in areas with deep water so that docks don't end up on the sand in August.

C2 Response: *Under the current drought conditions, the water levels in the lake have been abnormally low for an extended period of time, which has resulted in some docks being left dry late in the season. As a reservoir, water level fluctuations may occur due to retention of flood waters to protect downstream resources and people or water releases to generate hydropower or provide downstream flows for navigation and resource protection. Eufaula Lake is one unit of several on the Arkansas River Basin and is designed to fluctuate up to 12 feet depending on current conditions. While water level fluctuations can affect recreational activities, lake level management is not within the scope of the SMP or MP revisions under consideration.*

The normal pool elevation for the lake is 585 feet above mean sea level. Dock suitability is linked to this elevation. Because many of areas of the lakeshore are relatively flat, a lake level that was only 2 feet higher (e.g. 587 feet) would result in many areas being permanently flooded; some areas could be flooded several hundred feet from the current shoreline, which would result in some people being cut off from their existing docks. The revised SMP does consider dock suitability in the allocation of Limited Development shorelines and dock suitability, which includes consideration of water depth, will be considered in the approval of new dock permits.

Comment C3: Some commenters felt that the Final EIS needs to better define what is meant by "grandfathering" dock permits, including whether such grandfathered permits would be renewable and/or transferrable.

C3 Response: *As described in Section 2.4.4.1, grandfathered permits would be renewable as long as the facilities meet the criteria set forth in 36 CFR 327.30(h). All shoreline use permits are non-transferrable. Change of ownership would be allowed on grandfathered docks if it is in compliance with 36 CFR 327.30.*

Comment C4: Several people expressed concern that proposed Alternatives 3 and 4 would result in too many boats on the lake and exceed the carrying capacity of the lake resulting in unsafe conditions.

C4 Response: Section 5 of the Recreation Study in Appendix E of the EIS includes the analysis on water-based recreation, which concludes that the total boat capacity for Eufaula Lake is 14,200 boats and the Boats At One Time (BAOT) capacity is 3,500 boats. Once these capacities are exceeded the likelihood of increased safety issues will probably be proportionate. The EIS findings in Section 4.7 conclude that all of the alternatives with the exception of Alternative 1 would eventually exceed the recommended boat densities for the lake.

Comment C5: A few commenters felt that the need for a new marina on the lake was not supported by the analysis in the Draft EIS. They also requested clarification of the difference between the terms “public marina”, “commercial marina”, and “community marina” as used in the Draft EIS.

C5 Response: The need for a new marina on the lake is linked to the planned development at Carlton Landing. The addition of approximately 2,500 new homes in a concentrated location over the next 25 years would support the need for a marina at that location. This marina request would need to comply with the Recreation outgrant policy.

All marinas on Eufaula Lake are in private ownership. They are authorized by USACE to operate a commercial operation on a public lake. The wording in the Final EIS has been clarified to describe these marinas as commercial operations authorized by a lease.

Comment C6: Some commenters expressed the view that more docks and boats could be allowed on the lake than currently exist without resulting in adverse impacts. For example: “As for overcrowding of boats, I have never felt like there were too many on the lake at any given time. Again, this is a recreational area and you anticipate a higher volume of watercraft at differing times of the day or the season. There has always seemed to be plenty of room for the fisherman, the wake boarders, the personal water craft and boaters alike.”

C6 Response: Perception of congestion is very personal and comments on the Draft EIS included responses from people who feel that the lake is too crowded now to those who feel that there is room for many more boats (see Response C1). The EIS findings in Section 4.7 conclude that all of the alternatives with the exception of Alternative 1 would eventually exceed the recommended boat densities for the lake (see Response C4), but that there is room for additional boat docks and boats in the reasonably foreseeable future (e.g. a 20 year planning horizon).

Comment C7: A commenter stated: “I believe that new private docks should be allowed with permitting and architectural review in areas that already contain docks and have a solid history of residential development and infrastructure.”

C7 Response: New docks would be permitted in shoreline areas allocated as Limited Development and where the shoreline characteristics of water depth, distance from shoreline, and wave exposure are suitable for docks. Docks are permitted with an approved shoreline use permit and applications are reviewed on a case-by-case basis. Permit application review includes a review of the structural features of the proposed dock. Most of the proposed Limited Development areas in the revised SMP are located in areas that have been allocated as Limited Development in the previous SMP.

Comment C8: Several commenters expressed concern that if the number of boat slips or docks on the lake is limited, approval of a 300 slip marina at Carlton Landing would unfairly apportion a large number of slips to one developer.

C8 Response: *A marina, which is located on a shoreline allocated to Public Recreation would not affect or be “counted against” the total number of private boat docks that could be constructed along Limited Development shorelines. Boat docks are not equivalent to boat slips. The number of allowable boat docks is related to the miles of shoreline allocated as Limited Development rather than an absolute number. The number of boat docks that may be constructed is constrained by the regulations, which require that docks be placed a minimum of 50 feet apart and that no more than 50 percent of the shoreline allocated as Limited Development may be developed with docks. The number of docks may be further constrained by the regulation that limits the length of a dock to no more than 1/3 of the distance to the opposite shore, which often limits the number of docks in small coves. Many shorelines are also unsuitable for docks in that they may be too shallow for too great of a distance from shore or they may be too exposed to wind action that creates large waves that break docks apart in a few years. All of these factors limit the number of docks that can potentially be built along the lakeshore, so that the actual number would be less than the theoretical maximum based only on shoreline length. The theoretical maximum number of boat docks reported in the EIS is a hypothetical number based on shoreline miles that is only used for comparative purposes between the alternatives.*

Comment C9: A commenter stated: “I don't anticipate a problem with another marina being added on the lake. [See C16] I would just ask that everyone be mindful of how many areas get designated as no wake zones because in the last 5 years around our area alone some of the best skiing/wake boarding water has been designated "no wake" because of new boat docks and the cove by Carlton Landing is one of those "best" areas.”

C9 Response: *USACE and the State of Oklahoma Department of Public Safety continually monitor navigational safety on the lake and may identify the need for no wake zones through that monitoring process.*

Comment C10: Some people commented that they did not want any changes to the current restrictions on dock size and spacing.

C10 Response: *The current SMP requires a minimum of 50 feet between docks and limits the amount of shoreline that can be developed with docks to no more than 50 percent of the total shoreline allocated as Limited Development. The regulations also limit the length of a dock to no more than 1/3 of the distance to the opposite shore. The Preferred Alternative would increase the minimum spacing to 75 feet between docks.*

Comment C11: Some commenters suggested that USACE should encourage the use of community docks and one person even suggested that new housing developments should be required to only provide community docks, prohibiting individual docks associated with subdivisions.

C11 Response: *The SMP encourages the use of multi-slip docks to insure the availability of shoreline space for more docks and to include non-adjacent landowners in the benefits of shoreline use. Multi-slip docks are subject to the same shoreline allocation requirements and fees as stipulated for individual facilities. The revised SMP will no longer refer to “community docks” but will still allow docks with up to 20 slips. However, the choice of whether to provide a large multi-slip dock or to allow a smaller number of individual lot owners to construct individual docks is left to the developer.*

Comment C12: The following comment is related to boat density calculations described in the Recreation Study Report in Appendix E of the Draft EIS:

“Section 8, page 8-1. The data taken for boat density was for peak weekends and does not justify the capacity limits as the majority of the over capacity resulted from transient boats just there for the weekend. I drive by Lake Eufaula on my 7.4 mile journey to town, and 40% of the time there are no boats to be seen on the water.

The correlation between the number of resident boats and accident incidents is not established, and 15 boats per acre is an arbitrary number. Also the number of accidents was not shown to be correlated to non-weekend periods, nor was it correlated to the demographics of Lake Eufaula slip owners who are markedly senior (average 22.9 years recreating on the Lake) and likely to operate their water craft more responsibly.

Many residents with boats avoid going on the lake on weekends by wisely choosing other pursuits on those days (including going to town.) Unless the Corps intends to stop boat launching on busy weekends, over capacity will occur in spite of the imposed limits on boat docks.”

C12 Response: *This comment references the conclusions of the Recreation Study Report in Appendix E of the EIS. Sections 2 and 5 of that report provide a more complete description of the methodology used to gather data and conduct the analysis. For the purposes of an environmental impact statement it is important to look at the peak weekend use in order to properly evaluate the maximum potential impacts. Therefore, the study was conducted correctly.*

With respect to the comment concerning boat owner demographics on the lake and their correlation to boats and boating accidents, the commenter is correct concerning the fact the many of the boat operators on the lake would fit the “older” demographic. Our survey results indicate that the average number of years that survey respondents have boated on the lake is 22.6 years. However, the number of years of operating a boat does not necessarily equate to a lower incidence of boating accidents. Typically it is true that less experienced boaters are more likely to be involved in a boating accident, but the data specific to Eufaula Lake is not detailed enough to make this conclusion. Although our data does show that the average age of recreation-related fatality victims on Lake Eufaula is 38 years old. Also, our data shows that 59 percent of the recreation-related fatalities on Eufaula Lake are boating related; whereas, the national average is 42 percent on USACE-managed lakes. Based on this data, the correlation between age, boaters, accidents and fatalities is well established when compared to other USACE lakes across the nation.

Comment C13: The following comment is related to the Recreation Study Report in Appendix E of the Draft EIS: “Why was the 2012 Eufaula lake survey of recreational users conducted by Oklahoma State University not cited in Section 9?”

C13 Response: *The OSU study was not completed by the time the Draft EIS was published. Our recreation specialists have subsequently reviewed the study and have not found that it provides supplemental information that would contradict or add to the analysis; therefore, it has not been referenced.*

Comment C14: A commenter stated: “Please reconsider your discriminatory rules against mooring buoys versus boat docks, or at the very least, grandfather in the rights of the people with mooring buoy permits that were in place in 2000 as part of this process.”

C14 Response: *Mooring buoys are authorized by a letter permit only at no cost to the applicant. Additionally, there is no date of expiration for mooring buoys under the letter-permit format. Mooring buoys may remain in the approved location until such a time as an application to place a floating facility on that site is made. In that case, the floating facility will take precedence and the mooring buoy must be moved to another suitable location or be removed from the lake. All existing mooring buoys on the lake that are authorized by Shoreline Use Permit may remain until the expiration of the permit. Upon expiration of the permit, a letter of authorization will be issued and the new conditions will be in effect. The Preferred Alternative would not change these practices.*

Comment C15: A commenter stated: “Please revise your regulations to clarify that the 500-foot access language is only to be used in highly unusual circumstances as an “exception” and that in most instances the boat dock and its respective walkway must be placed on, or as near to the applicant’s property line as possible.” The commenter is concerned that private floating facilities could be placed on waterfront directly in front of their residence simply because it is within 500 feet of someone else’s access point.

C15 Response: *The Preferred Alternative would include revisions to the SMP to change the 500-foot access requirement in the new shoreline management plan. The Preferred Alternative proposes to require access to be measured from the center of the lot to the closest point on the shoreline. A dock could be approved there or within 125 feet either side of that location, if something restricts placement of the dock at the center point. This is described in Section 2.4.3.4 of the Final EIS.*

Comment C16: A commenter stated: “There definitely needs to be a public marina added to the lake south of Highway 9.” [See C9]

C16 Response: *Several comments were received both in support of and in opposition to a new marina on Eufaula Lake. It is unclear from this comment whether it is in reference to the proposed marina at Carlton Landing or whether the commenter feels that there is a need for a new marina in Lake Area 6.*

Category D: Carlton Landing

Many people expressed either support for or opposition to the proposed rezone and lease at Carlton Landing. Specific concerns or viewpoints expressed included the following comments.

Comment D1: Many people expressed the concern that the purpose of the EIS and the revisions to the SMP and MP are solely to accommodate the Carlton Landing proposal. Several people felt that the Carlton Landing proposal should be evaluated separately from the SMP and MP revisions.

D1 Response: *The Corps of Engineers Tulsa District has needed to update the Eufaula Lake Shoreline Management Plan (SMP) since 2003. Because the environmental impacts of shoreline zoning and lakeshore land allocations have not been assessed under the National Environmental Policy Act (NEPA) since the mid-1970s, the Tulsa District chose not to revise the SMP until an environmental impact evaluation could be completed. Funds did not become available for this work until 2011. The EIS is not being conducted to specifically to accommodate Carlton Landing. During scoping for the EIS in the summer of 2011, USACE requested proposals for specific rezones. The Carlton Landing proposal was one the most complex of these. Due to the size of the proposal and the complexity of the issues related to it, the Carlton Landing proposal may appear to have received extra attention in the analysis.*

Comment D2: Many people expressed concern that approval of the Carlton Landing proposal would restrict public access and use of that part of the lake and shoreline.

D2 Response: *The Carlton Landing proposal includes a change in shoreline allocation under the SMP from Protected to Public Recreation. The land use classification of 258 acres would remain High Density Recreation as it currently is classified under the MP and an additional 43 acres would change from Low Density Recreation to High Density Recreation for a total of 301 acres. If approved, this land would be leased to the Carlton Landing developers for the construction of a variety of public recreational facilities. It would be a condition of the lease that the area remains open to public access and use. The addition of new public facilities may result in some changes in how that portion of the lake is managed relative to past conditions; for example, no wake zones around the proposed marina would be a prudent safety measure that may be applied.*

Comment D3: Many people expressed concern that adding a new marina at Carlton Landing would add to overcrowding of Longtown Arm and degrade the recreational experience in that part of the lake. This concern is similar to Comment C1, but more specifically focused on the proposal at Carlton Landing.

D3 Response: *There are a number of metrics that provide insight into the potential for boat congestion. One of these measures is "Boats at One Time" or BAOT. As described in section 4.7 of the EIS, BAOT is the total number of boats on the water surface, actively being used for recreational purposes, at any given time. This number is less than the total number of boats that can be moored or stored at an approved moorage facility, such as a marina or boat dock, plus the total number of boats that can be placed on the water surface using an approved boat ramp or launch facility. The number of boats on the water actively being used for recreational purposes would be those that would contribute to a perception of congestion. The addition of a marina at Carlton Landing would likely only generate an additional 66 to 72 BAOT. Compared to the optimal BAOT for the lake of 3,500 BAOT, a new marina would only generate about 2 percent of the optimal BAOT. As described in the EIS, the existing BAOT is 2,174; therefore, there would still be capacity.*

The Recreation Study Report in Appendix E of the EIS provides information about boat use and capacity by lake area. Longtown Arm is located in Lake Area 3, which is the highest use portion of the lake as it also includes the Eufaula and Belle Starr areas. Based on information included in Appendix E of the EIS, the Recreation Study Report, the optimal BAOT for Area 3 would be 985. The existing BAOT for this area is approximately 835. Therefore, the addition of approximately 66 to 72 BAOT would not exceed the recommended level in the short term. Over time, additional private docks would be expected to be constructed within Lake Area 3 which would also contribute significantly to the number of boats on the water at one time. Another way to view the potential effect is to consider that a 300 slip marina would be equivalent to 90 average private docks, which is the number of docks that could be accommodated along approximately 3 miles of suitable shoreline. The Carlton Landing proposal would limit construction of docks along almost 6 miles of shoreline by focusing boat moorage at a single marina.

Comment D4: Many people expressed support for or opposition to the Carlton Landing proposal. Approximately 13 respondents expressed opposition to Carlton Landing specifically, while 8 commenters expressed support for Carlton Landing.

Those in opposition provided the following reasons:

- no reason given (2)

- if developed for private purposes and then later abandoned, would overburden Corps
- no special considerations should be given to private developer of Carlton Landing (3)
- Corps land should be open to all and should not be privatized (3)
- “changing rules” for Carlton Landing would affect the ability of others to develop (exceed capacity of lake for new docks)
- environmental impacts too great and should not be approved for economic gain of private individuals (3)

Those in support provided the following reasons:

- new facilities would offer tourist amenities (vacation lodging) and destinations (nature center)
- no objection to proposal, but with caveats – mitigation needed for impacts, marina needs extra study on issue of size, approval should not set precedent for clearing standing timber in other parts of lake
- economic benefits from construction jobs and new residents, new mix of resort amenities not currently available (5)
- can’t deny marina because there are other marinas on lake

D4 Response: *Approval of the rezone and lease for Carlton Landing would not privatize that portion of the shoreline. The facilities proposed would be required to be open to the public. See also response to D2. Potential environmental impacts are described in the EIS and mitigation measures will be applied to avoid and minimize those impacts as much as possible. Development of a marina at Carlton Landing would not affect the potential for other landowners to construct private docks; see response to C8.*

Home construction does generate jobs and provide for increases in local tax revenues. However, the proposed growth at Carlton Landing is within the projected growth rates for the region that have been observed historically and which are projected to occur in the near future; therefore, there would not be a significant effect on the local economy from this particular development. See response to E4.

Category E: Economic Effects:

Discussions of economic effects were most often linked to support or opposition to a specific alternative or proposal. Specific concerns are detailed below.

Comment E1: Some people expressed concern that a new marina at Carlton Landing would negatively affect existing marina operators.

E1 Response: *According to the data presented in the Recreation Study Report in Appendix E of the EIS, the existing marinas are currently about 85 percent occupied. This is a relatively high rate for marina occupancy and may actually be a bit lower than normal due to the recent recession. Slips in a marina at Carlton Landing would be expected to be most attractive to residents of the Carlton Landing development and secondarily to residents in the nearby region. At full build out of Carlton Landing it might be expected that the slips in the proposed marina would be entirely occupied by boats owned by residents of the development. With a projected 2,500 home lots associated with a marina with only 300 slips, it may be expected that over time, some Carlton Landing residents may look to other marinas for*

opportunities to moor boats. In the short term it is possible that some local residents who currently moor boats at existing marinas may find the Carlton Landing location to be an option.

Comment E2: Some people expressed concern that community docks could impact existing marina operators.

E2 Response: According to the data presented in the Recreation Study Report in Appendix E of the EIS, the existing marinas are currently about 85 percent occupied. This is a relatively high rate for marina occupancy and may actually be a bit lower than normal due to the recent recession. Multi-slip docks provide limited opportunities for individuals or developers to construct docks with up to 20 slips to insure the availability of shoreline space for more docks and to include non-adjacent landowners in the benefits of shoreline use. Multi-slip docks may reduce overall environmental impacts by reducing the number of docks that are constructed.

Comment E3: Some people expressed concern that any proposals that would change Limited Development shorelines to Protected shorelines would negatively affect property values with corresponding impacts on individuals and the local economy. One commenter specifically identified any change that would reduce the number of Limited Development shoreline miles below the current level of 271 miles as an action that would have significant adverse economic impacts that would not be offset by improvements in the environment.

E3 Response: Private dock permits are approved on a case-by-case basis and are subject to the regulations found in 36 CFR 327.30 and the SMP. A shoreline allocation of "Limited Development" does not guarantee an adjacent landowner the ability to construct a private dock. The property values of lots that are adjacent to government lands around the lakeshore are influenced by a wide variety of factors including views of the water, beach conditions, proximity to highways and/or towns, and the condition of neighboring properties. The alternatives evaluated in the Draft EIS depicted a range of scenarios with very little shoreline allocated to Limited Development to one with a significant increase in the amount of Limited Development shoreline. The Preferred Alternative described in the Final EIS maintains a ratio of Limited Development to Protected shorelines that is similar to the existing condition. Minor changes in shoreline allocations in specific locations are unlikely to significantly affect property values when averaged over the lake.

Comment E4: Several commenters stated that Carlton Landing would provide economic benefits from construction jobs, increased property values and local tax base that would support local schools and roads. Carlton Landing would provide a mix of resort amenities not currently available at Eufaula Lake potentially resulting in greater tourism benefits.

E4 Response: Carlton Landing proposes to construct approximately 2,500 homes over the next 30 years. If demand is constant, this would be the equivalent of approximately 80 homes per year. The National Association of Home Builders estimated in 2008 that construction of an average home generates about 3 jobs (<http://www.nahb.org/generic.aspx?genericContentID=103543>). Therefore, it could be expected that development at Carlton Landing could generate 240 jobs each year with an associated effect on local tax revenues. The resort and lake home amenities proposed at Carlton Landing could provide additional benefits to the local economy by attracting additional tourism and recreational users to the area. However, these effects are expected to be within the average growth rates observed in the past and would not necessarily represent a significant effect of the development.

Category F: Fish and Wildlife

Comment F1: Several people expressed concern that it would be important to protect natural areas for wildlife and for hunting and fishing opportunities in the revised SMP and MP. In particular, commenters noted that decisions should be focused on decreasing (or avoiding increasing) habit fragmentation, and also trying to preserve some travel corridors for fish and wildlife. Alternatives 1 and 2 were viewed as accomplishing these goals.

F1 Response: *Fish and wildlife habitat protection are important goals of USACE management of government lands around Eufaula Lake. Almost 30,000 acres are leased to ODWC or otherwise specifically managed for fish and wildlife habitat. In addition, USACE regulates vegetation modification on lakeshores through the review and approval of shoreline use permits for mowing and other vegetation modification. The preferred alternative would apply a 45-foot vegetated buffer along the shoreline in areas allocated as Limited Development. Buffer strips are a linear band of permanent vegetation adjacent to an aquatic ecosystem intended to provide water quality benefits but they may also provide habitat for a variety of plants and animals if sufficient land area is retained to meet the life history needs of those species. Buffer strips may also function as movement corridors if they provide suitable connections between larger blocks of habitat.*

Comment F2: Several people noted that construction of a marina and other facilities at Carlton Landing would require the removal of trees that could result in impacts on wildlife habitat. Some commenters noted that a decision to allow Carlton Landing to construct facilities on government lands would appear to be inconsistent with other policies that prohibit tree removal.

F2 Response: *As noted in Table 2-1 of the EIS, modification of vegetation by private individuals is generally not allowed in the Public Recreation shoreline allocation; however, such modifications may be considered and approved under the terms of a lease agreement after consideration of environmental and physical effects of such actions (Section 5(e)(2) of ER 1130-2-406). If approved, construction of public shoreline facilities and a marina at Carlton Landing would be conducted under the terms of a lease. Potential impacts to wildlife habitat would be required to be mitigated as part of the lease terms.*

Comment F3: Some people suggested that water level fluctuations in the lake should be restricted to less than one foot to encourage the growth of aquatic vegetation with associated benefits for the environment.

F3 Response: *As a reservoir, water level fluctuations may occur due to retention of flood waters to protect downstream resources and people or water releases to generate hydropower or provide downstream flows for navigation and resource protection. Eufaula Lake is one unit of several on the Arkansas River Basin and is designed to fluctuate up to 12 feet depending on current conditions. While water level fluctuations can adversely affect aquatic vegetation in nearshore areas, lake level management is not within the scope of the SMP or MP revisions under consideration.*

Comment F4: Several commenters expressed opposition to the proposal to remove standing timber in the lake at Carlton Landing. Some identified that this action would adversely impact fish habitat while others expressed concern that it would set a precedent for lakefront property owners in other parts of the lake to request permission for similar removal projects.

F4 Response: Additional mitigation measures have been added to Section 4.2.8 of the Final EIS to address potential impacts from the removal of standing timber. Those measures focus on timber removal practices and compensation for the loss of aquatic habitat structure. The measures increase the likelihood that the removal of existing standing timber will not adversely affect riparian, shoreline, and aquatic habitats and will not adversely impact Eufaula Lake’s fisheries.

- Selective timber removal – creation of access lanes in Areas B, K, D, and E
- Use barge-based tree removal operations rather than land-based operations
- Establish speed and wake limits to protect remaining standing timber and other aquatic habitat structures
- Plant native aquatic vegetation along the shoreline
- Install shallow water nest boxes and nest platforms for birds
- Install natural or artificial submerged aquatic habitat structures for fish

Comment F5: A commenter stated: “I believe fishing and water sports should be allowed on all areas of the lake with supervision provided by the lake patrol.”

F5 Response: Fishing and water sports are currently allowed on all areas of the lake where it is safe to conduct such activities. Enforcement is provided by the Marine Division of the Oklahoma Highway Patrol.

Comment F6: A commenter stated: “I would like to see the approval to remove all cedar trees on Corps land.”

F6 Response: As described in Section 3.1.7 of the EIS, “while not an exotic, the rapid westward spread of eastern red-cedar into previously uninhabited ecosystems has raised concerns with habitat managers in the state. This encroachment is evident within the Eufaula Lake study area as red-cedar was observed within crosstimbers, oak-hickory forest, oak-pine forest, and prairie habitat transects, with it being dominant in oak-pine and crosstimbers habitats.” In section 4.1.2.1 of the EIS, the spread of eastern red cedar is a symptom of changed land management practices that are resulting in the conversion of natural prairies to more forested habitat types. Tree removal may be approved on a case-by-case basis with the approval of a shoreline use permit.

Category G: Water Quality

In addition to the responses to specific water quality concerns, the reader is also directed to the supplemental information on the value of vegetated buffers in protecting water quality found at the end of the Category A responses section.

Comment G1: A few people identified water quality as an important element in attracting development to the lake and supporting the local economy, although development also has the potential to negatively impact water quality. Some suggested potential mitigation measures such as the use of hay bales or plastic to reduce the potential impacts of development on water quality.

G1 Response: Section 4.3.8 of the EIS provides an extensive list of potential mitigation measures to protect water quality at Eufaula Lake. Unfortunately, USACE is limited in its ability to apply mitigation

measures to developments on private lands adjacent to government lands. Sediment, erosion, stormwater runoff, application of pesticides and fertilizers on adjacent private lands can all impact the water quality of the lake. Maintenance of vegetated buffers along the lakeshore is the best protection that USACE can provide on government lands for the protection of lake water quality.

Comment G2: Blue green algae was identified as a new problem at the lake that is potentially caused by low lake levels.

G2 Response: *As described in Section 4.3.3.2 of the EIS, algal blooms are caused by an increase in nutrients in the water that results in an overgrowth of algae. There may be a number of different factors that are contributing to this increase in nutrients. Low lake levels may be resulting in areas of shallower water that allow light to reach the bottom of the water column and also contribute to algae growth; however, Eufaula Lake is a generally shallow lake overall and it is unlikely that low water levels are a significant contributor to the increase in blue-green algal blooms. USACE will continue to monitor recreational beaches for the presence of blue green algae at levels that may pose health risks from water contact.*

Comment G3: A commenter stated: “The overwhelming environmental impact on Lake Eufaula is the pollution delivered daily by the three tributaries which bring tons of polluting silt into the lake without any intervention or action by the Corps. Reference 1. lists no past, current, or future studies or projects which indicate any level of concern for Lake Eufaula’s demise. Currently, there are no facilities for protection of the lake from sediment. There is no plan for remedial solutions such as commercial relocation or mining (unconfirmed reports that as much as 250,000 cubic yards/year of silt is being removed from the Arkansas River north of Muskogee) which might help to preserve or extend Eufaula lake’s future. Worse, there is no Corps management or legislative will to finance the mitigation of the ongoing threat.

None of the proposed five alternatives in Reference 1. make any improvement against this pollution of Eufaula reservoir. One might be tempted to refer the Corps’ enthusiastic DEIS activity as akin to Nero’s fiddling while Rome was burning.

Since our federal government now controls the quality of the air that we breathe, the government could regulate the acceptable erosion content of the rivers which are destroying Eufaula Reservoir. To do otherwise dooms our lake to that of a silt collector for the McCellan-Kerr navigation system. To shrug ones shoulders and say that there is nothing that can be done or that the Corps lacks the authority to address these issues is unacceptable.

Once the reservoir is full of silt, the turbines will cease to turn and the Canadian river flood waters will overwhelm the Arkansas River navigation facilities and downstream communities.”

G3 Response: *The SMP and MP revisions would only affect activities around the edge of Eufaula Lake and would not influence conditions upstream in the watershed. None of the proposed alternatives evaluated in the EIS would affect upstream conditions; therefore, the modeling and analysis focuses on non-point pollution sources around the lakeshore that may be affected by the action alternatives. Actions that may address pollutant inputs from upstream tributaries are beyond the scope of this EIS.*

Appendix D of the EIS presents the detailed results of the modeling including a comparison of the total predicted inputs under each alternative that include the inputs from the upstream tributaries. Please also see the response to Comment B8.

Comment G4: A commenter stated: “One great concern is the impact all the house boats are having on our water quality of the lake. I know for fact that house boat owners are dumping their raw sewage into the water. With this going on plus the sewage from upstream cities and the local septic that run into the rivers and into the lake the water is being impacted greatly.”

G4 Response: *State law prohibits vessels from discharging any sewage, treated or untreated, into the fresh waters of Oklahoma. All vessels with installed toilet facilities are required to have an operable marina sanitation device on board. All devices must be U.S. Coast Guard-certified. More information on these requirements is included in the Handbook of Oklahoma Boating Laws and Responsibilities, available here: <http://www.boat-ed.com/ok/handbook/toc.htm>.*

In regards to concerns about sewage from upstream cities, wastewater is treated before being discharged to rivers per state and federal regulations. Therefore, wastewater discharges into rivers upstream of Eufaula Lake do not have a significant impact on water quality. In addition, the SMP and MP revisions would only affect activities around the edge of Eufaula Lake and would not influence conditions upstream in the watershed. None of the proposed alternatives evaluated in the EIS would affect upstream conditions; therefore, the modeling and analysis focuses on non-point pollution sources around the lakeshore that may be affected by the action alternatives. Actions that may address pollutant inputs from upstream tributaries are beyond the scope of this EIS.

Septic systems that are improperly operated and/or maintained may contribute to surface water pollution. The EIS discusses septic systems in Section 3.3.4.6. The water quality modeling includes the potential for residential development to contribute to water quality issues.

Category H: Preference for a Specific Alternative

Commenters expressed preferences for specific alternatives ranging from No Action through Alternative 4. Many people provided specific reasons for their support or opposition for particular alternatives, which are summarized below. These comments are noted and were considered in the development of the preferred alternative. Individual responses are not provided as they overlap with topics addressed under other comment categories.

Preference for the No Action Alternative:

- This alternative is a compromise between too much development and too little
- This alternative doesn't benefit or harm any group of landowners unfairly

Preference for Alternative 1:

- There are too many boats and boat docks currently on the lake
- Alternative provides the greatest level of protection for water quality
- Many existing boat docks are in disrepair and USACE does not have staff to adequately inspect existing docks or enforce existing permits; should not permit more docks without adequate staff
- The number of new boat docks that would allowed under Alternative 1 would be sufficient
- Alternative 1 provides low levels of development and protects fish and wildlife habitat and fishing and recreational opportunities

- Alternative 1 has less environmental impact than other alternatives

Opposition to Alternative 1:

- Areas that are already developed should stay zoned as Limited Development
- Protection of the natural environment and wildlife should occur in areas that are not yet developed
- Alternative 1 could have a negative impact on the local economy
- Alternative 1 would rezone the individual's property to Protected and mowing would not be permitted
- Alternative 1 would hinder small community development around the lake

Preference for Alternative 2:

- Alternative 2 provides low levels of development and protects fish and wildlife habitat and fishing and recreational opportunities
- Alternative 2 has less environmental impact than other alternatives
- There are too many boats and boat docks currently on the lake
- Alternative 2 has less environmental impact than other alternatives

Opposition to Alternative 2:

- Alternative 2 could have a negative impact on the local economy

Preference for Alternative 3:

- Alternative 3 would allow for additional development which would improve the local economy
- Additional development from Alternative 3 would provide new tax revenues that would support the local schools

Opposition to Alternative 3:

- Opposed to changing Protected shorelines to Limited Development
- Lake is overcrowded with too many docks and boats currently

Preference for Alternative 4:

- Alternative 4 would allow for additional development which would improve the local economy and create jobs
- Additional development from Alternative 4 would provide new tax revenues that would support the local schools
- Provides greatest support for new recreational development
- Approximately 30 children at the Carlton Landing Academy submitted pictures and notes in support of the proposed nature center at Carlton Landing, which is among the facilities proposed for development on government lands under Alternative 4.
- Support for Alternative 4 was often linked with support for the Carlton Landing proposal

Opposition to Alternative 4:

- Opposed to changing Protected shorelines to Limited Development

- Lake is overcrowded with too many docks and boats currently
- The conversion of all unencumbered, protected shoreline areas to limited development, regardless of the unsuitability of some of that shoreline for docks, is unacceptable and should not happen.
- Changing the MP Land Use Classification of thousands of acres of government land (5,070 acres deemed as Environmentally Sensitive, etc; 9,209 classified for low density recreation {protected}) to low density, limited development is unacceptable and should not happen.
- There is an adverse effect on the lake in all categories under Alternative 4.

Category I: Individual Zoning Requests

Several people expressed support for specific individual zoning requests. In addition to the zoning requests described in the Draft EIS, three additional zoning requests were received during the comment period. One of those requests, Zoning Request #11, Stone Ridge Estates, was originally submitted during scoping but was mistakenly overlooked in the development of the Draft EIS. These three zoning requests are now described and analyzed in the Final EIS in Section 2.3.4 and under the appropriate Alternatives. Zoning Request #11 would be considered under the Preferred Alternative and Alternative 4. Zoning Request #12, Breckenridge Estates, is considered under Alternative 4. Zoning Request #13, Fame Creek, is considered under the Preferred Alternative and Alternatives 3 and 4.

Comment I1: Stone Ridge Estates Zoning Request #11 – requested during scoping and mistakenly overlooked.

I1 Response: *The Preferred Alternative would partially approve this zoning request. This area is currently zoned as Protected shoreline. This request is to change over 2.7 miles of Protected shoreline area to Limited Development. This request would only be partially approved under the Preferred Alternative as much of the shoreline included in the request is not suitable for docks. In addition, a portion of the shoreline included in the request is adjacent to the bridge abutment for Highway 9. These areas would not be rezoned under the Preferred Alternative and only the shoreline fronting the requestor's property would be changed.*

Comment I2: Breckenridge Estates Zoning Request #12 – new request

I2 Response: *The Preferred Alternative would not approve this zoning request because the proposed dock location is adjacent to US Highway 69. Since the shoreline management program begun it has been a long standing policy to not approve docks adjacent to major highways. 36 CFR 327.30 specifically requires USACE to protect the shoreline for public enjoyment, which includes view corridors. USACE has always interpreted that to mean that docks should not be allowed along major highways. As described in Section 4.5 of the EIS, scenic vistas from bridges and causeways have been identified by USACE 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 are considered to be priority visual elements for Eufaula Lake.*

Comment I3: Fame Creek Zoning Request #13 – new request

I3 Response: *The Preferred Alternative would partially approve this zoning request in areas that are considered suitable for docks.*

Comment I4: Falcon Tree Zoning Request #8 – support for Zoning Request #8. One commenter lists a number of potential mitigation measures to reduce erosion including a request to rock line ditches that run from the government boundary to the water’s edge.

***I4 Response:** Comment noted. The Preferred Alternative would approve Zoning Request #8. The commenter’s suggested mitigation measures would be considered at the time of application for a shoreline use permit.*

Comment I5: Support for Lake Eufaula Association’s Zoning Request #3.

***I5 Response:** Comment noted. The Preferred Alternative would approve Zoning Request #3.*

Comment I6: Support for zoning requests #2 through 10.

***I6 Response:** Comment noted. The Preferred Alternative would approve Zoning Requests #3 through #8 and #10. The Preferred Alternative would not approve Zoning Request #9 because the area is being considered for expansion of the City of Eufaula's shoreline lease for public recreation facilities. The Preferred Alternative also would not approve Zoning Request #2.*

Comment I7: Support for Zoning Request #9

***I7 Response:** Comment noted. The Preferred Alternative would not approve this zoning request because the area is being considered for expansion of the City of Eufaula's shoreline lease for public recreation facilities.*

Comment I8: Support for Zoning Request #1; request review of ODWC lease as hunting in the area endangers residents.

***I8 Response:** It is a felony to shoot at a residence in Oklahoma. Since the Protected areas of shoreline in this zoning request are encumbered with a license agreement with ODWC, this zoning request was eliminated from further consideration in the EIS.*

Category J: Additional Specific Comments:

Several topics only received one or two comments. A couple of people commented on the public notice for the public workshop and the public comment period. A couple of people commented on the idea that there should be a board to help USACE with development planning decisions.

Comment J1: A few people raised concerns about the public notice and the season of the year during which the public comment period was held with particular concern about potential conflicts with the holidays. One commenter felt that the comment period was too short. Another felt that a letter to the shoreline permit holders and an advertisement in a local paper were inadequate to reach property owners who may not live at the lake full time. One suggested that in the future USACE should gather email addresses on shoreline permit applications to allow for quick and cost effective notice of actions. A couple of commenters raised the concern that many people who use the lake only do so during the summer months and would have missed the notice for the public comment period.

J1 Response: Notice of availability of the Draft EIS was published in the Federal Register on December 7, 2012 and copies of the Draft EIS were mailed to the distribution list on November 28 and 29, 2012, which included almost 200 agency staff and individuals. In addition, a postcard notice of availability was mailed to the approximately 2,280 shoreline permit holders.

The public comment period was 46 days long and closed on January 22, 2013. Although the comment period bracketed the late December holidays, it did extend well into January and provided the public with an opportunity to review and comment on the Draft EIS. A public workshop was held on December 19, 2012 to allow the public to ask questions of USACE staff and to make written and verbal comments about potential alternatives and potential impacts. The workshop was advertised in the following papers on the dates shown:

- Tulsa World – December 5, 2012
- The Oklahoman – December 5, 2012
- The Muskogee Phoenix – December 6, 2012
- Eufaula Indian Journal – December 6, 2012
- McIntosh County Democrat – December 6, 2012
- Stigler News Sentinel – December 6, 2012
- Country Star – December 6, 2012
- McAlester News Sentinel – December 7, 2012

Two hundred and three people signed in at the public meeting. Eleven people spoke to a court reporter and 15 people submitted written comments at the meeting. Another approximately 118 written comment letter and emails were received during the public comment period. Seven letters were received from agencies, elected officials, and tribes.

Comment J2: Several commenters suggested that USACE create a citizen board to help review development proposals. Suggestions included that the board be comprised of 15 to 20 residents from all areas of Eufaula Lake to help prevent misinformation or miscommunication about how decisions are made. The commenters suggested that this board review all proposals for more than 2 new houses.

J2 Response: USACE does not make decisions about new residential developments on private lands adjacent to the government lands around the lake. Those decisions are made by the local county and city planning departments. USACE does not allow new residences to be constructed on government lands. Citizen review boards are commonly used by local jurisdictions to review development proposals and to help local governments make land use decisions. However, this type of review would not apply to USACE authority or decisions.

Comment J3: Some commenters questioned why the existing amount of Limited Development allocated shoreline is being reviewed as they felt the existing amount is adequate. Some questioned whether the current review was being conducted to benefit those who have requested a change for commercial reasons.

J3 Response: The Corps of Engineers Tulsa District has needed to update the Eufaula Lake Shoreline Management Plan (SMP) since 2003. Because the environmental impacts of shoreline zoning and lakeshore land allocations have not been assessed under the National Environmental Policy Act (NEPA) since the mid-1970s, the Tulsa District chose not to revise the SMP until an environmental impact

evaluation could be completed. Funds did not become available for this work until 2011. During scoping for the EIS in the summer of 2011, USACE requested proposals for specific rezones. As part of the SMP update process the Corps seeks public input as to any proposed changes. That gives the public opportunities to suggest changes in general. These suggestions can be to add or remove areas of Limited Development. Our decision is based on the comments received and the review of the proposed changes. The Corps goal is to balance public use, required lake operations and the environment in our final determination. The Preferred Alternative described in the Final EIS maintains a ratio of Limited Development to Protected shorelines that is similar to the existing condition.

Comment J4: One commenter wanted to know which 10 miles of private use would be reduced under Alternative 1.

***J4 Response:** Alternative 1 proposes taking the areas zoned for Limited Development back to what existed in the 1981 SMP. The areas of Limited Development under this alternative are shown in the EIS on Figures 2-26 through 2-32.*

Comment J5: Some commenters had questions on the timing and process for decision making on a preferred alternative. Questions included how and by whom the decision would be made and the concern that the decision be made in a timely fashion as it has adversely affected their ability to continue developing their subdivision.

***J5 Response:** Members of the Corps of Engineers, Tulsa District will develop on the preferred alternative based on the results of the analysis in the Draft EIS and the public comments and input on the alternatives described in the EIS. This will be done after the draft EIS comment period ends on January 22, 2013. The information gleaned from the comments will then be utilized in developing a preferred alternative. The Preferred Alternative is incorporated into this Final EIS, which is scheduled to be available for a 30-day public review period in April 2013. It is anticipated that if changes occur in the SMP, they would become effective in June 2013.*

Comment J6: A commenter stated: "At a minimum keep the limited development areas intact and keep the language for the limited development areas as currently defined in the SMP. If nothing else, any area already declared limited development under the SMP should remain that way due to all the property transactions that have occurred over the years under those conditions. Many people on the lake have purchased property, constructed homes, and installed docks based on the ability to do so knowing the shoreline was limited development. Those limited development areas should remain open to the existing language under the current SMP. The ability to apply and obtain the permits for docks and mowing should remain intact. Ideally it would be beneficial if the limited development areas remained in full effect with the ability to apply for permits during the EIS and only the other areas outside of the limited development became part of the study."

***J6 Response:** The Corps of Engineers Tulsa District has needed to update the Eufaula Lake Shoreline Management Plan (SMP) since 2003. Because the environmental impacts of shoreline zoning and lakeshore land allocations have not been assessed under the National Environmental Policy Act (NEPA) since the mid-1970s, the Tulsa District chose not to revise the SMP until an environmental impact evaluation could be completed. Funds did not become available for this work until 2011. It was important for study purposes that development be suspended for a time to allow a baseline for effects to be established. As part of the SMP update process the Corps seeks public input as to any proposed*

changes. That gives the public opportunities to suggest changes in general. These suggestions can be to add or remove areas of Limited Development. Our decision is based on the comments received and the review of the proposed changes. The Corps goal is to balance public use, required lake operations and the environment in our final determination. The Preferred Alternative described in the Final EIS maintains a ratio of Limited Development to Protected shorelines that is similar to the existing condition.

The most significant change proposed under the Preferred Alternative would be the implementation of vegetative buffer strips along the shoreline. Buffer strips are a linear band of permanent vegetation adjacent to an aquatic ecosystem intended to maintain or improve water quality by trapping and removing various nonpoint source pollutants (e.g., contaminants from herbicides and pesticides; nutrients from fertilizers; and sediment from upland soils) from both overland and shallow subsurface flow. Buffer strips may occur in a variety of forms, including herbaceous or grassy buffers, grassed waterways, or forested riparian buffer strips. A buffer strip may provide habitat for a variety of plants and animals if sufficient land area is retained to meet the life history needs of those species. Buffer strips may also function as movement corridors if they provide suitable connections between larger blocks of habitat. The evaluation in the Draft EIS indicated that a buffer would help water quality. However it is apparent that having a sliding buffer zone width based on natural settings such as suggested in the Draft EIS would be difficult to manage. Therefore, a minimum 45-foot buffer is included in the Preferred Alternative as the only one necessary to be utilized lake wide.

Comment J7: A commenter noted a desire for language in the revised SMP to allow private community docks to be more than 20 slips and multiple docks connected from a single point off shore. “I see this done on many lakes. Stone Ridge Estates has had a domestic water line engineered for 100 homes and there are ways to expand even beyond this point. The electrical service is also sufficient to support many homes with Canadian Valley recently investing to upgrade their infrastructure in the Eufaula area. To support my development, I added a 6-inch water line and built a pump station for the City of Eufaula and gave it to them. Eventually the infrastructure most lacking for me could be boat slips. Although there may be people who do not want a slip, there will come a time when I may not have enough slips even with the existing dock concept discussed. To allow for the best dock configuration and to maximize the benefit by providing the most access and benefit to the people within these developments, I would like to see consideration given to;

- Community docks with more than 20 slips.
- Various configurations best suited for the application.
- Multiple connected docks from a single bridge to shore.”

J7 Response: *The current SMP encourages the use of multi-slip docks and there are no proposals to change the current limit of 20 slips at this time. A large residential community may construct multiple docks with an approved shoreline use permit if the conditions for floating facilities are met at a specific location. Multi-slip docks are subject to the same shoreline allocation requirements and fees as stipulated for individual facilities. The revised SMP will no longer refer to “community docks” but will still allow docks with up to 20 slips. However, the choice of whether to provide a large multi-slip dock or to allow a smaller number of individual lot owners to construct individual docks is left to the developer.*

Comment J8: A commenter noted a desire for a placeholder for community docks on planned developments. “In an effort to again maximize the available slips for the most people within a development, language to allow a placeholder for community docks within planned subdivisions would be beneficial to the SMP. The current dock permit application lasts 1-year with a 1-year extension if the dock is not constructed. For all

practical purposes, the same timeframe applies to a single slip or a 20-slip community dock. For the installation of the first community dock within a development this process may be fine, however some subdivisions need multiple docks. Language for allowing community dock placeholders through filing the concept with the USACOE showing the long-term expansion of the planned docks within the subdivision would be beneficial for the permitting of docks and developers who have established plans for long-term developments with growth over time. The process of approving the concept and assigning a placeholder for all the community docks within the subdivision allows the developer to plan and build out the docks in the development as needed versus trying to build too much infrastructure too early. The existing procedure used to expand the dock or add new docks, (i.e. the plan submittal, approval, and inspection) could remain intact with some modification to allow for this. This again locks in the maximum number of slips on the smallest footprint but locking up the area for community docks. I believe the community dock concept is one the Corp endorses and supports.”

J8 Response: *The SMP encourages the use of multi-slip docks. If multiple docks are desired over time, but it is not feasible to construct them all at one time, then the developer has tools available to place covenants on the lakefront lots that prevent individual owners from constructing private docks that might preempt a planned build out of a group of multi-slip docks.*

Comment J9: A commenter noted a desire for language allowing wave attenuation projects. “There are many places on the lake that might benefit from the installation of wave attenuation. I don't see where the existing SMP addresses this, but wave attenuation might be beneficial for the lake and it should be considered. Not only would this allow for dock protection in some difficult areas on the lake by allowing docks where previously they would not be feasible but this also helps with erosion by minimizing the wave action against the shoreline.”

J9 Response: *The current SMP would allow the installation of wave attenuation structures if they meet the requirements of the shoreline management plan, Section 10 of the Rivers and Harbors Act, and Section 404 of the Clean Water Act. Such structures would need to be constructed and maintained at the proponent's expense. There are no plans to change these provisions in the revised SMP.*

Comment J10: Two commenters raised concerns about the timing of the moratorium that was imposed during the course of the EIS study. In particular, they were concerned about the Bridgeport West and Rolling Oaks cove entrance that requires periodic dredging that is most feasible during periods of low water such as occurred during the past summer drought season. One commenter felt that when the cove entrance silts up and boat owners are not able to access the lake, the fees paid for dock permits should be refunded.

J10 Response: *The moratorium was necessary to set a baseline for the environmental impact studies. It also was not appropriate to continue to approve applications for activities under the existing rules when those rules and locations may change with the Preferred Alternative. Continuing to permit shoreline activities during the process of revising the SMP and MP could result in more non-conforming uses that would create conflicts with new regulations. The timing of the moratorium and the weather as it affected lake levels was an unforeseeable occurrence. Dock permit fees do not cover the costs associated with review of permit applications and inspections. Furthermore, there are no guarantees that floating facilities will always be accessible on a reservoir that is subject to extreme water level fluctuations due to floods, drought, and water demands of the larger Arkansas watershed.*

Comment J11: A commenter stated: “I believe trash removal and general debris pickup by residents should be allowed with permitting that is easily obtained.”

J11 Response: *USACE does not prohibit residents from removing man-made trash from shoreline areas. Removal of natural debris such as down wood would require a shoreline use permit. There are no proposals to change this provision of the SMP.*

Comment J12: A commenter stated: “The article in the Tulsa World addressing the CORP's efforts to develop a SMP and the listening session, public work shop, and subsequent public comment period was misleading insofar as the purposes for which this, and other lakes, were authorized. It stated that there were "primary" and "secondary" purposes in the legislation authorizing this lake. Public access, which I consider, is recreation wasn't even mentioned as a purpose. It listed flood control and hydro power generation as the primary purpose for this lake. My reading of the appropriate legislation lists flood control and navigation as the primary purposes. Hydroelectric power generation is listed as a purpose along with public access (recreation) and others. Folks here on this lake, and many places, elsewhere, mistrust the Government and these little "nuances" perpetuate this mistrust. You and I both know that up until 1965 Recreation, by law was to be a purpose for all lakes constructed by the Federal Government and both the 1944 Flood Control Act and 1946 Rivers and Harbors Act listed Recreation and Hydro Power as purposes.”

J12 Response: *The EIS states in Chapter 1, that the Tulsa District of USACE manages the water and land areas of Eufaula Lake for the purposes of flood control, hydroelectric power, navigation, water supply, fish and wildlife management, and recreation. Land and water resources at Eufaula Lake are managed by the Tulsa District of USACE in accordance with regulations governing Civil Works projects. Eufaula Lake was authorized by Congress through the 1946 Rivers and Harbors Act for the purposes of flood control, water supply, hydroelectric power, and navigation. Subsequent legislation added fish and wildlife management and recreation as authorized project purposes. USACE does not control how issues are reported in the popular press and these nuances are often overlooked.*

Comment J13: A commenter stated: “Shoreline Use: It is my opinion should have restrictions, but should have provision for any new addition as needed to improve quality and protection of the lake.”

J13 Response: *The Preferred Alternative for the revisions to the SMP and the MP contain a number of provisions that will protect natural and recreational resources at the lake and help to improve water quality. See Section 2.4.3 for a description of the Preferred Alternative.*

Comment J14: A commenter stated: “Corps & State & Private Usage: State and Corps areas are pretty good, but some of the private areas need improvement or closed.”

J14 Response: *This comment is outside the scope of this EIS. Privately-managed recreation areas are authorized under a real estate lease and issues need to be managed through that process. Management of recreation facilities is not being considered in this NEPA review.*

Comment J15: A commenter stated: “The thing the Corps should do is give the land owner control the erosion of his lake lot which the lake is continually doing. They need an engineer assigned to help individuals to control the vegetation buffer.”

J15 Response: *The current SMP already allows lakefront property owners the opportunity to install shoreline erosion control structures if they meet the requirements of the shoreline management plan,*

Section 10 of the Rivers and Harbors Act, and Section 404 of the Clean Water Act. Such structures would need to be constructed and maintained at the proponent's expense. There are no plans to change these provisions in the revised SMP. USACE is unable to provide engineering help to individuals because funds appropriated for Eufaula Lake are designated for the routine Operations and Maintenance of the project. Use of these funds to assist private citizens with engineering support would be contrary to current laws unless specifically congressionally authorized. The proposed vegetation buffers do not need maintenance to provide the full water quality and erosion control benefits. Please see the discussion on the "Benefits of Vegetated Buffers" at the end of the Category A comments starting on page I-8.

Comment J16: A real estate agent requested copies of the display maps that show the proposed changes for shorelines so that he could note probable effects in appraisals.

J16 Response: *The display maps were available on the website www.swt.usace.army.mil. This information was provided to the commenter during the comment period.*

Comment J17: A commenter wanted to know if the Corps has any data on tremblers associated with "fracking" affecting monolithic concrete structures.

J17 Response: *USACE does not have such data at the present time. As described in Section 3.4.3.3, landowners with mineral rights can apply to drill a well to extract mineral resources, following an environmental review and approval by USACE as described in Army Regulation 405-30.*

Comment J18: A commenter stated: "As to noise concerns with too many boats, I have not experienced nor do I know anyone who has had a concern with that issue. When you go to a recreational area anywhere you need to anticipate there will be noise with a greater number of people and activity concentrated in one area."

J18 Response: *As discussed in Section 4.8, there could be potential noise impacts resulting from dock construction, residential development, and increased recreational activities induced by changes in the shoreline allocations and the number of new dock permits granted. However, impacts would not be adverse. Because recreational boat usage tends to be concentrated in Lake Areas 3 and 4, it is possible that as the number of boats on the lake increases there could be changes in the noise levels experienced in some locations at some times of the year. The EIS discloses this potential effect of the alternatives that would allow more docks to be constructed on the lake.*

Comment J19: A commenter stated: "I want everyone involved in the SMP update to support wholeheartedly the purpose quoted at the beginning of this response. Balancing recreational needs, economic development and good stewardship cannot be mere words. We have to mean it and fight hard to ensure that this balance happens. The ultimate goal should be the sustainability of the lake—a Shoreline Management Plan that balances environmental, social and economic benefits, and ensures this lake will be here for others to enjoy long after we are gone."

J19 Response: *The Tulsa District believes that the Preferred Alternative for the revisions to the SMP and the MP provides a reasonable balance between continued recreational development opportunities and natural resource protection at Eufaula Lake. See Section 2.4.3 for a description of the Preferred Alternative.*

Comment J20: A commenter stated: “The justification and need for the moratorium during the environmental Impact study was weak initially, too broad in scope, and especially inappropriate in light of the study results. For instance, the correlation between not allowing private boat dock applications in zones where docks already exist seems too restrictive.”

J20 Response: *The moratorium was necessary to set a baseline for the environmental impact studies. It also was not appropriate to continue to approve applications for activities under the existing rules when those rules and locations may change with the Preferred Alternative. Continuing to permit shoreline activities during the process of revising the SMP and MP could result in more non-conforming uses that would create conflicts with new regulations. Once the SMP is revised following the issuance of the Record of Decision, USACE will again accept and review applications for dock permits in suitable locations. It is anticipated that this will occur in the summer of 2013.*

Comment J21: A commenter stated: “Section 9: Many of the references cited are old, and their relevance to the DEIS is not annotated in the body of the report. Are the references to material from Texas and Arkansas in a similar geographical environment? Are there assertions from these references that are used for conclusions in the DEIS?”

Examples include;

- A. Section 6.2.1, page 6-20; “According to the most recent census data,”
- B. Section 5.5.1, page 5-20; “Based on the review of previous studies,”
- C. Section 5.4.5, page 5-15; “By combining and analyzing data from the various recreation surveys”
- D. etc., etc., etc.”

J21 Response: *The comment is related to the Recreation Study Report in Appendix E of the EIS. The methodology is described in Section 2 of that report. An important step in the methodology was to review reports of similar lake studies to develop the methodology based on accepted practices. The references cited in Section 9 are those that are referenced in the main body of the document. The example statements provided in the comment are introductory sentences that refer to results presented in previous sections or on documents previously summarized. Section 6.2.1 is referring to current census data available from the 2010 US Census. The statement at the beginning of Section 5.5.1 is referring to the methodology which was described in the section immediately preceding, Section 5.5. The introductory statement to Section 5.4.5 is describing the methodology used in the analysis of data collected and reported upon in this report.*

Comment J22: One commenter suggested the following additions to the Recreation Study Report in Appendix E of the EIS:

“Section 7.2.3 Mitigation, page 7-4; A caveat to the effect that states “Should land be required for restoration of the reservoir be needed, then a modification of the Eufaula Lake MP will be required.”

Section 7.2.5.1 Low Density Recreation, page 7-4; Add “shoreline mitigation efforts” to uses.

Section 7.2.5.2 Wildlife Management, page 7-5; Add “Wild fowl habitat development” to uses.”

J22 Response: *The sections referenced in the comment are descriptions of the land use classifications allocated under the Master Plan. Engineering Pamphlet (EP) 1130-2-550, Chapter 3, establishes the*

regulatory framework and general definition for land allocations and land use classifications described in the master plan for a USACE lake project. These definitions will not be changed in the Final EIS.

Comment J23: A commenter stated: “Section 5.4.4. Geology, Soils, and Minerals, page 5-7; “As described in Section 4.4, there would be no adverse effects on geology,” This is a completely inaccurate assertion which biases the impact of the alternatives.”

J23 Response: *Sections 3.4 and 4.4 of the EIS describe the existing conditions and potential effects of each alternative on geology, soil, and mineral resources. The EIS concludes that although there would be no adverse effect on geology and mineral resources, several of the alternatives would have an adverse impact on soils through erosion. The Preferred Alternative proposes the implementation of vegetation buffers along the shoreline to help reduce erosion and sedimentation in the lake. Please see the section on “Benefits of Vegetated Buffers” at the end of the responses to Category A comments starting on page I-8.*

Comment J24: A commenter stated: “The Corps’ *laissez faire* management style (described as “no action alternative” in Reference 1.) has created dead zones where water turbidity is constantly generated. These dead zones (witnessed and photographed) extend to more than fifty feet in many cases.”

J24 Response: *The commenter is unclear about what management actions are creating dead zones and does not identify the locations of any such zones. Therefore, we are unable to provide a response.*

Comment J25: Several people raised concerns about lake level management including:

“While rainfall complicates lake level management, the simplistic dumping of valuable floodwater is too costly to be accepted in view of Oklahoma’s urgent water needs and demands. Further, the economic justification for continued consumption of the potential energy of lake waters must be renegotiated. Once again Reference 1. is silent.”

“Why didn’t the Environmental Impact Study (article in Indian Journal by Bob Buckner 1-17-13) address the hydroelectric power of Lake Eufaula and its effect on the vegetation and lake levels?”

J25 Response: *As a reservoir, water level fluctuations may occur due to retention of flood waters to protect downstream resources and people or water releases to generate hydropower or provide downstream flows for navigation and resource protection. Eufaula Lake is one unit of several on the Arkansas River Basin and is designed to fluctuate up to 12 feet depending on current conditions. Lake level management is not within the scope of the SMP or MP revisions under consideration.*

Comment J26: One commenter provided the following question: “Why didn't the study address the handling of the 2 lake lodges - before and after they were left to deteriorate and run down? I believe this impacted the shoreline and the surrounding environment. I believe if the lake still had the quality lodges it used to have the revenue would be there to help fund some of the improvements to the lake.”

J26 Response: *The State of Oklahoma Department of Tourism was the agency which constructed and managed these facilities. It was anticipated that there would be substantial demand for and usage of lodges of this type and size. Over time, it became financially impractical for the State of Oklahoma to operate these facilities. That is why they were sold to private and tribal entities. These organizations decided to change the purposes of these lodges to meet their current and future business models.*

Comment J27: Two commenters raised concerns about private investors leasing public shoreline and facilities and then being able to charge the public additional fees for use of the facilities while USACE does not have funds for maintenance. The commenters felt that the fees paid by investors should fund USACE maintenance activities at the lake.

***J27 Response:** Any funds USACE receives from leases for commercial activities go back to the US Treasury and not to the lake project. The real estate license issued to lease holders by USACE allows the outgrantee to recuperate some of their operating costs by charging the public to utilize the recreational facilities that they maintain.*

Comment J28: A commenter inquired: “Are there exceptions for persons with disabilities on dock size and design regulations?” Commenter is legally blind and has a T-dock that is 16 feet wide. It is difficult to maneuver in and out of the dock and he would like to rebuild to a stall-type dock that is as wide, but a little longer.

***J28 Response:** Any request for people with special needs can be reviewed on a case-by-case basis. Applicants with special needs should coordinate the requirements for their special needs with the lake office. These docks are considered an exception and when sold to a new owner would need to be changed to meet existing requirements.*

Responses to Agency Comments

Several letters from agencies were received. The comments and responses are provided in **Table I-6**. The agency comment letters are located in Appendix K.

Table I-6. Agency Comments and Responses

Organization	Comment File Name	Comment Number	Comment	Response
Oklahoma Department of Wildlife Conservation	2013-01-11 ODWC RidgeJD.pdf	ODWC-1	Designation of peninsula on western edge of Lake Eufaula State Park, as shown in the maps for all alternatives, indicates it is zoned "public recreation" as part of Lake Eufaula State Park. The peninsula should be designated "fish and wildlife protected" as part of the existing ODWC lease lands.	The Eufaula Lake Office has reviewed project office real estate records and concurs with comment. Alternative maps used in the Draft EIS that indicated the peninsula zoned as "Public Recreation" are incorrect. Peninsula should be zoned as "Protected" and the maps in the Final EIS have been revised.
		ODWC-2	Designation of a large area on South Canadian River north of Sam's Point and Canadian Shores developments, as shown in the maps for alternative "no action", alternative 3 and alternative 4 indicate it is zoned "limited development". The area in question should be indicated as "protected fish and wildlife" as part of the existing ODWC lease lands for all alternatives.	USACE discussed this comment with ODWC and determined that the area was previously water and is not currently included in the ODWC licensed areas. The area is shown as "protected" and licensed to ODWC in the Preferred Alternative, but the maps for the No Action Alternative (which is based on the 1998 SMP) and for the other alternatives have not been revised. The Preferred Alternative proposes to include this map revision in both the revised SMP and the MP.
USEPA Region 6 Office of Planning and Coordination (6EN-XP)	2013-01-17 EPA.pdf	EPA-1	General: According to the DEIS, Alternative 4 would cause significant adverse impacts to terrestrial habitats, aquatic habitats, the federally endangered American burying beetle, water quality, the local transportation network, and public lands. EPA does not support the implementation of Alternative 4 based on the impacts summarized above and described in detail in Chapter 4.	The purpose of action is to revise the SMP and MP in a way that balances natural resource protection with recreational development opportunities. USACE agrees that Alternative 4 does not represent that balance point, but it does provide a useful alternative for comparative purposes. The Preferred Alternative, which is described in Section 2.4.3 of the Final EIS would designate slightly less shoreline as Limited Development than the No Action and would approve the requested lease at Carlton Landing. Overall this would increase natural resource protection somewhat as compared to the No Action Alternative while allowing a specific recreational development to occur in a focused location.
		EPA-2	Air Quality: The DEIS states that air quality and climate change and greenhouse gas emissions are resource categories for which there would be no or minimal effects associated with any of the project alternatives. However, Section 4.14.8, Potential Mitigation Measures (Transportation), identified that there would be potential for adverse transportation impacts related to the Carlton Landing development and that additional traffic studies should be conducted to determine the type and extent of needed roadway improvements. We believe the DEIS should consider the linkage between transportation and construction and air quality impacts.	The EIS discusses the linkage between transportation and air quality and greenhouse gas emissions in Sections 2.2.3; 2.3.4.1; 3.2; and 3.3 of Appendix H. The potential effects from construction activities are also discussed in Sections 2.2, 2.3, 3.2, and 3.3 in Appendix H. Although it is anticipated that at full build out of Carlton Landing in 25 or 30 years, there would need to be some transportation improvements to provide for safe turning movements into and out of the development onto Hwy 9A, this does not necessarily equate to an air quality impact. The increased number of turning movements at this location would be very unlikely to generate a "hot spot" and would not result in non-attainment of air quality standards for the basin.

		EPA-3	<p>In addition to all applicable local, state, or federal requirements, the following mitigation measures (as practicable) should be implemented in order to reduce impacts associated with emissions of PM, and other pollutants from any construction-related activities, possible roadway expansion, and increased vehicular traffic.</p> <p>Fugitive Dust Source Controls: 1. Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions; 2. Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions; and 3. Prevent spillage when hauling material and operating non-earthmoving equipment and limit speed to 15 miles per hour. Limit speed of earthmoving equipment to 10 mph.</p> <p>Mobile and Stationary Source Controls: 1. Plan construction scheduling to minimize vehicle trips; 2. Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections; and 3. Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.</p>	<p>These BMPs have been added to the list of potential mitigation measures for construction activities on USACE lands in Section 6.12.2 and 6.12.3. However, most activities, such as dock construction, are unlikely to involve storage piles, grading, or earthmoving equipment and thus these measures would not generally be applicable.</p>
		EPA-4	<p>Cultural and Historic Resources: It is unclear from the document the extent to which Tribes were consulted regarding National Historic Preservation Act (NHPA) sites or whether Tribal members were included on the archeological team that assisted in the preparation of the DEIS. In particular, Muskogee and Choctaw Tribal members may have religious/cultural practices using plants and animals in the area and USACE should take a more proactive approach to consult with them on potential location and/or disturbance of (tribal) cultural resources.</p>	<p>The following federally-recognized Native American tribes were consulted under Section 106 based on Pre-Contact range; aboriginal lands, and treaty lands: Caddo Tribe; Chickasaw Nation; Choctaw Nation; Kialegee Tribal Town; Muskogee (Creek) Nation; Osage Nation; Quapaw Tribe; Seminole Nation; Thlopthlocco Tribal Town; and Wichita and Affiliated Tribes. After the archaeological investigations were completed, these reports were sent to each tribe for review. Additionally, each tribe was asked to share -- to the extent they are willing -- information on how the proposed undertaking might affect archaeological and historic sites, Sacred Sites, or Traditional Cultural Properties. In general, Tulsa District welcomes tribes to share their natural resources needs for religious/cultural practices so that the District can accommodate those needs. Specifically, this has been accomplished with the Muskogee (Creek) Nation and the Cherokee Nation. The proposed undertaking is no exception, should these needs be brought to the attention of Tulsa District. Lastly, Tulsa District is currently working through a special consultation issue of direct cultural importance to the Choctaw Nation. Tribal consultation is described in the EIS in Section 7.4.2 and this section has been updated in the Final EIS.</p>

		EPA-5	The document states that a number of tribal cultural resources are under the lake itself. It is unclear whether there are any protection/safeguards for these sites. When/if a lease or development proposal is approved to develop a shoreline, the Tribal Historic Preservation Officers should be invited to participate or assist if any artifacts are discovered.	There are a number of archaeological sites, recorded before impoundment of the reservoir, that today lie under the normal conservation pool level. Some of these sites are affected by erosion and turbation (disturbance or mixing of sediments through natural processes) and some are affected by sedimentation. All are affected to one degree or another by inundation, depending on local conditions. When the lake is at normal conservation pool level and above, these sites are inaccessible. When the reservoir falls below conservation pool, there may be inadvertent discoveries of human remains and/or artifacts. Two such situations have occurred in 2013. In those cases, Tulsa District followed NAGPRA Section 3 and 43 CFR Part 10 inadvertent discovery procedures and contacted and consulted with appropriate tribes. None of the alternatives propose any changes to the management of lake levels and so changes to the status of cultural resources under the lake are not anticipated under any of the alternatives.
		EPA-6	The document indicates that Tribes were identified and contacted for the limited purpose of discussing NHPA, but does not provide complete information to determine if Tribal officials for each Tribe have been contacted for government-to-government consultation on the full scope of potential effects under E.O. 13175.	The proposed undertaking will not have any effects under E.O. 13175.
		EPA-7	Recommendation: The USACE should identify all potentially affected tribes, resources, and tribal communities; identify potentially applicable treaties, laws, policies, legal responsibilities, and duties; contact and, as appropriate, initiate consultation with Tribes concerning the potential effects of its action.	Please see the response to EPA-6. All potentially affected tribes were identified and contacted. Several tribes including the Osage Nation and Choctaw Nation of Oklahoma provided responses.
USDOE Southwestern Power Administration Division of Resources and Rates	2013-01-18 DOE-SWPA VickersB.pdf	DOE-1	Authorized Purposes: As indicated in multiple places in the Draft EIS, hydroelectric power is one of the four original Congressionally authorized purposes of the project, and Southwestern applies a portion of the revenues collected each year to paying off the U.S. taxpayers' investment, plus interest, in the Eufaula project facilities. Therefore, other project uses should not receive additional benefits to the detriment of hydroelectric power.	The revisions to the SMP and MP do not propose any changes to the uses of the lake or to water level management. Water levels will continue to fluctuate in response to rainfall (or the lack of it), and water releases for flood control, hydroelectric power production, and water level management of the Arkansas River navigation system.
		DOE-2	Lake Elevation Levels: Additionally, other lake users should continue to be made aware that lake levels will fluctuate depending on a variety of factors, including rainfall (or lack thereof), flood control operations, water supply withdrawals, and power demand. Prior to the construction of additional facilities in or around Eufaula Lake, developers should continue to be informed of these routine and sometimes significant fluctuations.	The Preferred Alternative includes consideration of areas suitable and not suitable for docks. Dock suitability accounts for water depth. Areas that are too shallow close to shore are areas which would be most affected by normal water level fluctuations and these areas are identified as unsuitable for docks. With the information developed through the EIS study, USACE will be better able to consider dock suitability on a case by case basis when reviewing shoreline use permit applications.
Osage Nation Tribal Historic Presevation Office	2013-01-18 Osage Nation.pdf	ON-1	The Osage Nation Historic Preservation Office has evaluated your submission and concurs that the proposed Shoreline Management Plan (SMP) for a public marina and recreational facilities at Eufaula Lake, Oklahoma most likely will not adversely affect properties of cultural or sacred significance to the Osage Nation . The finding of this NHPA Section 106 review has resulted in a determination of " No Properties. "	Thank you.
		ON-2	The Osage Nation concurs that as part of the scoping process the U.S. Army Corps of Engineers fulfilled NHPA and NEPA compliance by consulting with the Osage Nation Historic Preservation Office in regard to the proposed project referenced as Shoreline Management Plan (SMP) for a public marina and recreational facilities at Eufaula Lake, Oklahoma.	Thank you.

		ON-3	We do not anticipate that this project will adversely impact any cultural or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law. If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office be contacted.	This condition would be added to the lease agreement under any alternatives that would approve the shoreline development at Carlton Landing.
Oklahoma Department of Wildlife Southeast Region Fisheries Supervisor	2013-01-22 ODWC GroomD.pdf	ODWC-3	After reviewing the Summary of Alternative ODWC supports Alternative 1 with the following inclusions/exceptions: 2.3.3.2 Inclusion in the Eufaula Lake Shoreline Management Plan Revision and Master Plan Supplement EIS. The shoreline area that would involve the proposed Carlton Landing development is a popular fishing area among Eufaula Lake anglers. ODWC would prefer that Carlton Landing not be granted inclusion. Proposed actions will reduce essential fish habitat and fishable shoreline in the area; however, the ODWC does recognize the economic and recreational value. With hesitation in regards to the loss of fish habitat and fishable shoreline, the ODWC has no other general objections with Alternative 4 actions as they relate to the inclusion of Carlton Landing.	Additional mitigation measures have been added to the Final EIS to address potential impacts to fish habitat in the area of Carlton Landing under the Preferred Alternative and Alternative 4.
		ODWC-4	2.3.4 Individual Zoning Requests. <i>Zoning Request #3- Lake Eufaula Association: A shoreline area west of highway 69 on the north side of town of Eufaula is currently designated Limited Development.</i> ODWC supports granting this special zoning request to change said area from Limited Development to <i>Public Recreation to allow for the development of a fishing pond and park area.</i>	The Preferred Alternative would approve zoning request #3 for a public fishing pond on the north side of Eufaula.
		ODWC-5	2.3.3 Carlton Landing Proposed Development. <i>Table 2-5 Summary of Proposed Shoreline Recreational Development at Carlton Landing</i> indicates that a <i>Protected fish habitat zone</i> will be located in areas A, D, & E shown on <i>Figure 2-11 Carlton Landing Shoreline Proposed Development Areas</i> . It is also proposed to remove standing timber in the Areas B, K, D & E. ODWC request that if action is taken to approve Carlton Landing lease and zoning requests that ODWC be involved in standing timber removal discussions to maximize fish habitat in the areas that are designated as <i>Protected fish habitat zone</i> and other non-designated areas. ODWS understands the purpose for removal to be safety related, however, ODWC wishes to work with Carlton Landing Development to minimize unnecessary reduction and provide input to maximize fish habitat in the area and along the shoreline while still meeting development goals. Furthermore, ODWC requests that other mitigation measures be in place to compensate for the reduction of standing timber as a loss of fish habitat. It is preferential that such mitigation be compensated within the same general location of the loss.	Additional mitigation measures have been added to the Final EIS to address potential impacts to fish habitat in the area of Carlton Landing under the Preferred Alternative and Alternative 4. USACE will continue to work with ODWC in developing potential lease agreement terms to include appropriate mitigation measures.
		ODWC-6	4.7.6. Alternative 4 (Recreation) In consideration to Carlton Landing, potential benefits under Alternative 4 relating to Land-based Recreation (4.7.6.1) and Water-based Recreation (4.7.6.2) are describes as "extremely limited" and "have very little impact" respectively. Since said area will rezone shoreline from <i>Protected</i> to <i>Public Recreation</i> and will be open to the general public, the ODWC request that if action is taken to include Carlton Landing, that lease/license agreements mitigate for additional public access facilities (parking, boat ramp and appropriate courtesy docks) to improve Land-based Recreation and Water-based Recreation (for the general public) and the ODWC be involved in its development.	The overall intention of the shoreline development proposed at Carlton Landing is to provide additional recreational opportunities for the public. The project would not be eliminating any existing recreational facilities but would be constructing new ones. Mitigation for the loss of recreational facilities would not be required.

U.S. Congress	2013-01-21 US Rep MullinM.pdf	USC-1	I believe Alternate #4 of the Corps of Engineers EIS report for Eufaula Lake takes a balanced approach to lake development. I also believe this alternative would offer opportunity to anyone with a dream for business on the lake which would help create jobs, increase quality of life, and spur economic development for all.	USACE recognizes the importance of Eufaula Lake to the economic health of the region. While the Preferred Alternative does not increase the amount of Limited Development shoreline as much as Alternative 4, the Preferred Alternative is not expected to constrain economic growth at the lake. The amount of Limited Development shoreline available for new dock construction is approximately 106 miles; at the historic rate of growth in the region, this would not be expected to be fully built out for about 65 years.
Lieutenant Governor	2013-01-14 OK Lt Governor LambT.pdf	OLtG-1	There are several reasons for my request for Alternative #4: 1. A Solid Boost to the Local Economy. The Master Plan for Carlton Landing contains more than 2,700 homes over the next 30+ years. Realizing this vision will inject more than \$1.5 billion of primarily outside investment into our local economy. Also, as a direct result of Carlton Landing's growth, hundreds of jobs will be created and the boost to local taxes will help build and maintain roads and schools in the area.	Agreed. The Preferred Alternative would approve the requested lease and development of a marina and public recreational facilities along the lake shore.
		OLtG-2	2. A World Class Vision. Carlton Landing brings a world class vision to the Lake Eufaula with resort amenities that have not existed to date. The Master Plan, designed by world renowned urban designers Duany Plater-Zyberk, puts Lake Eufaula in the same discussion as Seaside, Florida and premier communities around the world. This will help continue to refine Oklahoma's national image.	Agreed. The Preferred Alternative would approve the requested lease and development of a marina and public recreational facilities along the lake shore.
		OLtG-3	3. Building Oklahoma Values. The community being created at Carlton Landing connects with our Oklahoma values. Carlton Landing is a place where families are strengthened and neighbors have a sense of belonging to a tightly-knit community. Kids can play safely and reconnect with nature. Culture and the arts are supported by the Carlton Landing Community Foundation which offers music, food and art in celebration of our proud Oklahoma heritage.	Agreed. The Preferred Alternative would approve the requested lease and development of a marina and public recreational facilities along the lake shore.