Draft EA

For

Grand Prairie Sewer Line on Lands Associated Joe Pool Lake

U.S. Army Corps of Engineers

Fort Worth District

February 2013

1.0 INTRODUCTION

1.1 BACKGROUND

The City of Grand Prairie has proposed to install a wastewater collection line to provide regionalized and centralized wastewater utility service to a broad area northwest of Midlothian, TX. Construction of the wastewater line is proposed for late spring to summer of 2013. A portion of the wastewater line lies within USACE property near the headwaters of Joe Pool Lake along Mountain and Soap Creeks that drain to Joe Pool Lake.

A portion of the proposed collection line requires an easement and construction access on Federal Property. An environmental assessment is required as part of the Federal NEPA program. The proposed line lies within the drainage area just upstream of Joe Pool Lake. Joe Pool Lake is owned and operated by the USACE for flood control and municipal water purposes. This environmental assessment has been prepared in accordance with 33 CFR 230 for procedures to implement the NEPA process.

Joe Pool Lake began operations in 1989. Joe Pool Lake encompasses portions of three counties, Dallas, Tarrant and Ellis. Cities surrounding the lake include Grand Prairie, Dallas, Cedar Hill, Mansfield, and Midlothian. When full the lake has a surface area of 7,400 acres with a conservation storage capacity of 176,900 acre feet and has over 60 miles of shoreline. Joe Pool Lake is fed by the waters of Walnut and Mountain Creeks and drains north. Currently, Joe Pool Lake serves as a reservoir and public water supply for the City of Midlothian (Joe Pool Lake, Texas, 2011).

The proposed project consists of approximately 3.4 miles (17,760 feet) of wastewater pipeline (gravity line) with a ROW located on the United States Army Corps of Engineers (USACE) property in the City of Grand Prairie and Extraterritorial Jurisdiction Boundary (ETJ), Ellis County, Texas. The proposed project is located near SH 287 and FM 661 in northwest Ellis County, Texas (Appendix A, Figures 1-3). The City of Grand Prairie has master planned a single lift station to be constructed on an upland tract of land adjacent to the proposed project area. The construction of the master planned lift station and gravity pipeline would prevent redundant private pipeline construction that could affect water quality conditions downstream, and would ensure that any future private construction and operation of wastewater facilities are managed by the City of Grand Prairie.

This proposed action is not associated with any past utility right of ways or any other past developments on lands associated with Joe Pool Lake, and therefore this NEPA document is not linked or tiered to any other NEPA documents. This EA will go through a 30-day public comment period. During this comment period a Notice of Availability (NOA) will be published to inform the public of the comment period for the Draft EA. The Notice of Availability will inform the public of locations for viewing the document and where to send comments. In addition the NOA and the EA will be sent to the United States Fish and Wildlife Service (USFWS), the United State Environmental Protection Agency (USEPA), the Texas Parks and Wildlife Department (TPWD), the Texas Commission on Environmental Quality (TCEQ), and the Texas Historical Commission

(THC) for their review. Any comments received from the public or agencies will be addressed in the final version of the EA. A copy of the NOA and any comments or letters received will be placed in Appendix C of this document. A Draft Finding of No Significant Impact (FONSI) has also been prepared, which, pending receipt of comments to the contrary, will be finalized at the end of the comment period. The draft FONSI and NOA are located in Appendix C.

1.2 PURPOSE AND NEED

The City of Grand Prairie lies within Dallas, Ellis and Tarrant counties and is a part of the Dallas-Fort Worth metroplex. The Dallas-Fort Worth metroplex is experiencing one of the fastest land development and population growth rates in the country. The current infrastructure for the City of Grand Prairie is not expected to have adequate capacity to meet the future demands for waste water treatment, and therefore infrastructure planning for the area has become a priority.

The proposed regional wastewater collection system is needed to meet growing infrastructure demands and to meet regional water quality standards imposed by the Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency pursuant Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code. Required environmental permits for construction of the proposed regional wastewater collection system will be the responsibility of the City of Grand Prairie including any contractors managed by the city for this project. Environmental permits and requirements are discussed in later sections of this report.

The project study area is identified in Appendix A, Figures 2 and 3. The figures depict possible wastewater pipeline locations within and around USACE owned property.

In 2010 the City of Grand Prairie was challenged with preparing plans to meet future demands for waste water treatment within the region. The City of Grand Prairie assembled a team to explore several combinations of site and facility design alternatives for meeting current and future waste water treatment demands. The team developed selection criteria that are listed below.

Selection Criteria

- Regional wastewater collection system must support current and future demands for at least 30 years within and around the City of Grand Prairie and still offer affordable services to customers
- Availability of land
- Available land price
- Accessibility for ease of maintenance
- Land uses
- Visibility – Aesthetics

As shown in table 1 below, each alternative was evaluated for consistency with the purpose and need using the key criteria listed above.

Table 1: Evaluation of Possible Alternatives Against Key Criteria

Alternative	Positive	Negative
No Action - Do Not Construct any New Facilities	• -No land disturbance. • -No construction expenses for the City of Grand Prairie. • -Would not compromise planned public land uses.	• -Land Development would continue and the current system would not support waste water demands. • -New developments would be required to install multiple private septic or sewer systems and that would not meet the requirement of a regionalized system.
Alternative 1 - No Action on Federal Property - Pipeline Alignment Adjacent to USACE Property	• -No federal lands would be disturbed. • -Would meet future wastewater demands for the City of Grand Prairie. • -Would not compromise planned public land uses.	• -Would require the addition of multiple lift stations and related facilities to service areas west of FM 661. • -Multiple facilities would add additional construction and maintenance expenses. • -Multiple lift stations could place additional demands on the local electrical coop and could induce power outages. • -Additional land acquisitions & easements would be required. • -Would require several creek crossings. • -Could require temporary road detours during construction activities. • -Facilities would be visible from nearby roads and public use areas. • -Consumers would see significant increases in the cost of waste water services.
Alternative 2 - Pipeline Alignment along US 287 & Across USACE Property	• -One single large lift station facility located off of USACE property would support the entire alignment • A single lift and pump facility would require less	• -Could require temporary inaccessibility to public facilities and road detours during construction activities. • -Would require several creek crossings.

Alternative	Positive	Negative
	construction, maintenance and operation costs water system. • -Would not compromise planned public land uses. • -Facilities would not be visible from nearby roads or public areas.	
Alternative 3 - Pipeline Alignment Along FM 661	• -Would meet future wastewater demands for the City of Grand Prairie.	• -Would require the addition of multiple lift stations and related facilities to service areas east of Mountain Creek and Soap Creek. • -Would require additional land easements. • -Would require facilities to be placed within floodplains of Mountain and Soap Creeks. • -Would require a large lift station within the headwaters of Joe Pool Lake. • -Multiple lift stations could place additional demands on the local electrical coop and could induce power outages. • -Would require additional construction and maintenance expenses. • -Accessibility for maintenance would be difficult. • -Could compromise planned public land use. • -Facilities would be visible from nearby roads and public use areas. • -Affordability to the city and to customers is significantly affected.

2.0 DESCRIPTION OF ALTERNATIVES

2.1 General

This section of the environmental assessment identifies and evaluates the design alternatives that were considered in determining the preferred action plan. As shown in the table above the No Action Alternative simply constructing no infrastructure improvements would not address future waste water demands and led to evaluating three other possible alternatives. Alternative 1 - No Action on Federal Property would involve no construction on federal lands, in which all pipelines and related pump facilities would be developed on private lands. Alternative 2 would involve the location of a utility right of way for locating a portion of the pipeline on federal lands. Alternative 3 involves a combination of facilities to be constructed on federal lands and connected to facilities developed on private lands.

Degrees of disturbance are addressed below in terms of their relative impact to land, environmental and social resources. The "significance" of the given impacts is primarily based on two criteria; the intensity or severity of the impact, and the context in which the proposed action will occur. The duration of the impact has also been used as a third criterion to determine significance of the impact. These effects on the resources can consist of changes that are either adverse or beneficial. An effect is considered significant if it will result in highly noticeable, permanent, and measurable changes to the resources under evaluation on a local, regional, and/or national level. The intensity of the proposed action might be based on the degree of controversy, effects on public health or safety, impacts to unique resources, precedent-setting effects, the degree of uncertainty about the effects and the risks, or on actions that will result in violation of federal, state, or local environmental law. NEPA requires that the reviews consider direct impacts, indirect impacts, and the cumulative effects of the proposed action.

Negligible impacts are those disturbances that result in no measurable changes to the resources. Minor or minimal impacts are those disturbances that result in small but temporary changes to the resources. Such terminology is further defined in Section 5.0 of this document under the discussion of cumulative impacts.

2.2 No Action Alternative

The No Action alternative would result in not implementing any construction of wastewater collection improvements or facilities. This alternative would not meet near-term and long-term demands for regionalized wastewater collection and treatment for the City of Grand Prairie and its surrounding communities. The current system would reach capacity and would require future developments to construct multiple private septic systems and numerous lift stations to meet the waste water demands. Multiple septic systems and lift stations would place increased demands on the local electric company. Increased demands on the electric company could induce power outages. Power outages would not allow pumps within lift stations to operate and could result in sewage overflowing into nearby water bodies through runoff. For these reasons this alternative was not chosen as the preferred alternative.

2.3 Alternative 1 - No Action on Federal Property (Pipeline Alignment Adjacent To USACE Property)

In the Alternative 1 - No Action on Federal Property the pipeline alignment would not cross USACE property therefore, it would not require the NEPA process and easement associated with the federal lands. The No Action on Federal Property Alternative pipeline alignment would be situated north of US 287 and east of FM 661 in northwest Ellis County, Texas. This alignment would travel in a north to south direction running parallel and east of Soap Creek along the eastern boundary of USACE property and would terminate just south of US 287 North Bound. Alternative 1 would consist of approximately 2.69 miles of gravity line collection and ROW but would not include the two interceptor lines planned for service availability along FM 661. The location of Alternative 1 is presented in Appendix A, Figures 2-3.

This pipeline alignment would not provide wastewater services to prime real estate areas west of FM 661unless, additional features are added to increase capacity that would extend service to those areas. To service those areas west of FM 661 would require the City of Grand Prairie to construct multiple lift stations and force mains at the location of each of the four natural drainage courses which converge at the location of the proposed gravity main. These required lift stations would be located in close proximity with the floodplains of Mountain and Soap Creeks and would require coordination with the local floodplain administrator. In addition a system of multiple lift stations and force mains would place increased demands on the local electrical cooperation and could induce power outages. The multiple lift stations and associated facilities would require substantial construction costs and substantial increases in the City of Grand Prairie's maintenance and operating expenses. The increase in maintenance and operating expenses would require the City of Grand Prairie to significantly raise the cost of waste water services offered to customers within the community. This alternative would meet the criteria of providing a regional wastewater collection system to support current and future demands; however, the increased service costs could affect some populations within the community, such families on fixed incomes. In addition some local small business owners could be affected by significant increases in waste water services. Therefore, "Alternative 1 - No Action on Federal Property" has been eliminated from further consideration in the Environmental Consequences review of reasonable alternatives.

2.4 Alternative 2 - Us 287 Pipeline Alignment Across USACE Property (Preferred Alternative)

Alternative 2 is the preferred alternative alignment and would be situated near US 287 and FM 661 in northwest Ellis County, Texas. Alternative 2 would consist of approximately 3.8 miles (3.4 miles on USACE Property) of gravity line and ROW traveling in a north to south direction parallel and east of Soap Creek, terminating just south of US 287 North Bound. Alternative 2 would include a large single lift station located on private land to serve the entire system.

The planned large single lift station would save construction, maintenance and operational expenses significantly and would allow the City to offer affordable services to the entire community. Designs for this alternative would include; boring under major creek crossings to avoid potential impacts to Waters of the U.S. and a variety of Best Management Practices

(BMPs) to minimize impacts to other natural resources. The location of Alternative 2 is presented in Appendix A, Figures 2 and 3.

2.5 Alternative 3, Fm 661 Pipeline Alignment

Alternative 3 would consist of approximately 3.04 miles (1.76 miles on USACE Property) of collection line traveling in a north to south direction parallel and east of Soap Creek along FM 661 with approximately 1.4 miles of force main travelling south to north of Mountain Creek and traveling west to east across the headwaters of Joe Pool Lake. This alignment would not provide wastewater service to the areas east of Mountain and Soap Creeks unless, additional features are added to increase capacity that would extend service to those areas. To service those areas would require the City of Grand Prairie to construct multiple lift stations and force mains to reach the collection line at FM 661. The required force mains would be located near the base of Mountain Creek and would run north toward FM 661 with lift stations located in close proximity of the creek bottom which would require coordination with the local floodplain administrator. In addition, a large lift station would be required within the headwaters of Joe Pool Lake which could be difficult due to the location of the flood plain and the normal conservation pool. The location of Alternative 3 is presented in Appendix A, Figures 2 and 3.

A system of multiple lift stations and force mains would place increased demands on the local electrical cooperation and could induce power outages. The multiple lift stations and associated facilities would require substantial construction costs and substantial increases in the City of Grand Prairie's maintenance and operating expenses. In addition, the lift stations located near the bottom of Mountain Creek and the required lift station within the headwaters of Joe Pool Lake would require extensive mitigation which further increase the costs associated with this alternative. The costs associated with construction, mitigation, maintenance, and operations for this alternative would not align with the City of Grand Prairie allowable budgets. Therefore, the "Alternative 3 - Fm 661 Pipeline Alignment" has been eliminated from further consideration in the Environmental Consequences review of reasonable alternatives.

3.0 AFFECTED ENVIRONMENT

3.1 GENERAL

This section describes the existing environment that could be affected within the USACE property surrounding Mountain Creek and Soap Creek in Ellis County, Texas. The construction activities would involve a trench-cut and back-fill method for the pipeline installation. Several crossings would be required within Soap Creek and Mountain Creek and methods to bore under the creeks would be used to reduce impacts to the natural resources in those areas.

3.2 PROJECT SETTING & LAND USE

The project area is located in Ellis County, Texas south of Gifco Road and north of the intersection at US 287 and FM 661. The majority of the land is not developed and lies to the south of Joe Pool Lake northwest of Midlothian, TX. The terrain is level to rolling with an elevation of 300-700 ft, above sea level.

3.3 CLIMATE

The climate of the study area is mild, ordinarily free from extremes of heat or long-continued cold. While the summers are long and warm, the heat of the days is moderate, and the nights are generally cool. During January and February sudden changes of temperature are experienced, caused by winds that sweep south from the colder regions to the north. A small fall of snow is not uncommon, but the ground seldom freezes to depths greater than 1 inch. Temperatures range from an average low of 35°F in January to an average high of 96°F in July, rainfall averages slightly less than 36 inches a year, and the growing season extends for 245 days.

3.4 GEOLOGY AND SOILS

3.4.1 General

The study area is situated in the Blackland Prairie ecoregion of Texas (Griffith et al. 2007). The fertile dark clay soils of the Blackland Prairies are some of the richest soils in the world. These clay soils are found in gently rolling to level regions just west of and, in some cases, surrounded by the Post Oak Savannah ecoregion. The region contains a higher percent of cropland than adjacent regions, although much of the land has been recently converted to urban and industrial uses.

The topographic features of Ellis County vary from those of a hilly section cut by streams flowing in narrow V-shaped valleys to those of a level county. The terrain is level to rolling, with an elevation ranging from 300 to 700 feet above sea level. Mountain Creek flows northwest and drains the northwestern part of the county (Appendix A, Figure 2) with discharges to Joe Pool Lake. The floodplain of Mountain Creek in the study area is about 25 feet lower than the adjacent prairie to the west, and is 25 to 75 feet lower than gently rolling hills to the east of the creek. The floodplain is relatively flat but exhibits some minor local relief associated with oxbow lakes and natural stream levees (Appendix A, Figure 5).

3.4.2 Soil Descriptions

The soils in the project area are predominantly calcareous, marly and variegated clays and clay loams that have average to good moisture retention, and are underlain by a water supply sufficient for livestock, irrigation, and domestic purposes. The alluvial soils are mainly clay. Five mapped soil units would be traversed by the proposed pipeline within the USACE property. (Soils map located Appendix A, Figure 4).

The NRCS (2010a) provides farmland classifications, which identifies map units as Prime Farmland, Farmland Of Statewide Importance, Farmland Of Local Importance, Or Unique Farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978. As indicated below two soil types within the project study area are considered prime farmland: Houston clay, 1 to 3% slopes, and Trinity clay, occasionally flooded.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions of saturation, flooding, or ponding long enough during

the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. Hydric soils may indicate potential wetlands, which could be regulated under the USACE jurisdiction. There is one hydric soil within the project area. The five soil units found within the project area are described below.

- **Ellis and Houston clays, 3 to 5 percent slopes, eroded (EhC2)**

The Ellis and Houston Clays 3 to 5 percent slopes, eroded unit is a soil complex. A soil complex consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on soil maps. The soils in this complex are known to exist in uplands and are known to exhibit several small gullies. These soils are thin droughty soils that exhibit slow permeability, rapid runoff, and are best suited for use as native grasslands.

- **Gullied land (GI)**

The Gullied land map unit consists of areas that have severe gully erosion. GI units receive runoff from soils at higher elevations. Most of the soil materials are clay, and the gullies are sparsely vegetated. These soils are highly erosive soils and are not recommended for agricultural uses.

- **Houston clay, 1 to 3 percent slopes (HcB) (PRIME FARMLAND CLASSIFICATION)**

The Houston clay unit consists of very deep, well drained, nearly level to gently sloping soils of uplands with a very high shrink-swell potential. These soils are suited for cropland production such as grain sorghum and cotton, but are commonly used for pasture and hay production.

- **Trinity clay, frequently flooded (Tc) (HYDRIC SOIL CLASSIFICATION)**

The Trinity clay frequently flooded map unit occurs on the lower portions of floodplains along streams and rivers. These soils are very deep, poorly drained, and exhibit very slow permeability. This soil is known to be associated with wetlands. Because this soil is frequently flooded it is not suitable for cultivated crops, and should be kept in permanent grasses.

- **Trinity clay, occasionally flooded (To) (PRIME FARMLAND CLASSIFICATION)**

The Trinity clay unit consists of nearly level soils that are occasionally flooded, are underlain by old alluvium and occur on the upper portions of flood plains along river valleys. These soils are deep, moderately drained soils, are very fertile soils, and are best suited for cropland production, but are commonly used for pasture.

3.5 WATER RESOURCES

3.5.1 Surface Waters of the U.S. Including Wetlands, Section 404

The Army Corps of Engineers regulates, under the authority of Section 404 of the Clean Water Act, the discharge of dredged and fill material into all waters of the U.S., including wetlands,

Nontidal waters of the U.S are generally described as rivers and streams including the smallest of tributaries, any impoundments on those rivers and stream (*i.e*., ponds and lakes), and any wetlands adjacent to those features. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions Wetlands generally include swamps, marshes, bogs, mudflats, wet meadows, playa lakes, and similar areas. In the absence of adjacent wetlands, the limits of jurisdiction extend beyond the Ordinary High Water Mark (OHWM) to the limit of the adjacent wetlands. The OHWM is the line on the shore established by the fluctuations of water and indicated by physical characteristics of the surrounding area. A study to determine the presence or absence of waters of the U.S. within the proposed project was done by the City of Grand Prairie.

Two jurisdictional streams, Soap Creek and Mountain Creek, were observed within the USACE portion of the project area. Soap Creek is an intermittent stream with several unnamed ephemeral tributaries, and one adjacent pond. The adjacent pond is a jurisdictional wetland and is considered a Water of the US. Mountain Creek is an intermittent stream with several unnamed ephemeral tributaries. Most of the stream beds in the project area are located on the upper ends of the tributaries that eventually discharge into Joe Pool Lake. Although Joe Pool Lake receives water from these streams, the lake is located outside of the project area. The impacted drainages of Soap and Mountain Creeks consist of bare dirt or rock substrates meandering through grasslands and mixed hardwoods. Very little herbaceous vegetation is present along the majority of these streambeds, other than at the down gradient ends of the stream reaches where they cross flatter wetland benches.

3.5.2 Surface Waters, Section 10

Section 10 of the Rivers and Harbors Act of 1899 states that navigable waters of the U.S are those waters that are subject to the ebb and flow of the tide and/or are presently being used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Navigable waters include lakes and other on-channel impoundments of navigable rivers. No navigable water bodies are located within the study area.

3.5.3 Wild and Scenic Rivers

None of the water resources within the project area are classified as wild or scenic rivers.

3.5.4 Coastal Zone Areas

There are no coastal zone areas in the Dallas-Fort Worth metroplex.

3.5.5 Ground Waters

Ellis County is underlain by a sub crop of the Trinity Aquifer. The Trinity Aquifer underlies an area of about 41,000 square miles that extends from south-central Texas to southeastern Oklahoma. This aquifer consists of interbedded sandstone, sand, limestone, and shale of Cretaceous age. The base of the Trinity aquifer slopes generally to the south and southeast. The altitude of the base ranges from more than 5,000 feet below sea level in the north to more than 1,500 feet above sea level in the west-central area.

The top of the aquifer in the confined zone ranges from more than 2,000 feet below sea level in the north to more than 1,500 feet above sea level in the west-central area. Depths of wells completed in the Trinity aquifer range between 50 and 800 feet, but some well depths exceed 3,000 feet. Wells commonly yield from 50 to 500 gallons per minute, and some yield as much as 2,000 gallons per minute. The concentration of dissolved solids in the water typically ranges from 500 to 1,500 milligrams per liter.

Recharge/catchment areas for this aquifer are not known to exist within the footprint of the study area for the proposed pipeline.

3.5.6 Water Quality

The Texas Commission on Environmental Quality (TCEQ) establishes water quality standards and regulations for each classified river segment in Texas. The records from the TCEQ and United States Geological Survey were reviewed for information on continuous recording stream flow gauges and water quality data for the streams located in the proposed project area. The 2008 Texas Water Quality Inventory and 303 (d) List revealed that the reservoir Joe Pool Lake (north of project area), Mountain Creek or Soap Creek were not listed on the TCEQ impaired list.

Temporary construction activities have the potential to adversely affect water quality, especially near stream crossings. Such activities, if not properly controlled, could cause an increase in turbidity and sediments that are potentially damaging to aquatic ecosystems. Potentially harmful ground disturbing activities related to construction operations include clearing, grubbing.

The greatest potential for adverse impacts to surface water exists during the construction phase of the project due to ground disturbing activities. The construction activities for this project would disturb greater than 5 acres of land and would require a TPDES General Permit (TXR 150000) for large construction projects. Under this type of permit a project specific Stormwater Pollution Prevention Plan (SWPPP) detailing erosion and sediment measures must be written by the project engineer or contractor and implemented prior to ground disturbing activities. The plan would consist of both management and structural Best Management Practices (BMPs) in order to reduce pollution movement into receiving waters. These BMPs work by slowing the flow of water from the site to minimize transport of soil particles or other debris during construction. The SWPPP would include an inspection and maintenance plan for the BMPs to insure maximum erosion protection and would include other details mandated in the General Permit. In order to comply with regulations, the project engineer or contractor is required to submit a Notice of Intent (NOI) to the TCEQ prior to beginning construction. Following the completion of construction and attaining final stabilization on all portions of the site, a Notice of Termination (NOT) must be submitted to TCEQ.

3.5.7 Flood Plains

The proposed project would require construction activities within the 100 year floodplains of Mountain and Soap Creeks.

The City of Grand Prairie is a participating member of the National Flood Insurance Program (NFIP) and is required to regulate any development in designated flood prone areas. Any work

within a Federal Emergency Management Agency (FEMA) designated floodplain requires a Floodplain Permit. The City Floodplain Administrator would review the permit and associated documentation (e.g. Elevation Certificate, Conditional Letter of Map Revision, Letter of Map Amendment, ect.) to determine if the development would have an adverse impact on adjacent property owners, would decrease the flood carrying capacity of the watercourse, and would create a situation that is dangerous during flooding events.

3.6 BIOLOGICAL RESOURCES

3.6.1 Vegetation

The project area is located in the Blackland Prairie soils belt and the Blackland Prairie vegetation region in Ellis County (Griffith et al. 2007). The Texas Blackland Prairie represents the southernmost extension of the North American tall grass prairie. In project area, the principal habitat is an almost treeless rolling prairie of tall grass that typically occurs on higher areas with good drainage. Dominant vegetation within the project area includes big bluestem, little bluestem, Indian grass, brownseed paspalum, and grama grass. There are, however, hardwoods such as elms, hackberry, pecan, oak, and Bois d' Arc occurring along streams. Vegetative components specific to the project site are typical of areas where sucessional species have become common as a result of past agricultural practices. Brushy species such as honey mesquite and eastern red cedar are found in many portions of the grasslands within the project area. Vegetative characteristics of the site are generally of lower value. Grading activities could affect vegetation and potential affects to those areas will be discussed in section 4.5.3 below.

Due to the intermittent nature of Mountain Creek and Soap Creek, aquatic vegetation is limited to the down gradient reaches of these streams where small areas of flat wetland benches exist within the confines of stream channel. Vegetation observed within these wetland areas included patches of Bermuda grass and pondweed (Potamogeton sp.). Patches of Bermuda grass, camphor-weed *(Pluchia purpurascens)*, Curly dock *(Rumex crispus)* and (Potamogeton sp.) were observed along the perimeter of one jurisdictional pond located adjacent to Soap Creek. Construction activities within these areas would require Section 404 coordination with USACE Regulatory.

3.6.2 Wildlife

A variety of mammals are known to reside in or near the project area. These include opossum (*Didelphis virginiana*), cave bat (*Myotis velife*), beaver (*Castor canadensis*), nutria (*Myocastor coypus*), plains pocket gopher (*Geomys bursarius*), eastern flying squirrel (*Glaucomys volans*), eastern gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), California jackrabbit (*Lepus californicus*), eastern cottontail (*Sylvilagus floridanus*), white-tailed deer (*Odocoileus virginanus*), nine-banded armadillo (*Dasypus novemcinctus*), raccoon (*Procyon lotor*), mink (*Mustela vison*), spotted skunk (*Spilogale putorius*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). Many of these species have been able to tolerate urbanization, while species that formerly inhabited the region such as black bear (*Ursus americanus*), grey wolf (*Canis lupus*), red wolf (*Canis rufus*), mountain lion (*Felis concolor*), river otter (*Lutra candensis*), and bison (*Bos bison*) were extirpated from the area due to hunting, trapping and/or behavioral intolerance to human activity.

The situation is similar for birds, reptiles, and amphibians. The species more intolerant to human activity have declined, while the more tolerant species have flourished. Common reptile species that occur near the project area include lizards and various snakes, such as the copperhead (*Agkistodon contortrix*), cottonmouth (*Agkistodon piscivorus*), bullsnake (*Pituophis melanoleucus sayi*), and diamondback rattlesnake (*Crotalus atrox*). A large number of bird species utilize the stream bottomlands in Ellis County and species such as the house sparrow (*Passer domesticus*), great-tailed grackle (*Quiscalus mexicanus*), American crow (*Corvus brachyrhynchos*), blue jay (Cyanocitta cristata); and European starling (*Sturnus vulgaris*) dominate the more urbanized areas.

During site visits, evidence of raccoon and beaver presence was recorded in the woodland areas, and eastern cottontail, spotted skunk, blue jay, and house sparrows were observed within the property.

3.6.3 Threatened and Endangered Species

A review of the state and federal threatened and endangered species lists was conducted for Ellis County, Texas (Table 1. TPWD 2011 listed below). The U.S. Fish and Wildlife Service lists four threatened or endangered species as occurring or potentially occurring. These are the golden-cheeked warbler (endangered), interior least tern (endangered), whooping crane (endangered), and red wolf (endangered). The Texas Parks and Wildlife Department lists an additional ten state threatened or endangered species as occurring or potentially occurring. These species are American peregrine falcon (threatened), bald eagle (threatened), white-faced ibis (threatened), wood stork (threatened), alligator snapping turtle (threatened), Texas horned lizard (threatened), timber/canebrake rattlesnake (threatened), Louisiana pigtoe (threatened), Texas heelsplitter (threatened), and Texas pigtoe (threatened).

Surveys for the species of concern as well as their preferred habitat as listed by the USFWS and the TPWD were conducted in July, 2007 and on January 5, 2010 within the proposed project area. During the on-site investigation, the project area was visually assessed for the listed species or evidence of their presence. Habitat for the listed species was not observed within the pipeline ROW, and none of these species were observed during the site visits.

Section 7 of the Endangered Species Act of 1973 (PL 93-205) (ESA) (United States Congress, 1973) requires Federal agencies to consult with the USFWS in order to ensure projects do not jeopardize the continued existence of threatened and endangered species.

Table 2: List of Federal and State listed threatened and endangered species for Ellis County, Texas (TPWD, 2011).

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS*	STATE STATUS**	HABITAT DESCRIPTION
BIRDS				
AMERICAN PEREGRINE FALCONE	*FALCO PEREGRINES ANATUM*	DL	T	YEAR-ROUND RESIDENT AND LOCAL BREEDER IN WEST TEXAS, NESTS IN TALL CLIFF EYRIES; ALSO, MIGRANT ACROSS STATE FROM MORE NORTHERN BREEDING AREAS IN U.S. AND CANADA, WINTERS ALONG COAST

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS*	STATE STATUS**	HABITAT DESCRIPTION
				AND FATHER SOUTH; OCCUPIES WIDE RANGE OF HABITATS DURING MIGRATION, INCLUDING URBAN, CONCENTRATIONS ALONG COAST AND BARRIER ISLANDS; LOW-ALTITUDE MIGRANT, STOPOVERS AT LEADING LANDSCAPE EDGES SUCH AS LAKE SHORES, COASTLINES, AND BARRIER ISLANDS.
BALD EAGLE	*HALIATEENTUS LEUCOCEPHALUS*	DL	T	FOUND PRIMARILY NEAR RIVERS AND LARGE LAKES; NEST IN TALL TREES OR ON CLIFFS NEAR WATER; COMMUNALLY ROOSTS, ESPECIALLY DURING WINTER, HUNTS LIVE PREY, SCAVENGES, AND PIRATES FOOD FROM OTHER BIRDS.
GOLDEN-CHEEKED WARBLER	*SETOPHAGA CHRYSOPARIA*	LE	E	JUNIPER-OAK WOODLANDS; DEPENDENT ON ASHE JUNIPER (ALSO KNOWN AS CEDAR) FOR LONG FINE BARK STRIPS, ONLY AVAILABLE FROM MATURE TREES, USED IN CONSTRUCTION; NESTS ARE PLACED IN VARIOUS TREES OTHER THAN ASHE JUNIPER; ONLY A FEW MATURE JUNIPERS OR NEARBY CEDAR BRAKES CAN PROVIDE NECESSARY NEST MATERIAL; FORAGE FOR INSECTS BROAD-LEAVED TREES AND SHRUBS; NESTING LATE MARCH-EARLY SUMMER.
INTERIOR LEAST TERN	*STERNA ANTILLARUM ATHALASSOS*	LE	E	SUBSPECIES IS LISTED ONLY WHEN INLAND(MORE THAN 50 MILES FROM A COASTLINE); NESTS ALONG SAND AND GRAVEL BARS WITHIN BRAIDED STREAMS, RIVERS; ALSO KNOWN TO NEST ON MAN-MADE STRUCTURES (INLAND BEACHES, WASTEWATER TREATMENT PLANS, GRAVEL MINES, ECT); EATS SMALL FISH AND CRUSTACEANS, WHEN BREEDING FORAGES WITHIN A FEW HUNDRED FEET OF COLONY.
PEREGRINE FALCONE	*FALCO PEREGRINES*	DL	T	BOTH SUBSPECIES MIGRATE ACROSS THE STATE FROM MORE NORTHERN BREEDING AREAS IN U.S. AND CANADA TO WINTER ALONG COAST AND FARTHER SOUTH; SUBSPECIES (F.P. ANATUM) IS ALSO A RESIDENT BREEDER IN WEST TEXAS; THE TWO SUBSPECIES LISTING STATUSES DIFFER, F.P. TUNDRIUS IS NO LONGER LISTED IN TEXAS; BUT BECAUSE THE SUBSPECIES ARE NOT EASILY DISTINGUISHABLE AT A DISTANCE,

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS*	STATE STATUS**	HABITAT DESCRIPTION
				REFERENCE IS GENERALLY MADE ONLY TO THE SPECIES LEVEL; SEE SUBSPECIES FOR HABITAT.
WHITE-FACED IBIS	*PLEGADIS CHIHI*	---	T	PREFERS FRESHWATER MARSHES, SLOUGHS, AND IRRIGATED RICE FIELDS, BUT WILL ATTEND BRACKISH AND SALTWATER HABITATS; NESTS IN MARSHES, IN LOW TREES, ON THE GROUND IN BULRUSHES OR REEDS, OR ON FLOATING MATS
WHOOPING CRANE	*GURS AMERICANA*	LE	E	POTENTIAL MIGRANT VIA PLAINS THROUGHOUT MOST OF STATE TO COAST; WINTERS IN COASTAL MARSHES OF ARANSAS, CALHOUN, AND REFUGIO COUNTIES.
WOOD STORK	*MYCTERIA AMERICANA*	---	T	FORAGES IN PRAIRIE PONDS, FLOODED PASTURES OR FIELDS, DITCHES, AND OTHER SHALLOW STANDING WATER, INCLUDING SALT-WATER; USUALLY ROOSTS COMMUNALLY IN TALL SNAGS, SOMETIMES IN ASSOCIATION WITH OTHER WADING BIRDS (I.E. ACTIVE HERONRIES); BREEDS IN MEXICO AND BIRDS MOVE INTO GULF STATES IN SEARCH OF MUD FLATS AND OTHER WETLANDS, EVEN THOSE ASSOCIATED WITH FORESTED AREAS; FORMERLY NESTED IN TEXAS, BUT NO BREEDING RECORDS SINCE 1960.
MAMMALS				
RED WOLF	*CANIS RUFUS*	LE	E	EXITIRPATED; FORMERLY KNOWN THROUGHOUT EASTERN HALF OF TEXAS IN BUSHY AND FORESTED AREAS, AS WELL AS COASTAL PRAIRIES
MOLLUSKS				
LOUISIANA PIGTOE	*PLEUROBEMA*	---	T	STREAMS AND MODERATE-SIZE RIVERS, USUALLY FLOWING WATER ON SUBSTRATES OF MUD, SAND AND GRAVEL; NOT GENERALLY KNOWN FROM IMPOUNDMENTS, SABINE, NECHES AND TRINITY (HISTORIC) RIVER BASINS.
TEXAS HEELSPLITTER	*POTAMILUS AMPHICHAENUS*	---	T	QUIET WATERS IN MUD OR SAND AND ALSO IN RESERVOIRS. SABINE, NECHES, AND TRINITY RIVER BASINS.
TEXAS PIGTOE	*FUSCONAIA ASKEWI*	---	T	RIVERS WITH MIXED MUD, SAND, AND FINE GRAVEL IN PROTECTED AREAS ASSOCIATED WITH FALLEN TREES OR OTHER STRUCTURES; EAST TEXAS RIVER BASINS, SABINE THROUGH

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS*	STATE STATUS**	HABITAT DESCRIPTION
				TRINITY RIVERS AS WELL AS SAN JACINTO RIVER.
REPTILES				
ALLIGATOR SNAPPING TURTLE	*MACROCHELYS TEMMINCKII*	---	T	PERENNIAL WATER BODIES; DEEP WATER OF RIVERS, CANALS, LAKES, AND OXOWS; ALSO SWAMPS, BAYOUS, AND PONDS NEAR DEEP RUNNING WATER; SOMETIMES ENTERS BRADKISH COASTAL WATER; USUALLY IN WATER WITH MUD BOTTOM AND ABUNDANT AQUATIC VEGETATION; MAY MIGRATE SEVERAL MILES ALONG RIVERS; ACTIVE MARCH-OCTOBER; BREEDS APRIL-OCTOBER.
TEXAS HORNED LIZARD	*PHRYNOSOMA CORNATUM*	---	T	OPEN, ARID AND SEMI-ARID REGIONS WITH SPARSE VEGETATION, INCLUDING GRASS, CACTUS, SCATTERED BRUSH OR SCRUBBY TREES; SOIL MAY VARY IN TEXTURE FROM SANDY TO ROCKY, BURROWS INTO SOIL, ENTERS RODENT BURROWS, OR HIDES UNDER ROCK WHEN INACTIVE; BREEDS MARCH-SEPTEMBER.
TIMBER/CANEBACK RATTLESNAKE	*CROTALUS HORRIDUS*	---	T	SWAMPS, FLOODPLAINS, UPLAND POINE AND DECIDUOUS WOODLANDS, RIPARIAN ZONES, ABANDONED FARMLAND; LIMESTONE BLUFFS, SANDY SOIL OR BLACK CLAY; PREFERS DENSE GROUND COVER, I.E. GRAPEVINES OR PALMETTO.

*LE = listed endangered, LT = listed threatened, DL = delisted
**E=listed endangered, T = listed threatened

3.7 NOISE AND GENERAL AESTHETICS

The project area is generally a quiet community with noise generated from adjacent or nearby transportation infrastructures such as, the Burlington Northern Santa Fe Railway, and adjacent highways and major thorough fares. Existing traffic volumes for US 287 south bound is 10, 998 vehicles per day (VPD), SH 360 south bound is 12,594 VPD, and east bound Gifco Road is 587 VPD, and FM 661 is 547 VPD. Ambient noise commonly known as background noise levels in and around the project area generally range between 35 to 45dBA. There are no sensitive receptors such as schools, day cares, hospitals or churches located in the project area.

3.8 CULTURAL RESOURCES

Blanton & Associates, Inc. (B&A) conducted a review of records available on the THC's online Texas Archeological Sites Atlas (TASA) on January 5, 2009 to determine the presence of previously recorded sites or previously investigated archeological project areas in or adjacent to

the proposed pipeline ROW. The research indicated that there are no previously recorded archeological sites within, or adjacent to, the proposed project area. However, the review did indicate that the proposed ROW was previously surveyed in 1977 and 1981 during large cultural resources surveys of the USACE property that the proposed wastewater utility pipeline would occupy (TASA 2010). One very low density prehistoric lithic scatter (41EL29) discovered in a plowed field recorded during these investigations is approximately 1,060 meters north-northeast of where the planned terminus of the ROW north of Mountain Creek ends at FM 661. Given the distance of this site to the ROW, 41EL29 would not be impacted by the planned construction.

3.9 NATIVE AMERICAN CONCERNS (E.O. 13007)

No Native American concerns have been identified in this project area.

3.10 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTES (HTRW)

A Hazardous, Toxic, and Radioactive Waste (HTRW) Assessment was conducted for each of the alternatives. The scope of the HTRW Assessment included a visual site visit, database and records review for the areas. The assessments did not reveal any conditions that would affect land uses. A summary of the assessment results is discussed in section 4.8.2.

3.11 AIR QUALITY

The EPA established the General Conformity Rule in Title I, Section 176 of the Clean Air Act (CAA). The regulatory citations of the General Conformity Rule can be found in Title 40 of the Code of Federal Regulations Part 51, subpart W in Title 30 of the Texas Administrative Code (30 TAC) 101.30. These rules mandate that the federal government not engage, support, provide financial assistance for licensing or permitting, or approve any activity not conforming to an approved CAA implementation plan in coordination with and as part of the National Environmental Policy Act process. USACE approval of the Proposed Action through an anticipated FONSI would require the General Conformity Rule be addressed.

The daily air quality surrounding the study area is generally of higher quality than that of the major cities within the Dallas–Fort Worth metroplex. Ellis County, however, is one of nine counties included in the Dallas-Fort Worth eight hour serious nonattainment area for ozone and its precursors, nitrogen oxides ($NO_{x)}$ and volatile organic compounds (VOC). Ellis County has adopted and abides by the Revisions to the State Implementation Plan (SIP) for the Control of Ozone Air Pollution, Dallas-Fort Worth eight-hour Ozone Nonattainment Area dated May 23, 2007. In determining conformity with the DFW SIP, direct and indirect NO_x and VOC emissions resulting from the Proposed Action must be estimated and compared to the de minimis threshold of 50 tons per year (TPY) per pollutant. The greatest potential for impacts to air quality by the Proposed Action would be related to the use of equipment during construction activities. Impacts to air quality related to the proposed project are discussed in Section 4.9.

3.12 RECREATION, STATE OR NATIONAL PARKS, FORESTS, CONSERVATION AREAS, OR OTHER AREAS OF ECOLOGICAL, SCENIC, OR AESTHETIC IMPORTANCE.

A portion of the project area would be located on property owned and managed by the Fort Worth USACE district and is designated in the USACE Joe Pool Lake Master Plan as Recreation Low-Density Use/Wildlife Management. This land is suited for primitive camping, nature study,

hiking and biking while providing suitable habitat for the propagation and preservation of native species and wildlife. Appendix A, Figure 8 depicts the land use near the proposed Alternative alignments.

No other State or National Parks, conservation areas, or other areas of recreational, ecological, scenic, or aesthetic importance are located within the project foot print.

3.13 SOCIOECONOMICS

Ellis County encompasses 939 square miles with a 2000 U.S. census population total of 111,360, of which 82.3 percent were white, 8.9 percent Black or African American, and the remainder American Indian, Asian, or other races. The median household income for Ellis County was $50,350 in 1999, and the percent below the poverty level was 8.6 percent. The 2006-2008 U.S. Census Bureau American Community Survey (USCBAS) 3-Year Estimates increase the median household income to $59,932 and the percent below poverty level to 9.2 percent (USCB, 2010).

The 2006 Regional Water Plan County Population Projections for 2000-2060: Region C for Ellis County, Texas are: 111,360 (2000), 149,627 (2010), 188,280 (2020), 230,402 (2030), 277,956 (2040), 334,794 (2050), and 402,573 (2060) (TWDB, 2010). The City of Grand Prairie had a population of 127,427 in the 2000 US Census. The median household income for the City of Grand Prairie was $46,816 in 1999, and the percent below the poverty level was 8.7. The USCBAS 2006-2008 3-Year estimates increase the median house income to $50,765 and the percent below poverty level to 12.3 percent. The project area is located in census tract 607 and crosses block groups 1012, 1035, and 1037. In 2000, tract 607 had a population of 5,495, of which 88.9 percent were white, 3.4 percent were black, and the remaining consisting of other ethnic groups; the census data revealed that 15.9 percent of the overall population in census tract 607 were of Hispanic origin. Approximately 6.9 percent of the families in this census tract had income below the poverty level (USCBAS, 2010).

4.0 ENVIRONMENTAL CONSEQUENCES

This section evaluates the environmental consequences of each alternative for each environmental resource area. After a general introduction of each resource area and the types of impacts that might occur in that area, the nature of the environmental consequences for each specific alternative are described. Consequences of the ”Preferred Action” and other alternatives consist of both direct and indirect (or secondary) impacts. Secondary impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

As discussed in section 2.3, Alternative 1- No Action on Federal Property (Pipeline Alignment Adjacent to USACE Property) would require significant increases in the City of Grand Prairie’s Maintenance and Operating budgets and force the city to raise the cost of waste water services offered to their customers. The increased cost of waste water services could impose economic stress on small business owners and other neighborhood populations within the area. Therefore, the “No Action on Federal Property” alternative has been eliminated from further consideration in this Environmental Consequences review of reasonable alternatives.

As discussed in section 2, alternative 3 FM 661 Pipeline Alignment, was not economically feasible for the City of Grand Prairie. Therefore, the "Alternative 3 FM 661 Pipeline Alignment" has been eliminated from further consideration in this Environmental Consequences review of reasonable alternatives.

4.1 Project Setting & Land Use No Action Alternative

The No Action Alternative would not build any wastewater improvements. No waste water improvement construction activities would occur and existing land uses in the project area would not be affected.

4.1.2 Project Setting & Land Use Alternative 2 Proposed Alternative

The proposed action alternative consists of approximately 3.4 miles (17,760 feet) of wastewater pipeline (gravity line) with a ROW width of 40 feet bounded by the USACE property in the City of Grand Prairie and ETJ, Ellis County, Texas (**Appendix A, Figures 1-3**). The proposed alignment would be located near the intersection of US 287 and FM 661 in northwest Ellis County, Texas. Approximately 2.2 miles of the proposed pipeline would travel in a north to south direction parallel and east of Soap Creek within the USACE property. Along FM 661 approximately 360 feet south of Mountain Creek, a section of the pipeline would extend nearly 0.7 miles in an eastern direction, would cross Soap Creek, and would terminate into the north to south proposed portion of the pipeline. A third section of the pipeline, would be located approximately 0.4 miles north of Mountain Creek and FM 661, would travel in a southeastern direction for approximately 0.5 miles, would cross Mountain Creek, and would merge into the proposed pipeline that extends in an eastern direction. The pipeline associated with this action would require a ROW width of 40 feet along a gravity line section within the USACE property. During the preliminary evaluation of route alternatives the preferred pipeline route was characterized as being 64 percent Rural-Open Field/Grasslands (10 acres), 32 percent Rural-Woodlands (5 acres), and 4 percent Cleared ROW/Open Field (0.63 acres). Public access would be temporarily restricted to the areas along the proposed pipeline route during construction activities. Land use would be altered post construction to accommodate the change in the development for the areas east of Soap Creek and west of Mountain Creek. The construction areas within the USACE property would be restored to conditions comparable to preconstruction conditions and there would be no change in land use on USACE property.

4.2 CLIMATE

The proposed wastewater pipeline alignments are designed to reside within a right of way (ROW) that would cross streams and grasslands. The lands within the ROW could include activities such as, primitive camping, nature study, walking and biking. As with any other water infrastructure projects of this nature, it would not be expected to have any temporary, permanent, or cumulative adverse effects on climatic weather patterns in the region with respect to temperature, humidity, rainfall, or typical seasonal weather changes.

4.3 GEOLOGY AND SOILS

4.3.1 Geology & Soils – No Action Alternative

There would be no impact to geology or soils for the No Action Alternative, because no construction activities would occur. However, without waste water improvements new developments would be required to construct private lift stations and/or septic systems to meet waste water demands. This alternative was not chosen as the preferred alternative, therefore, an extensive assessment of the potential effects of the numerous lift stations or septic systems was not completed.

4.3.2 Geology & Soils Alternative 2 (Proposed Alternative)

Impacts to the soils associated with the Proposed Action Alternative would be limited to soil, grading, trench excavation, and boring activities. Construction activities within the Proposed Action Alternative alignment would involve only minor soil disturbance. None of the construction activities would significantly impact the site's geological resources. Should any materials of paleontological value be unearthed during the construction activities, construction will cease until such finds are investigated and appropriate action taken to recover them.

Construction activities within the Proposed Action Alternative could have short-term adverse impacts to soils. The removal of vegetation within the construction zone could potentially increase the chances for erosion. Erosion Control Plans for the construction areas would include the use of "Best Management Practices (BMPs)" in order to address potential erosion concerns. See 4.4.3.2 for details of BMPs to be utilized. As a result of applying Best Management Practices during construction and stabilizing any exposed areas with groundcovers after construction, this alternative would not have a significant impact on the site's soil resources in terms of erosion.

4.4 WATER RESOURCES

4.4.1 SURFACE WATERS

4.4.1.1 Surface Waters, Section 10

"For purposes of Section 10 of the Rivers and Harbors Act of 1899, navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently being used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR 329.4). Navigable waters include lakes and other on-channel impoundments of navigable rivers. Under Section 10, the U.S. Army Corps of Engineers (USACE) regulates any work in or affecting navigable waters of the United States."

4.4.1.2 Surface Waters of the U.S., Including Wetlands Section 404, No Action

There would be no construction, and therefore no impact to water resources would occur. However, without the proposed pipeline future developments would be required to construct private lift stations and/or septic systems to meet the demands for waste water treatment. Since this alternative was not chosen as the preferred alternative, an extensive assessment of the potential effects of the numerous lift stations and/or septic systems to Waters of the U.S. was not completed.

4.4.1.3 Waters of the U.S., Including Wetlands Section 404, Alternative 2 – Pipeline Alignment Along US 287 & Across Corps Property Preferred Alternative

The proposed project is a linear utility line, and as such, each crossing of a Water of the U.S. at a specific location is considered a single and complete project. Based on the field investigations along the pipeline route, there are proposed crossings of jurisdictional waters within the USACE property including stream channels and a portion of an adjacent pond (Appendix A, Figure 7). A list of each proposed crossing as well as the potential impact is provided below in Table 3. These crossings would be evaluated under the terms and conditions of Nationwide Permit 12 for Utility line Activities (NWP 12). The proposed pipeline route easement across USACE property would intersect Soap Creek adjacent to an existing easement, Mountain Creek, and unnamed tributaries and adjacent wetlands to these creeks. The pipeline would be bored at major crossings of Soap Creek and Mountain Creek. The other crossings are expected to be open trench cut and back-filled to pre-construction contours. The proposed pipeline would be within the 100-year floodplain where the project crosses USACE property. (Appendix A, Figure 5) (FEMA 2011). Each proposed crossing was mapped using GPS equipment with sub-meter accuracy. Photographs of each proposed crossing are presented in Appendix A, Figures 9-13. The contractor would follow construction guidelines outlined in the Section 404 NWP 12, would follow FEMA guidelines for working in floodplains, and would follow guidelines set forth by the (TCEQ) Texas Commission of Environmental Quality to minimize impacts to water resources. All of these guidelines and details are discussed in sections 4.4.3 Water Quality and 4.4.4 Floodplains.

Table 3: Alternative 2 - Proposed Alternative Grand Prairie Wastewater Utility Pipeline ROW Waters of the U.S. Crossings

Crossing	Name	Waters of the U.S.	Crossing Method	OHWM (feet)	Potential Impact Length (feet)	Potential Impact Area (acre)
1	Tributary 1	Ephemeral Stream	Open-trench	5	35	0.004
2	Tributary 2	Ephemeral Stream	Open-trench	6	36	0.005
3(3 & 3a)	Tributary 3	Ephemeral Stream	Open-trench	5 1	38 35 73	0.004 0.001 0.005
8	Tributary 8	Mountain Creek	Bore	25	-	-
9	Tributary 9	Soap Creek	Bore	16	-	-
11	Tributary 11	Ephemeral Stream	Open-trench	8	113	0.020
14	Pond 1	Pond	Open-trench	-	-	0.014
10	Tributary 10	Newton Branch	Bore	12	-	-

Crossing	Name	Waters of the U.S.	Crossing Method	OHWM (feet)	Potential Impact Length (feet)	Potential Impact Area (acre)
		of Soap Creek				
15	Tributary 12	Ephemeral Stream	Open-trench	1	40	0.001
16	Tributary 13	Ephemeral Stream	Open-trench	2	10	0.001
17	Tributary 14	Backwater of Soap Creek	Open-trench	5	40	0.005
18	Tributary 15	Soap Creek	Bore	6	-	-

4.4.2 GROUND WATER

As stated above there are no catchment or recharge areas located within the project footprint and therefore, it is anticipated that there would be no effects or impacts on groundwater or local aquifers due to the proposed pipeline construction.

4.4.3 WATER QUALITY

4.4.3.1 Water Quality No Action Alternative

Water Quality would not be affected due to construction activities if the No Action Alternative is implemented. However, the current system would reach capacity and would be unable to offer regionalized services to new developments. The absence of regionalized wastewater treatment offered through the City of Grand Prairie would require future developments to construct private septic systems and a series of numerous lift stations. Anticipated risks associated with multiple septic systems and lift stations include, increased demands on the local power company that could induce power outages and overflowing lift stations. However, since this alternative was not chosen as the preferred alternative a formal assessment to determine specific risks associated with this action was not completed.

4.4.3.2 Water Quality Alternative 2 (Proposed Alternative)

Pipeline construction activities would only result in minor soil disturbance or loss of vegetation cover along the ROW. Since the proposed action alternative involves excavation near stream segments, surface water may be temporarily at risk during construction activities. These areas have potential for sedimentation and siltation that would be managed using construction BMPs as described below.

A Stormwater Pollution and Prevention Plan (SWPPP) as outlined in the TPDES General Permit (TXR 150000) for large construction projects is required. The SWPPP would be developed and implemented by the construction contractor to help minimize erosion and loss of soil movement

during hard rainfall events. The USACE and the City of Grand Prairie would review the SWPPP to make sure all potential impacts to water quality have been addressed appropriately. A general Texas Pollution Discharge Elimination Systems (TPDES) permit would be obtained by the construction contractor from TCEQ prior to construction activities. In addition to the TPDES permit, the City of Grand Prairie would mandate the contractor to address all requirements described in the NWP 12 granted for the Grand Prairie Waste Water Collection Pipeline and Easement. Several practices could be used to minimize storm water pollution, erosion and sedimentation, but not limited to those listed below.

- The required SWPPP would be project specific and would show details of each proposed measure used on site to minimize and manage pollutants, in storm water discharges during and after construction operations.
- A copy of the Notice of Intent and SWPPP would be posted at the construction site prior to the start of construction and would be maintained at a readily available location until completion of the construction activities.
- All erosion control devices shall be constructed, inspected and maintained in compliance with TCEQ and City of Grand Prairie standard erosion control practices.
- Mulch, Interceptor swales, Erosion control compost, compost filter berms and socks, blankets, matting, sod, diversion dikes and/or mulch filter berms and socks could be used for erosion control.
- Sandbag berms, silt fencing, filter dikes, rock berms, hay bales dikes, sediment traps, erosion control compost, sediment basins and/or brush berms could be used for sedimentation control.
- Vegetative Filter strips, grassy swales, wet basins, mulch filters, and/or erosion control compost could be used for post construction TSS control.
- All disturbed areas not covered in concrete would be hydro mulched and maintained until the ground is successfully stabilized and the Notice of Termination (NOT) is accepted by the TCEQ.
- Constructor shall monitor the site daily and keep the site free of trash and construction debris.
- All onsite vehicles would be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products would be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
- Organic Fertilizers used would be applied only in the minimum amounts recommended by manufacturer. Once applied, organic fertilizer would be worked in the soil to limit exposure to storm water. Storage would be in a covered shed. The contents of any partially used bags of organic fertilizer would be transferred to a sealable plastic bin to avoid spills.

The use of BMP's would reduce the adverse effects of sedimentation or siltation runoff caused by construction activities. Construction activities would cause a temporary disruption within the ROW and surrounding areas and disturbance is considered to be short-term. All areas impacted by the construction of the pipeline would be restored through activities such as restoring contours to original elevations and implementing a re-vegetation plan. Due to proper use of erosion and sediment control devices, following prescribed procedures outlined in the NWP 12 for the proposed ROW, and borings at major creek crossings, surface impacts associated with construction activities are not anticipated to affect nearby Joe Pool Lake or other Waters of the U.S. Therefore, no permanent water quality impacts are expected as a result of the proposed project.

4.4.4 FLOOD PLAINS

4.4.4.1 Flood Plains No Action Alternative

There would be not impacts to floodplains related to the implementation of the No-Action Alternative.

4.4.4.2 Flood Plains Alternative 2 (Proposed Alternative)

The preferred alternative would include construction activities within the 100-year flood plains of Soap and Mountain Creeks. The contractor would comply with FEMA regulations and would obtain a permit from the City of Grand Prairie flood plain administrator prior to construction. The proposed project would use proper construction methods in compliance with FEMA regulations, would restore all contours to original elevations, and flow paths would not be altered within Soap and Mountain Creeks. Therefore, the proposed project would not have negative impacts to the floodplains of Soap and Mountain Creeks.

4.5 BIOLOGICAL RESOURCES

4.5.1 BIOLOGICAL RESOURCES WILDLIFE

4.5.1.1 Biological Resources Wildlife No Action Alternative

There would be no impact to wildlife, or their habitat in association with the No-Action Alternative.

4.5.1.2 Biological Resources Wildlife - Alternative 2 (Proposed Alternative)

The impacts of the proposed project on the wildlife would include minor temporary effects resulting from physical disturbance during construction. The dominant habitat along the proposed ROW consists of grasslands with narrow woody riparian corridors along major drainages. The proposed project would require grading and minor clearing along the pipeline alignment. The grasslands disturbed along the ROW would be restored through reseeding and woody vegetation along creeks and drainages would be thinned where necessary to allow for pipeline crossings. Any woody vegetation completely removed would be replaced. A general discussion of the construction and operation of the proposed project on wildlife is presented below.

Pipeline construction activities would directly affect most animals that reside or wander within the project area. The noise and physical activity of the work crews and machinery might temporarily disturb the normal behavior of certain species. Some small, low-mobility forms may be killed by required machinery during construction. These include several species of amphibians, reptiles, and mammals. Fossorial animals (*i.e.*, those that live underground) such as mice and shrews may be negatively impacted as a result of soil compaction caused by machinery. Larger, more mobile species such as birds, deer, jackrabbits, and foxes may avoid the initial construction activities by moving into adjacent areas outside the project area. Wildlife within the immediate area may experience a slight loss of browse forage material; however, similar habitats adjacent to the project area would provide those resources.
Although normal behavior of many wildlife species would be disturbed during construction activities, little permanent damage to the populations would result because they would be able to move in and out of the area through adjacent habitat.

Aquatic habitat is limited due to the intermittent nature of Mountain and Soap Creeks. Potential impacts to aquatic resources within these water features would result from increased suspended solids entering the water ways which in turn would negatively affect aquatic organisms that require relatively clear water for feeding and reproduction. Implementation of the SWPPP would minimize potential impacts on aquatic communities.

4.5.2 BIOLOGICAL RESOURCES AQUATIC VEGETATION

4.5.2.1 Biological Resources Aquatic Vegetation No Action Alternative

There would be no impacts to aquatic vegetation associated with the No-Action Alternative.

4.5.2.2 Biological Resources Aquatic Vegetation Alternative 2 (Proposed Alternative)

Information obtained from wetland delineations of the project area indicate that aquatic vegetation exists in small patches along the main channels of Soap Creek and Mountain Creek. The pipeline crossings of Soap Creek and Mountain Creek would be bored underneath the channel and therefore no impacts to aquatic vegetation is expected.

4.5.3 BIOLOGICAL RESOURCES – TERRESTRIAL VEGETATION

4.5.3.1 Biological Resources Terrestrial Vegetation No Action Alternative

There would be no impacts to vegetation if the No-Action Alternative were implemented.

4.5.3.2 Biological Resources Terrestrial Vegetation Alternative 2 (Proposed Alternative)

A temporary 80-ffoot construction easement is planned to allow for temporary equipment storage, and ingress/egress. BMPs would be applied and maintained within in the temporary easement. Once construction activities are completed, the temporary easement would be cleaned up and restored to conditions comparable to those of preconstruction.

Impacts to grasslands and woodlands within the project area would be primarily due to disturbance caused by transportation of equipment and personnel within the 40-foot ROW and the installation of the pipeline using an open-cut and back-fill method. Trees within the ROW

(primarily nuisance species such as honey mesquite and eastern red cedar) would be thinned or grubbed to allow access for construction and maintenance activities. Mature native mast producing trees would be avoided. Approximately 10 acres of open field and grasslands, 5acres of wooded area and 0.63 acres of a cleared existing easement would be affected from construction within the 40-foot ROW. Table 3 below describes the impacts on vegetation that would occur within the permenant40-foot ROW.

Table 4: Affected Areas within Proposed 40-foot ROW

GRASSLANDS (~ 10 acres affected from construction activities such as transportation, grading and trenching)	WOODLANDS (~ 5 acres affected from construction activities such as thinning, grubbing, and grading)	EXISTING ROW (~ 0.63 acres affected from construction activities such as transportation, grading and trenching)
Dominant Vegetation	Dominant Vegetation	Dominant Vegetation
bermudagrass (*Cynodon dactylon*), Texas wintergrass (*Stipa leucotricha*), ryegrass (*Lolium perenne*), cocklebur (*Xanthium strumarium*), Texas bluebonnet (*Lupinus texensis*), giant ragweed (*Ambrosia trifida*), Johnsongrass (Sorghum halepense), dandelion (*Taraxacum officinale*)	Tree Species Include: cedar elm (Ulmus crassifolia), red-cedar (Juniperus virginiana), sugar hackberry (Celtis occidentalis) Understory Species Include: flameleaf sumac (Rhus lanceolata), Canada wildrye (*Elymus canadensis*), bermudagrass (*Cynodon dactylon*), Texas wintergrass (*Stipa leucotricha*), cocklebur (*Xanthium strumarium*), giant ragweed (*Ambrosia trifida*), and peppervine (*Ampelopsis arborea*)	bermudagrass (Cynodon dactylon), ryegrass (Lolium perenne), silver bluestem (Bothrichloa laguroides), buffalograss (Bouteloua dactyloides), sideoats grama (Bouteloua curtipendula), Sand dropseed (Tridens flavus cupreus)

It is planned to allow the ROW to re-vegetate naturally, within both grassland and woodland habitats. Open-cut trenches would be back-filled to pre-construction elevations, and vegetation would be restored naturally from the existing seedbank. BMPs to minimize impacts to terrestrial vegetation would include avoiding mature native mast trees during construction and conducting topsoil preservation activities to retain the existing seedbank, nutrients, organic matter and microorganisms in the habitat. Effective topsoil salvage would provide the foundation for successful re-vegetation, would protect the topsoil from loss while stockpiled during construction activities, and would provide material to be used as a permanent erosion control measure during post construction stabilization. In addition to salvaging topsoil, the ROW would be reseeded with a native grass seed mix that would offset vegetative losses. The ROW would be maintained periodically in a primarily grassland state to deter the growth of nuisance woody vegetation.

Seeding is recommended in spring, summer or fall to allow the germination of warm season (spring or summer seeding) and cool season (fall seeding) grass species (Bailey & Martin 2007).

The native prairie grass seed mixture would be based on the USACE Texas Region 4 native herbaceous plant list (USACE 2011) and the current site conditions. Several species of warm and cool season grasses would be used, but not limited to those listed below.

Table 5: Grasses for Seed Mixtures

WARM SEASON GRASSES	
Big Bluestem Little Bluestem Bushy Bluestem Broomsedge Bluestem Indian Grass Switchgrass Side-Oats Grama Blue Grama	Sand Lovegrass Green Sprangletop Tall Dropseed Sand Dropseed Purpletop Purple Three-awn Alkali Sacaton Buffalo Grass
COOL SEASON GRASSES	
Western Wheatgrass Virginia Wildrye Canada Wildrye	

Re-vegetation within the ROW would be affected by environmental factors such as precipitation and light availability (especially under canopy in wooded areas). Current herbaceous cover is on average approximately 25% in woodland areas, and 45-85% in herbaceous communities along the proposed ROW. Once construction activities are completed, these ground cover averages would be used to determine when the project area has reached final stabilization.

4.5 4 .BIOLOGICAL RESOURCES THREATENED & ENDANGERED SPECIES

4.5.4.1 Threatened & Endangered Species No Action Alternative

There would be no impacts to Threatened, Endangered, or Rare species related to the implementation of the No-Action Alternative.

4.5.4.2 Threatened & Endangered Species Alternative 2 (Propose Alternative)

Physical site observations within the project area were conducted by the City of Grand Prairie in 2007 and in 2010 to determine if suitable habitat existed for any federal or state-listed endangered, threatened, or rare species. No suitable habit for any federal or state-listed endangered, threatened, or rare species was observed during these surveys. In addition to the site observations, a search of the TPWD Natural Diversity Database records indicated that there were no documented sightings of any federal or state-listed endangered, threatened, or rare species within the study area. The project area provides very little suitable habitat for federal or state-listed endangered, threatened, or rare species and it is anticipated that the area would not be

utilized by protected species for other than transitory purposes. Adjacent habitats are sufficient to support stopovers or foraging activities of migratory species, and therefore it is anticipated that the proposed construction activities would have no effects to protected species.

4.6 NOISE AND GENERAL AESTHETICS

4.6.1 Noise and General Aesthetics No Action Alternative

The project area would remain undeveloped and would continue to be used for low density recreation such as walking or bicycling. The only noise generated would be that of the nearby Burlington Northern Santa Fe Railroad and vehicles traveling US 287, SH 360 and other nearby main public thorough fares.

4.6.2 Noise and General Aesthetics Alternative 2 (Preferred Alternative)

The project area is defined as mainly Rural-Open Field/Grassland and Rural-Wooded areas with sparse areas of Cleared ROW/Open Fields. Vegetation within the ROW would reduce visibility and would serve as a natural sound buffer and barrier. In addition, the construction contractor would use temporary construction barriers as necessary to limit unauthorized vehicles or unauthorized personnel from entering the area.

During construction, temporary noise impacts would result from utilization of construction equipment such as chain saws, motor graders, trenchers, rollers, power tools and similar equipment. The construction activities are expected to last less than six months. Operation for construction equipment would be limited to the standard operation hours recommended in local, state and federal guidelines for construction (7:00 A.M. and 5:00 P.M. weekdays, with minimal Saturday work as required between the hours of 8:00AM and 1:00PM). A noise plan would be developed and followed to manage noise levels to recommended target levels for interim construction activities. In addition, the construction contractor would follow other guidelines set forth in Federal, State, and Local noise regulations that affect the conduct of work. The use of these noise mitigation measures during construction activities along with the natural vegetative buffers in place, the undeveloped nature of the surrounding area, and the short construction duration would reduce noise impacts within the general project area to minimal levels. For these reasons noise associated with this project is anticipated to be short-term and would not significantly affect adjacent property owners or residential areas.

4.7 CULTURAL RESOURCES

4.7.1 Cultural Resources No Action Alternative

There would be no impacts to cultural resources related to the implementation of the No-Action Alternative.

4.7.2 Cultural Resources Alternative 2 (Proposed Alternative)

Several segments of the proposed wastewater line ROW are disturbed by previous construction, as it crosses and/or parallels existing buried and overhead utility easements and ROWs.

Continuous saturated conditions in the project area from January 2010 through March 2010, prevented the use of systematic backhoe trenching within the proposed wastewater utility pipeline ROW. Therefore, systematic subsurface investigations involved 60 hand-excavated shovel tests. Surface investigations resulted in the discovery of archeological site 41EL253, which consists of a late twentieth century (ca. 1960s to early 1980s) trash dump. Site 41EL253 was considered to have no integrity and is not eligible for inclusion to the National Register of Historic Places (NRHP). The survey discovered no buried archeological historic properties or sites.

Coordination with the Texas Historical Commission (THC) on March 25, 2010 and May 4, 2010 concerning impediments to trenching given saturated conditions concluded that the systematic shovel testing was sufficient and construction monitoring or possible later trenching would be unnecessary. On June 16, 2010, an official letter of recommendation to proceed with the construction of the wastewater line along with a copy of the draft final archeology investigations was submitted by William Martin (THC) to the USACE, Operations Chief of Natural Resources and Recreation Branch. Please See Appendix C. No impacts to cultural resources are anticipated in association with the Preferred Alternative and no further cultural resource investigations were warranted.

4.8 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTES (HTRW)

4.8.1 HTRW No Action Alternative

No impacts regarding HTRW would be expected if the No Action Alternative is implemented.

4.8.2 HTRW Alternative 2 (Proposed Alternative) Pipeline Alignment Along US 287 & Across USACE Property

A visual observation of the entire ROW did not reveal any signs of potential hazardous, toxic, or radioactive wastes. In addition, a parameter report was obtained from the Banks Corporation to gather background information on the subject property and adjacent properties (See Appendix B). Banks Corporation searched all available "reasonably ascertainable" government records within a Minimal Search Distance (MSD) of 0.5 miles. The data search revealed the existence of 10 active gas and oil wells within the MSD. There are no known environmental issues associated with these wells. The data search also revealed the existence of one "orphan site". "Orphan Sites" are those sites that could not be mapped or "geocoded" due to inadequate address information. The Orphan site is listed as a (CER NFRAP) which are CERCLIS sites designated "No Further Remedial Action Planned" and have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. The NFRAP site is located on private property approximately 0.50 miles from the project area and was not considered a significant find. Given the fact that there were no significant finds within the MSD, it is anticipated that construction activities from the proposed action would have no impacts related to HTRW.

4.9 AIR QUALITY

Air quality impacts would be considered below the threshold of significance if direct and indirect NO_x and VOC emissions are below the serious nonattainment major source threshold of 50 TPY per pollutant.

4.9.1 Air Quality No Action Alternative

Implementation of the No-Action Alternative would not provide regionalized wastewater service to the fast growing communities within the Ellis County area. No construction or operations and maintenance emissions would result from implementation of the No-Action Alternative; and no air quality impacts would occur above the threshold of significance; therefore, no further analysis is required.

4.9.2 Air Quality Alternative 2 (Proposed Alternative) Pipeline Alignment Along US 287 & Across USACE Lands

Short-term air quality impacts from implementation of the Proposed Alternative include unavoidable, temporary construction emissions including products of combustion from construction equipment and particulate emissions from soil disturbance. The construction design would include BMP's and a set of guidelines that involve the application of practices to minimize the amount of air pollution during construction activities related to the proposed alternative. Several practices would be used by the contractor to minimize dust particles and other forms of pollution from entering the air, but not limited to those listed below.

- All clearing, grading, earth moving, or excavation activities would cease during periods of high winds to prevent excessive amounts of fugitive dust.
- All unpaved on-site roads would be periodically watered or treated with environmentally-safe dust suppressants to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earth moving, or excavation operations would be minimized to prevent excessive amounts of fugitive dust.
- On-site vehicle speeds would not exceed 15 miles per hour.
- Construction equipment and engines would be maintained in good condition and in proper tune as per manufacturers' specifications.
- Daily use of operation of construction equipment would be limited to 8 hours.

It is anticipated that emissions from construction activities for the proposed project would be short-term (approximately 6 months), would be localized to the project area, and would be below the threshold of significance and would conform to the DFW SIP; therefore, a comprehensive general conformity determination is not required and no further air quality impact analysis is required.

4.10 RECREATION

4.10.1 Recreation No Action Alternative

The project area would continue to be suited for low density recreation activities such as walking and bicycling. Therefore, implementation of the No Action Alternative would result in no impacts to recreation.

4.10.2 Recreation – Alternative 2, (Proposed Alternative) Pipeline Alignment Along US 287 & Across USACE Lands

The implementation of the Proposed Alternative would have short-term impacts to recreation within the project area. During construction, public access within USACE lands would be limited to only the areas located outside of the immediate project ROW. Private land owners along the ROW would have limited access during construction activities. After construction activities are completed the project areas within the ROW would be restored to original conditions, and access would be restored to original boundaries. It is anticipated the proposed action would allow for future residential and economical developments that would bring additional population to the area. Population growth of nearby developments could cause the USACE to see an increase in use of the recreational trails and primitive camping.

4.11 SOCIOECONOMICS

4.11.1 Socioeconomics No Action Alternative

Implementation of the No-Action Alternative would not allow the citizens of the Grand Prairie community to benefit from the increase in home values provided from a central sewer system.

In addition, the cost to develop several smaller collection systems with more lift stations would be more costly to the ultimate customer/resident and could potentially create a cost prohibitive development for low income or minority populations.

4.11.2 Socioeconomics Alternative2, (Proposed Alternative) Pipeline Alignment Along US 287 & Across USACE Lands

Implementation of Alternative 2, the Proposed Alternative, would allow the residences of the City of Grand Prairie to benefit from improved wastewater services. Based on socioeconomic US Census data, it is anticipated that the proposed action alternative would have a positive economic impact for the citizens of Ellis County and the surrounding region. It is anticipated that economical wastewater service to undeveloped areas would allow developers to expand operations, and would attract new businesses that would provide additional jobs within the area. The construction of the proposed Grand Prairie wastewater utility pipeline is not expected to disproportionately affect any low income or minority populations within and surrounding the Ellis County area.

Table 6: Relative Comparison of Alternatives

Environmental Parameter	No Action	ALT #2 Pipeline Alignment Along US 287 & Across USACE Property
Project Setting & Land Use	0	0
Climate	0	0
Geology & Soils Including Prime Farmlands	0	minimal
Water Resources		
Surface Waters & Wetlands	-	minimal
Wild & Scenic Rivers	N/A	N/A
Coastal Zone Areas	N/A	N/A
Ground Water	0	0
Water Quality	-	>
Floodplains	0	minimal
Biological Resources		
State or National Parks	0	0
Forests, Conservation Areas, or Other Areas of Recreational, Ecological, Scenic, or Aesthetic Importance	N/A	N/A
Vegetation	0	minimal
Wildlife	0	minimal
Threatened & Endangered Species	0	0
Noise & General Aesthetics	0	minimal
Cultural Resources	0	0
Hazardous, Toxic & Radioactive Wastes (HTRW)	0	0
Air Quality	0	minimal
Recreation	0	minimal
Native American Concerns (E.O. 13007)	0	0
Socioeconomics	minimal	+

LEGEND:

0 **No Impacts**

Minimal **Minimal Impacts**

+ **Positive Impacts**

- **Negative Impacts**

< **Less Impacts Than Preferred Plan**

> **Greater Impact than Preferred Plan**

N/A **Not Applicable because these resources do not exist in the study area**

5.0 CUMULATIVE IMPACTS

The following subsections include an evaluation of the anticipated cumulative environmental impacts associated with the ”Preferred Action” and other alternatives described above. Cumulative impacts are the impacts on the environment that would result from the incremental impacts of the ”Preferred Action” or alternative when added to other past, present and reasonably foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). A meaningful cumulative effects study must identify, (1) the area in which effects of the proposed project will be felt is known as the area of influence (AOI); (2) the impacts that are expected in that area from the proposed project, (3) other past, proposed and reasonably foreseeable actions that have or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

The Council on Environmental Quality Guidance for implementing NEPA (CEQ, 1997) recommends that Federal agencies identify the temporal and geographic boundaries of the potential cumulative effects of a proposed action. For the purposes of this Environmental Assessment, the temporal boundary of project analysis includes actions that have taken place within the study area during the past two decades, as well as current and reasonably foreseeable future action anticipated between the present (2012) and 2015. The window for considering evaluated projects encompasses a period during which data are reasonably available and forecasts can be reasonably made.

The issues and resources evaluated in this cumulative impacts analysis are listed below. The list also indicates whether or not a particular issue or resource was considered relevant in evaluating the potential cumulative effects of the proposed action and provides a brief explanation for each such determination. Only those issues that had a reasonable potential for cumulative impacts were evaluated in detail in this Environmental Assessment.

The cumulative effects analysis requires an evaluation of sustainability of each issue or resource of interest as viewed from a perspective of a geographic area that is larger than the immediate project area. The geographic boundaries of cumulative effects analysis will vary, depending on the resource in question and the potential effects. The geographic area for each resource a function of the area in which the effects of the proposed action or alternative under consideration have a reasonable potential to interact with the effects of other past, present, and reasonably foreseeable future action on the same resource, so as to affect the long-term viability of that given resource. This is a case-by-case basis analysis based on the unique aspects of the particular proposed action.

Table 7: Resources Evaluated in the EA as Part of the Cumulative Effects (CE) Analysis

Resource	Included For C.E. Analysis?	Reason for Elimination
Project Setting & Land Use	Yes	
Geology & Soils Including Prime Farmland	Yes	
Surface Waters & Wetlands	Yes	
Wild & Scenic Rivers	No	No resources of this nature are located within the project limits
Coastal Zone Areas	No	No Coastal Zones are located within or near the project limits.
Ground Water & Aquifers	Yes	
Water Quality	Yes	
Flood Plains	Yes	
Recreation Areas, State or National Parks	Yes	
Forests, Conservation Areas, or Other Areas of Ecological, Scenic, or Aesthetic Importance	No	None of these resources are located within or near the project area.
Vegetation	Yes	
Wildlife	Yes	
Threatened or Endangered Species	Yes	
Noise & General Aesthetics	Yes	
Cultural Resources	Yes	
Hazardous, Toxic, and Radioactive Wastes (HTRW)	Yes	
Air Quality	Yes	
Recreation	Yes	
Native American Concerns	No	No Native American Concerns Identified
Socioeconomics	Yes	

Effects Terminology

The effects analysis includes terms referring to impact intensity, context, and duration. Unless otherwise stated, the standard definitions for these terms are as follows:

- Negligible: The impact is at the lower level of detection, and there would be no measurable change.
- Minor or Minimal**:** The impact is slight but detectable, and there would be a small but temporary change.
- Moderate: The impact is readily apparent, and there would be a measurable change that could result in a small but permanent change.
- Major: The impact is severe, and there would be a highly noticeable, permanent, measurable change.

• Localized Impact: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts are detectable only in the localized area.
• Short-Term Effect: The effect occurs only during or immediately after implementation of the project.
• Long-Term Effect: The effect could occur for an extended period after implementation of the project. The effect could last several years or more and could be beneficial or adverse.

5.1 PAST PROJECTS

Much of the landscape changes within the AOI have been associated with the construction of Joe Pool Lake and housing developments in the surrounding areas adjacent to Federal Property. Five cities are located adjacent to Joe Pool Lake which include; the City of Grand Prairie, Dallas, Cedar Hill, Mansfield, and Midlothian. These five cities are located within three counties that include Dallas, Ellis and Tarrant. Development associated with the State Highway 360 corridor just north of the project, is beginning to expand significantly to those areas surrounding Federal Property. Subsequently, several roadways have been improved connecting the southern part of the lake to the northern part of the lake. Much of the developments in the immediate area reflect that of the surrounding communities experiencing growth and expansion to include several housing developments, retail shopping stores and convenience stores.

5.1.1 Joe Pool Lake

Joe Pool Lake was constructed by the USACE as a multiple purpose reservoir for flood control, water supply, recreation, fish and wildlife purposes, and became operational in January 1986. Joe Pool Lake has both a conservation pool and a flood control pool. The conservation pool has a surface area of approximately 7,470 acres at an elevation of 522.0 feet at mean sea level (MSL) and the flood control pool has a surface area of approximately 10,940 acres at 536.0 feet MSL. Past projects associated with the lake include several park areas that are discussed below.

5.1.2 Lynn Creek Park

Lynn Creek Park is leased and operated by the City of Grand Prairie which covers approximately 784 acres. The eastern and western portions of Lynn Creek Park are separated by Lakeridge Parkway. The eastern portion of the park amenities include a swimming beach, playground, restrooms, showers, two boat ramps with eight lands, a concession stand, almost 100 picnic sites, group picnic pavilions, sand volleyball court and a marina facility with approximately 550 boat slips. The western portions of Lynn Creek Park are undeveloped.

5.1.3 Loyd Park

Loyd Park is leased and operated by the City of Grand Prairie which covers approximately 791 acres. Park amenities include 221 camping sited, 8 cabins, picnic and pavilion areas, four lane boat ramp with trailer parking, boat dock, a volleyball and softball field, swimming beach as well as a trail system accommodating pedestrians, biking and equestrian users.

5.1.4 Britton Park
Britton Park is leased and operated by the City of Grand Prairie which covers approximately 129 acres. Amenities include a boat ramp, parking lot and restrooms.

5.1.5 Cedar Hill State Park
Cedar Hill State Park is leased and operated by the Texas Parks and Wildlife Department which covers approximately 1,826 acres. Amenities of the park include 355 camping sites, 30 primitive sites, 15miles of biking tails, approximately 200 picnic sites, 2 lighted fishing jetties, a swimming beach, three playgrounds, 2 four lane boat ramps with parking and a marina facility with 235 boat slips.

5.2 PRESENT ACTIONS
The properties surrounding the proposed pipeline ROW are rural areas slated for housing developments and many spaces are currently in different stages of construction. New house construction within the past few years has been slow due to an economy slump. A recent trend of economical growth in the area has caused the housing demand to rise and a steady increase in development is anticipated for the area within the next year.

5.3 REASONABLY FORESEEABLE ACTIONS

5.3.1 Estes Park
Estes Park is leased to the City of Grand Prairie which covers approximately 1020 acres. The City has proposed a master plan community on the site to include a resort with overnight accommodations, golf course and tennis course along with other amenities. An EA was conducted of the proposed activities in Estes Park but no further efforts have taken place to facilitate the development at this time.

5.3.2 Pleasant Valley Park
Pleasant Park is 224 acres currently undeveloped with no plans for development in the near future. This area is currently classified as high density recreation in the Joe Pool Lake Master Plan.

5.3.3 Low Branch Park
Low Branch Park is leased to the City of Grand Prairie which encompasses 155 acres. The park is mostly undeveloped with a small model airplane field in use. No future development in the park is planned at this time.

5.4 Land Use
Continued growth and expansion in the area is expected through new housing developments adjacent to the proposed pipeline ROW. In addition, the demand for supporting businesses such as retail shopping and convenience stores would likely increase in association with the continued growth. The current proposed pipeline is designed to minimize the potential for pipeline enlargement in the next 50 to 100 years.

Projected development is anticipated to include plans structured for retaining the rural nature of the area through detailed regional planning for future land uses. The City of Grand Prairie has forecasted for future land uses as presented in Table 5:

Table 8: Land Use by Area, Grand Prairie

G.P. South of I-20 Land Use		
Category	**Type**	**Area (ac)**
Future	Residential	11,334
	Parks & Rec.	1,258
	Mixed Use	2,416
	Commercial Retail	3,483
	Light Industrial	791
	Open Space Drainage	3,703
Total Future		**22,986**

The City of Grand Prairie's future land uses for the area encircling Joe Pool Lake are presented in Figure 21 located on page 16 of appendix A (City of Grand Prairie, 2011).

The "Proposed Alternative" for the development of the proposed regional wastewater collection system would result in the development of features that are consistent with and supportive of the natural resources and recreational objectives in the USACE's Joe Pool Lake Master Plan. In this context, the incremental effects of the proposed project and other uses of the federal lands would be supportive of their intended uses. All other foreseeable construction projects in the "resource study area" outside of the federal lands would be on tracts zoned for such development. Therefore, there would not be adverse cumulative impact to the land uses within the "resource study area" from any of the proposed projects and alternatives in the foreseeable future.

5.5 CLIMATE

As with many projects of this nature involving utility infrastructure development in a rural setting, it could not be expected to have any temporary, permanent, or cumulative adverse effects on climatic weather patterns in the region with respect to temperature, humidity, rainfall, or typical seasonal weather changes. No cumulative impacts would be expected to the lake or the localized lake setting as a result of the proposed project.

5.6 GEOLOGY AND SOILS

Significant cumulative effects would be reached if the projects in the area were to expose people to an increased level of geologic hazards, such as decreased slope stability, or if they were to result in a change in or loss of a unique geologic resource. Significant cumulative effects would be reached if the projects were to result in substantial soil loss due to increased erosion, decreased soil stability, or increased impermeable surfaces such that measurable decrease in water infiltration into the soils were a result.

The proposed project would result in temporary and minor impacts to soil resources such as hydric soils, prime farmlands, and surface geology during the construction operations. A Storm

Water Pollution Prevention Plan (SWPPP) would be implemented within the study area prior to and during construction to protect soil resources from erosion, and all disturbed areas would be planted or seeded after construction to stabilize soil resources. All other foreseeable construction projects in the area would also have only temporary impacts on the subsurface during construction operations, based on erosion control and sediment stabilization measures required to be applied as part of their erosion control plans. In this context, the incremental effects of the proposed project would be minimal. Therefore, there would only be minimal adverse cumulative impact to geology and soils within the study area from any of the proposed projects and alternatives in the foreseeable future.

5.7 WATER RESOURCES

5.7.1 Surface Waters of the U.S. Including Wetlands and Water Quality

Significant cumulative effects would be reached if the projects in the area were to substantially impair any significant surface water bodies, watershed health, or the functionality of major rivers. Significant cumulative effects would be reached if the projects in the area were to substantially decrease surface water quality or quantity.

Water quality can be altered by changes made to the natural state of a watershed. Various factors generated by human activity such as urbanization and agricultural use can have adverse effects unless appropriate abatement programs are put into place. As a general matter, impacts from urbanization have included physical modifications and heavy management of stream and river channels for flood control; construction of reservoirs; storm water runoff from residential, commercial, and industrial areas; and discharges from municipal wastewater treatment plants. Urban runoff has resulted in other types of use impairments as evidenced by the multiple 303(d) listings for legacy pollutants (pesticides and PCBs) in fish tissue in the Dallas-Fort Worth (DFW) area. Numerous studies examining storm water runoff have documented that these constituents are the predominant source for water quality impairment.

Joe Pool Lake, is not listed as impaired water in the 2011 TCEQ database and the public water supply and general uses are fully supported. Individually, the Construction of Grand Prairie Waste Water improvements project, other development projects discussed above, and other foreseeable projects would only have minimal short-term impacts on water quality. SWPPPs are mandated by TCEQ in their TPDES rules, and construction activities disturbing more than one acre would have requirements for Best Management Practices to be put in place to minimize erosion and to stabilize disturbed soils. Therefore, disturbances associated with the ”Preferred Action” and other construction work in the area would not cumulatively cause adverse impacts to water quality within the proposed project area.

Significant cumulative effects would be reached if the projects in the area were to dredge, fill or substantially impair the health or the functionality of wetlands. Within this part of North Central Texas, the most notable sources of wetland decline include conversion of land to agricultural uses, inundation of floodplains from reservoir construction, sedimentation due to storm water erosion, infilling of streams and wetlands for urban development, and the impairment of water quality due to chemical contamination from excessive nutrients, fertilizers,

and pesticides. The destruction and loss of wetlands has created a potential for secondary impacts such as increased flood damages, increased drought damages, and the decline of bird populations.

The proposed project would avoid wetlands and waters of the U.S. to the greatest extent practicable. Riparian buffers have been retained adjacent to stream corridors located within the project area. The proposed project a linear utility line meets the terms and conditions of Section 404 Nationwide Permit (NWP) 12. During the planning phase for the proposed project a NWP 12 application was submitted for the pipeline to the USACE Regulatory. The submittal was assigned Project Number SWF-2008-00441.

The project has been designed with consideration for avoiding and minimizing potential impacts to the extent practicable, with NWP 12 terms and conditions being followed to address unavoidable, minimal impacts to streams and wetland areas. Other proposed projects that have been or are being developed in the general area may also have potential impacts on streams and wetlands draining into Joe Pool Lake. All such actions affecting jurisdictional waters of the United States are subject to the permitting requirements of CWA Section 404 and its mandate to avoid impacts to the maximum extent practicable. Although past, present, and reasonably foreseeable future actions in the resource study area have resulted, or would result in minimal impacts to jurisdictional areas – including intermittent streams, ephemeral streams and wetland areas around Joe Pool Lake – the cumulative effect of those impacts is expected to be minimal, particularly taking into account NWP measures that have been or would be implemented to offset such losses. It is anticipated that the cumulative effect of all such actions in the area would comply with the national mandate for "no net loss" of wetland functions and values. Numerous areas around Joe Pool Lake, including those areas designated as Environmentally Sensitive Areas in the Joe Pool Lake Master Plan, have been and will be preserved, and will help to sustain the wetland functions and values of the lakes, streams and wetlands in the general area. The minimal effects on jurisdictional waters that are expected to result from the implementation of the proposed project would have only a minor incremental effect in light of the effects of other actions in the area. Therefore, it is concluded that the project adhering to the terms and conditions of NWP 12 Section 404 impacts would only have minimal cumulative impacts on jurisdictional waters and wetlands in the "resource study area".

No Section 10 Waters occur within the project area; therefore, no direct or indirect impacts would occur.

5.7.2 Ground Water

Significant cumulative effects would be reached if the projects in the area were to substantially impair any significant groundwater aquifer, or affect the functionality of an aquifer.

Urbanization in the area would lead to a more rapid and higher rainfall runoff pattern, alteration of hydrologic regimes for streams, reduction in ground water recharge areas, potential overdraught of groundwater, and pollution loading that could infiltrate to shallow groundwater in the Trinity Aquifer. The proposed project and those listed above would not directly impact groundwater. Implementation of the requisite SWPPP would minimize the potential for contaminated surface water runoff or chemical spills which would minimize

impacts to groundwater recharge areas. Based on the nature of the proposed regional waste water collection project, there would not be a cumulative effect on groundwater quality.

5.7.3 Flood Plains

Significant cumulative effects would be reached if the projects in the area were to substantially impair the functionality of floodplains.

The protection of floodplains and floodways is required by EO 11988 Floodplain Management and is implemented through 23 CFR 650, Subpart A Location and Hydraulic Design of Encroachments on Floodplains. Urban development, flood damage reduction projects, placement of fill material, and transportation projects can have cumulative impacts to floodplains. Secondary impacts associated with floodplain encroachment include increases in base flood elevations, changes in natural stream flow dynamics, and alterations to life process requirements of aquatic species. The proposed construction methods associated with the alternative 2 alignment would involve the use of proper construction methods in compliance with and FEMA regulations, and would not impact floodplain storage within the project area. All disturbed areas would be returned to pre-construction contours and grades; therefore, flood storage loss would not occur. As a result of the absence of any adverse flooding effects from the "Proposed Action", the incremental effects of the project in light of other actions would be negligible. Thus, no cumulative effects to floodplains are anticipated.

5.8 FISH AND WILDLIFE

Significant cumulative effects would be reached if the projects in the area were to substantially affect the abundance or diversity of any native animal species beyond normal variability. Significant cumulative effects would be reached if the projects in the area could be inferred to substantially affect the movement of any resident or migratory fish or wildlife species. Significant cumulative effects would be reached if the projects in the area were to substantially harm, harass or destroy species, natural communities or habitat that is recognized for scientific, recreational, ecological, or commercial importance. Significant cumulative effects would be reached if the projects in the area were to substantially alter or destroy habitat that would prevent the establishment of native biological communities that inhabited the area prior to the disturbances, would lead to an extensive loss of biological communities in high quality habitat for longer than a year, or would lead to a violation of the Migratory Bird Treaty Act.

Urban pressure due to growth within the general area is displacing wildlife and causing them to relocate to other nearby undeveloped properties. Relocated wildlife will often be forced to move into other animals' ranges and experience a higher competition for food and shelter. Accordingly, it is anticipated that the land within the USACE limits of Joe Pool Lake will continue to see an increase in density of wildlife species. Displacement of wildlife is expected during construction along the ROW due primarily to the removal of wooded habitat, clearing of grasslands and noise associated with the proposed project. These disturbances would be limited to the project ROW. However, significant areas of wooded, riparian and native grassland habitat are located in areas adjacent to the project area and there are other areas that still remain protected and preserved as Environmentally Sensitive Areas on the remainder of the acreage surrounding Joe Pool Lake. In addition grasslands would be restored according to regulatory mandates. As discussed in earlier sections Aquatic habitat is limited due to the intermittent

nature of Mountain and Soap Creeks and those areas would be protected using BMPs, therefore impacts to fish and other aquatic species is anticipated to be zero to minimal. The minimal effects on fish and wildlife that are expected to result from the implementation of the proposed project would have only a minor incremental effect in light of the effects of other actions in the area. Therefore, it is concluded that the project with proposed regulatory mandates and measures would only have minimal cumulative impacts on fish and wildlife in the resources study area.

5.9 AQUATIC VEGETATION

As discussed in earlier sections, aquatic resources are limited due to the ephemeral nature of the streams within the ROW. The proposed project would be designed to avoid aquatic resources to the greatest extent possible. Negligible effects on aquatic vegetation are expected to result from the implementation of the proposed project and would have only a minor incremental effect in light of the effects of other actions in the area. Therefore, it is concluded that the project with regulatory mandates and measures would only have minimal cumulative impacts on aquatic vegetation resources within the study area.

5.10 TERRESTRIAL VEGETATION

Significant cumulative effects would be reached if the projects in the area were to introduce or encourage the spreading of noxious terrestrial weeds or other undesirable invasive species. Significant cumulative effects would be reached if the projects in the area were to lead to the substantial loss of upland habitats. Significant cumulative effects would be reached if the projects in the area were to alter or destroy habitat that would prevent the reestablishment of native biological communities that inhabited the area prior to disturbances. Significant cumulative effects would be reached if the projects in the area were to substantially harm or destroy terrestrial species, natural terrestrial communities or terrestrial habitat that is specifically recognized as biologically significant in local, state or federal policies, statutes or regulations.

The project ROW has been designed to maximize the preservation of larger stands of trees and preserve a significant portion of the habitat areas. Where impacts are necessary, measures will be taken to minimize the impairments to wooded habitat. Existing ROWs would be incorporated into the proposed project where possible to terrestrial habitat. Any standing snags and downed logs would be retained for their habitat values within preserved wooded areas, except where standing snags would pose a safety threat to recreational users. Post construction reseeding within the ROW and other BMPs will be used to minimize and avoid impacts. Thus, impacts to terrestrial habitat is anticipated to be negligible.

5.11 THREATENED AND ENDANGERED SPECIES

Significant cumulative effects would be reached if the projects in the area were to result in harm, harassment or destruction of any federally listed endangered, threatened or candidate species, its habitat, migration corridors, or breeding areas. Significant cumulative effects would be reached if the projects in the area were to harm, harass or destroy any birds of conservation concern.

There would be no threatened and endangered species impacts related to the proposed project. Thus, no cumulative effects on threatened and endangered species are anticipated.

5.12 NOISE AND GENERAL AESTHETICS

There are no universally applicable regulatory thresholds for assessing significance of noise impacts, but environmental noise regulations and guidelines are defined by various Federal and state agencies. Significant cumulative effects would be reached if the projects in the area were to violate EPA noise standards at the boundaries of the project areas over an extended period of time, or create impulse or other short-term event noise levels. The design of the proposed action and alternatives would ensure that noise impacts are minimized, and thus the incremental noise effects of the project would result in negligible cumulative effects.

The visual landscape near the project area is characterized by USACE-managed forest lands around the lake, undeveloped land, and residential/commercial development in the Grand Prairie and surrounding DFW metroplex communities. Since the majority of the proposed project would be surrounded by some wooded areas, no impacts to the local aesthetics are anticipated.

5.13 CULTURAL RESOURCES

Significant cumulative effects would be reached if the projects in the area were to directly or indirectly alter the integrity or characteristics of a resource that would qualify for inclusion in the National Registry of Historic Places, or if it were determined that the projects inhibited access to or use of culturally important locations or interfered with cultural or religious practices.

Archeological resources within the project area will be avoided by present and foreseeable future construction activities. Thus, the project is not anticipated to result in cumulative impacts to cultural resources.

5.14 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTES

Significant cumulative effects would be reached if the projects in the area were to directly or indirectly create hazards by exposing the public to hazardous materials at levels exceeding the range of risk generally considered acceptable by the EPA.

No hazardous, toxic or radioactive waste sites are recorded within the project area.

5.15 AIR QUALITY

Construction of the buildings and other recreational assemblages in the area of the proposed project would involve the use of diesel powered construction equipment. During daytime work hours there would be exhaust (and particulate) emissions associated with construction activities. However, this is considered a minor or temporary event affecting air quality; especially since the construction is distributed along linear corridors and as such would preclude a high density of construction machinery.

The potential short-term impacts due to dust during construction of the proposed features would be mitigated by use of BMPs such as periodic watering of loose soil in traffic areas to minimize dust release into the air. Vegetation would be reestablished on all areas disturbed during construction following completion to stabilize the bare soil; therefore, the incremental air quality impacts of the proposed project, in light of other actions in the area, would be negligible.

5.16 RECREATION

Significant cumulative effects would be reached if the projects in the area were to result in a substantial decline in the quality or quantity of existing recreational facilities, or would result in a substantial decline in the opportunities to participate in these recreational activities.

Continued population growth within the region could lead to additional water-based recreational draw on Joe Pool Lake and increased trail usage in the foreseeable future. The proposed project ROW would be located in an area designated as low density recreation as specified in the Joe Pool Master Plan. The proposed ROW is designed to be maintained in a manner that would support such land uses and impacts to recreational resources is expected to be negligible.

5.17 SOCIOECONOMICS

Significant cumulative effects would be reached if the projects in the area were to create an increase in population growth or the demand for housing, schools, or community facilities that is beyond the capacity of a region to accommodate. Significant effects also would result from the displacement of a large number of people, especially from affordable housing, a decrease in local employment, or a decrease in the accessibility of community facilities. Significant environmental justice effects would occur if the cumulative result of all area projects led to disproportionately negative effects on low-income and minority populations.

Census data show that areas served by the Grand Prairie infrastructure system have been among the fastest growing population areas in the US between 1990 and 2000. The development of surrounding land would provide homes and employment in the immediate vicinity. Most of the development in the area is taking place on undeveloped land currently fallow or pasture land. Therefore, it is not anticipated that local development would have adverse cumulative impacts on socioeconomic resources of the Grand Prairie area in accordance with local planning efforts. The beneficial impacts from the waste water expansion and the continued economic development being experienced along the Highway 287 corridor will be realized by those neighborhoods close to the project area in the form of new job opportunities and shopping. The local community will benefit from increased tax revenues and property values.

Secondary or indirect effects of the ”Proposed Action” on the broader “resource study area” may include negligible growth-inducing effects or other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems. Activities taking place within the proposed ROW and in the general area of Joe Pool Lake would have no cumulative adverse or disproportionate social and economic implications on residents and businesses in Tarrant, Ellis and Dallas Counties.

6.0 PUBLIC INVOLVEMENT

6.1 AGENCY COORDINATION

A Notice of Availability (NOA) would be sent out for public notification of the review and comment period. The draft EA would be sent to the following resource agencies for review and comment in accordance with coordination requirements as set forth by the NEPA: Texas Parks and Wildlife (TPWD); United States Fish and Wildlife Service (USFWS); Environmental Protection Agency (EPA, Region 6: the State Historical Preservation Office (SHPO) and the

Texas Commission on Environmental Equality (TCEQ). All public comments and agency coordination information would be addressed and incorporated into the final EA document.

7.0 FINDINGS AND CONCLUSIONS

Implementing "Alternative 2- Pipeline Alignment Along U.S. Highway 289 and Across USACE Property" (the proposed action), for the Grand Prairie wastewater utility pipeline project in Ellis County, Texas would only have minor and short-term impacts to the environment. There are potential temporary impacts to waters of the US that meet the requirements for permitting under NWP 12 for utility line construction activities. The proposed action would however reallocate a portion of existing land-use as an Easement. Only temporary impacts to soils, geology, water quality, fish and wildlife, air quality, noise and general aesthetics, and aquatic and terrestrial vegetation are expected from construction activities. The proposed action alternative would not disproportionately affect any low income or minority populations in Ellis County, Texas. In turn, benefits would occur to socioeconomics from the extra wastewater capacity created by construction of the utility line. There would be minor cumulative adverse impacts to the Waters of the US, soils, geology, water quality, fish and wildlife, air quality, noise and general aesthetics, and aquatic and terrestrial vegetation.

Based on the findings of this EA, the Proposed Action would not have significant impact on the quality of the cultural or natural environment. Construction activities would have short-term minimal impacts to natural resources and would not result in any moderate or significant, long-term, or cumulative adverse effects. It is anticipated that the proposed project would not be a major federal action that would require an Environmental Impact Statement under terms of the NEPA. A FONSI is recommended for the Grand Prairie wastewater utility pipeline project. In conclusion, construction of the Grand Prairie wastewater utility pipeline would not significantly affect the natural or cultural environment and is recommended for implementation.

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Appendix A
Exhibits

Figure 1

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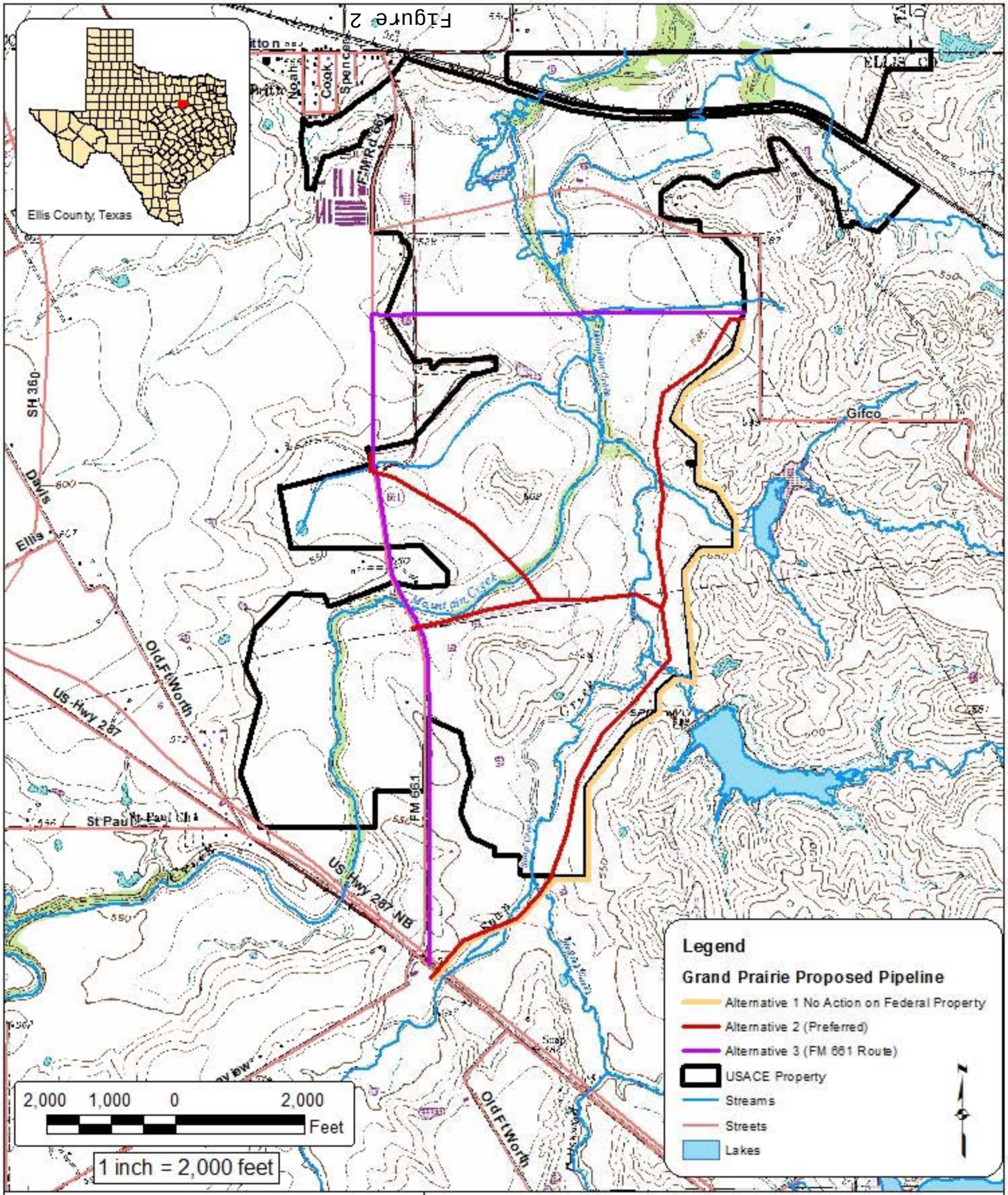
Figure 2



Espey Consultants, Inc.
Environmental & Engineering Services

PROJECT LOCATION MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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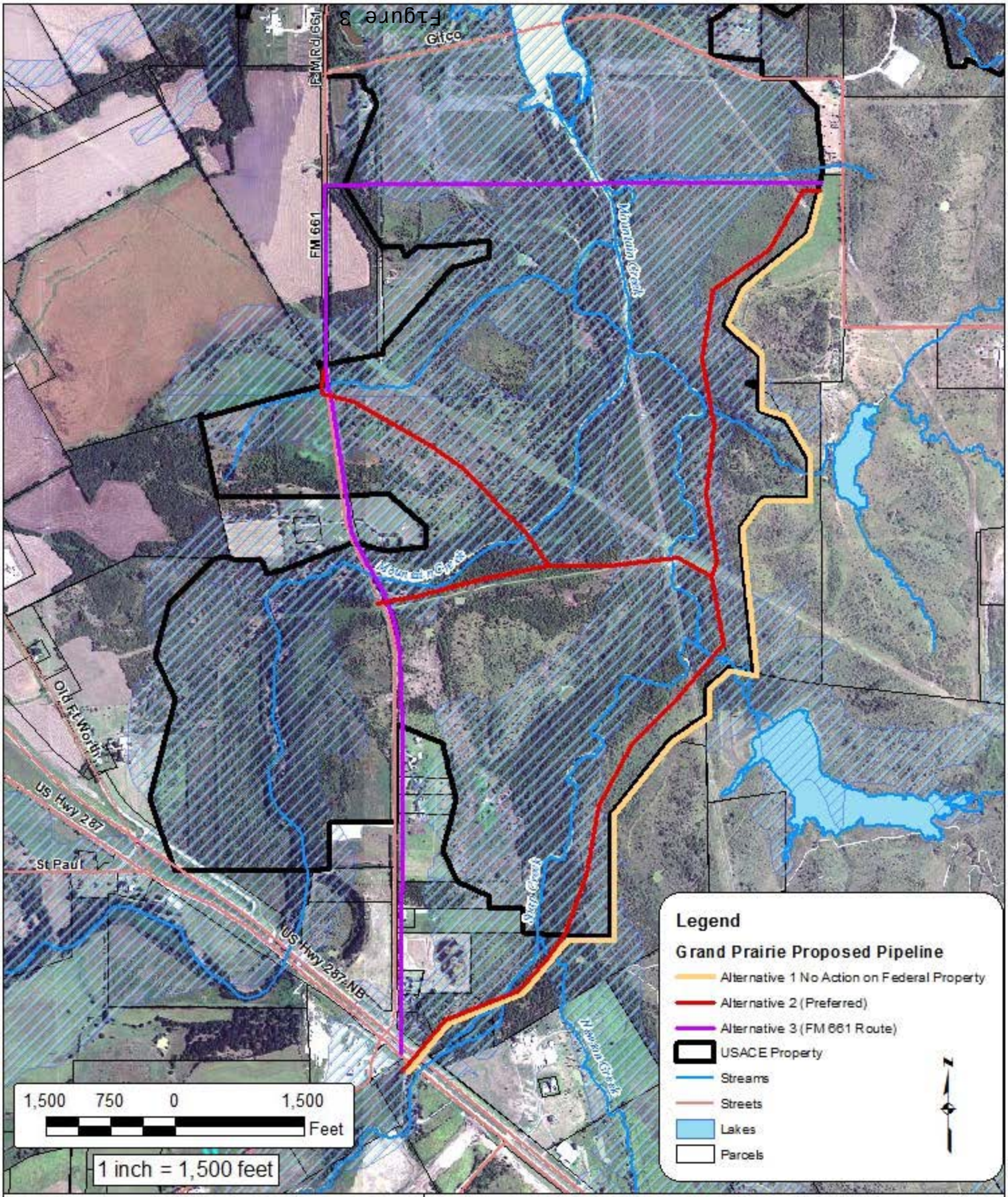

Espey Consultants, Inc.
Environmental & Engineering Services

PROJECT AREA MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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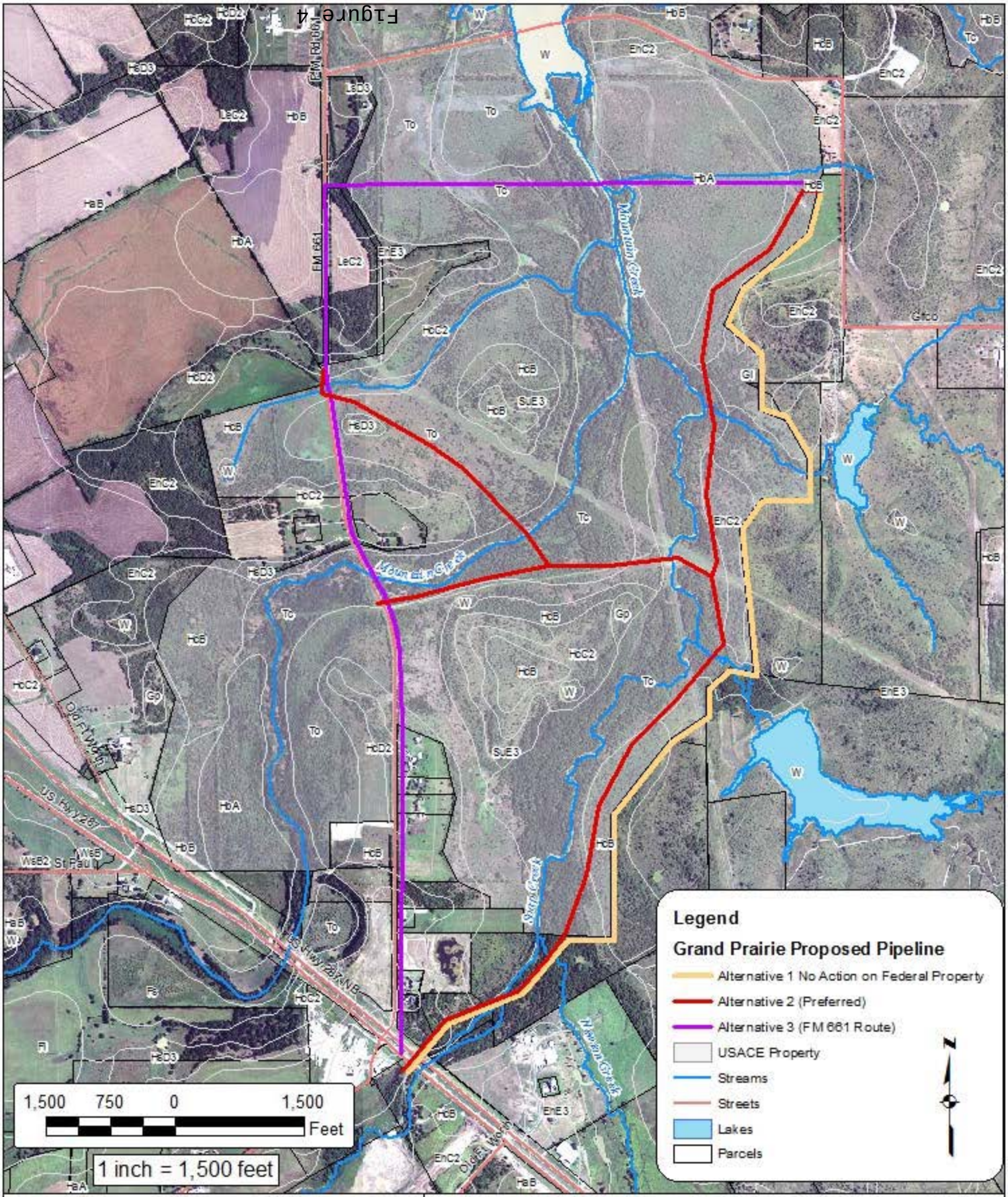
Figure 4



Espey Consultants, Inc.
Environmental & Engineering Services

SSURGO SOIL SURVEY MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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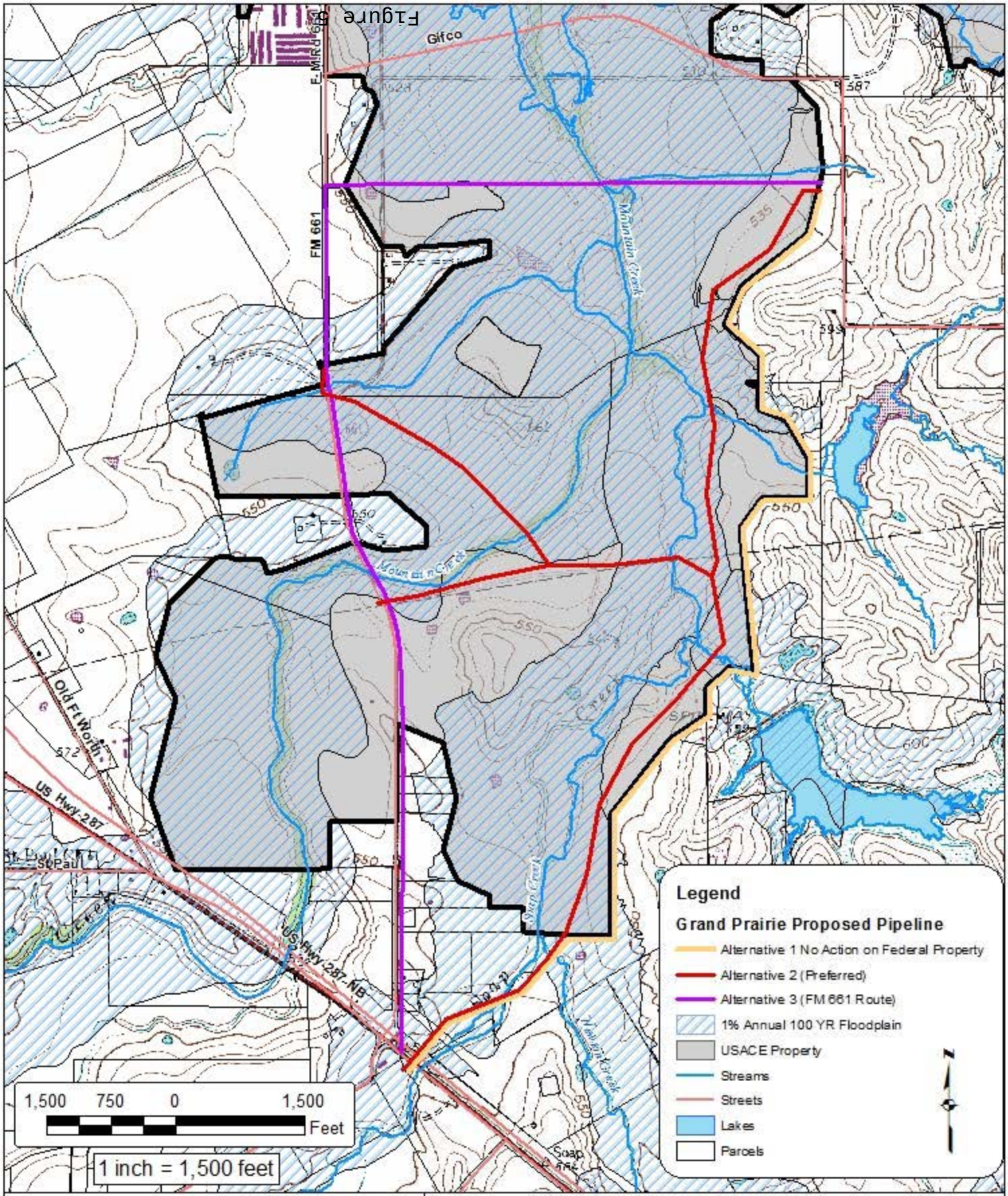
Figure 3



Espey Consultants, Inc.
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1% ANNUAL 100 YR FLOODPLAIN MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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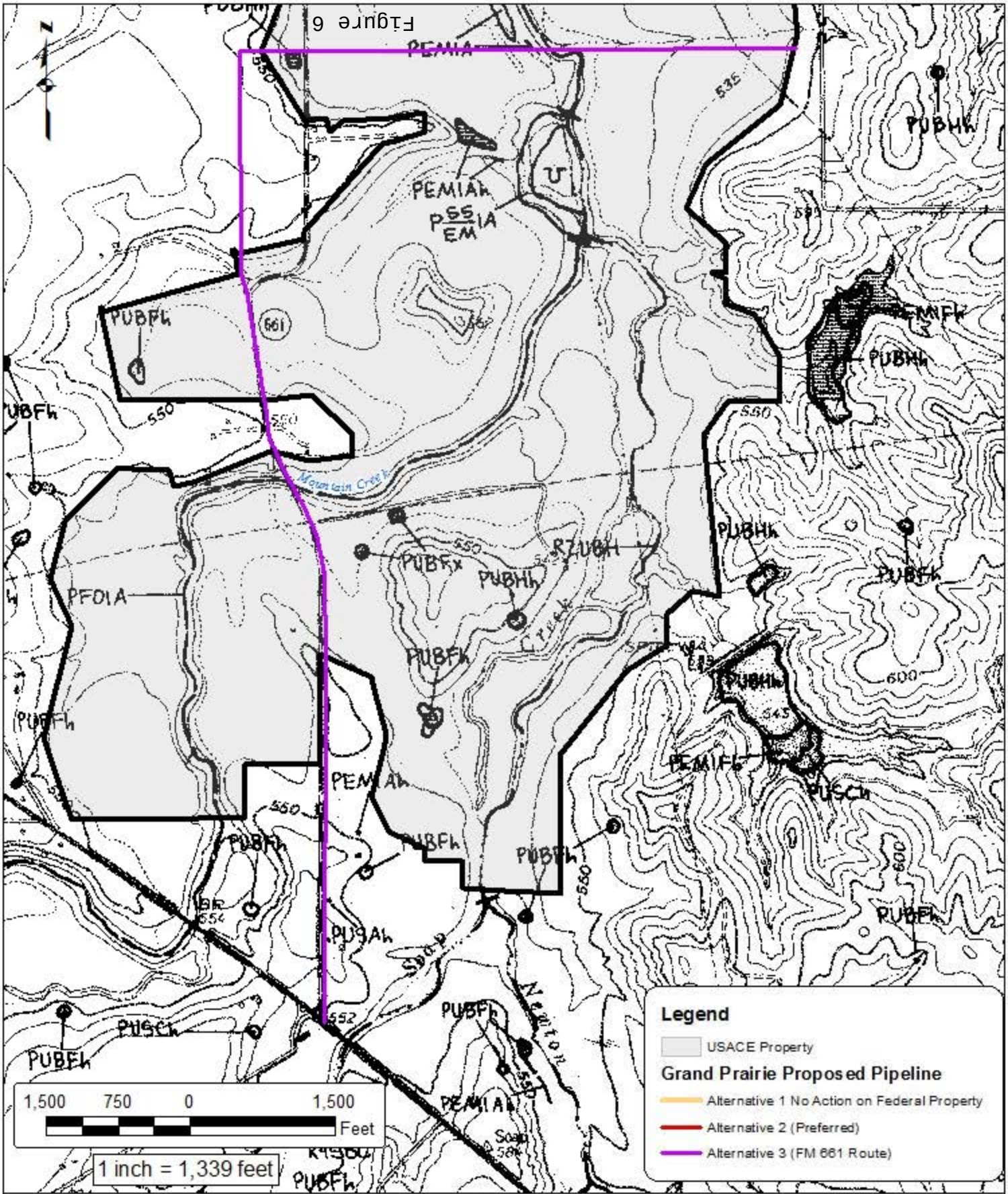

Espey Consultants, Inc.
Environmental & Engineering Services

NATIONAL WETLANDS INVENTORY MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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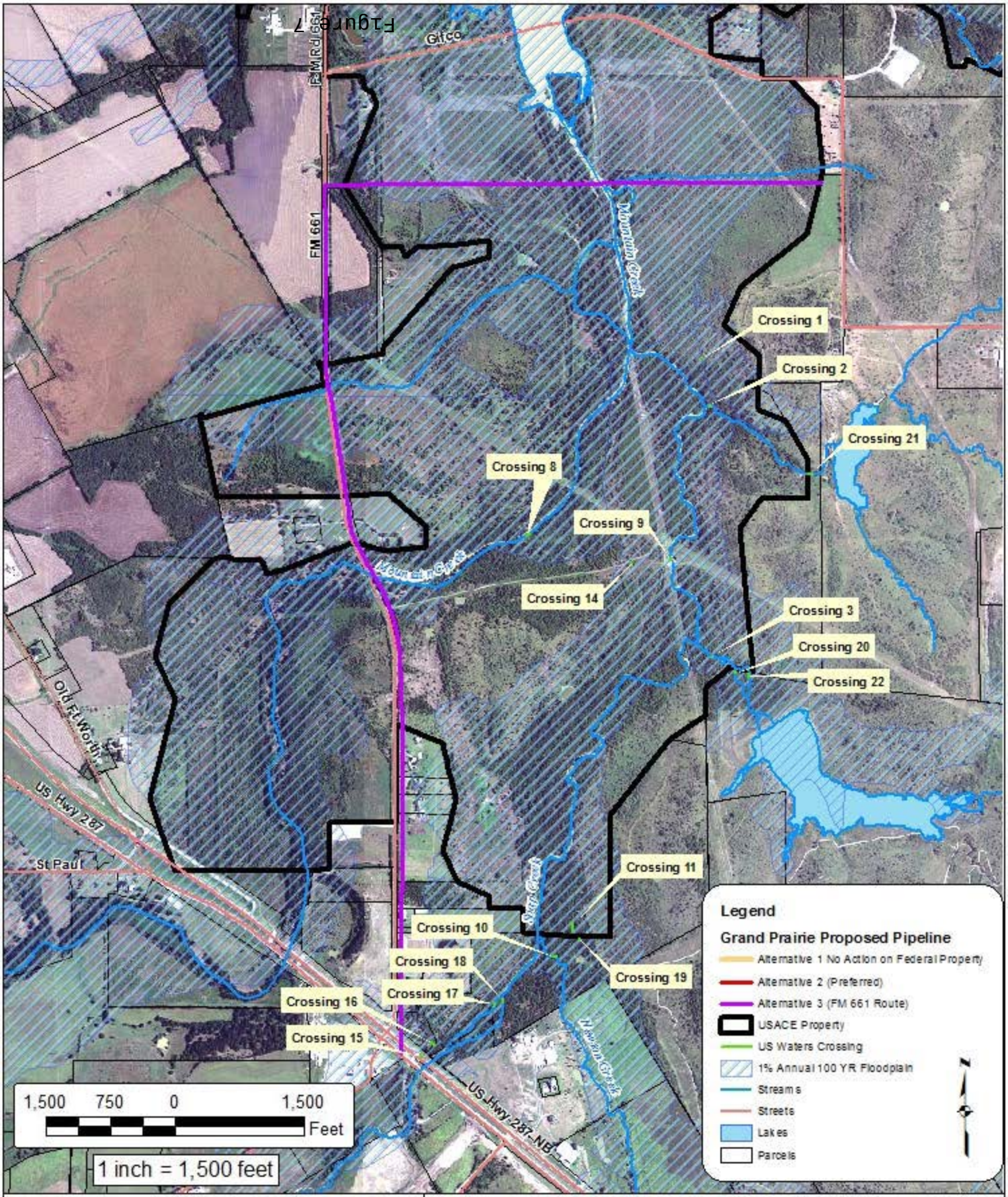

Espey Consultants, Inc.
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Crossings of Waters of the U.S.

Grand Prairie Utility Line
Ellis County, Texas

NOVEMBER 2010

Project No. 06006.01

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Figure 8

Espey Consultants, Inc.
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LAND USE MAP

Grand Prairie Utility Line
Ellis County, Texas

AUGUST 2011

Project No. 06006.01

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Figure 11: A view of the north end of the proposed pipeline route, facing south.

Figure 12: A view of the middle portion of the proposed pipeline route, facing north.

Figure 13: A view of the south end of the proposed pipeline route, facing north.

Figure 14: A view of the main branch of the proposed pipeline route, which runs adjacent to an existing utility ROW, facing east.

Figure 15: A view of the subsequent northwest branch of the proposed pipeline route, facing southeast.

Figure 16: View of Tributary 1, facing east along crossing.

Figure 17: View of Tributary 2 looking upstream, facing south along crossing.

Figure 18: View of Tributary 3 looking upstream, facing east from crossing.

Figure 19: View of Tributary 8 looking upstream from dirt road, facing north along crossing.

Figure 20: View of Tributary 9 (Mountain Creek), facing downstream from crossing.

Figure 21: View of Tributary 10 (Soap Creek) looking downstream, facing southeast toward the crossing.

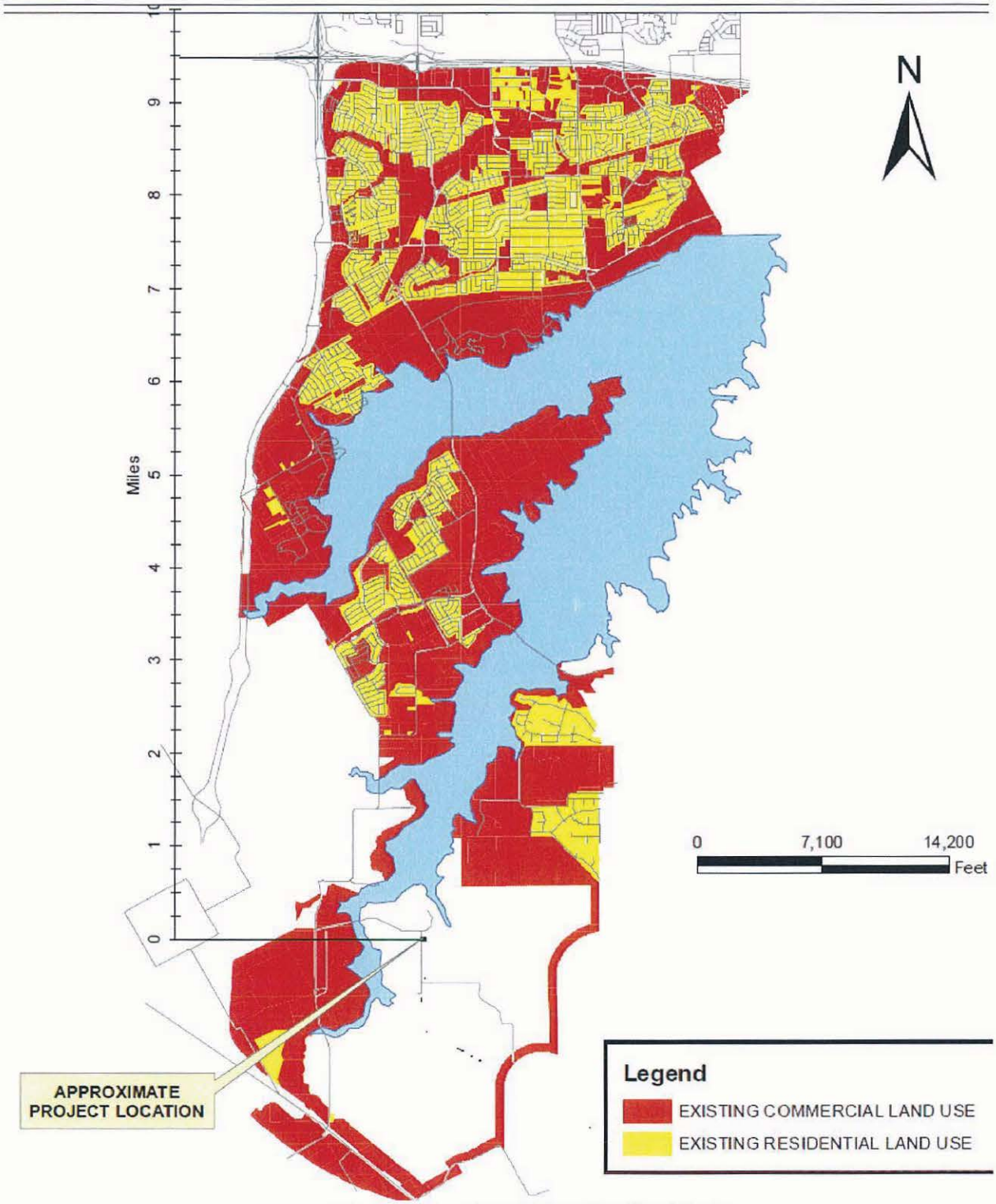

Figure 20: Existing Land Use, Joe Pool Lake.

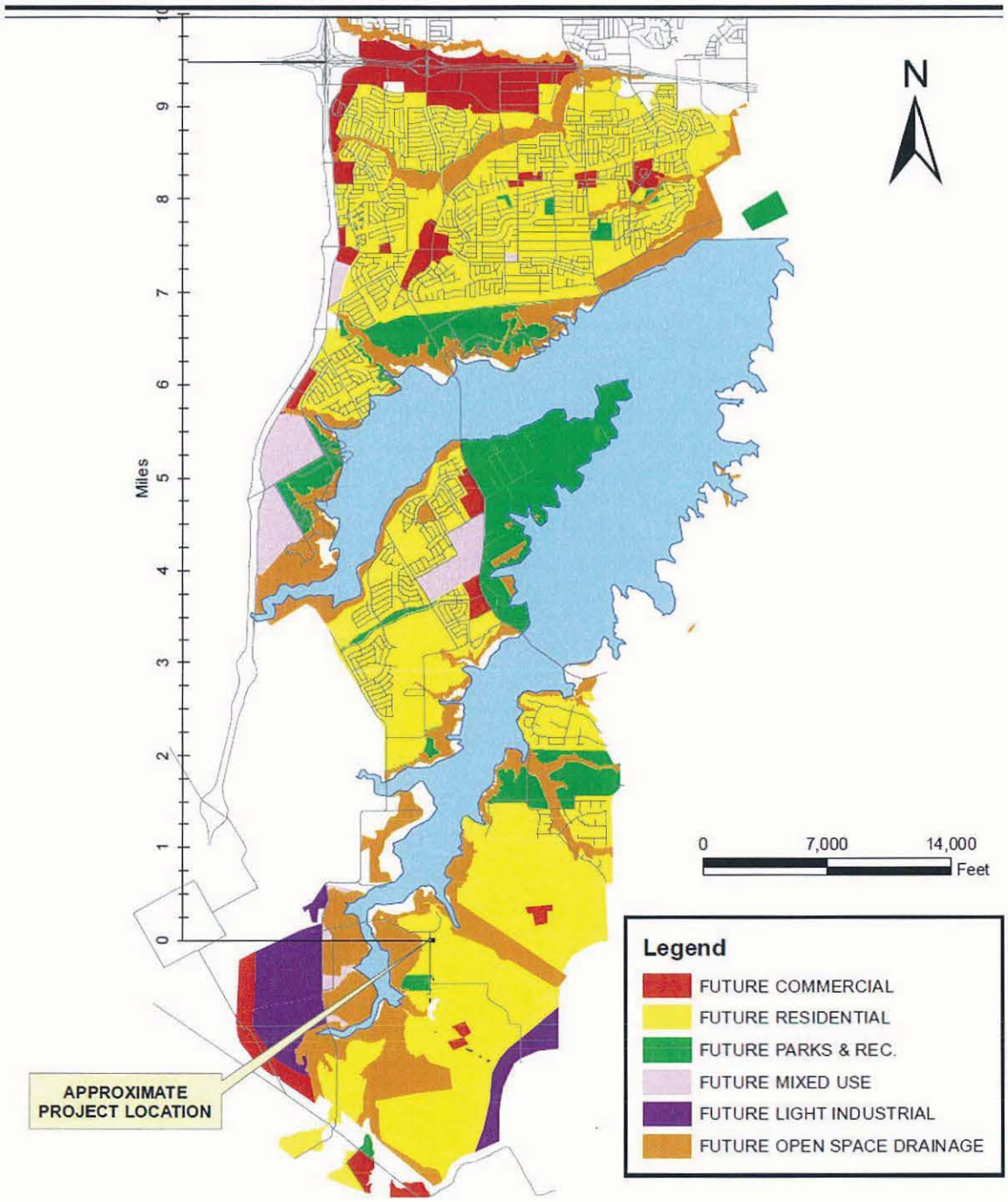

Figure 21: Future Land Use, City of Grand Prairie.

Appendix **B**

Hazardous, Toxic, and Radioactive Wastes Regulatory Report (Banks Environmental Data, Inc.)

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

December 29, 2009

Dear Esteemed Banks Environmental Data Client,

We very much appreciate your business and are very excited that you have ordered our new ASTM/AAI Regulatory Database Report Product.

It is our goal with this new Regulatory Database Report to create an *Easy to Order, Easy to Obtain, and Easy to Read* product that is accurate, cost effective, and delivered quickly.

As with any new product launch, we feel it is important to note what we currently have available for you in our report, and more importantly let you know what we do not currently have available but will be adding to the product in the very near future:

What our ASTM/AAI Regulatory Report does offer right now:

- ✓ All ASTM 1527-05/AAI required Regulatory Databases
- ✓ Coverage for Texas, Louisiana, Oklahoma, Arkansas, and New Mexico
- ✓ .25, .5, and 1 Mile Street Maps + Topographic and Aerials Overlay Maps where available
- ✓ Target Site and Risk Sites Elevation
- ✓ Accurate Risk Sites Mapping + Minimal Unmapped Sites Listings

What our ASTM/AAI Regulatory Report will be offering soon:

- ✓ Additional Non ASTM/AAI Databases required Regulatory Databases
- ✓ Coverage for additional states throughout the country
- ✓ Enhanced Mapping Features
- ✓ In depth SSURGO and STATSGO Soils Data
- ✓ Water Well + Oil & Gas Well Data included in Report

You can provide us valuable feedback by email at feedback@banksinfo.com or by calling me directly at 512-744-1787.

Please feel free to let me know me or any of our staff know how Banks Environmental Data can be helping you be better off with your Phase I Site Assessment and other Due Diligence needs.

Sincerely In Your Service,

Trace Hight
CEO
Banks Environmental Data, Inc.

Banks Environmental Data, Inc.
1601 Rio Grande, Ste. 500
Austin, TX 78701
1-800-531-5255
www.banksinfo.com

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

ASTM 1527-05/AAI Compliant

The Banks Regulatory Database Report™

Tuesday, December 29, 2009

Client
ESPEY CONSULTANTS, INC.
3809 South Second Street
Ste #B-300
Austin, TX 78704

Target Property
Grand Prairie Wastewater Utility
Ellis County, TX
ES#: 60989
PO#: 06006.01

1601 Rio Grande Suite 500 Austin, Texas 78701
PH 512.478.0059 FAX 512.478.1433 E-mail banks@banksinfo.com

BANKS ENVIRONMENTAL DATA
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Table of Contents

Grand Prairie Wastewater Utility

1601 Rio Grande Suite 500 Austin, Texas 78701
PH 512.478.0059 FAX 512.478.1433 E-mail banks@banksinfo.com

BANKS ENVIRONMENTAL DATA
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Database Summary

Grand Prairie Wastewater Utility

Databases Searched	Distance Searched	Mapped Sites Found	Unmapped Sites Found	Total Sites Found	Last Updated Date
Federal - ASTM 1527-05/AAI Required					
National Priority List (NPL)	0.500	0	0	0	09/22/2009
Delisted National Priority List (DNPL)	0.500	0	0	0	09/22/2009
CERCLIS (CER)	0.500	0	0	0	10/19/2009
CERCLIS NFRAP (CER NFRAP)	0.500	0	1	1	10/19/2009
RCRA CORRACTS (RCRA COR)	0.500	0	0	0	09/10/2009
RCRA non-CORRACTS TSD (RCRA TSD)	0.500	0	0	0	09/10/2009
RCRA Generators (RCRA GEN)	0.500	0	0	0	09/10/2009
Federal Brownfields (FED BWN)	0.500	0	0	0	09/22/2009
Federal Institutional Control (FED IC)	0.500	0	0	0	09/22/2009
Federal Engineering Control (FED EC)	0.500	0	0	0	09/03/2009
ERNS List (ERNS)	0.500	0	0	0	09/03/2009
State - ASTM 1527-05/AAI Required					
State/Tribal Equivalent NPL (ST NPL)	0.500	0	0	0	09/14/2009
State/Tribal Equivalent CERCLIS (ST CER)	0.500	0	0	0	N/A
State/Tribal Disposal or Landfill (SWLF)	0.500	0	0	0	09/30/2009
State/Tribal Leaking Storage Tank (LPST)	0.500	0	0	0	09/30/2009
State/Tribal Storage Tank (PST)	0.500	0	0	0	09/30/2009
State/Tribal Institutional Control (ST IC)	0.500	0	0	0	09/14/2009
State/Tribal Engineering Control (ST EC)	0.500	0	0	0	09/14/2009
State/Tribal Voluntary Cleanup (VCP)	0.500	0	0	0	09/14/2009
State/Tribal Brownfield (ST BWN)	0.500	0	0	0	09/30/2009
Non-ASTM/AAI Required Databases					
RCRA (RCRA)	0.500	0	0	0	09/10/2009
Dry Cleaners (DRYC)	0.500	0	0	0	09/30/2009
Industrial Hazardous Waste (IHW)	0.500	0	0	0	09/30/2009
Total Sites Found		**0**	**1**	**1**	

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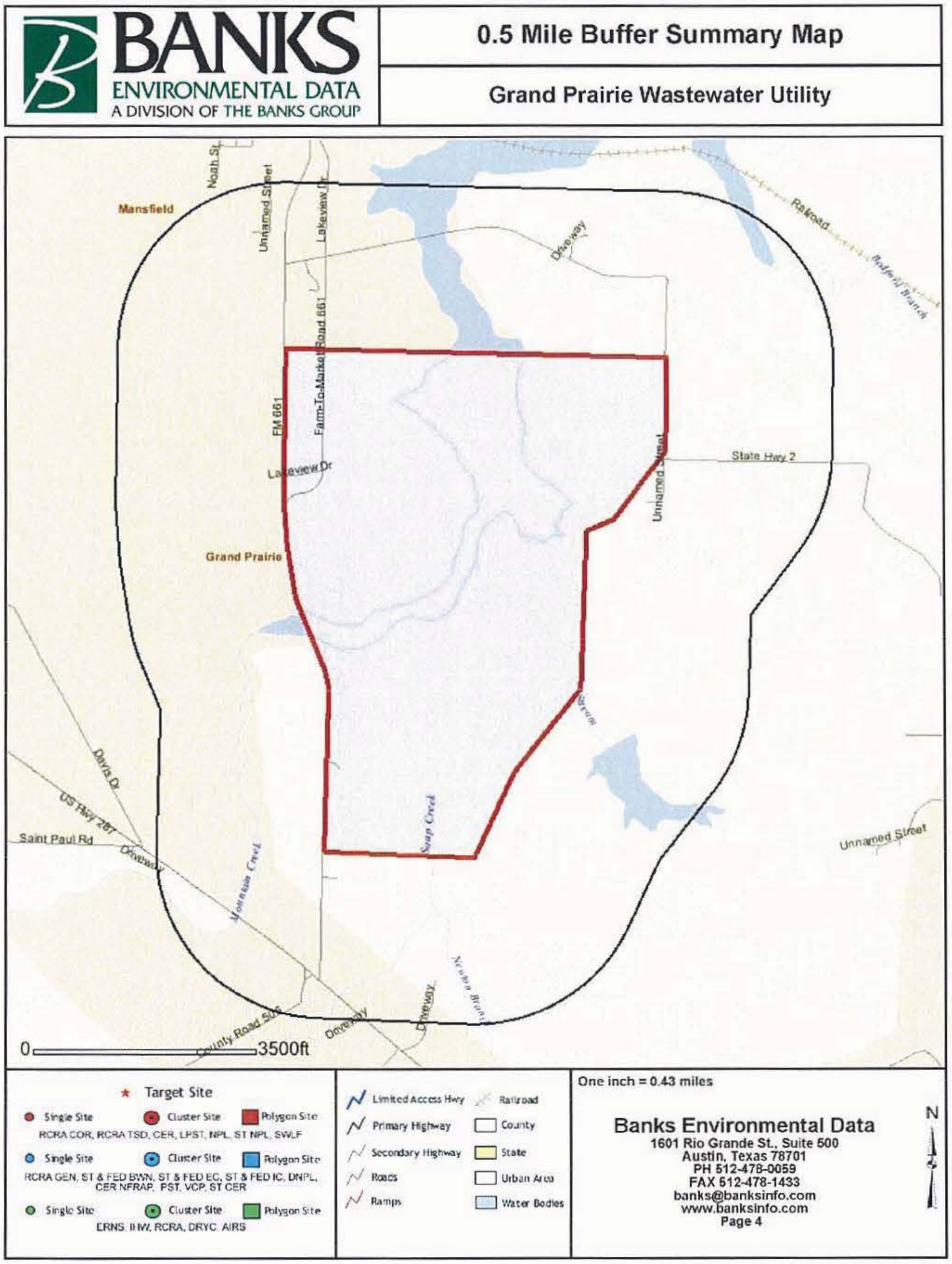
BANKS
ENVIRONMENTAL DATA
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0.5 Mile Buffer Summary Map
Grand Prairie Wastewater Utility
Mansfield
Noah St
Unnamed Street
Lakeview Dr
Driveway
Railroad
Farm-To-Market Road 661
FM 661
Lakeview Dr
State Hwy 2
Unnamed Street
Grand Prairie
Davis Dr
US Hwy 287
Saint Paul Rd
Driveway
Soap Creek
Unnamed Street
County Road 506
Driveway
Driveway
0
3500ft
Target Site
Single Site
Cluster Site
Polygon Site
RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF
Single Site
Cluster Site
Polygon Site
RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER
Single Site
Cluster Site
Polygon Site
ERNS, IHW, RCRA, DRYC, AIRS
Limited Access Hwy
Primary Highway
Secondary Highway
Roads
Ramps
Railroad
County
State
Urban Area
Water Bodies
One inch = 0.43 miles
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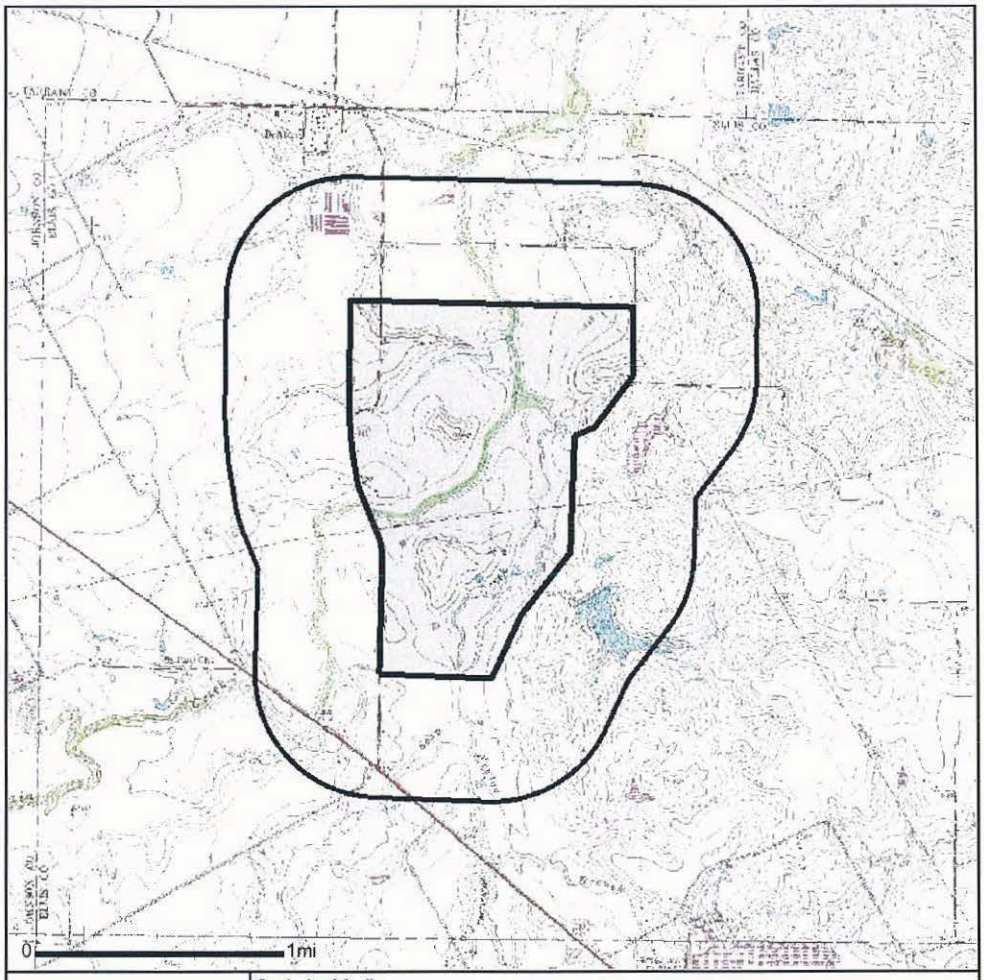
Topographic Overlay Map - 1 Mile Buffer

Grand Prairie Wastewater Utility



★ Subject Site
Site
Cluster
Existing Road
State Line
County Line
Unimproved Road

One inch = 0.6 miles

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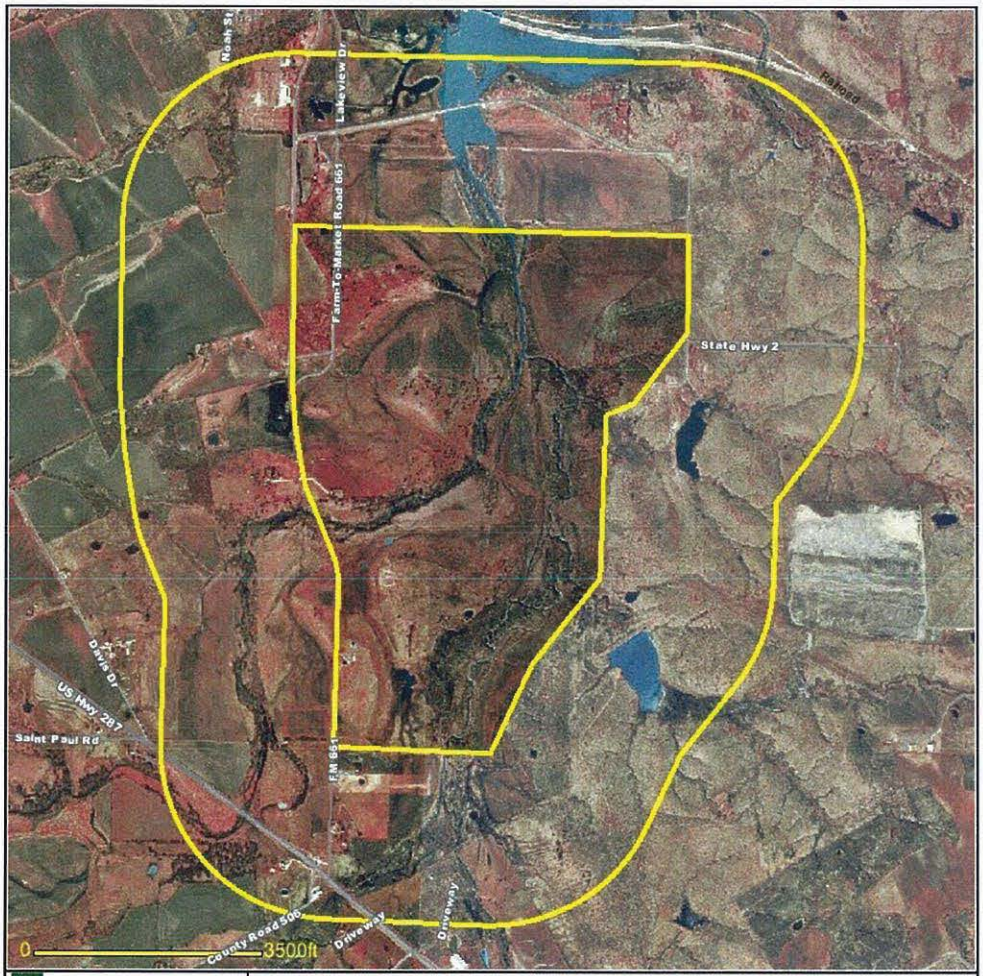
1996 Aerial Overlay Map - 0.5 Mile Buffer

Grand Prairie Wastewater Utility



Subject Site
Site
Cluster
Primary Highway
State Line
County Line
Roads & Ramps
Railroad
Limited Access Hwy

One inch = 0.43 miles

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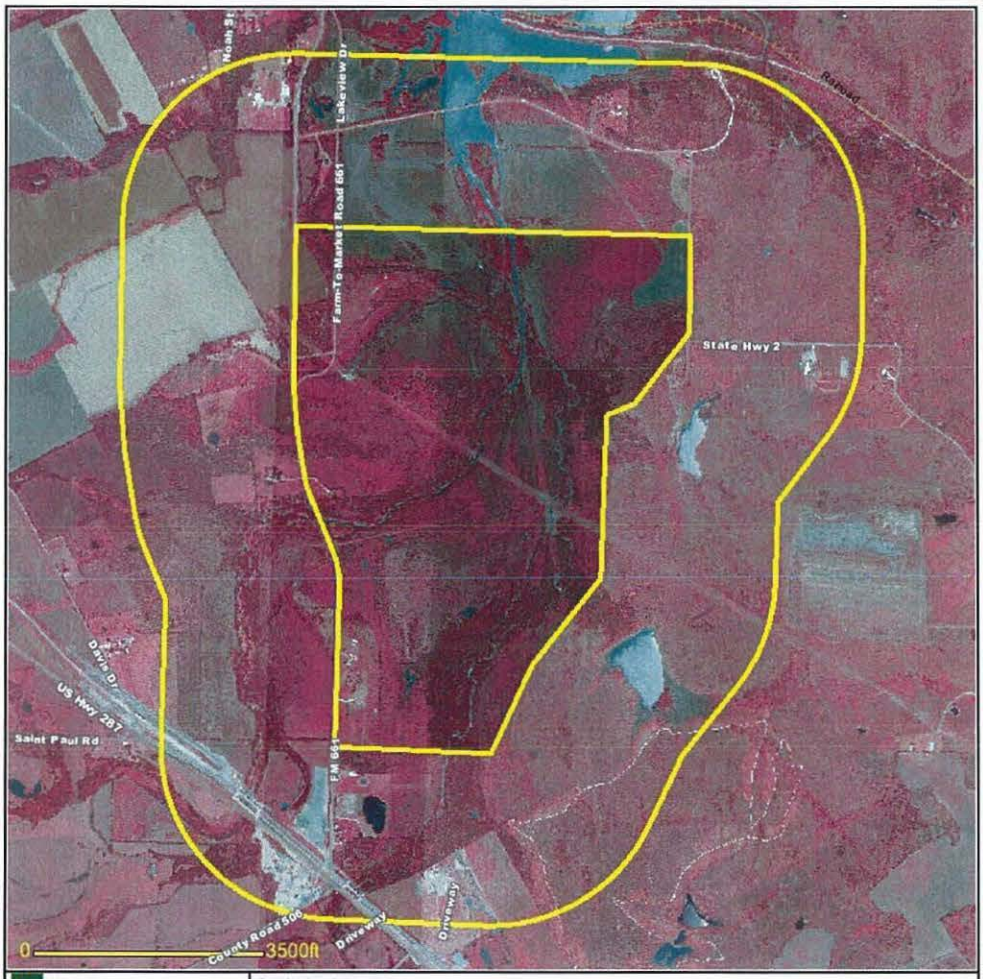
2004 Aerial Overlay Map - 0.5 Mile Buffer

Grand Prairie Wastewater Utility



Subject Site
Site
Cluster
Primary Highway
State Line
County Line
Roads & Ramps
Railroad
Limited Access Hwy

One inch = 0.43 miles

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Geographic/Geologic Summary

Grand Prairie Wastewater Utility

Coordinates	
Longitude & Latitude in Degrees Minutes Seconds	NA
Longitude & Latitude in Decimal Degrees	NA
X and Y in UTM	NA
Elevation	
NA	

SSURGO and STATSGO Soils Data is currently not avaialble for this report but will be added into this section in the very near future. Thank you for your understanding.

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BANKS ENVIRONMENTAL DATA
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Mapped Sites Summary

Grand Prairie Wastewater Utility

*Sites are sorted by database tier, database, and distance from the target site.

Banks Environmental Data Performed A Thorough Search And No Data Was Found

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Unmapped Sites Summary

Grand Prairie Wastewater Utility

Database	Facility Site Name	Facility Site Address	Site Details Page #
CER NFRAP	WILLIAM BEAN	ROUTE 2 BOX 117 A, MIDLOTHIAN, TX 76065	11

*Sites are sorted by database tier and database.

End of Unmapped Sites Summary Section

Search Distance	Zip Codes Searched
0.5 miles	76065

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Unmapped Sites Details

Grand Prairie Wastewater Utility

CER NFRAP - CERCLIS NFRAP

CER NFRAP	
WILLIAM BEAN	ROUTE 2 BOX 117 A, MIDLOTHIAN, TX 76065
ID: 0603084	Contact:
National Priority List Status:	Not on the NPL
Facility Type:	Site is not a federal facility

End of Unmapped Sites Details Section

Page 1 of 1

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Click Here to Go Back to Summary Section *Page 11*

BANKS ENVIRONMENTAL DATA
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Database Descriptions

Grand Prairie Wastewater Utility

Database Abbreviation	Database	Database Description	Source	Update Schedule
CER	CERCLIS	CERCLIS sites come from the Comprehensive Environmental Response, Compensation, and Liability Act, a federal law designed to clean up abandoned hazardous waste sites. These sites are either proposed, listed or under review currently to be a part of the National Priority List.	EPA	Quarterly
CER NFRAP	CERCLIS NFRAP	CERCLIS sites designated 'No Further Remedial Action Planned' NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.	EPA	Quarterly
DNPL	Delisted National Priority List	DNPL is a list of all sites that have been deleted from the EPA NPL list. These sites are taken off the NPL list usually due to no further response or remedial action being required on them. Notices to delete NPL sites are published in the Federal Register and become effective unless the EPA receives significant adverse or critical comments during the 30-day public comment period.	EPA	Quarterly
DRYC	Dry Cleaners	The DCRP database contains records funded for state-lead clean up of dry cleaner related contaminated sites. The DCRP administers the Dry Cleaning Facility Release Fund to assist with remediation of contamination caused by dry cleaning solvents. There are two listings from this program: LIST#1 - A historic listing of any facility that registered with the DCRP indicating whether or not the facility has used Perchloroethylene (PERC) in the past. LIST#2 - A Prioritization list of dry cleaner sites Facilities on this list will be investigated in order to determine the existence and or extent of possible contamination. Facilities which are not current on their DCRP payments get dropped from the program. Banks Environmental Data DOES NOT REMOVE these listings from our database so that we may present a more complete historical listing of facilities that may or may not have used PERC in the past.	TCEQ	Quarterly
ERNS	ERNS List	ERNS is a national database used to store	EPA/National Response Center	Annually

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Database Descriptions

Grand Prairie Wastewater Utility

Database Abbreviation	Database	Database Description	Source	Update Schedule
		information on unauthorized releases of oil and hazardous substances that have been reported to the National Response Center since 2001. The NRC is the sole federal point of contact for reporting oil and chemical spills. Prior to 2001 this information was maintained by the EPA.		
FED BWN	**Federal Brownfields**	A listing of sites that assist the EPA in collecting, tracking, and updating information of sites in relation to the Small Business Liability Relief and Brownfields Revitalization Act. These sites are real property that is either abandoned or underutilized where redevelopment or expansion is complicated by real or perceived environmental contamination.	EPA	Quarterly
FED EC	**Federal Engineering Control**	This is a listing of Brownfield Management System (BMS) sites that have had Engineering Controls (ECs) placed on them. ECs are physical methods or modifications put into place on a site to reduce or eliminate the possibility of human exposure to known contamination. ECs are a type of Activity and Use Limitation (AUL).	EPA	Quarterly
FED IC	**Federal Institutional Control**	This is a listing of Brownfield Management System (BMS) sites that have had Institutional Controls (ICs) placed on them. ICs are administrative restrictions, such as legal controls, that help minimize the potential for human exposure to known contamination by ensuring appropriate land or resource use. ICs are meant to supplement Engineering Controls and will rarely be the sole remedy at a site. ICs are a type of Activity and Use Limitation (AUL).	EPA	Quarterly
IHW	**Industrial Hazardous Waste**	This database contains information on facilities which store, process, or dispose of hazardous waste as maintained by the Industrial and Hazardous Waste Permits section of the TCEQ.	TCEQ	Quarterly
LPST	**State/Tribal Leaking Storage Tank**	This database contains information on leaking storage tanks, equipment failures, compliance, and releases in the state.	TCEQ	Quarterly
NPL	**National Priority List**	NPL is the list of high priority hazardous waste sites in the United States eligible for long-term remedial action financed under the federal Superfund program and CERCLIS. Also known as Superfund sites, the EPA will only add sites to the NPL list	EPA	Quarterly

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Database Descriptions

Grand Prairie Wastewater Utility

Database Abbreviation	Database	Database Description	Source	Update Schedule
		based upon completion of the Hazard Ranking System (HRS) screening, public solicitation of comments about the proposed site, and after all comments have been addressed.		
PST	State/Tribal Storage Tank	This database contains information on above and underground storage tanks, compliance, and releases in the state.	TCEQ	Quarterly
RCRA	RCRA	This database lists all sites that fall under the Resource Conservation and Recovery Act (RCRA) and are not classifiable as treatment, storage, disposers of hazardous material, hazardous waste generator or subject to corrective action activity.	EPA	Quarterly
RCRA COR	RCRA CORRACTS	These sites are registered hazardous waste generators or handlers that fall under the Resource Conservation and Recovery Act (RCRA). and subject to corrective action activity.	EPA	Quarterly
RCRA GEN	RCRA Generators	The EPA regulates all Hazardous Waste Generators subject to the Resource Conservation and Recovery Act (RCRA). They are classified by the quantity of hazardous waste generated. A Small Quantity Generator (SQG) generates between 100kg and 1,000 kg of waste per month. A Large Quantity Generator (LQG) generates over 1,000 kg of waste per month. A Conditionally Exempt SQG (CEG) generates less than 100 kg of waste per month.	EPA	Quarterly
RCRA TSD	RCRA non-CORRACTS TSD	This database lists all treatment, storage and disposal of hazardous material sites that fall under the Resource Conservation and Recovery Act (RCRA). All hazardous waste TSD facilities are required to notify EPA of their existence.	EPA	Quarterly
ST BWN	State/Tribal Brownfield	Brownfield sites are former industrial properties that lie dormant or underutilized due to liability associated with real or perceived contamination. In Texas, the TCEQ, in close partnership with the EPA and other federal, state, and local redevelopment agencies, and stakeholders, is facilitating cleanup, transferability, and revitalization of Brownfield's through the development of regulatory, tax, and technical assistance tools.	TCEQ	Quarterly
ST CER	State/Tribal Equivalent CERCLIS	This database is not currently available	NA	NA

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Database Descriptions

Grand Prairie Wastewater Utility

Database Abbreviation	Database	Database Description	Source	Update Schedule
		from this state. If this state does make this database available in the future, Banks Environmental Data will obtain it for reporting purposes.		
ST EC	State/Tribal Engineering Control	This database includes Voluntary Cleanup Program (VCP) or Innocent Operator Program (IOP) sites that have been remediated and have had Engineering Controls (ECs) placed on them. ECs are physical methods or modifications put into place on a site to reduce or eliminate the possibility of human exposure to known contamination.	TCEQ	Quarterly
ST IC	State/Tribal Institutional Control	This database includes Voluntary Cleanup Program (VCP) or Innocent Operator Program (IOP) sites that have been remediated and have had Institutional Controls (ICs) placed on them. ICs are administrative restrictions, such as legal controls, that help minimize the potential for human exposure to known contamination by ensuring appropriate land or resource use.	TCEQ	Quarterly
ST NPL	State/Tribal Equivalent NPL	This database contains sites determined by the TCEQ that may constitute an imminent and substantial endangerment to public health and safety or to the environment due to a release or threatened release of hazardous substances into the environment.	TCEQ	Quarterly
SWLF	State/Tribal Disposal or Landfill	The SWLF database contains records of municipal solid waste facilities that may accept various types of municipal solid waste for processing or disposal, depending on the type of facility. A Municipal Solid Waste facility may also accept certain special wastes and non-hazardous industrial solid wastes if approved by the TCEQ executive director.	TCEQ	Annually
VCP	State/Tribal Voluntary Cleanup	This database contains sites from both the Voluntary Cleanup Program (VCP) and the Innocent Operator Program (IOP). The VCP records contain information on contaminated sites that private parties have cleaned up through assistance from the State in the form of administrative, technical, and legal incentives. The IOP records are sites that have received certificates from the State acknowledging that their property is contaminated as a result of a release or migration of contaminants from a source or sources	TCEQ	Quarterly

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Database Descriptions

Grand Prairie Wastewater Utility

Database Abbreviation	Database	Database Description	Source	Update Schedule
		not located on the property, and they did not cause or contribute to the source or sources of contamination.		

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Disclaimer

Grand Prairie Wastewater Utility

The Banks Environmental Data Regulatory Database Report© was prepared based upon data obtained from State, Tribal, and Federal sources known to Banks Environmental Data at the time the data was obtained. Great care has been taken by Banks in obtaining the best available data from the best available sources. However, there is a possibility that there are sources of data applicable or pertaining to this report's target property, and/or surrounding properties, to which Banks does not have access or has not accessed. Furthermore, although Banks Environmental Data performs quality assurance and quality control on all data, including data it obtains, Banks recognizes that inaccuracies in data from these sources may, and do, exist; accordingly, inaccurate data may have been used or relied upon in the preparation of this report. Even though Banks Environmental Data performs a thorough and diligent search to locate and fix any inaccuracies in the data relied upon in the preparation of this report and this report, Banks can not guarantee or warrant the accuracy of the information, data, or report. The purchaser of this report accepts this report "as is" and assumes all risk related to any potential inaccuracy contained in the report or not reported in it, whether due to a reliance by Banks Environmental Data on inaccurate data, or for any other reason [including but not limited to the negligence or express negligence of Banks Environmental Data]. If this report is being used for the Records Review section of a Phase I Site Assessment according to the ASTM 1527-05, for EPA's All Appropriate Inquiry, or for any other purpose (public or private), all liability and responsibility is assumed by the Environmental Professional or other individual or entity acquiring the report.

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BANKS ENVIRONMENTAL DATA
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Oil & Gas Well Report™

Tuesday, December 29, 2009

CLIENT

ESPEY CONSULTANTS, INC.
3809 South Second Street
Ste #B-300
Austin, TX 78704

SITE

Grand Prairie Wastewater Utility
Ellis County, TX
PO #: 06006.01
ES #: 60989
BISMap #: 122909-2799

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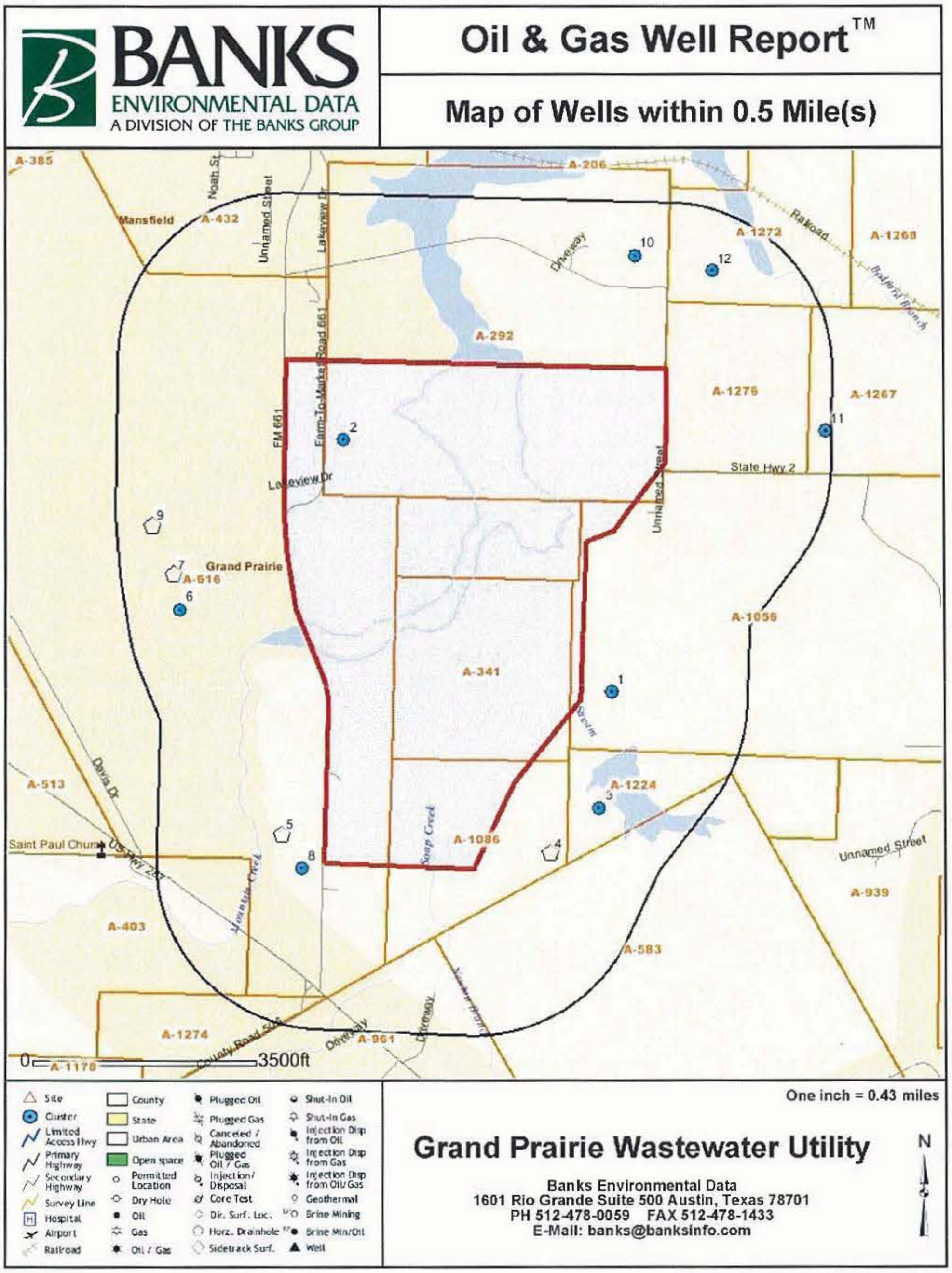
BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP
Oil & Gas Well Report™
Map of Wells within 0.5 Mile(s)
Mansfield
Grand Prairie
Saint Paul Church
State Hwy 2
Lakeview Dr
FM 661
Farm-To-Market Road 661
Unnamed Street
Lakeview Dr
Noah St
Davis Dr
County Road 504
Driveway
Railroad
Soap Creek
Mountain Creek
A-385
A-432
A-206
A-1272
A-1268
A-292
A-1276
A-1267
A-616
A-1056
A-341
A-513
A-1224
A-1086
A-939
A-403
A-583
A-1274
A-961
A-1178
0
3500ft
One inch = 0.43 miles
Site
Cluster
Limited Access Hwy
Primary Highway
Secondary Highway
Survey Line
Hospital
Airport
Railroad
County
State
Urban Area
Open space
Permitted Location
Dry Hole
Oil
Gas
Oil / Gas
Plugged Oil
Plugged Gas
Canceled / Abandoned
Plugged Oil / Gas
Injection/ Disposal
Core Test
Dir. Surf. Loc.
Horz. Drainhole
Sidetrack Surf.
Shut-In Oil
Shut-In Gas
Injection Disp from Oil
Injection Disp from Gas
Injection Disp from Oil/Gas
Geothermal
Brine Mining
Brine Min/Oil
Well
Grand Prairie Wastewater Utility
N
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BANKS ENVIRONMENTAL DATA
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Oil & Gas Well Report™

WELL DETAILS and SUMMARY

Map #	Operator Name	Lease Name	Well #	Comp. Date	Plug Date	T.D.	API #	Longitude	Latitude	Status/Comments
1	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30477-00	-97.046511	32.52308	Horz. Drainhole
1	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30527-00	-97.04855	32.523022	Horz. Drainhole
1	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30528-00	-97.046586	32.522961	Horz. Drainhole
1	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30529-00	-97.048625	32.5229	Sidetrack Surf. Loc.
2	RANGE PRODUCTION COMPANY	CARLTON UNIT	2H			0	42-139-30551-00	-97.062407	32.533939	Horz. Drainhole
2	RANGE PRODUCTION COMPANY	CARLTON UNIT	1H			0	42-139-30552-00	-97.062341	32.533971	Horz. Drainhole
3	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30531-00	-97.049084	32.518164	Horz. Drainhole
3	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30566-00	-97.049124	32.518075	Horz. Drainhole
3	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30569-00	-97.049117	32.518032	Horz. Drainhole
3	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30570-00	-97.049109	32.517988	Horz. Drainhole
4	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30573-00	-97.051518	32.516009	Horz. Drainhole
5	EOG RESOURCES, INC.	KUTNER	2 H	5/8/2007		8377	42-139-30476-00	-97.065287	32.516662	Horz. Drainhole
6	EOG RESOURCES, INC.	ORR	2H			0	42-139-30495-00	-97.070538	32.52645	Horz. Drainhole
6	EOG RESOURCES, INC.	ORR UNIT	1			0	42-139-30496-00	-97.070619	32.526452	Horz. Drainhole
6	(N/A)	NOT AVAILABLE				0	42-139-30496-00	-97.070619	32.526452	Horz. Drainhole
6	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30497-00	-97.070458	32.526447	Horz. Drainhole
6	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30501-00	-97.071177	32.526456	Horz. Drainhole
7	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30580-00	-97.070927	32.527981	Horz. Drainhole
8	CHESAPEAKE OPERATING, INC.	FRANCIS	1H	4/16/2009		8524	42-139-30536-00	-97.064568	32.515207	Horz. Drainhole
8	CHESAPEAKE OPERATING, INC.	FRANCIS	2H			0	42-139-30572-00	-97.064263	32.515238	Horz. Drainhole
9	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30502-00	-97.07205	32.530116	Horz. Drainhole
10	CHESAPEAKE OPERATING, INC.	WALKER UNIT 1	1H	4/13/2009		8608	42-139-30549-00	-97.047506	32.542264	Horz. Drainhole
10	CHESAPEAKE OPERATING, INC.	WALKER UNIT 1	2H			0	42-139-30553-00	-97.047509	32.542054	Horz. Drainhole

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BANKS ENVIRONMENTAL DATA
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Oil & Gas Well Report™

WELL DETAILS and SUMMARY

Map #	Operator Name	Lease Name	Well #	Comp. Date	Plug Date	T.D.	API #	Longitude	Latitude	Status/Comments
10	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30576-00	-97.047508	32.542096	Horz. Drainhole
10	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30577-00	-97.047537	32.542117	Horz. Drainhole
10	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30578-00	-97.047544	32.541927	Horz. Drainhole
11	CHESAPEAKE OPERATING, INC.	ATHERTON MURPHY D	1H			0	42-139-30486-00	-97.037625	32.534465	Horz. Drainhole
11	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30507-00	-97.037639	32.534583	Horz. Drainhole
11	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30525-00	-97.037659	32.534533	Horz. Drainhole
12	NOT AVAILABLE	NOT AVAILABLE				0	42-139-30484-00	-97.043493	32.541113	Horz. Drainhole
12	CHESAPEAKE OPERATING, INC.	ATHERTON MURPHY F UNIT 1	1H			0	42-139-30514-00	-97.043524	32.541501	Horz. Drainhole

*UNKNOWN appears where digital data does not exist. Further research can be requested to obtain this data.
*N/A (not applicable) appears in the Comp. Date row only when there is a Dry Hole because a Dry Hole does not constitute a completion.
*NOT AVAILABLE appears where digital data does not exist. However, this data may exist within hard copy well files. Further research is required to obtain this data. Please call 512-478-0059 to request a file review.
*THIS REPORT IDENTIFIES WELLHEAD SURFACE LOCATIONS ONLY AND IN NO WAY ATTEMPTS TO IDENTIFY ANY DEVIATED BOTTOM HOLE LOCATIONS.

Well Summary

Oil Wells	Gas Wells	Injection Wells	Other Types of Wells*	Total Number of Wells
0	0	0	30	30

*May include dry holes, abandoned locations, disposal, injection, domestic, water supply wells, surface locations, etc.

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Oil & Gas Well Report™

DISCLAIMER

Banks obtained the digital data for this report from the Texas Railroad Commission (RRC).

Banks recommends obtaining the actual construction and abandonment records from the appropriate oil and gas regulatory agency to identify possible sources of surface or below surface contamination and/or identify any improperly plugged or abandoned wells that can contribute to the possible upward migration of subsurface drilling fluids. Obtaining the actual well records can provide closure for plugging questions, verify locations, or obtain missing information for many of the historical wells.

Banks Environmental Data provides mapping data sets for informational purposes only. These data sets are continually being updated and refined. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the well locations and well data could possibly be traced to the appropriate regulatory authority. Therefore, Banks cannot guarantee the accuracy of the data or well location(s) of those maps and records maintained by the oil and gas regulatory agencies.

This data was last updated on: 12/14/2009

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BANKS ENVIRONMENTAL DATA
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Water Well Report

DETAILS

MAP ID	STATE ID	OWNER NAME	TYPE OF WELL	DEPTH DRILLED	COMPLETION DATE	LONGITUDE	LATITUDE	DRILLER'S LOG

The coverage for your search area is incomplete. Please contact Banks Environmental Data to request a thorough Groundwater Well Search.

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1942
ASCS
1"=1000'

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

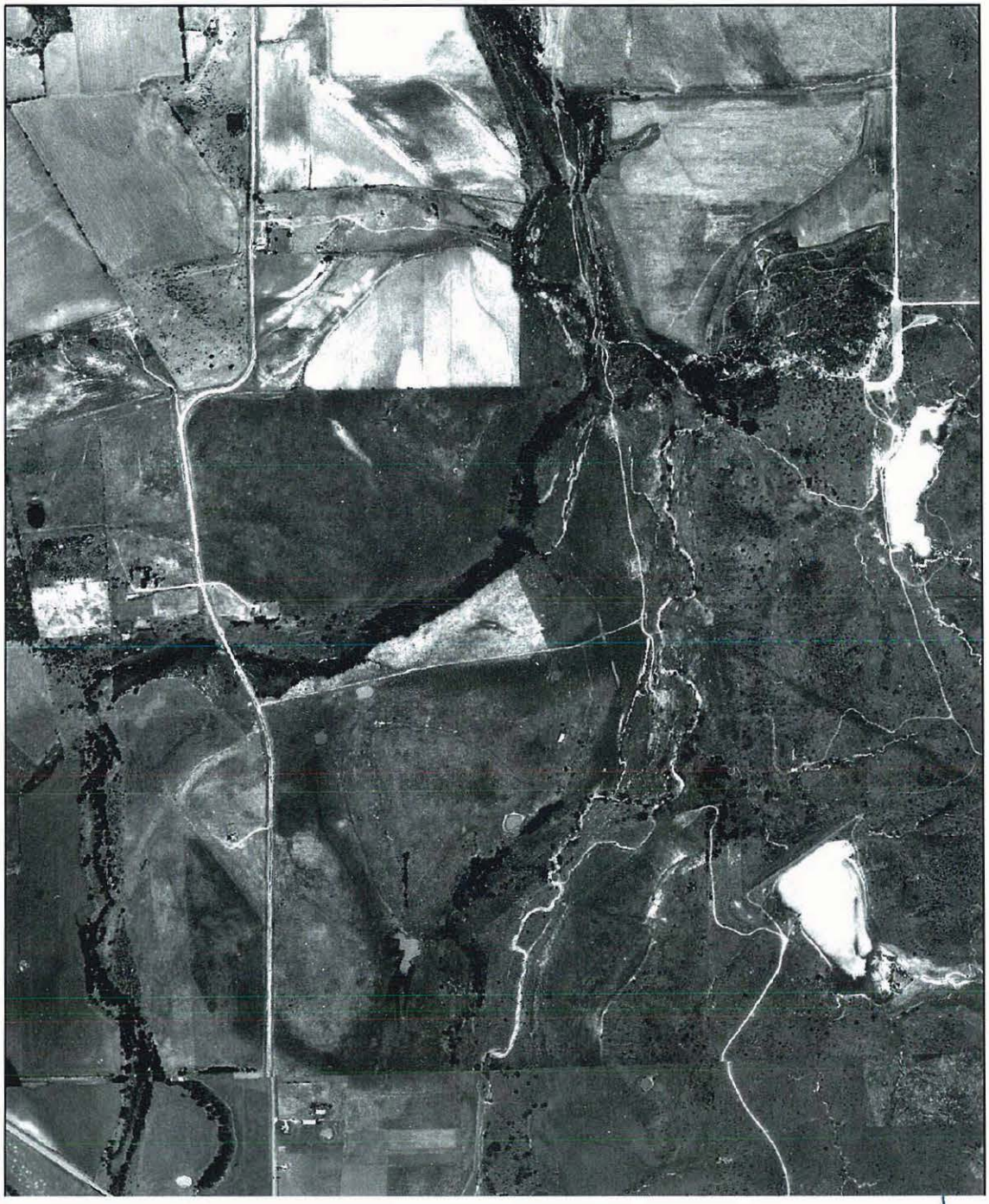
1953
AMS
1"=1300'

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

1968
USGS
1"=1000'

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

1979
TXDOT
1"=1000'

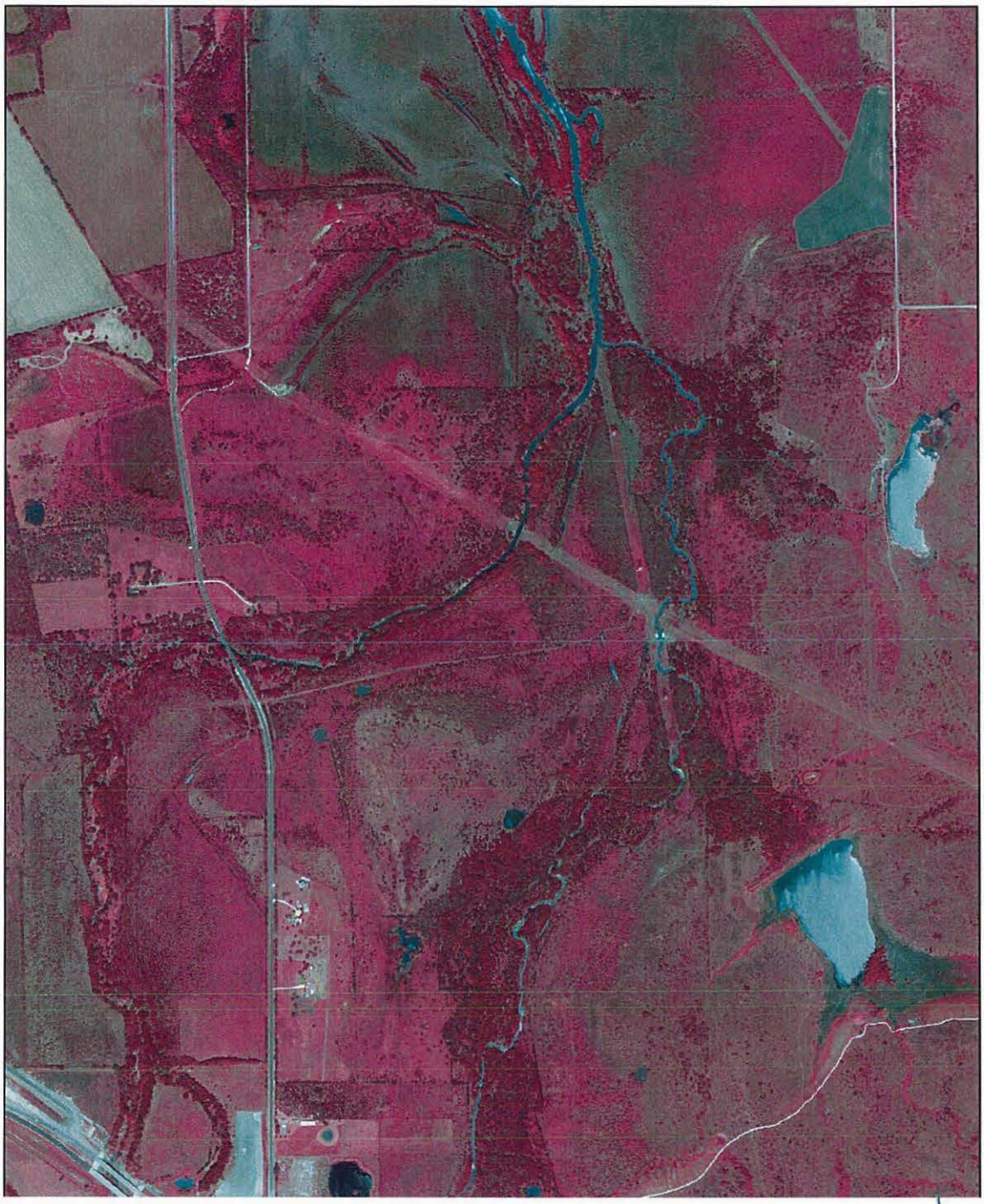


BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

1984
TXDOT
1"=1000'

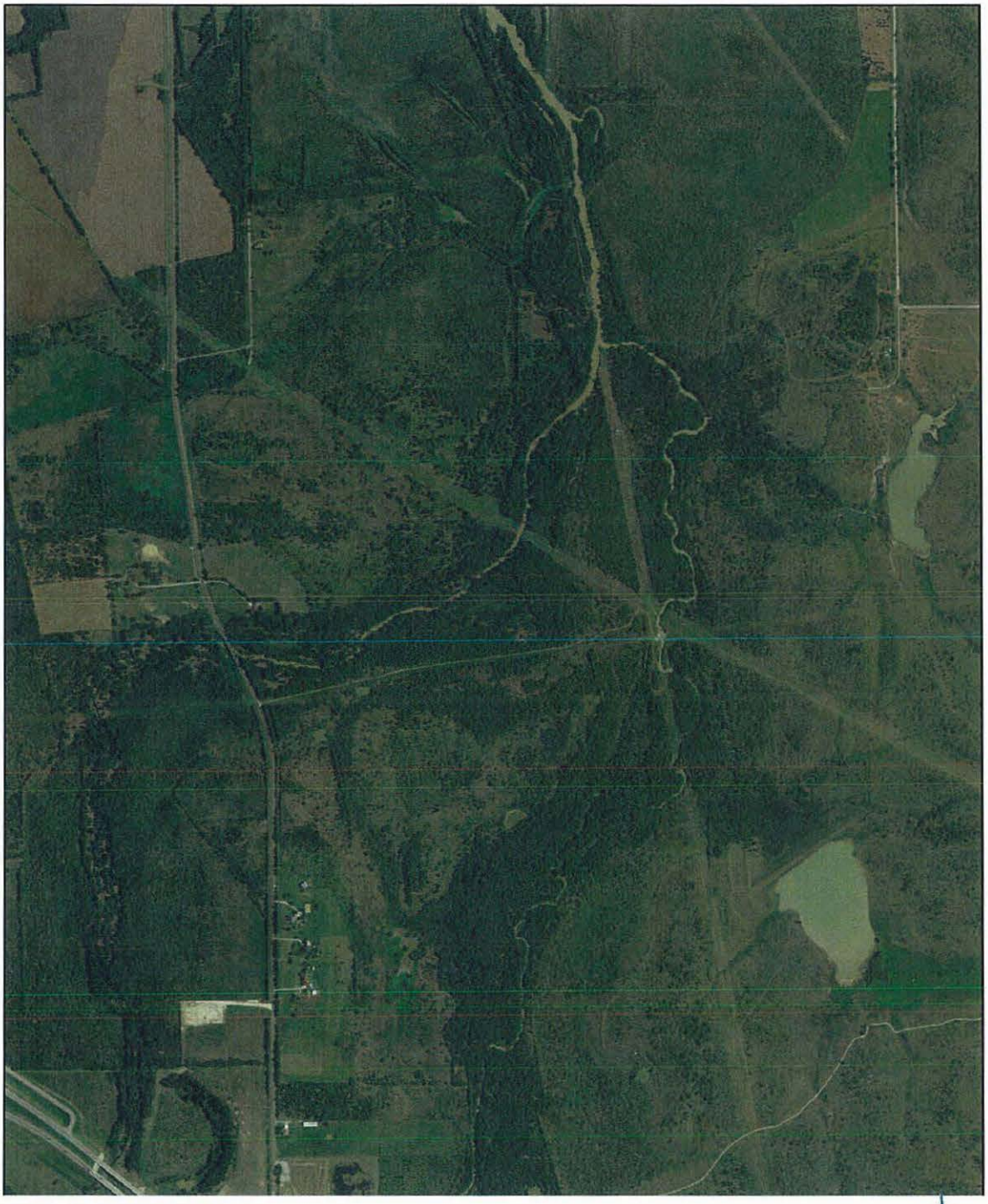
BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

1995
USGS
1"=1000'



BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

2004
USDA
1"=1000'



BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

2008
USDA
1"=1000'

Appendix C

Public Agency Coordination and Public Comments

TEXAS HISTORICAL COMMISSION
real places telling real stories

JUN 18 2010

June 16, 2010

Mr. William H. Collins
Chief of Natural Resources and Recreation Branch
CESWF-OD-R
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Draft report: *Intensive Archaeological Survey of a Proposed City of Grand Prairie Wastewater Utility Line on U.S. Army Corps of Engineers Property South of Joe Pool Lake in Ellis County, Texas.* (COE-FWD)

Dear Mr. Collins:

We are in receipt of the draft report for the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Bill Martin, has completed its review. After examining the documentation, we concur that archeological site 41EL253 does not have potential to yield information important to history or prehistory and is ineligible for inclusion in the National Register of Historic Places. The construction of the wastewater line will not affect historic properties, and may proceed without further consultation with this office.

We have no specific comments that require report revision and look forward to receiving the final report.

Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Bill Martin at 512/463-5867.**

Sincerely,

William a. Martin

for
Mark Wolfe, State Historic Preservation Officer

MW/wam

cc: Brandon Young, Blanton & Associates, Inc.

RICK PERRY, GOVERNOR • JON T. HANSEN, CHAIRMAN • MARK WOLFE, EXECUTIVE DIRECTOR
P.O. BOX 12276 • AUSTIN, TEXAS • 78711-2276 • P: 512/463-6100 • F: 512/475-4872 • TDD: 1-800-735-2989 • www.thc.state.tx.us