

# **ENVIRONMENTAL ASSESSMENT**

## **IMPLEMENTATION OF THE MASTER PLAN SUPPLEMENT DEVELOPED FOR GRAPEVINE LAKE**

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## Executive Summary

This Environmental Assessment (EA) is prepared in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969. The EA addresses the potential impacts of the Fort Worth District, U.S. Army Corps of Engineers proposed supplement to the Grapevine Lake Master Plan. The proposed supplement would incorporate current land classification standards, include contemporary requirements mandated by Federal environmental laws, and better reflect the Corps of Engineers environmental stewardship mission.

This EA addresses two alternatives to the proposed action: 1) No Action; 2) Implement the Master Plan Supplement. Under the No Action alternative, no changes would be made to the current Master Plan of Grapevine Lake. Lands around the lake would remain classified as they are in the original Master Plan. The Master Plan Supplement alternative entails permanent changes to portions of the 1971 Grapevine Lake Master Plan. This would include revising resource management objectives, identifying the Environmentally Sensitive Areas on mitigation sites and all lands classified as recreation and aesthetic lands, changing the location of Roanoke Park, changing the land classification of North Shore, Knob Hills, and Rocky Point Parks, and designating utility corridors.

The current Grapevine Lake Master Plan was last revised in September 1971. Two previous supplements approved in 1994 and 2000 added 94.1 acres of Oak Grove Park and 178 acres of Silver Lake Park to existing Park & Recreation leases held by the City of Grapevine. An EA, which accompanied the 2000 supplement, stated that past, present and future mitigation sites would be reclassified using current land classification standards set forth in EP 1130-2-550. The EA also stated the U.S. Army Corps of Engineers would designate utility corridors on Federal land to reduce future environmental impacts from new utility construction proposals.

The Master Plan Supplement was developed through a collaborative team effort involving the US Army Corps of Engineers, U. S. Fish & Wildlife Service, Texas Parks & Wildlife Department, seven cities adjoining the lake, open space advocates, equestrian groups, concessionaires, and University of North Texas, Applied Sciences Department. Individual meetings were also conducted with Parks and Recreation and Public Works officials from the cities of Flower Mound, Northlake, Southlake, Westlake, Trophy Club, Marshall Creek, Grapevine and Roanoke. Other alternatives, conceptualized during public involvement, were not carried through for further analysis because all other alternatives are variations of the proposed action.

There would be no significant adverse effects to the natural environment associated with the proposed project. The proposed action would not adversely impact biological or cultural resources within the project area. The proposed action would not affect any federal species listed or proposed for listing as threatened or endangered in accordance with the Endangered Species Act.

## **1.0 INTRODUCTION**

The Grapevine Dam and Lake project was completed in 1952 by the U.S. Army Corps of Engineers (USACE) for the purpose of flood control and water supply. The Flood Control Act of 1946 (Public Law 526) authorized construction of the project. The project is located on Denton Creek, a tributary of the Trinity River, about 30 miles northwest of Dallas, Texas. The lake, in its function for flood control, will fluctuate from 535 feet (top of conservation pool) to 560 feet (spillway crest).

Upon completion of the dam and lake, a Master Plan for Grapevine Lake was developed so that the lake and the surrounding lands could be managed according to the designated land use. The most recent version of the Grapevine Lake Master Plan was published in September 1971. USACE, Fort Worth District (SWF) initiated a study to evaluate the potential impacts of revising the 1971 Grapevine Lake Master Plan to identify areas around the lake for reclassification to environmentally sensitive areas, change the location of Roanoke Park, change the land classification of North Shore, Knob Hills, and Rocky Point Parks, and designate areas for utility corridors. Environmentally Sensitive Areas are defined as areas having scientific, ecological, cultural, or aesthetic features (EP 1130-2-550). This study was initiated due to loss of habitat on private land, coupled with the high value of remaining habitat on Federal land at Grapevine Lake.

### **1.1 Purpose and Need of the Proposed Action**

The purpose of the proposed action would be to implement the Master Plan Supplement developed for Grapevine Lake. By implementing the supplement, USACE would be able to revise resource management objectives, identify the Environmentally Sensitive Areas on past, present and future mitigation sites and all lands classified as recreation and aesthetic lands, change the location of Roanoke Park, change the land classification of North Shore, Knob Hills, and Rocky Point Parks, and designate utility corridors on Federal land to reduce proliferation of utility easements and associated adverse environmental impacts. The supplement to the Master Plan incorporates current land classification standards, includes contemporary requirements mandated by Federal environmental laws, and better reflects the Corps of Engineers environmental stewardship mission. The rapid rate of urbanization and the resultant widespread loss of natural resources and high quality wildlife habitat in the North Central Texas region also point to the need to adopt this supplement to the 30-year-old Master Plan. In summary, the supplement is needed to reflect the Corps of Engineers natural resources management mission of managing and conserving natural resources consistent with ecosystem management principles, providing quality outdoor recreation experiences, and serving the needs of present and future generations.

## **1.2 Compliance**

As required by the National Environmental Policy Act (NEPA) of 1969 and subsequent implementing regulations promulgated by the Council on Environmental Quality, this Environmental Assessment (EA) is prepared to determine the potential impacts associated with implementing the Supplement to the Master Plan of Grapevine Lake. The lead agency for this change in policy is the Fort Worth District, U.S. Army Corps of Engineers.

## **2.0 DESCRIPTION OF THE PROPOSED ACTION**

### **2.1 Existing Conditions**

The current Grapevine Lake Master Plan was last revised in September 1971. Two previous supplements approved in 1994 and 2000 added 94.1 acres of Oak Grove Park and 178 acres of Silver Lake Park to existing Park & Recreation leases held by the City of Grapevine. An EA, which accompanied the 2000 supplement, stated that past, present and future mitigation sites would be reclassified using current land classification standards set forth in EP 1130-2-550. The EA also stated the U.S. Army Corps of Engineers would designate utility corridors on Federal land to reduce future environmental impacts from new utility construction proposals.

Currently, Federal land at Grapevine Lake is categorized by designated land use. The Master Plan designates lands necessary for operation of the project (Grapevine Lake), park areas, wildlife and nature study areas, and land to enhance the aesthetics of the project area.

During the past several years, the pace of urbanization on private land surrounding Grapevine Lake has been extremely rapid. Portions of Denton, Tarrant, and Dallas Counties, which includes areas around Grapevine Lake, have been characterized as the most rapidly developing areas in the United States. This development has resulted in significant, region-wide losses of wildlife habitat and native vegetation characteristic of the Cross Timbers and Prairies ecological area of Texas. The loss of this habitat on private land, coupled with the high value of remaining habitat on Federal land at Grapevine Lake, has greatly increased the need to protect and carefully manage remaining habitat on Federal land.

### **2.2 Description of the Proposed Action and Alternatives**

Two alternatives were considered for the proposed action: 1) No Action, 2) Implement Master Plan Supplement. Other alternatives were not carried through for further analysis because all other alternatives conceptualized during public involvement are variations of the proposed action.

The Master Plan Supplement was developed through a collaborative team effort involving the US Army Corps of Engineers, U. S. Fish & Wildlife Service, Texas Parks & Wildlife Department, seven cities adjoining the lake, open space advocates, equestrian groups, concessionaires, and University of North Texas, Applied Sciences Department. Individual meetings were also conducted with Parks and Recreation and Public Works officials from the cities of Flower Mound, Northlake, Southlake, Westlake, Trophy Club, Marshall Creek, Grapevine and Roanoke.

### **2.2.1 No Action Alternative**

The “No Action” or “Without Master Plan Supplement” alternative is the condition where there would be no supplement to the current Master Plan of Grapevine Lake. Under this alternative, lands around the lake would continue to be managed using the current Master Plan and retain their current classifications. This alternative would fail to address the reclassification of lands and the designation of Environmentally Sensitive Areas and utility corridors. Lake areas would eventually be developed according to their land use classification and the natural resources in these areas would be adversely impacted. Development of the existing natural areas around Grapevine Lake would result in loss of valuable wildlife habitat and other unique natural resources, impact lake water quality, and contribute to the deterioration of regional air quality. Development of these natural areas would also result in adverse impacts to the overall aesthetic quality of the lake. The “no action” alternative does not allow compliance with findings of earlier environmental assessments conducted at the lake or meet the objectives of the Corps of Engineers environmental stewardship mission as identified in EP 1130-2-540.

### **2.2.2 Master Plan Supplement Alternative**

The preferred alternative entails implementing the Supplement developed by USACE. This supplement to the Grapevine Lake Master Plan is contained in Appendix A. A narrative summary of the changes would be as follows: Chapter 2 of the supplement (Resource Objectives) would replace Chapter VII of the 1971 Master Plan (Resource Development), Chapter 4 of the supplement (Land Classification Updates) would replace Chapter V of the 1971 Master Plan (Land Management), Figure 1 of the supplement (Land Classification Plan) would replace Plates 46 thru 54 of the 1971 Master Plan (Land Use Maps), areas designated as Environmentally Sensitive Areas (Figures 2 thru 11 in the supplement) would no longer be available for intense recreation development, the location of Roanoke Park shown on Figure 1 of the supplement replaces the location shown on plates 3, 5, 18, and 19 of the 1971 Master Plan, and the supplement would establish utility corridors on Federal land at Grapevine Lake. Eighteen of the nineteen proposed corridors would follow existing easements or roads.

Environmentally Sensitive Areas are defined as areas having scientific, ecological, cultural, or aesthetic features (EP 1130-2-550). These areas would be characterized by mature, native vegetation in a climax or near-climax status; vegetation exhibiting rich species diversity; areas valued as resting, nesting, feeding or roosting areas for important and sensitive wildlife species; areas with aesthetic function (i.e. visual buffer, wildflower viewing area); areas which serve an important water quality function; or areas with the

presence or high probability for presence of archaeological, historical, or paleontological resources. Utility corridors would be defined as areas where utilities could be or have already been placed. These corridors would be designed to be as unobtrusive as possible on surrounding habitat.

### 3.0 AFFECTED ENVIRONMENT/BASELINE CONDITIONS

#### 3.1 Land Management

Under the current Master Plan, federal land at Grapevine Lake is categorized by designated land use. Current land use designates lands necessary for operation of the project (Grapevine Lake), park areas, wildlife and nature study areas, and land to enhance the aesthetics of the project area. Lands for use as park areas and aesthetic areas for public use are currently located above the conservation pool level (elevation 535 feet). Park areas are reserved for use by the general public and are to be developed and administered for park and recreational purposes. The wildlife and nature study areas are intended to provide, through proper management, suitable habitat for the propagation and preservation of the native wildlife species and to promote a greater variety of species. Aesthetic areas are determined by scenic beauty, tree cover, adaptability, access to water's edge, and by the presence of sheltered and open water. Table 3-1 presents the land use acreage for project use, public use and other land use. The total land use acreage for Grapevine Lake in accordance with GSA Form 1166 dated 30 June 1971 is 17,829 acres. The vegetation on these lands has changed dramatically over the 50 years of Federal ownership, with many areas succeeding naturally toward climax vegetation status.

Other than the lake itself, park areas occupy the most acres of land within the project area (Appendix A, Fig.1). The current Master Plan discusses each park individually as to size and gives very general descriptions as to the land cover. Terrain is categorized from flat to rolling and vegetation is characterized as sparse to heavy.

**Table 3-1**

**Land Use Acreage**

Land Use Category	Land Use Designation	Acres
Project Use	Permanent Pool	7380
Project Use	Dam & Operations Purposes	600
Public Use	Park Areas	3863
Public Use	Nonprofit Group Areas	17
Public Use	Nonprofit Group/Public Interest	25
Other Land Use	Aesthetics & Wildlife	3778
Other Land Use	Flowage Easement	2166

### 3.2 Wildlife Management

Under the 1971 Master Plan, efforts are made to protect preferred and critical habitat, but on a case-by-case basis. Current wildlife management techniques promote an assortment of endemic wildlife species within the project area such as owls (Tytonidae and Strigidae), raccoons (*Procyon lotor*), bobcats (*Lynx rufus*), mink (*Mustela vison*), opossums (*Didelphis virginiana*), eastern fox squirrels (*Sciurus niger*), eastern cottontail (*Sylvilagus floridanus*), and white tail deer (*Odocoileus virginianus*), as well as various species of other small mammals (USACE 1999).

The lake and associated wetlands provide important feeding, staging, and roosting areas for migratory birds. Migratory waterfowl, such as ducks, pelicans, herons, egrets, gulls and terns, migrate through the area and utilize open water, shallow wetlands and riparian vegetation for feeding and roosting (USACE 1999). The typical bird population for Grapevine Lake and the surrounding lands include the great blue heron (*Ardea herodias*), turkey vulture (*Carthartes aura*), mourning dove (*Zenaida asiatica*), red-tailed hawk (*Buteo jamaicensis*), northern bob-white (*Colinus virginianus*), blue jay (*Cyanocitta cristata*), American crow (*Corvus brachyrhynchos*), Carolina wren (*Thryothorus ludovicianus*), northern cardinal (*Richmondia cardinalis*), field sparrow (*Spizella pusilla*), red-winged blackbird (*Agelaius phoeniceus*), northern mockingbird (*Mimus polglottos*), and red-bellied woodpecker (*Melanerpes carolinus*) (USACE 1999). During recent site visits conducted by the Fort Worth District, USFWS and TPWD personnel, important neotropical species such as dickcissel (*Spiza americana*), indigo bunting (*Passerina cyanea*), and painted bunting (*Passerina ciris ciris*) were observed utilizing the project area.

### 3.3 Threatened and Endangered Species

The Endangered Species Act of 1973 (P.L. 93-205) and the amendments of 1988 (P.L. 100-578) were enacted to provide a program of preservation for endangered and threatened species and to provide protection for ecosystems upon which these species depend for their survival. The Endangered Species Act requires all federal agencies to implement protection programs for designated species and to use their authorities to further the purposes of the Act. The Fort Worth District, Operations Division has initiated coordination for this project with U.S. Fish & Wildlife Service informally. A total of five Federally Listed Threatened or Endangered Species occur or potentially occur within Denton and Tarrant Counties. Two species are listed as endangered, two as threatened, and one as proposed threatened (Table. 3-2).

**Table 3-2**

**Denton and Tarrant Counties Threatened and Endangered Species**

**Denton County**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
<u>Bald eagle</u>	<i>Haliaeetus leucocephalus</i>	Threatened
<u>Black-capped vireo</u>	<i>Vireo atricapillus</i>	Endangered
<u>Mountain plover</u>	<i>Charadrius montanus</i>	P/Threatened
<u>Whooping crane</u>	<i>Grus americana</i>	Endangered

**Tarrant County**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>
<u>Mountain plover</u>	<i>Charadrius montanus</i>	P/Threatened
<u>Piping plover</u>	<i>Charadrius melodus</i>	Threatened
<u>Whooping crane</u>	<i>Grus americana</i>	Endangered

Endangered	Listed as endangered - Species in danger of extinction throughout all or a significant portion of its range
Threatened	Listed as threatened - Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range
P/	Proposed/...

**4.0 ENVIRONMENTAL IMPACTS OF PROPOSED ACTION**

**4.1 No Action Alternative**

**4.1.1 Land Management**

Under the No Action alternative, the proposed supplement would not be incorporated into the Grapevine Lake Master Plan. Under this alternative, lands around the lake would remain classified as they are in the original Master Plan. Land management practices would continue to follow the land classifications as set forth in the 1971 Master Plan. No Environmentally Sensitive Areas or corridor designations would be added to the Master

Plan. Lake areas would eventually be developed according to their land use classification and the natural resources in these areas would be adversely impacted.

#### **4.1.2 Wildlife Management**

The No Action alternative would eventually have negative environmental impacts in regards to wildlife management due to the continued urban development. Lake areas would eventually be developed according to their land use classification and the natural resources, including endemic wildlife populations, would diminish. The loss of habitat would adversely affect the wildlife causing them to rely on less than optimal resources or leave the area in search of more viable habitat. Efforts would still be made to protect critical habitat, on a case-by-case basis, but such efforts would be piecemealed and lacking a comprehensive approach to wildlife management.

### **4.2 Preferred Alternative**

#### **4.2.1 Land Management**

The proposed action would revise and supplement land management practices to include Environmentally Sensitive Areas, utility corridors, change the location of Roanoke Park, and change the land classification of North Shore, Knob Hills, and Rocky Point Parks. Park areas would be positively impacted by the proposed action by reducing the acreage on which high-density recreation facilities such as campgrounds, golf courses, and athletic fields could be constructed. A team of Natural Resource Specialists used the aforementioned criteria to locate areas within each park that qualify as Environmentally Sensitive Areas. Examples of such areas include areas dominated by climax or near-climax vegetation, areas where vegetation has been planted as mitigation for loss of natural resources, cultural sites eligible for or listed on the National Register of Historic Places, riparian areas, wetland and other high-value aquatic sites, areas where natural vegetation or topography serves as important visual or noise buffers and areas having exceptional aesthetic qualities. Table 4.1 illustrates the areas within the existing parks that will be affected by the revised land management practices. These areas are currently categorized by designated land use and would be designated Environmentally Sensitive Areas (ESA) under the proposed action.

The implementation of revised management practices would have significant positive impacts, as designated project lands would be allowed to naturally mature and develop to attain the highest integrity and quality possible. A total of 2,523 acres would be designated as Environmentally Sensitive Areas, of which, 1,716 acres are located in park areas and 867 acres are located in aesthetic areas (Table 3-1). Also, the designation of utility corridors would have positive impacts concentrating and confining future utilities in areas where utilities already exist. Eighteen of the nineteen proposed corridors follow existing easements or roads thus minimizing the possible impacts. The relocation of the Roanoke Park would allow for proper use of the lands under the new management practices.



**Table 4.1**

**Proposed Environmentally Sensitive Areas and Acreages**

Park/Area	Total Acres	ESA Acres	Description Appendix Figure Codes	Appendix A Figure #
Rockledge & Silver Lake Parks	526	178	Mature upland forest (D1, D3, S1, S2, S3), Denton Creek channel (D2), bottomland hardwood areas (D2), archeological sites (D2), heron rookery (D2), streamside protection zone (D2), shoreline (S2)	Figure 2
Oak Grove Park	785	282	Riparian and upland wildlife habitat (OG1, OG2), upland hardwoods (OG3, OG4, OG5), native prairie (OG6)	Figure 3
Meadowmere Park	250	93	Riparian corridor (MM1), mature woodlands (MM1, MM2), wetland vegetation (MM1), shoreline (MM1)	Figure 4
Walnut Grove Park	448	321	Shoreline and riparian habitat (WG1), riparian corridor (WG2), native prairie (WG2), several stream tributaries (WG1), mature upland hardwoods (WG3)	Figure 5
Marshall Creek Park	804	383	Upland and riparian hardwoods (MC1), stream tributary (MC1), upland prairie (MC2), shallow water reservoir area (MC2)	Figure 6
Denton Creek Wildlife Management Area	350	350	Mitigation sites	Figure 7
Knob Hills Park	225	177	Native prairie (KH1, KH2), hardwood areas (KH1, KH2), wooded riparian areas (KH3)	Figure 8
Rocky Point Park & Point Noble Shoreline		308	Heavily wooded riparian area (RP1), shoreline (PN1), heavily wooded area (RP1)	Figure 9
Twin Coves Park	243	225	Riparian corridors (TC1, TC2), upland and riparian woodlands (TC1, TC2)	Figure 10
Murrell Park	510	206	Riparian corridor (M1), wildflower field (M2), mature riparian and upland woodlands (M3, M4), upland woodlands (M5), native prairie (M4)	Figure 11

#### **4.2.2 Wildlife Management**

The proposed action would have positive environmental impacts on wildlife management. Through consultation with State and Federal wildlife agencies, animal and plant species of high, and regional importance would be identified and habitat for those species would be developed, improved and/or protected. The revisions would give special status species (listed threatened, endangered, and proposed) and/or their critical habitats priority in management decisions. This would prove beneficial for the threatened and endangered species listed for Denton and Tarrant Counties.

#### **4.3 Environmental Justice**

Executive Order 12898 of 11 February 1994 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” provides that each U.S. Federal Action shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations in the United States. The preferred alternative would affect Federal lands located near the towns of Grapevine, Flower Mound, Southlake, Westlake, Trophy Club, and Roanoke. The project involves only a change in policy for management of these Federal lands. Therefore, no disproportionately high and adverse impacts on minority and low-income populations are expected. Under the definition of Executive Order 12898, there would be no adverse environmental justice impacts.

#### **5.0 CONCLUSION**

Pressure of continuing urbanization and the mitigation plans prepared for the Opryland development and Cowboys Golf Course in 2000 confirm the need to reconsider designated land uses at Grapevine Lake. Through intensive public involvement, the supplement to the Master Plan has been developed.

The proposed implementation of the supplement of the Grapevine Lake Master Plan has been evaluated in this EA. There have been no significant adverse impacts to the human environment identified from this assessment; therefore an Environmental Impact Statement would not be necessary. Pending receipt of comments to the contrary that may be received during the public comment period on this Environmental Assessment, a Finding of No Significant Impact will be signed by the District Engineer, allowing for implementation of the proposed supplement.