

DRAFT ENVIRONMENTAL ASSESSMENT

WHITEWATER AND WALNUT RIVERS LOCAL FLOOD PROTECTION PROJECT AUGUSTA, KANSAS



US Army Corps
Of Engineers
Tulsa District

APRIL 2004

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations, Part 230, the Tulsa District has assessed the environmental impacts of a local flood protection project to provide additional flood relief within the city of Augusta, Kansas. The City has a history of flooding and significant flood damage occurred during the November 1998 flood when floodwaters overtopped an existing levee. This assessment was prepared in accordance with U.S. Army Corps of Engineers Regulations, Part 230, Policy and Procedures for Implementing the National Environmental Policy Act. It has been determined from the enclosed Environmental Assessment that the project will have no significant adverse effects on the natural or human environment. Therefore, an environmental impact statement will not be prepared.

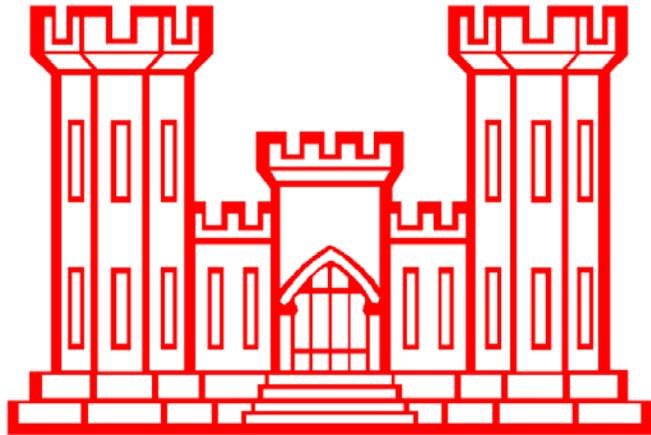
Date

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Colonel, U.S. Army
District Engineer

Enclosure
Environmental Assessment

DRAFT

**Environmental Assessment for
Whitewater and Walnut Rivers
Local Flood Protection Project
Augusta, Kansas**



**U.S. Army Corps of Engineers
Southwestern Division
Tulsa District**

April 2004

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the effects of a Section 205 Local Flood Protection Project to reduce flooding within the City of Augusta, Kansas. This EA will facilitate the decision process regarding the proposed action and alternatives.

<i>SECTION 1</i>	<i>PURPOSE, NEED AND SCOPE</i> of the proposed action summarizes the purpose of and need for the proposed action, provides relevant background information, and describes the scope of the EA.
<i>SECTION 2</i>	<i>ALTERNATIVES</i> examines alternatives for implementing the proposed action.
<i>SECTION 3</i>	<i>PROPOSED ACTION</i> describes the recommended action.
<i>SECTION 4</i>	<i>AFFECTED ENVIRONMENT</i> describes the existing environmental and socioeconomic setting.
<i>SECTION 5</i>	<i>ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION</i> identifies the potential environmental and socioeconomic effects of implementing the proposed action and alternatives.
<i>SECTION 6</i>	<i>MITIGATION PLAN</i> summarizes mitigation actions required to enable a Finding of No Significant Impact for the proposed alternative.
<i>SECTION 7</i>	<i>FEDERAL, STATE, AND LOCAL AGENCY COORDINATION</i> provides a listing of individuals and agencies consulted during preparation of the EA.
<i>SECTION 8</i>	<i>REFERENCES</i> provides bibliographical information for cited sources.
<i>SECTION 9</i>	<i>APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS</i> provides a listing of environmental protection statutes and other environmental requirements.
<i>SECTION 10</i>	<i>LIST OF PREPARERS</i> identifies persons who prepared the document and their areas of expertise.
<i>APPENDICES</i>	<i>A</i> Coordination/Correspondence <i>B</i> Section 404 Permit <i>C</i> Fish and Wildlife Coordination Act Report <i>D</i> Cultural Resources Coordination <i>E</i> Public Comments <i>F</i> Newspaper Public Notice

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- F Newspaper Public Notice (final EA)

**DRAFT
ENVIRONMENTAL ASSESSMENT
WHITEWATER AND WALNUT RIVERS
LOCAL FLOOD PROTECTION PROJECT
AUGUSTA, KANSAS**

SECTION 1.0 PURPOSE, NEED, AND SCOPE

The U.S. Army Corps of Engineers, Tulsa District, and the city of Augusta are conducting a feasibility study for flood control under the authority of Section 205 of the Flood Control Act of 1948, (Public Law 80-858), as amended. The feasibility study was requested by the city of Augusta in November 1988, but funds to initiate the study were not available until March 1999. The feasibility cost sharing agreement was signed in March 2001. The Detailed Project Report is scheduled for completion in May 2004. The city of Augusta, as the local sponsor would be responsible for acquisition of lands, easements, rights-of-way, relocations, and disposal areas that would be required for the project. Acquisitions must be completed before construction can begin. Funds will be provided by the Government and by the city of Augusta, on a 50% cost-share, after the first \$100,000, which is all federally funded.

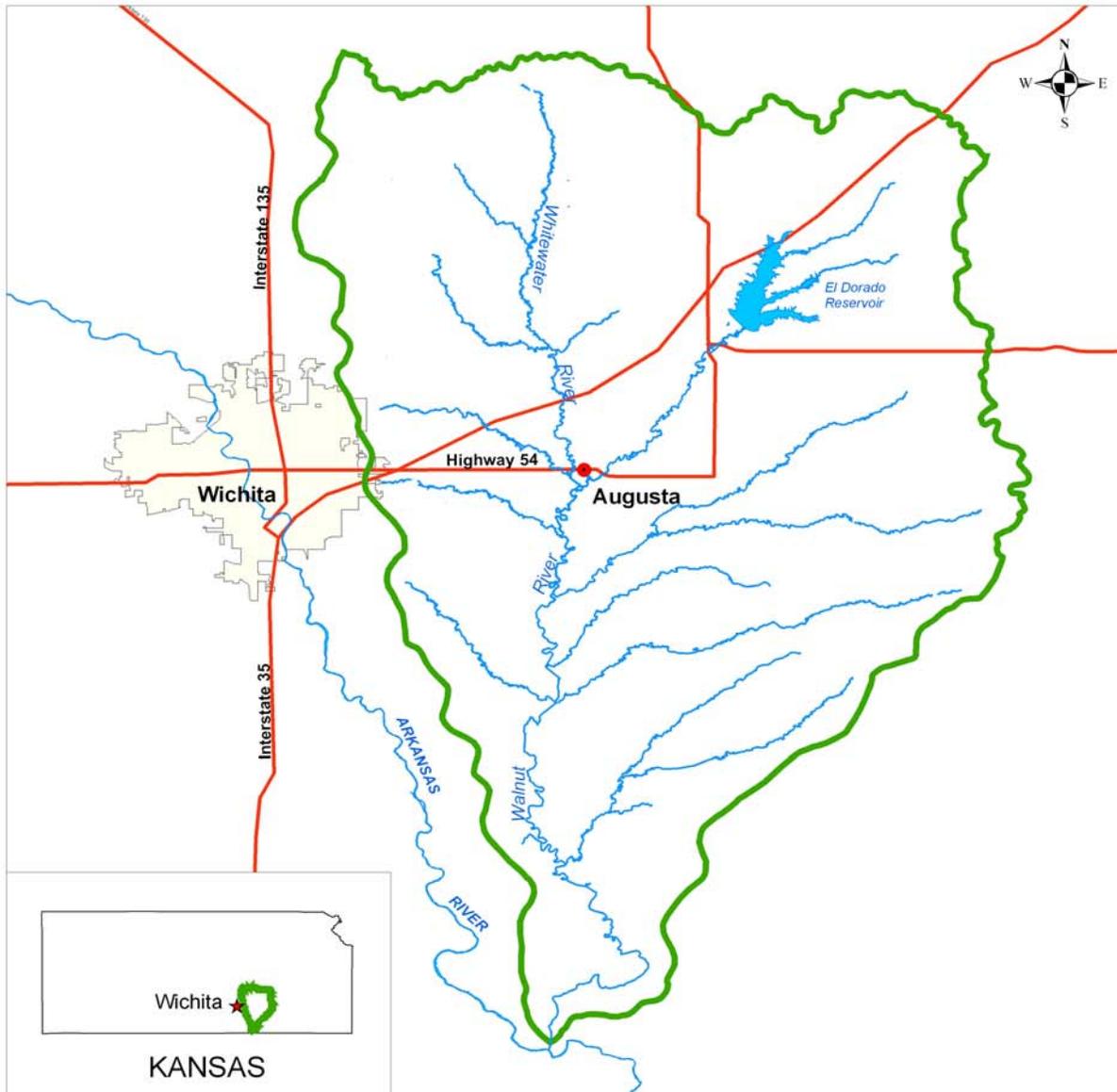
The Walnut River Basin covers an area of approximately 2,380 square miles and encompasses most of Butler and Cowley Counties and small portions of five other counties in south central Kansas (Figure 1.0). The major streams in the basin are the Walnut River and its tributary, the Whitewater River. The Whitewater and Walnut Rivers converge approximately 1½ miles south of Augusta, which is bounded by water on three sides. The current project was requested by the city of Augusta after flooding in late October and early November of 1998 (Known as the Halloween flood of 1998. The majority of the 1998 flooding occurred when floodwaters from the Whitewater River either overtopped the western side or got behind the northwest side of the levee built by the Kansas Works Progress Administration in 1938. This same levee was breached in 1965, but floodwaters came from the Walnut River. El Dorado Lake was placed in operation on 1980 and offers protection from the Walnut River. The city of Augusta requested that the Corps put them in the levee inspection program in the late 1960's to early 1970's to make the city eligible for Federal levee repair funds.

The project area is the city of Augusta, Kansas, and the Whitewater and Walnut Rivers immediately above and below Augusta. Alternatives have been developed that include modifications to the existing levee. The existing levee is 19,948 feet long and includes a reinforced, concrete floodwall approximately 1,013 feet long. The Corps of Engineers rehabilitated the floodwall around 1979 under Public Law 84-99. Land inside the levee is primarily urban and industrial. Outside the levee it is farmland with riparian timber in scattered tracts and along the river.

Several alternatives were considered by the Corps to alleviate flooding in the City of Augusta. These alternatives consist of structural and non-structural plans including levee modification, channelization, upstream detention, buyout, and flood proofing. The proposed project includes modification of the height and length of the existing levee. The existing channel of the Whitewater River and the Walnut River would not be disturbed. A No Action alternative was also considered.

The National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) requires all Federal agencies to address the environmental impacts of any major Federal action on the natural and human environment. Guidance for complying with the NEPA is contained in Title 40 of the Code of Federal Regulations (CFR), Parts 1500 through 1508, and in Engineering Regulation (ER) 200-2-2, *Procedures for Implementing NEPA*. The primary intent of NEPA is to ensure that environmental information is made available to public officials and citizens regarding major actions taken by Federal agencies. This environmental assessment was developed to assure that construction of the proposed project complies with the intent of NEPA.

The Tulsa District issued a news release to the local media announcing a public information workshop for the Augusta Local Flood Protection Project (Appendix A). Retail advertisements were placed in the Augusta Daily Gazette on April 12, 22, and 23, 2002. The Tulsa District sent scoping and workshop announcements to State and Federal resource agencies. Both the advertisement and the announcements specified the beginning of the NEPA scoping process.



Source: ArcView StreetMap, ESRI, 2001

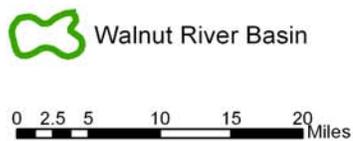


Figure 1.0 Vicinity Map, Whitewater and Walnut Rivers Local Flood Protection Project, Augusta, Kansas

The workshop was held April 23, 2002, to inform the public of the initiation of the Section 205 flood protection feasibility study and to provide information and allow the public an opportunity to comment on the project. Approximately 25 citizens attended the workshop. Most of the attendees were interested in how the project would affect their lives. Many were affected by the 1998 flood and were in favor of additional flood protection. Several comments addressed environmental concerns or concerns surrounding abandoned houses that had been flooded and never renovated or demolished. Several citizens expressed concerns regarding the non-operational refinery and pipelines crossing parts of the city.

SECTION 2.0 ALTERNATIVES

2.1 No Action Alternative

The Council on Environmental Quality (CEQ) regulations implementing the provisions of the National Environmental Policy Act of 1969 (NEPA) require Federal agencies to consider a "no action" alternative. These regulations define the "no action" alternative as the continuation of existing conditions and their effects on the environment, without implementation of, or in lieu of, a proposed action. This alternative represents the existing condition and serves as the baseline against which to compare the effects of the other alternatives. Under existing conditions, expected average annual damages from flooding along the Whitewater River in Augusta are expected to be \$497,000. This alternative would retain the existing condition and would not result in any change in environmental conditions or fish and wildlife habitat.

2.2 Action Alternatives

The Corps of Engineers considered several flood reduction plans during the preliminary screening of alternatives. Requirements for the selected plan included technical soundness, economic feasibility, and environmental acceptance. The selected plan should provide the greatest amount of protection for an area, and the benefits received from flood protection must be greater than the costs to construct and maintain the project. The selected alternative should also achieve the City's planning objectives and adequately address social, environmental, and economic impacts. The alternatives considered included four levee modification plans, channelization of the Whitewater River, upstream detention, floodproofing, and property buyout. A levee modification plan was determined to be economically feasible, justified a Federal interest, and would meet the City's planning objectives.

a. Levee Modification. This alternative would consist of extending the northwest end of the existing levee by approximately 2466 feet and at a height to protect against future 100-year event (1% chance of occurring in a year) floods and the existing portion of the levee would be rehabilitated to ensure the entire levee would consistently protect the city from future 100-year event floods. This plan was dropped from further study.

b. Levee Modification. This alternative would consist of extending the northwest end of the existing levee by approximately 2466 feet and at a height to protect against future 200-year event (0.5% chance of occurring in a year) floods, and the existing portion of the levee would be raised to a height to ensure the entire levee would consistently protect the city from future 200-year event floods. This plan was dropped from further study.

c. Levee Modification. This alternative would consist of extending the northwest end of the existing levee by approximately 2466 feet and at a height to protect against future 500-year event (0.2% chance of occurring in a year) floods, and the existing portion of the levee would be raised to a height to ensure the entire levee would consistently protect the city from future 500-year event floods. This alternative is the preferred plan and is discussed further in SECTION 3.0, PROPOSED ACTION.

d. Levee Modification. This alternative would consist of extending the northwest end of the existing levee by approximately 2466 feet and at a height to protect against future 600-year event floods, and the existing portion of the levee would be raised to a height to ensure the entire levee would consistently protect the city from future 600-year event floods. This plan was dropped from further study.

e. Channelization. This alternative would consist of the channelization of the Whitewater River to sufficiently pass floods in excess of the 100-year event. This alternative was not a viable option due to the large

area of the 100-year flood plain (approximately 2 miles wide) adjacent to the existing levee and the depth of water during a 100-year event. This plan was dropped from further study.

f. Upstream Detention. This alternative would consist of detention structures on the Whitewater River upstream of the city of Augusta. It would allow for the protection of the city from greater than 100-year events. This alternative was eliminated from further study because the Whitewater River drainage area is so large that the amount and size of detention structures required to protect the city of Augusta from future 100-year floods would be cost prohibited. This plan was dropped from further study.

g. Floodproofing. This alternative would consist of various floodproofing measures applied to all structures within the 500-year flood plain to protect them against future 500-year events. This plan was dropped from further study.

h. Property Buyout. This alternative would consist of buying all remaining property within the 500-year flood plain and would restrict building on such property. This plan was dropped from further study.

SECTION 3.0 PROPOSED ACTION

A levee modification plan that would provide 500-year protection is the selected plan. It would consist of extending the existing levee 2466 feet on the north end of the levee and raising all sections of the levee to provide 500-year protection for the city of Augusta (Photo 3.0). It would have a favorable benefit/cost ratio of 1.66, is the NED plan, and meets the requirement of a Federal interest. The local sponsor supports this plan.

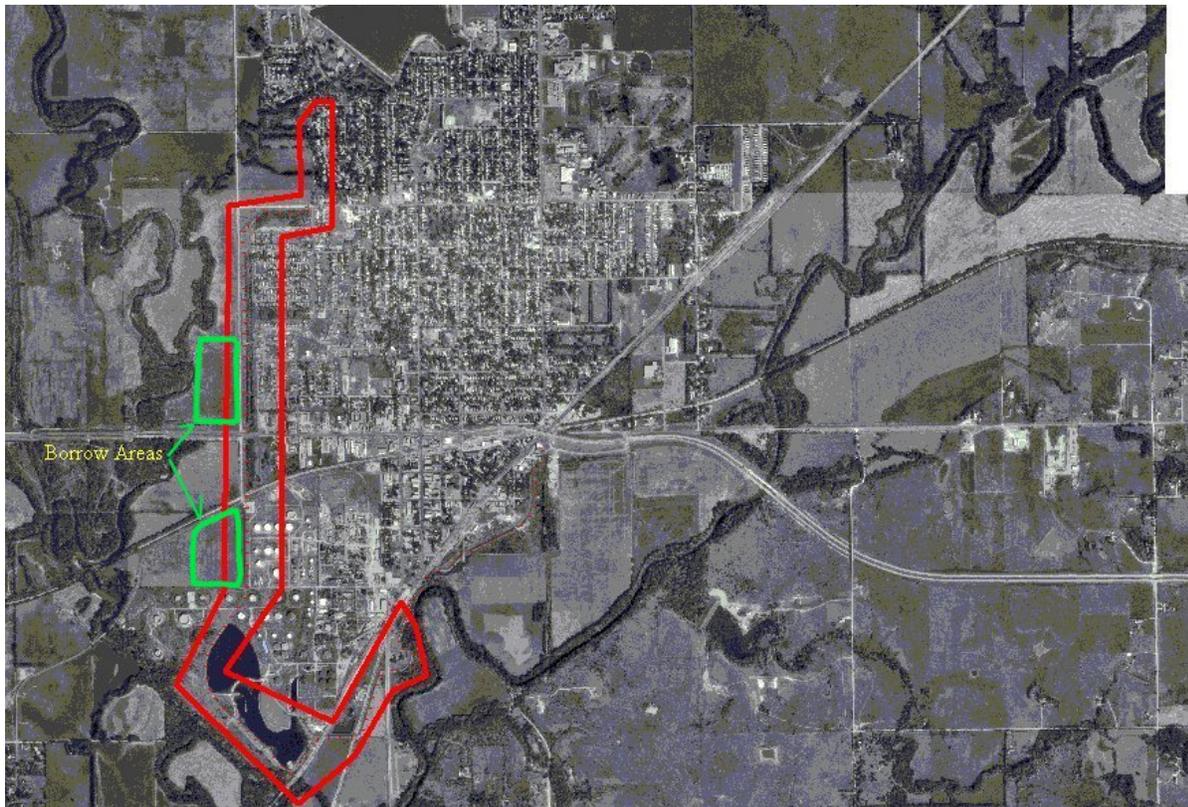


Photo 3.0. General Location of the Augusta Levee Project.

The existing levee is approximately 19,948 feet long and protects the city from flood flows generated by the Whitewater River to the west and the Walnut River to the east. It has a crest width of 8 to 10 feet and side slopes

varying from 1V: 2H to 1V: 3H. An existing concrete floodwall exists between stations 0+00 to 1+00 and 31+65 to 41+50.

The selected plan consists of enlarging and improving the existing levee as well as extending the northwest portion of the levee further north. Improvement includes removal of the top portion of the levee, which contains topsoil or unsuitable material, and backfilling with quality controlled material. An inspection trench would be excavated at the toe of the levee towards the riverside.

As shown in Figure 3.0, an impervious section will be constructed on the riverside portion of the levee with the remainder of the section being random fill. Construction would involve stripping six inches of topsoil off the existing levee and placing quality controlled impervious material. The crown width would be increased to 10 feet and side slopes would be one vertical to three horizontal. The crest elevation would vary from elevation 1230.00 feet National Geodetic Vertical Datum (NGVD) to 1238.00 feet NGVD. A six-inch layer of topsoil would be placed over new construction surfaces and seeded, fertilized, and mulched.

A six-foot deep inspection trench would be excavated at the riverside toe of the new slope to locate existing utilities, debris, unsuitable material or other items that could be detrimental to the levee. The trench would also have one vertical to three horizontal slopes and would be revegetated the same as the levee.

Clearing and grubbing would be accomplished on the existing levee, adjacent to the levee where construction would occur, and along the footpath of the northward extension. Clearing would consist of complete removal of all material from the construction site including trees, fallen timber, brush, rubbish, vegetation, loose and soft soil, abandoned structures, and similar debris. Tree clearing would be limited to the levee right-of-way. Grubbing would consist of removal of all stumps, roots, buried logs, old piling, old paving, drains, roots, and other objectionable material.

Construction along the existing levee would also include extending existing culverts, constructing new culverts with headwalls and flap gates, constructing new stop log structures, constructing asphaltic concrete road ramps; and planting trees. Existing gravity drainage structures would be modified. Existing stop log structures would be replaced unless modification to existing structures would be possible. First Street located on the west side of the refinery and 6th Street would be ramped to a higher elevation to meet the 500-year flood level. Highway 96 would not be ramped because it meets the 500-year flood level, as it exists.

Construction of the northward extension would begin at the end of the existing levee near Kelly Avenue and Money Street, approximate station 199+47. The crown width would be 10 feet and side slopes would be one vertical to three horizontal. The new levee would extend north crossing Highland Drive and terminate on the south side of the Garvin Park road running along the south end of the park. The north extension would be approximately 2,466 feet in length. There would be one drainage structure passing through this section with concrete headwalls and a flap gate.

The proposed plan would involve excavation of borrow material from two ten-acre sites located in agricultural land as shown on the photo. Excavated soil from the borrow sites will be used as fill and topsoil for the project. The borrow area south of Highway 54 will provide material for the section of the levee south of Highway 54 (Figure 3.1). The borrow area north of Highway 54 will provide material for the levee north of Highway 54 (Figure 3.2). Each borrow area will be approximately ten acres in size with a depth of six feet and side slopes of one vertical to four horizontal. The two borrow sites would be developed as mitigation areas. Each borrow area would be developed with various plant species established to provide wildlife habitat as described in Section 6.0. Section 6.0 provides information on measures that would be implemented to alleviate habitat losses associated with the project. Figure 3.3 illustrates a typical cross-section for the Augusta Levee borrow sites.

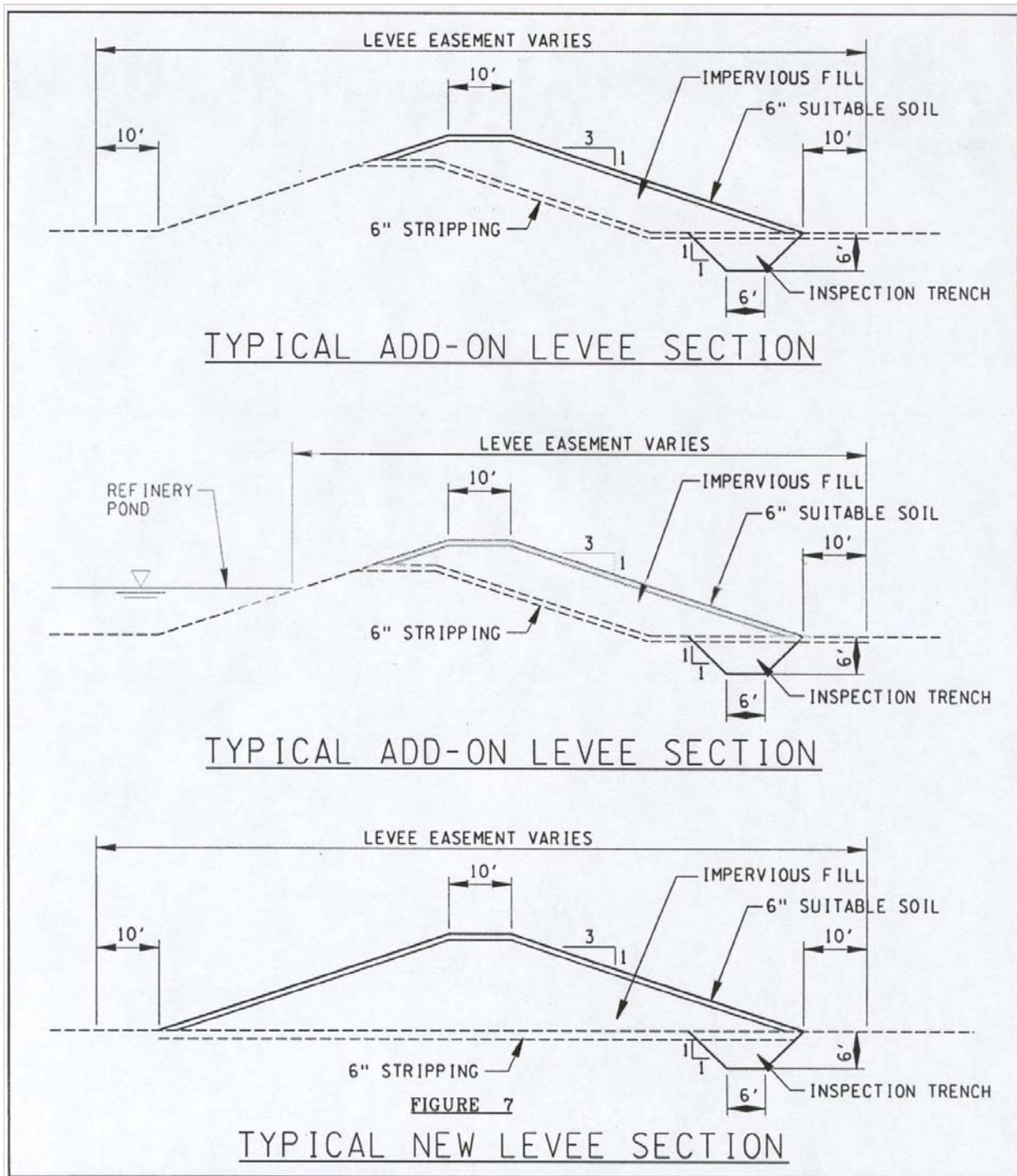


Figure 3.0 Typical Levee Design for Augusta Levee.

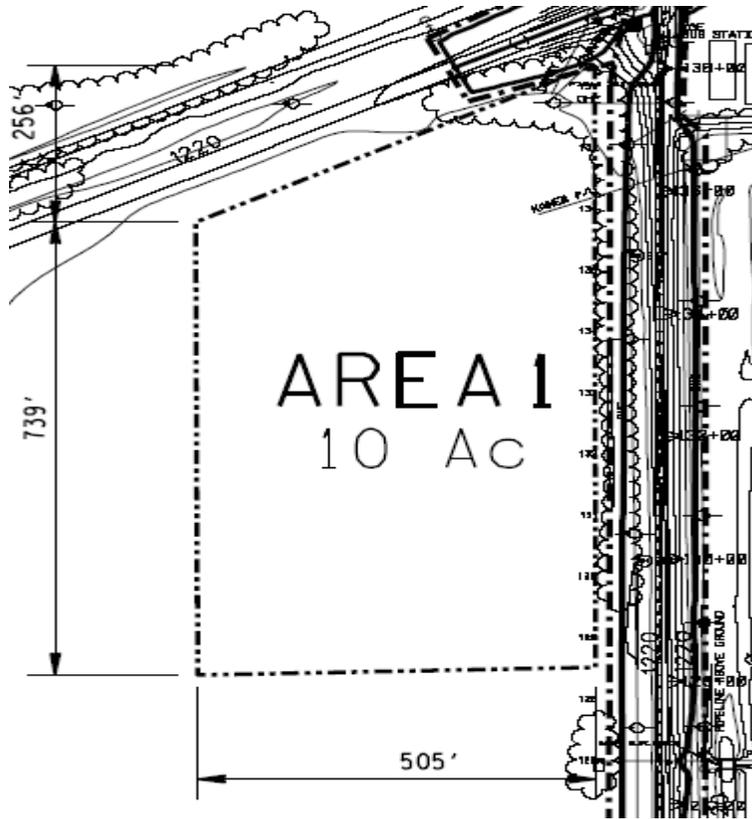


Figure 3.1. Borrow Area South.

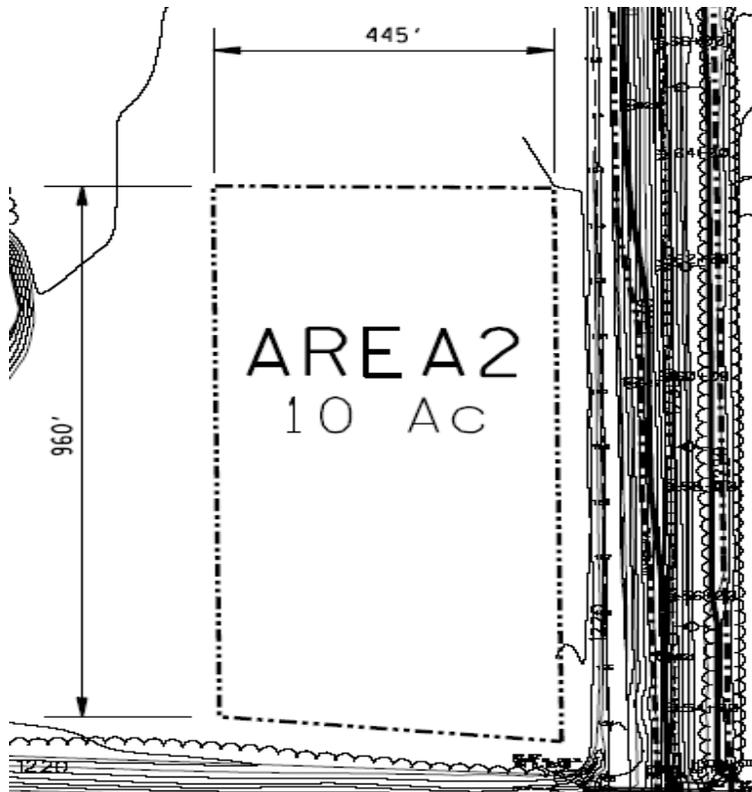


Figure 3.2. Borrow Area North.

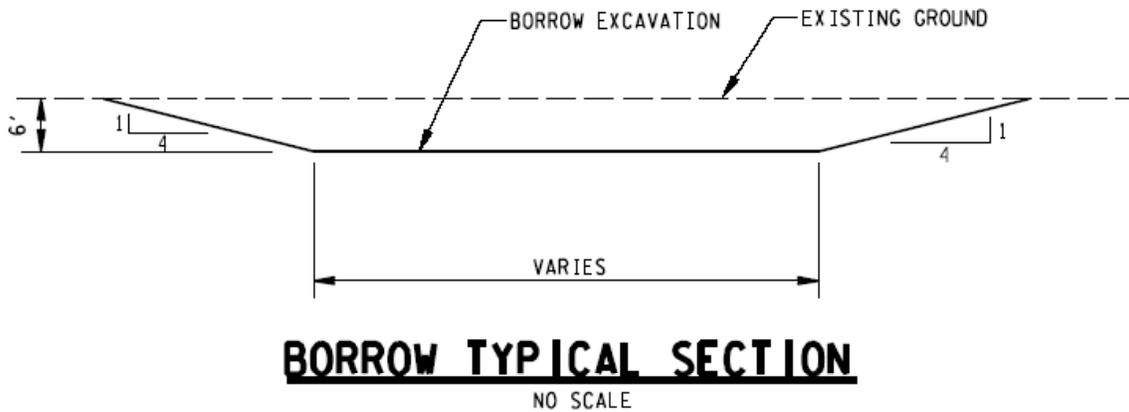


Figure 3.3 Typical Borrow Cross-Section.

SECTION 4.0 AFFECTED ENVIRONMENT

4.1 Location

The Walnut River drainage basin covers approximately 2,380 square miles and encompasses most of Butler and Cowley counties and small portions of five other counties in south central Kansas. The Walnut and the Whitewater Rivers are the two major drainages in the basin and converge just downstream of Augusta. El Dorado Lake is located on the Walnut River about 20 miles above Augusta and provides flood relief for the City. The Whitewater River is not impounded and is responsible for the majority of the flood threat to Augusta. The drainage basin for the Whitewater River covers about 518 square miles within the Walnut River basin.

Butler County is the largest county in Kansas. It is situated entirely within the Flint Hills Physiographic region underlain by Lower Permian limestone and shale. Most of the area is devoted to rangeland for cattle grazing. Winter wheat and other crops are raised mainly toward the west, and cotton is grown in the southernmost portion. Larger cities include El Dorado and Augusta; rapid suburban growth is taking place in the southwestern portion of the county near Wichita.

4.2 Climate

Augusta's elevation is just over 1,300 feet above sea level. Augusta is located in the Central Great Plains where masses of warm moist air from the Gulf of Mexico collide with cold dry air from the Arctic region. Augusta has a distinct four-season climate and a wide range of weather year round. The climate is mild with brief periods of extreme temperatures. The average annual daily low is 45 degrees F; the average annual daily high is 67.4 degrees F; and the average annual daily temperature is 56.2 degrees F. The average summer temperature is 78.9 °F, and the average daily maximum is 90.1 °F. The average winter temperature is 33.3 °F, and the average daily minimum is 23 °F.

Augusta averages about 225 days of sunshine annually. Wichita Mid-Continent Airport operates under VFR (Visual Flight Rules) conditions about 91% of the time. The prevailing wind is southerly and averages about 9 miles per hour.

Summers are usually warm and moderated by steady wind and relatively low humidity. Temperatures above 90 degrees occur an average of 63 days per year. Winters are usually mild with short periods of very cold weather. Temperatures below zero occur about 2 days per year. Spring is the most varied season and is the period of heaviest rainfall due to severe thunderstorms and occasional tornadoes. The prevailing winds are from the north in February and from the south the remainder of the year.

Rainfall averages about 29 inches per year, with 70% occurring during the April-September growing season. Snow flurries are common, with snowfall averaging 15 inches per year from December through March. Occurrence of more than 1 inch of snow, ice or sleet happens on average about 5 times per year. Occurrence of more than 3 inches happens about twice per year. Snow seldom covers the ground for a period greater than three days.

Kansas ranks sixth among states in average number of tornados per year (Texas, Oklahoma, and Florida top the list.) Kansas weather is generally benign. The likelihood of experiencing a tornado on a given section of land in Sedgwick County, which lies just west of Augusta, based on area and frequency over the last 40 years is estimated to be once in every 1,460 years. Civil defense systems are in place to ensure adequate warning in case of severe weather.

4.3 Social and Economic Conditions

4.3.1 Study Area

The project alternatives will have the most direct impact on persons living and working in the western portions of the City of Augusta. This area is considered the social area within which the primary impacts of the proposed project will occur.

4.3.2 Population

The U.S. Census Bureau estimates that the City of Augusta had a population of 8,423 in 2000 a 7% increase from the 1990 population of 7,876. Butler County had a population of 59,482 in the year 2000, a 17.6% increase from the 1990 Census count. The State of Kansas posted a population increase of 8.5% during the same period. This increased rate of growth for Butler County is attributed to the relatively rapid growth in Wichita, which is approximately 15 miles west of Augusta. The area surrounding the project is partially located in the City of Augusta and partially rural land on the western border. According to the 2000 Census, 28% of the population of the social area (City of Augusta) was under the age of 18. Hispanic or Latino people report 2.8% of the total population. One percent of the 2000 population in the social area was American Indian/Alaska Native.

4.3.3 Employment and Income

In 2000, there were 4,239 residents in the labor force in the City of Augusta of which only 4.4 percent were unemployed. Unemployment for Butler County was slightly less at 3.6 percent, which is slightly lower than the State of Kansas unemployment rate of 4.2% during the same year. The majority of the area's employees work in manufacturing, educational, health and social services sectors.

The 2000 per capita income (PCI) for residents in the City of Augusta was \$19,094. Butler County PCI was \$26,488 in the same year. This compares with \$20,506 for the State of Kansas and \$21,587 for the entire United States.

4.3.4 Social Ecology

The social area is primarily residential, with an additional mix of industrial, commercial and agricultural operations along the western edge of the City of Augusta. As a smaller community of approximately 8,400 people, the town of Augusta serves as a center for retail and service businesses. The town center served as a social and economic hub when the region's economy was more agriculturally oriented. Employment and business development in Augusta is closely related to development outside the community because of its relatively close proximity to the significantly larger City of Wichita.

4.4 Natural Resources

4.4.1 Terrestrial

The Walnut River drainage basin is located in the Flint Hills Upland section of the Central Lowland Physiographic Province (Schoewe, 1949). The project lies within the floodplain of the Walnut and Whitewater Rivers and drains an area that has a flat lowland topography with very little relief. The floodplain in this area is either highly urbanized or has been developed into farmland (Photo 4.4.1). Essentially none of the original floodplain vegetation remains in the immediate project area.

Overstory vegetation includes cottonwood, hackberry, mulberry, green ash, elm, pecan, black willow, and honey locust. Understory vegetation on the levee includes sunflower, Illinois bundleflower, ragweed, Johnson grass, golden rod, morning glory, Bermuda grass, fescue, smartweed, aster, dandelion, barnyard grass, foxtail, purpletop, horseweed, and vetch. Eastern redcedar, roughleaf dogwood, sumac, and hawthorn provide shrubby habitat.



Photo 4.4.1. Levee foot print; northward extension from Station 199+47.

The Flint Hills form a prominent erosional massif that stands well above lower plains to the east and west. The bedrock strata are revealed as a result of pervasive stream erosion, which has dissected deep valleys that cross the Flint Hills in all directions. The Flint Hills includes the largest region of native tall-grass prairie remaining in North America, and so the surface geology and geomorphology are readily visible in the landscape. The Flint Hills are underlain by Permian limestone, shale and evaporates. This bedrock generally dips gently toward the west or northwest. Local variations in bedrock dip are found over the crest of the buried Nemaha uplift. Erosion of

interbedded shale and limestone strata has resulted in landscapes with steep east-facing escarpments separated by gently west-sloping cuestas. Thick cherty limestone units weather to produce residual chert lag deposits that are highly resistant to chemical breakdown. Such residual chert is responsible for maintaining high topographic relief and gives the Flint Hills their name. Unconsolidated sediments are common, especially within river valleys and on some upland areas. Soils are developed in residual (weathered) bedrock material, alluvial deposits, and loess sediment.

Using climate and vegetation as ecoregion indicators Bailey (1995), places the area within the Prairie Parkland (Temperate) Province of the Prairie Division. Prairies are typically associated with continental, mid-latitude climates that are designated as subhumid. Precipitation in these climates ranges from 20 to 40 inches per year, and is almost entirely offset by evapotranspiration. In summer, air and soil temperatures are high; soil moisture in the uplands is inadequate for tree growth, and deeper sources of water are beyond the reach of tree roots.

Prairie vegetation is dominated by tall grasses and associated subdominant broad-leaved herbs. Trees and shrubs are almost totally absent, but a few may grow as woodland patches in valleys and other depressions, and in riparian corridors along streams. Grasses are deeply rooted and form a continuous cover. They flower in spring and early summer, with forbs appearing in late summer. Because there is less rainfall in the grasslands than in forest, there is also less leaching of the soil. Soils of the prairies have black, friable, organic surface horizons and a high content of bases. Grass roots deeply penetrate these soils. Bases brought to the surface by plant growth are released on the surface and restored to the soil, perpetuating fertility. These soils are the most productive of the great soil groups.

The Prairie Parkland (Temperate) Province covers an extensive area from Canada to Oklahoma, with alternating prairie and deciduous forest. The topography is mostly gently rolling plains, but steep bluffs border a number of valleys. Some areas are nearly flat; others have high rounded hills. Butler County is relatively flat.

An intermingling of prairies, groves, and strips of deciduous trees characterize vegetation. The alternation of forest and prairie results chiefly from local soil conditions and slope exposure; trees are commonly found near streams and on north facing slopes. Grasses are the dominant prairie vegetation. Most are moderately tall and usually grow in bunches. Deciduous forest is encroaching on the prairie where grazing and fire are controlled. Upland forest is dominated by oak (*Quercus sp.*), and hickory (*Carya sp.*). Deciduous forests are found on floodplains and moist hillsides. Major species include eastern cottonwood (*Populus deltoides*), black willow (*Salix nigra*), common hackberry (*Celtis occidentalis*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), black walnut (*Juglans nigra*), Osage orange (*Maclura pommifera*), and bur oak (*Quercus macrocarpa*). Sycamore (*Platanus occidentalis*), honey locust (*Gleditsia triacanthos*), Kentucky coffee tree (*Gymnocladus dioica*), box elder (*Acer negundo*), and mulberry (*Morus rubra*) are present to a lesser degree.

Loess and river valley deposits support extensive cropland agriculture of winter wheat and grain sorghum.

Woody shrubs or smaller trees along the waterways include American plum (*Prunus americana*), rough-leaved dogwood (*Cornus drummondii*), redbud (*Cercis canadensis*), buckbrush (*Parthenocissus quinquefolia*), green briar (*Smilax sp.*), and Virginia creeper (*Parthenocissus quinquefolia*). Other vines and plant species found in the project area include dewberry (*Rubus sp.*), giant ragweed (*Ambrosia trifida*), Illinois bundleflower (*Desmanthus illinoensis*), Johnson-grass (*Sorghum halepense*), cocklebur (*Xanthium strumarium*), curly dock (*Rumex crispus*), brome (*Bromus spp*), sedge (Cyperaceae), smartweed (*Polygonum sp.*), purpletop (*Tridens sp.*), water primrose (*Jussiaea sp.*), and spike-rush (*Eleocharis sp.*). Prairie species include big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and Indian grass (*Sorghastrum nutans*), with switchgrass (*Panicum virgatum*) in more mesic sites.

4.4.2 Soils

Soils in the project area are of the Verdigris-Brewer-Norge association. These soils are deep, nearly level to sloping soils that have a silt loam or silty clay loam surface layer and a silty clay loam or silty clay subsoil. They are found on flood plains and terraces (U.S. Natural Resource Conservation Service). Three soils occur along the proposed project. They include Brewer silty clay loam, Norge silt loam on 1 to 3 percent slopes, and Verdigris silt

loam. Each is classified as prime farmland. A significant part of the existing levee is located adjacent to agricultural land (Photo 4.4.2).



Photo 4.4.2. Cropland adjacent to existing levee (Brewer silty clay loam) (Station 185+00).

Brewer silty clay loam is a deep, nearly level, moderately well drained soil on flood plains. These soils formed in clayey alluvium. In a representative profile the surface layer is dark-gray silty clay loam about 14 inches thick. The subsoil is about 27 inches thick. The upper part is very dark gray, firm heavy silty clay loam. The lower part of the subsoil is dark-gray, very firm silty clay that has common, dark-brown mottles. Brewer soils have high available water capacity and slow permeability. Except for narrow, irregularly shaped areas adjacent to streams, most of this soil is cultivated. Flooding occurs, but serious damage to crops is infrequent. This soil is well suited to all the locally grown field crops, grasses, and trees.

Norge silt loam is a deep, nearly level to sloping, well-drained soil on high terraces and uplands. These soils formed in loamy sediment. In a representative profile the surface layer is dark-brown, heavy silt loam about 9 inches thick. The subsoil is about 63 inches thick. The upper 9 inches is friable, reddish-brown silty clay loam. The next 24 inches is firm, reddish-brown silty clay loam; and the lower 30 inches is firm, yellowish-red silty clay loam. Norge soils have high available water capacity and moderately slow permeability. This soil is easy to farm, and most of it is cultivated. This soil can be cropped intensively if well managed. It is easily worked and has no serious limitation to use for crops.

Verdigris silt loam is a deep, nearly level and gently sloping, moderately well drained soil on bottomlands. These soils formed in loamy alluvial sediment. In a representative profile the upper part of the surface layer is dark grayish-brown silt loam about 8 inches thick, and the lower part is friable, dark-gray silty clay loam about 25 inches

thick. The next layer is about 24 inches thick. It is friable, very dark grayish-brown silty clay loam that has common, fine, distinct mottles. Verdigris soils have high available water capacity and moderate permeability. Except for narrow, irregularly shaped areas adjacent to streams, most of this soil is cultivated. Runoff is slow. Although flooding occurs, serious damage to crops is infrequent. All locally grown crops, grasses, and trees are well suited to this soil. Practices that maintain productivity and soil structure can be carried out more easily on this soil than on most other soils in the county.

4.4.3 Prime Farmland

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have properties favorable for the economic production of sustained high yield crops. Prime soils produce the highest yields with minimal inputs of energy and economic resources, and farming these soils results in the least damage to the environment. Soil that is prime or unique farmland as defined in the Farmland Protection Policy Act is classified as prime farmland. Each of the three soils discussed above; Brewer silty clay loam, Norge silt loam on 1 to 3 percent slopes, and Verdigris silt loam, are classified as prime farmland.



Photo 4.4.3. Prime farmland (Verdigris silt loam) adjacent to Whitewater River.

4.4.4 Wild and Scenic Rivers

There are no streams within the project area that are classified as wild and scenic pursuant to the Federal Wild and Scenic Rivers Act, Public Law 90-542.

4.4.5 Aquatic and Wetlands

The Whitewater River is a perennial stream with a streambed composed primarily of sand. Rock outcrops and areas of silt are plentiful. The Kansas Water Office classifies the Whitewater River at Towanda, just upstream of the project site, as an E5 stream type. The Whitewater River is slightly entrenched with a channel gradient of approximately 4.8 feet per mile. At the Towanda Gage it has a bankfull width of 105 feet, a mean depth of 9.1 feet, and an estimated bankfull discharge of 4,968 cubic feet per second (Figure 4.4.5). It has a very low width to depth ratio (9.1), very high sinuosity (1.82), and the dominant particle size is sand. These stream types are found in broad alluvial valleys with well-developed flood plains. The banks along the river vary from one foot to forty feet in height. The lowlands of the lower portion of the river are largely cultivated, so that this portion of the river is usually more turbid than the smaller streams of the upper watershed.

Potential limiting factors associated with the small streams emptying into the Whitewater River are low flows, silt, turbidity, trash dumps, feedlot and oil field runoff, crop sprays, city sewage effluents, and channelized sections.

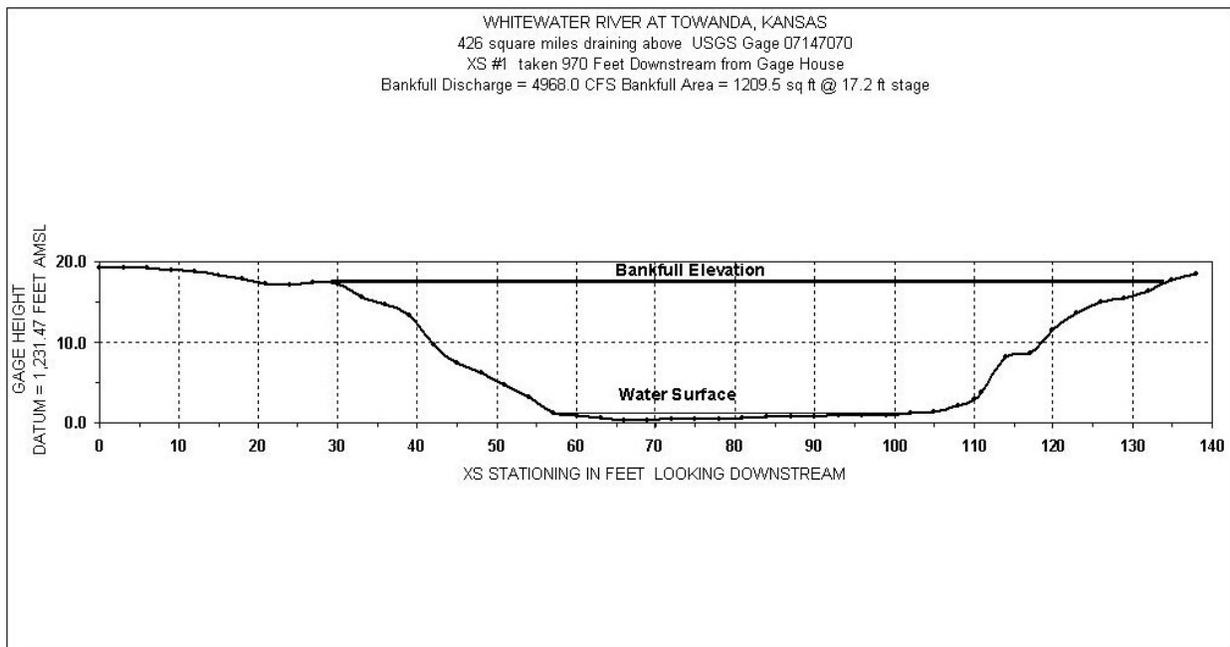


Figure 4.4.5. Cross-section of Whitewater River at Towanda.

Fishes present include catfishes, bullheads, largemouth bass, white crappie, black crappie, carp, buffalo and other suckers, gars, sunfish and minnows. Channel catfish, flathead catfish, carp and bullhead are the species comprising the bulk of the sport fishermen's catch.

The Whitewater River Basin contains widespread sources of pollution including natural sulfates, oil field brines, and total dissolved solids. The Kansas Department of Health and Environment (KDHE) does not classify it as outstanding natural resource water. Designated uses established by the KDHE include expected aquatic life support, contact recreation, domestic water supply, food procurement, groundwater recharge, industrial water supply, irrigation, and livestock watering.

4.4.6 Fish and Wildlife

Most streams with riparian corridors contain a rich diversity of fish and wildlife because of the abundance of food, vegetative cover, and water normally found there (Photo 4.4.6). The diversity and abundance of wildlife is



Photo 4.4.6. Habitat along the Whitewater River.

reduced by the proximity to an urban area and by farming operations that utilize all available land to the edge of the bank. A small amount of floodplain forest remains in a narrow corridor along the river. The following four subsections provide a listing of fish and wildlife species that could occur in the project area.

4.4.6.1 Fish

The Whitewater River is a moderately clear stream characterized by long pools separated by riffle areas (Figure 4.4.6.1). The river is turbid for varying periods following rainfall. Stream flow is adequate during normal rainfall years but zero flows occur during periods of extended drought. Except for the most severe droughts, deep pool areas provide fish habitat during zero-flow periods. Cover is provided by well-vegetated banks, aquatic vegetation, and at the lower end, limited amounts of structure consisting of logs and rocks. Bank vegetation forms a canopy over the stream and shades it in some areas (Photo 4.4.6.1).

The quality of fish habitat ranges from poor to excellent depending upon water conditions. Fishes present include catfish, bullhead, largemouth bass, white crappie, black crappie, carp, buffalo, sucker, gar, sunfish, and minnows. Channel catfish, flathead catfish, carp, and bullheads are the species that receive the bulk of the fishing pressure. A total of 51 species of fish are reported from the Walnut River basin.

4.4.6.2 Amphibians and Reptiles

Numerous species of amphibians and reptiles are found in south central Kansas. Common species of amphibians that could occur in the project area include Woodhouse's toad (*Bufo woodhousei*), Great Plains toad

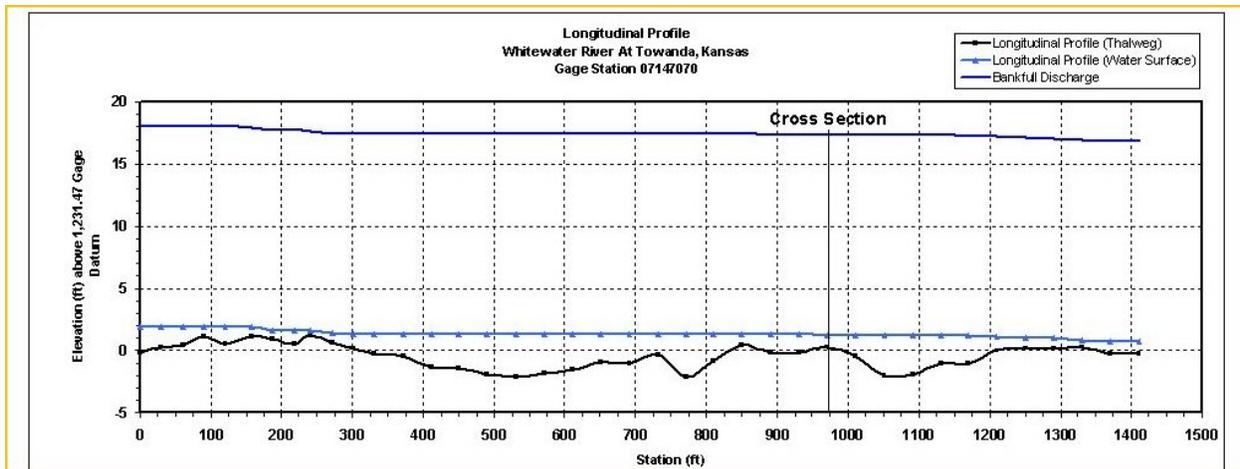


Figure 4.4.6.1. Longitudinal profile of Whitewater River at Towanda.



Photo 4.4.6.1. Bank vegetation provides shade in the Whitewater River.

(*Bufo cognatus*), plains leopard frog (*Rana blairi*), western chorus frog (*Pseudacris triseriata*), Blanchard's cricket frog (*Acris crepitans*), and bullfrog (*Rana catesbeiana*). Common species of reptiles that could occur in the project area include the northern water snake (*Nerodia sipedon*), snapping turtle (*Chelydra serpentina*), and western painted turtle (*Chrysemys picta*).

4.4.6.3 Birds

Birds that are most likely to occur in the area include mourning dove, great horned owl, barred owl, red-tailed hawk, wood duck, redheaded woodpecker, hairy woodpecker, downy woodpecker, great blue heron, blue jay, Carolina chickadee, European starling, English sparrow, warblers, flycatchers, native sparrows, red-winged blackbird, brown-headed cowbird, and cardinal. Neotropical migrants utilize the bottomland forests along the river during spring migration.

4.4.6.4 Mammals

Mammals most likely to occur in the project area include species that are tolerant of urban activity. These include fox squirrel (*Sciurus niger*), pocket gopher (*Geomys bursarius*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), mink (*Mustela vison*), striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), coyote (*Canis latrans*), cottontail rabbit (*Sylvilagus floridanus*), several species of rodents, and several species of bats.

4.5 Threatened and Endangered Species

The threatened bald eagle (*Haliaeetus leucocephalus*) may occur occasionally along the Walnut or Whitewater Rivers during winter. Eagles utilize areas where large trees provide perch sites in proximity to open water. The proposed project approaches the Whitewater River near the south end of the levee but habitat disturbed by construction of the levee does not extend through the riparian zone adjacent to the river. Construction activities will be outside the channels of those two rivers.

The state-listed threatened eastern spotted skunk could occur in the project area in suitable habitat. Spotted skunks are smaller and more weasel-like in body shape than the more familiar striped skunk. The spotted skunks' strips are broken in pattern, giving it a 'spotted' appearance. Spotted skunks may occur in suitable habitat anywhere in the state. They seem to prefer forest edges and upland prairie grasslands, especially where rock outcrops and shrub clumps are present. In western counties, it relies heavily on riparian corridors where woody shrubs and woodland edges are present. Woody fencerows, odd areas, and abandoned farm buildings are also important habitat for spotted skunks.

4.6 Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended), in March 2003 consultation was initiated with the Kansas State Historic Preservation Office (SHPO) and the Wichita and Affiliated Tribes of Oklahoma (see Appendix D). The Wichita and Affiliated Tribes did not provide any comment on the project.

During the period of July through October 2003, 4G Consulting performed a literature review and field reconnaissance at the request of the Tulsa District. No historic properties were identified in either the levee footprint or the two proposed borrow areas. In a January 27, 2004 letter (see Appendix D) to the Kansas SHPO, Tulsa District established an agency position of "no historic properties affected" for the Whitewater and Walnut Rivers project. The Kansas SHPO agreed in a return letter dated January 29, 2004 (see Appendix D). Section 106 coordination is therefore complete for the project.

4.7 Air Quality

The U.S. Environmental Protection Agency (EPA) published a Conformity Rule on November 30, 1993, requiring all Federal actions to conform to appropriate State Implementation Plans (SIP's) that were established to improve ambient air quality. At this time, the Conformity Rule only applies to Federal actions in non-attainment areas. A non-attainment area is an area that does not meet one or more of the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act (CAA).

The project area is within the City of Augusta, which is a small rural town about 12 miles east of the City of Wichita. The Wichita-Sedgwick County Health Department monitors air quality in Wichita and the surrounding area for both criteria pollutants and air toxins. National Ambient Air Quality Standards exist for six pollutants: carbon monoxide, ozone, particulate matter smaller than 10µm, sulfur dioxide, nitrogen oxides, and lead. These "criteria pollutants" are the only ones for which standards have been established. The EPA assigns designations, based on an area's meeting, or "attaining" these standards. The Wichita-Sedgwick County area is designated "In Attainment" for criteria pollutants and air toxins.

A conformity determination based on air emission analysis is required for each proposed Federal action within a non-attainment area. Since this geographical region is in attainment and meets the National Air Quality Standards for the criteria pollutants designated in the CAA, a conformity determination is not required.

4.8 Hazardous, Toxic, and Radiological Waste

Potential for discovery of hazardous material during construction was evaluated through examination of historic and current land use, review of environmental databases, interviews with local regulatory personnel, and visual observations. Avoidance of HTRW during construction is desirable in order to minimize project delays, remediation costs, and environmental damage.

Lands in the project area are primarily composed of agricultural land, undeveloped riparian woodlands, and other categories of undeveloped lands. These lands have not been subject to industrial development or other land use activities with associated potential for significant contamination. In addition, lands in close proximity to the project area share similar uses and have a low potential for contaminant transport onto the project. There is no reason to believe that environmental media in the project area have been significantly contaminated by past or current land practices or by releases from adjoining properties. No hazardous, toxic or radiological waste was observed, but potential for encountering these materials does exist.

A search of environmental databases revealed no documented areas of contamination near the project location. A search of the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database revealed the presence of five CERCLIS-listed sites in Butler County, Kansas. Each is a significant distance from the proposed project. Two hundred twenty eight sites listed on the Resource Conservation and Recovery Act Information System (RCRAinfo) database were noted in Butler County. Fifty of these are located in Augusta, Kansas. All are outside the construction area. The decommissioned Mobil refinery is located within the construction area. A review of the information provided on the refinery site indicates the possibility of the presence of hazardous, toxic, and radiological waste although the site was closed in accordance with Environmental Protection Agency (EPA) and Kansas Department of Health and Environment (KDHE) standards. The decommissioned refinery still contains many above ground storage tanks and refinery equipment. Based on information from environmental databases and documents there is a low probability of HTRW related problems from documented areas of local contamination.

In addition to searches of environmental databases, local personnel from Augusta and Butler County were contacted for information related to potential areas of contamination that could affect project construction or operation. These included personnel from the Augusta Fire Department and Butler County Health Department and residents in Augusta, Kansas. None of the contacted individuals were aware of any HTRW related issue near the site.

A site visit was conducted on May 27, 2003 and included a search for visual evidence of potential HTRW-related problems. This involved walking the project area as well as a visual reconnaissance of surrounding areas. Areas of soil staining, evidence of unusual vegetative distress, drums of containerized waste, unusual topography (mounds or depressions), or other visual evidence of potential contamination were not noted at any location. One area was observed within the decommissioned Mobil refinery that contained a small amount of construction debris.

Two areas were identified during this survey that have a potential for hazardous material discovery. These are the decommissioned Mobile refinery and the construction debris area. Although the decommissioned refinery has been cleaned and closed following EPA and KDHE guidelines, there is a potential for discovery of hazardous materials in this area. The construction debris area appears to have been used only for the disposal of construction

debris, but there is a potential for discovery of hazardous materials here also. Apart from these two areas, the potential for discovery of or significant problems related to HTRW during project construction or operation is believed to be low.

SECTION 5.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A summary of environmental impacts is presented in Table 5.0, Impact Assessment Matrix.

5.1 Social and Economic Impacts

5.1.1 Future Without-Project Conditions

5.1.1.1 Population

Under the without-project conditions, population trends of the past decade will likely continue with lower than average rates of population growth and continued higher than average ages within the City of Augusta. This trend continues the out-migration of the working age population as the opportunities in the nearby City of Wichita and other metropolitan areas draw from the available labor force in Augusta. Job opportunities in The City of Augusta and the demand for residential lands will be linked to future population dynamics in the area. In the absence of flood control improvements, a large portion of the western area of the City of Augusta will experience reduced maintenance of residential, commercial and industrial properties, and reduction of population growth in the area. The flooding along Whitewater and Walnut Rivers will continue to disrupt the lives of those conducting business, going to school and residing in flood prone areas. The health and safety of these individuals will continue to be at risk.

5.1.1.2 Employment

The unemployment rate will remain higher than the state level. Manufacturing and education, health, and social services will remain an important part of the industrial segment of the economy, and management and retail trade are expected to increase in their importance as part of the Butler County economy. Floodwaters will continue to pose a threat to business, as traffic access is restricted to the area in addition to operational interruptions that occur from flooding. Flooding will continue to disrupt farming operations in the areas adjacent to Augusta. The abandoned oil refinery located along the southwestern portion of the City of Augusta will remain inoperable and reconstruction of the industrial land at the location and employment opportunities will not likely take place.

5.1.1.3 Income

Income of persons living in the area is expected to remain lower than the State and national averages. Flooding will continue to reduce the income of those living and working in areas subject to inundation by Whitewater and Walnut Creeks as flood insurance or flood related costs reduce disposable income. As employment opportunities remain lower in Augusta than peripheral areas, the income of residents of Augusta will likely be tied to employment in the City of Wichita and the surrounding region. Property values will stabilize at lower levels than areas not subject to flooding.

5.1.1.4 Social Ecology

The land use for the Augusta area will continue to be a mixture of low, moderate and high-income residential properties, commercial development, and light industrial lands. Demand for new residential developments will increase the transition of agricultural lands into residential areas although at a pace that will be slower than in the surrounding metropolitan areas. The Augusta area will continue to be a center for retail businesses, service and educational facilities.

**Table 5.0
Impact Assessment Matrix**

Name of Parameter	Magnitude of Probable Impact						
	Increasing Beneficial Impact			No Appreciable Effect	Increasing Adverse Impact		
	Significant	Substantial	Minor		Minor	Substantial	Significant
A. Social Effects							
1. Noise Levels				x			
2. Aesthetic Values					x		
3. Recreational Opportunities				x			
4. Transportation			x				
5. Public Health and Safety	x						
6. Community Cohesion (Sense of Unity)		x					
7. Community Growth and Development		x					
8. Business and Home Relocations					x		
9. Existing/Potential Land Use				x			
10. Controversy				x			
B. Economic Effects							
1. Property Values			x				
2. Tax Revenues			x				
3. Public Facilities and Services			x				
4. Regional Growth				x			
5. Employment				x			
6. Business Activity			x				
7. Farmland/Food Supply					x		
8. Flooding Effects	x						
C. Natural Resource Effects							
1. Air Quality				x			
2. Terrestrial Habitat					x		
3. Wetlands			x				
4. Aquatic Habitat			x				
5. Habitat Diversity and Interspersion				x			
6. Biological Productivity				x			
7. Surface Water Quality				x			
8. Water Supply				x			
9. Groundwater				x			
10. Soils					x		
11. Threatened and Endangered Species				x			
D. Cultural Resources							
1. Historic Architectural Values				x			
2. Pre-Historic & Historic Archeological Values				x			

5.1.2 Future With-Project Conditions

5.1.2.1 Population

The flood control project will have a direct impact on the number of people living in the study area. Population trends of the past decade will continue although at higher rates of growth, as some residents of the nearby metropolitan area will likely migrate to the less congested nature of the City of Augusta. Construction may temporarily increase noise and traffic, which will affect persons living in and those commuting through the project area. Lands will be required for levee alignments and borrow areas. The acquiring of these lands may displace some property owners although greater flood protection will reduce the threat to health and safety of the population living in and commuting through the areas currently subject to flooding. Additional residential construction in flood-protected areas will stimulate population growth in the area in future decades.

5.1.2.2 Employment

The project construction may slightly increase job opportunities in the area until construction is complete. Long-term area employment will increase in response to additional residential construction, commercial employment, and the increased retail trade that will increase as area residents commute less and spend income in the Augusta community. The overall employment rate will increase in response to wholesale and retail sales increases in the area.

5.1.2.3 Income

Short-term construction related employment would increase area incomes, as expenditures for materials and labor will be made during the flood control project construction. Long-term increases in income within the area will be realized as construction of residential and commercial property takes place in response to reduced flood hazards within the area. Additionally, as increased population growth in the area occurs, less travel to employment outside the Augusta area will increase economic activity within the social area.

5.1.2.4 Social Ecology

Although land use for the Augusta area will continue to be a mixture of low, moderate and high-income residential properties, commercial development, and light industrial lands, development of larger industrial sites may occur in the absence of the flood hazard. The Augusta community will develop a more diverse population profile with increases in area employment from residential growth. Demand for new residential developments will increase the transition of agricultural lands into residential areas although at a pace that will be slightly slower than in the surrounding metropolitan area. The Augusta area will continue to be a center for retail businesses, service and educational facilities and additional business growth will follow increased population.

5.2 Natural Resource Impacts

5.2.1 Terrestrial

The project area includes the existing levee, a 2466-foot northward extension of the levee, and two agricultural fields that will provide borrow material for the project. Construction would include removal of all vegetation from the existing levee, widening the base, raising the height, and extending the levee northward. Impacts from construction would be confined to disturbance on and immediately adjacent to the levee and to the two borrow areas. Construction access would be routed through treeless areas where possible to avoid impacting riparian areas. Borrow material will be removed from two agricultural fields currently being farmed. The two borrow areas are currently in cropland and are devoid of ground cover. Approximately 7.8 acres of tree/shrub habitat along the base of the levee would be disturbed by the project. The predominant overstory species are cottonwood, hackberry, and elm. Lesser numbers of green ash, mulberry, honeylocust, and pecan occur there. A few cottonwood trees are 24" diameter. A few remnants of riparian timber occur at the lower end of the levee where a lack of maintenance of the levee has allowed them to grow. Some shrubby vegetation including sumac, hawthorn, dogwood, and eastern red cedar will be removed.

Wildlife habitat in the project area primarily is limited to habitat formed along the narrow corridor on and adjacent to the levee. Wildlife species utilizing this habitat would be displaced. A wetland mitigation area will be developed at each borrow site as part of the project to offset these losses (Section 6.0). Additional minor temporary impacts would be caused by construction activity but they would disappear after project completion.

5.2.2 Prime Farmland

Three soil types are transected by the project. All three are classified as prime farmland. These are Brewer silty clay loam, Norge silt loam, and Verdigris silt loam. Brewer silty clay loam soil occurs approximately between stations 118+00 and 200+00. Norge silt loam soil occurs on the north end of the project beginning at about station 200+00. Verdigris silt loam soil occurs at the south end of the project below about station 118+00. The principal impact to prime farmland will be at the site of the two borrow areas where material will be excavated to construct the levee. Soils at the site of Borrow Area 1 are Brewer silty clay loam. Soils at the site of Borrow Area 2 also are Brewer silty clay loam with a small area of Verdigris silt loam at the southwest corner of the borrow area. About 20 acres will be impacted in the two borrow areas by the excavation. Approximately 7,300 feet of the existing levee extends through Brewer silty clay loam. However, very little impact to prime farmland will occur along the levee footprint since that soil was previously disturbed during construction of the existing levee.

The 2466-foot new levee extension at the north end of the levee will extend through Norge silt loam soils. Crops are planted on about 1400 feet of the site and urban yards with native and ornamental trees occur on the remaining 1000 feet. This northward extension of the levee contains the only segment of Norge silt loams crossed by the project.

Verdigris silt loam soil occurs at the south end of the project along the existing levee. No prime farmland impact would occur to Verdigris silt loam soil on this project because the footprint of the levee at this location is on or adjacent to the refinery and was previously disturbed.

The only prime farmland impact occurs at the borrow sites and along the northern levee extension. Cropping patterns, average yields, gross value, and net returns would change on these areas with the project.

5.2.3 Aquatic and Wetlands

Activities associated with construction of the Augusta levee would not impact existing wetlands. A positive impact will occur with the development of new wetlands in the borrow areas. Development of the borrow areas is discussed under Mitigation (Section 6.0).

5.2.4 Wildlife

Minor impacts would occur to those species of wildlife residing in the project area that utilize the habitat at the south end of the levee below about station 125+00 where woody vegetative growth and native grasses have become established. Above station 125+00 habitat is limited and consists primarily of a narrow band of overstory vegetation. Several narrow strips of woody or shrubby vegetation occur along the project area, which total about 7.8 acres. Impacts would be temporary and would be replaced through mitigation discussed in Section 6.0.

5.3 Wetlands and Water Quality Permits

The location and design of the project is such that the placement of dredged or fill material would not be required into any waters of the United States. Therefore, this project is not subject to regulation pursuant to Section 404 of the Clean Water Act. The U.S. Army Corps of Engineers, Tulsa District has assigned Identification Number 11093 to the project (Appendix B).

5.4 Threatened and Endangered Species

The threatened bald eagle may occur along the Walnut or Whitewater Rivers during winter. Eagles utilize areas where large trees provide perch sites in proximity to open water. The proposed project should cause no

adverse impact to this species. The levee approaches but does not extend to the banks of the Whitewater River where perching trees primarily exist. A few scattered cottonwood trees would be removed adjacent to the levee on the south end of the project. However, these are mostly trees with trunks less than 16 inches in diameter. Cottonwood trees larger than 30 inches diameter will be avoided where possible. Listed fish species would not be affected by the project since the project does not connect with the Whitewater or Walnut Rivers. Construction activities will be in the floodplain away from the channels of those two rivers.

The U.S. Fish and Wildlife Service concurs if the proposed project does not intrude into the existing riparian habitat (Appendix C). Construction activities at the south end of the levee near the Whitewater River could result in the loss of a few trees that are large enough to support eagles for perching. However, these trees furnish only low quality habitat. Large trees will be avoided if possible.

The state-listed threatened eastern spotted skunk could occur in the project area in suitable habitat. Spotted skunks may occur in suitable habitat anywhere in the state. They seem to prefer forest edges and upland prairie grasslands, especially where rock outcrops and shrub clumps are present. Woody fencerows, odd areas, and abandoned farm buildings are also important habitat for spotted skunks. Removal of a small amount of shrubby habitat potentially suitable for the spotted skunk would occur during project construction along the levee below station 125+00. The loss of suitable habitat would be temporary during construction. Spotted skunk habitat would be created at the borrow sites as a part of the mitigation for the project as discussed in section 6.0. Vegetation utilized by spotted skunks would also return along the base of the levee upon project completion.

4.6 Cultural Resources

As outlined in Section 4.6 of this report, Section 106 coordination (National Historic Preservation Act of 1966, as amended) is complete. The proposed project will have no effect on historic properties.

5.6 Water Quality

During construction, there would be a temporary increase in siltation in sheet runoff associated with soil disturbance. Following construction there would be a return to existing conditions in water quality from the maintained levee. The proposed project would not have permanent impacts on the quality of surface or groundwater.

5.7 Air Quality

Construction related and site development impacts on air quality may result from temporary fugitive dust (particulate) emissions in and around the project site. Construction contractors will comply with all appropriate Federal air quality regulations to limit the dispersal of particulate matter. A temporary increase in exhaust emissions from construction equipment would also be expected during construction of the proposed project.

5.8 Noise

During construction, there would be an increase in noise from heavy equipment, but this would be temporary and last only during the construction period.

5.9 Cumulative Impacts

No cumulative impacts are anticipated to occur as a result of the proposed project.

SECTION 6.0 MITIGATION PLAN

Project related impacts were identified during project formulation and data gathering for the Environmental Assessment, and coordination planning with the Kansas Department of Wildlife and Parks and the US Fish and Wildlife Service (Appendix C). The proposed project would have impacts to upland habitat along the

base of the existing levee. Mitigation was developed to offset project related impacts, which includes avoidance and plantings. The removal of existing trees and brush will be minimized.

Avoidance is recommended along three sections of a mature shelterbelt that provides valuable wildlife habitat along about 4,700 feet of the inside of the levee between stations 141+00 and 199+00. Shelterbelts provide important nesting, feeding, and resting cover for many wildlife species. They are especially significant in Kansas. They are also important as travel or migration links across otherwise treeless areas. These three sections of shelterbelt provide about four acres of habitat and comprise the most significant terrestrial habitat with potential for project impact. They will be avoided if possible. Several large cottonwood trees grow adjacent to the base of the levee. Trees larger than 24 inches diameter breast height and large snags will be avoided if possible.

Planting to offset losses of upland habitat consists of planting native grasses and forbs in the two borrow areas. In addition, shrubs and trees will be planted in the south borrow area (NE¹/₄, S28, T27S, R4E). These two areas would not be subject to continual mowing/manicure.

A native grass/forb mix will be planted at a seeding rate of 18 pounds per acre on the 20 acres of the two borrow areas (approximately 360 pounds of seed mix). The mix consists of sideoats grama (100 pounds), blue grama (100 pounds), buffalo grass (35 pounds), sand lovegrass (35 pounds), western wheatgrass (30 pounds), Illinois bundleflower (35 pounds), and partridge pea (25 pounds). Lime and fertilizer will be applied per soil tests for that mix on a well-prepared seedbed. The mixture will be planted with a grass or pasture drill equipped with an agitator in the seedbox to provide equal distribution of seed. Seeding depth will be shallow per planting specifications for the mix and the area will be mulched. The Kansas Department of Wildlife and Parks office in Wichita, Kansas, has a source for native grass seed.

Trees and shrubs will be planted in the south borrow area to compensate for project related losses of this habitat type. They will be planted on the same mitigation acreage that is seeded with the native grass/forb mix. Approximately eight acres of trees will be established to mitigate project impacts. If the mature shelterbelts described above that exist between stations 141+00 and 199+00 along the inside of the levee can be avoided then only four acres of trees will be planted in the borrow area to provide an acre for acre replacement ratio. Two clusters of shrubs will be planted in the borrow area to compensate for the loss of shrub habitat.

Tree species will consist of bare root seedlings of black walnut (300), red oak or bur oak (300), cottonwood (300), hackberry (300), and pecan (300). The number of trees to be planted will be halved if only four acres are required. Species will be mixed as they are planted with the exception that cottonwood may be planted in the center of the borrow area. The grass mix discussed above will be applied to the tree planting area prior to planting the seedlings. Bare root seedlings may be planted using a 'dibble bar' and should be planted on a 14-foot spacing. The upper slope of the borrow area shall be planted first, then extending down the slopes and to the center of the borrow site. Thus the slopes will be planted if only four acres are required.

Shrub species planted will be Sand Hill Plum. They will be planted on a 7-foot spacing in two clusters of 50 plants each. Trees will not be planted within the shrub clusters. The two clusters will be planted on the slope on separate sides of the borrow area so they are not adjacent to each other. The Kansas Forest Service has information on the availability of these species of trees and shrubs through the Kansas Conservation Tree Planting Program.

These mitigation features are required to alleviate project losses.

SECTION 7.0 FEDERAL, STATE, AND LOCAL AGENCY COORDINATION

The draft environmental assessment (EA) was coordinated with the following agencies having legislative and administrative responsibilities for environmental protection. A copy of the correspondence from those agencies that provided comments and planning assistance for preparation of the draft EA are in the appendices. The mailing list for the 30-day public review period for this EA is in Appendix A.

U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

Natural Resources Conservation Service
Kansas State Historical Society
Wichita and Affiliated Tribes
Kansas Department of Health and Environment
Kansas Water Board
Kansas Department of Wildlife and Parks

SECTION 8.0 REFERENCES

- Bailey, R.G. 1980. *Ecoregions of the United States*. Miscellaneous Publication No. 1391. USDA, Forest Service, Washington, DC.
- Omernik, J.M. 1987. *Ecoregions of the Conterminous United States*. Ann. Assoc. Amer. Geogr. 77(1): 118-125.
- Schoewe, W. H. 1949. The geography of Kansas. Trans. Kans. Acad. Sci. 52:261-331.
- Soil Conservation Service. 1981. *Prime Farmland, Soil Survey Map Units, Kansas*. U.S. Department of Agriculture (USDA), Salina, Kansas. 34p.
- Soil Conservation Service. 1975. *Soil Survey of Butler County, Kansas*. USDA, Manhattan, Kansas. 60p.
- U.S. Bureau of Census. 2001. *2000 Census of Population and Housing, STF3*. www.census.gov/
- U.S. Department of Defense. 2001. *Defense Environmental Network & Information eXchange*. www.denix.osd.mil

SECTION 9.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

Table 9.0

Relationship of Plans to Environmental Protection Statutes and Other Environmental Requirements

Policies	Compliance of Alternatives
<u>Federal</u>	
Archeological and Historic Preservation Act, 1974, as amended, 16 U.S.C. 469, <u>et seq.</u>	All plans in full compliance
Clean Air Act, as amended, 42 U.S.C. 7609, <u>et seq.</u>	All plans in full compliance
Clean Water Act, 1977, as amended (Federal Water Pollution Control Act, 33 U.S.C. 1251, <u>et seq.</u>	All plans in full compliance
Endangered Species Act, 1973, as amended, 16 U.S.C. 1531, <u>et seq.</u>	All plans in full compliance
Federal Water Project Recreation Act, as amended, 16 U.S.C. 460-1-12, <u>et seq.</u>	All plans in full compliance
Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, <u>et seq.</u>	All plans in full compliance
Land and Water Conservation Fund Act, 1965, as amended, 16 U.S.C. 4601, <u>et seq.</u>	All plans in full compliance
National Historic Preservation Act, 1966, as amended, 16 U.S.C. 470a, <u>et seq.</u>	All plans in full compliance
National Environmental Policy Act, as amended, 42 U.S.C. 4321, <u>et seq.</u>	All plans in full compliance
Native American Graves Protection and Repatriation Act, 1990, 25 U.S.C. 3001-13, <u>et seq.</u>	All plans in full compliance
Rivers and Harbors Act, 33 U.S.C. 401, <u>et seq.</u>	N/A
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, <u>et seq.</u>	N/A
Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271, <u>et seq.</u>	N/A
Water Resources Planning Act, 1965	N/A
Floodplain Management (E.O. 11988)	All plans in full compliance
Protection of Wetlands (E.O. 11990)	All plans in full compliance
Environmental Justice (E.O. 12898)	All plans in full compliance
Farmland Protection Policy Act, 7 U.S.C. 4201, <u>et seq.</u>	All plans in full compliance
Protection of Children From Environmental Health Risks and Safety Risks (E.O. 13045)	All plans in full compliance

Note: Full compliance - Having met all requirements of the statutes, Executive Orders, or other environmental requirements for the current stage of planning.

SECTION 10.0 LIST OF PREPARERS

This EA has been prepared to assess the Whitewater and Walnut Rivers Local Flood Protection Project, Augusta, Kansas. The following personnel contributed to the preparation of this document.

David L. Combs - Chief, Environmental Analysis and Compliance Branch; Biologist; 10 years Oklahoma Department of Wildlife Conservation, 17 years U.S. Army Engineer Districts, Tulsa and Chicago.

Jerry C. Sturdy - Biologist; 3 years U.S. Fish and Wildlife Service; 8 years U.S. Army Garrison, Fort Chaffee, Arkansas; 22 years U.S. Army Engineer Districts, Tulsa and Fort Worth.

Kenneth L. Shingleton, Jr. - Archaeologist; 7 years U.S. Army Engineer District, St. Louis; 3 years U.S. Army Engineer District, Tulsa.

Tracey D. Jordan-Ham – Biologist; 2 years Kerr McGee Chemical Corporation; 9 years U.S. Army Engineer District, Tulsa.

Vicky L. Weatherly - GIS Specialist; 8 years U.S. Army Engineer District, Tulsa.

Edwin J. Rossman, Ph.D. - Sociologist; 2 years University of North Texas; 21 years U. S. Army Engineer District, Tulsa.

Craig Wells - Economist; 30 years U.S. Army Engineer Districts, Tulsa and Little Rock.

James R. Sullivan – Economist; 29 years U.S. Army Engineer District, Tulsa.

APPENDIX A

COORDINATION/CORRESPONDENCE

Mailing List for Whitewater and Walnut River Local Flood Protection Project Draft EA

Senator Sam Brownback
225 North Market St.
Suite 120
Wichita, KS 67202

Senator Pat Roberts
155 North Market St.
Suite 120
Wichita, KS 67202

Congressman Todd Tiahrt
155 North Market St.
Suite 400
Wichita, KS 67202

Senator Dave Corbin
Kansas Senate District 16
Room 143-N
State Capitol Building
Topeka, KS 66612

Representative Everett Johnson
Kansas House of Representatives
Room 531-N
State Capitol Building
Topeka, KS 66612

Mr. William Gill
U.S. Fish and Wildlife Service
Kansas State Office
315 Houston, Suite E
Manhattan, KS 66502-6172

Mr. J. Michael Hayden
Secretary
Kansas Department of Wildlife and Parks
900 SW Jackson St., Suite 502
Topeka, KS 66612

Mr. James B. Gulliford
Regional Administrator, Region 7
U.S. Environmental Protection Agency
901 N. 5th Street
Kansas City, KS 66101

Mr. Harold L. Klaege
State Conservationist
USDA Natural Resource Conservation Service
760 South Broadway
Salina, KS 67401-4642

Mr. Clyde D. Graeber
Secretary
Kansas Department of Health and Environment
1000 SW Jackson
Topeka, KS 66612

Mr. John Wine
Chairman
Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604-2425

Mr. David L. Pope
Chief Engineer
Kansas Department of Agriculture
Division of Water Resources
109 SW 9th Street, 2nd Floor
Topeka, KS 66612-1283

Mr. Dennis Carlson
District Forester
Kansas Forest Service
9 West 28th Suite B
Hutchison, KS 67502-3453

Mr. Al LeDoux
Director
Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612

Mr. Paul M. Liechti
Kansas Biological Survey
2041 Constant Avenue
Lawrence, KS 66047

Ms. Tracy Streeter
Executive Director
Kansas State Conservation Commission
109 SW 9th Street, Suite 500, Mills Bldg.
Topeka, KS 66615-1099

Ms. Mary R. Allman
State Historic Preservation Officer
Kansas State Historical Society
6425 SW 6th Avenue
Topeka, KS 66615-1099

Mr. Gary McAdams
Wichita and Affiliated Tribes of Oklahoma
P. O. Box 729
Anadarko, OK 73005

Commissioner Bill Shriver, District 2
Butler County Board of Commissioners
205 W. Central
El Dorado, KS 67042

Mr. Jim Schmidt
Director, Emergency Management
and Homeland Security
911 N. Andover Road
Andover, KS 67002

Mr. Darl Lutz, P.E.
Director
Butler County Public Works
205 W. Central
El Dorado, KS 67042

Mr. Larry Powell
Executive Director
Economic Development
310 W. Central, Suite F
Andover, KS 67002

Mr. William Keefer
City Manager
P.O. Box 489
Augusta, KS 67010

Mr. Wes Starnes
Director
Augusta Public Works
P.O. Box 489
Augusta, KS 67010

Dick and Carlene Pennington
117 West 7th
Augusta, KS 67010

Ms. Kate Crandell
1001 Wirth St.
Augusta, KS 67010

Ms. Kimberley Smith
502 W. Broadway
Augusta, KS 67010

Mr. Don Davis
Senior Environmental Engineer
Williams Companies
One Williams Center
P.O. Box 3483, MD 48-6
Tulsa, OK 74101

Ms. Charla Zerbe
312 Woodridge Ct.
Augusta, KS 67010

Bill and Sharon Slade
1705 Sunset Dr.
Augusta, KS 67010

Mr. J. Benington
11746 SW Hwy 77
Augusta, KS 67010

Mr. Floyd Zwahl
1707 Sunset Dr.
Augusta, KS 67010

Mr. Eric Grooms
2500 Lakepoint Ct.
Augusta, KS 67010

Mr. Martin Goedocke
Goedocke Engineering
2055 Main
El Dorado, KS 67042

Harlan and Susan Bartel
1200 Leckliter Dr.
Augusta, KS 67010

Mr. Steve Gillies
1104 Helen
Augusta, KS 67010

Ms. Sheryl Erickson
1147 Helen
Augusta, KS 67010

Glen and Luella Vance
1101 Leckliter Dr.
Augusta, KS 67010

Myrna Hale, Library Director
Augusta Public Library
1609 State Street
Augusta, KS 67010

~Announcing~

PUBLIC INVOLVEMENT WORKSHOP

as related to the

Augusta, Kansas, Feasibility Study

in compliance with

Section 205 of the 1948 Flood Control Act

Workshops

The U.S. Army Corps of Engineers will host a public workshop to inform the public about the Whitewater flood control feasibility study and to solicit comments and questions. The workshop will be open house format, with no set or formal presentation. Interested persons may arrive anytime between 6:30 - 8:00 p.m., visit the information tables, discuss the study with Corps personnel, and make comments. The workshops will be held at the following location:

Augusta, Kansas, Workshop

City Council Chambers

6th and School, Box 489

Augusta, KS

Tuesday, April 23, 2002

Any time between 6:30 - 8:00 p.m.

Scoping Process

The Corps of Engineers Feasibility study will investigate the flood problems of the Whitewater and Walnut Rivers area, formulate a variety of alternative to reduce future flooding, identify other concerns or needs of the project area, and formulate a recommended plan of action or non-action. The Corps evaluation includes consideration of environmental impacts that may occur as a result of each alternative. The environmental impact evaluation is done in compliance with the National Environmental Policy Act. The first step in the evaluation is the scoping process involving input from the public about potential alternatives and related impacts. As part of the scoping process, the Corps of Engineers requests that the public; interested parties; and Federal, State, and local agencies identify environmental issues related to the project alternatives. Comments and questions can be forwarded to:

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District

1645 S. 101st East Avenue ATTN: CESWT-PE-E

Tulsa, OK 74128-4629

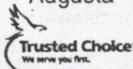
Phone: 918-669-7660

e-mail: David.L.Combs@usace.army.mil

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~Announcing~

PUBLIC INVOLVEMENT WORKSHOP
as related to the

Whitewater and Walnut Rivers, Augusta, Kansas Project
in compliance with

Section 205 of the 1948 Flood Control Act



Photo courtesy of the Augusta Daily Gazette

The U.S. Army Corps of Engineers will host a public workshop on the Whitewater and Walnut Rivers flood control project. Interested persons are invited to stop by the open-house workshop anytime between 6:30 - 8:00 p.m., visit the information tables and discuss the project with Corps personnel and city officials. Comments gathered will be considered in the official scoping process. The workshop will be held at the following location:

Whitewater and Walnut Rivers, Augusta, Kansas Project Workshop

City Council Chambers
6th and School, Box 489, Augusta, KS
Tuesday, April 23, 2002
Any time between 6:30 - 8:00 p.m.

Scoping Process

The Corps of Engineers feasibility phase of this project will investigate the flooding problems of the Whitewater and Walnut Rivers area, formulate a variety of alternatives to reduce future flooding, identify other concerns or needs of the project area, and formulate a recommended plan of action or non-action. The Corps evaluation includes consideration of environmental impacts that may occur as a result of each alternative. The environmental impact evaluation is done in compliance with the National Environmental Policy Act. The first step in the evaluation is the scoping process that includes public input on potential alternatives and related impacts. As part of the scoping process, the Corps of Engineers requests that the public; interested parties; and Federal, State, and local agencies identify environmental issues related to the project alternatives. Comments and questions can be forwarded to:

Mr. Steve Nolen

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 • Phone: 918-669-7666
e-mail: Steven.L.Nolen@usace.army.mil

Augusta Daily Gazette
Tuesday, April 23, 2002



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

2 May 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. James B. Gulliford
Regional Administrator
U.S. Environmental Protection Agency
726 Minnesota Avenue
Kansas City, KS 66101

Dear Mr. Gulliford:

This is to inform you that the Tulsa District has been requested by the City of Augusta, Kansas to study the feasibility of a flood control project to provide additional flood protection from the Whitewater and Walnut Rivers. We are beginning the process of preparing an Environmental Assessment addressing the affect of various alternatives that would provide additional flood protection for the city. The study is being conducted under authority of Section 205 of the 1948 Flood Control Act, as amended.

The city currently is afforded some protection by a levee that was constructed by the Works Projects Administration in the 1930's. However, significant flooding occurred in the city in 1965 and in 1998 when water either overtopped or got behind the levee on the western edge of town. Alternatives include extending the length and raising the height of the existing levee to provide additional protection.

We are preparing documentation for compliance with the National Environmental Policy Act of 1969 and would appreciate comments from your agency concerning this proposed action.

If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,


For Larry D. Hogue, P.E.
Chief, Planning, Environmental and
Regulatory Division



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

May 2, 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. William Gill
U.S. Fish and Wildlife Service
315 Houston, Suite E
Manhattan, KS 66502-6172

Dear Mr. Gill:

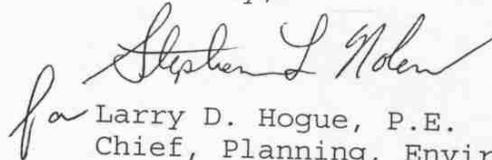
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We are preparing documentation for compliance with the National Environmental Policy Act of 1969 and would appreciate comments from your agency concerning this proposed action.

Your comments are requested in accordance with the Fish and Wildlife Coordination Act and the Endangered Species Act. If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,


for Larry D. Hogue, P.E.

Chief, Planning, Environmental and
Regulatory Division



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

May 2, 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Clyde D. Graeber, Secretary
Kansas Department of Health and Environment
Charles Curtis State Office Building
1000 SW Jackson
Topeka, KS 66612

Dear Mr. Graeber:

This is to inform you that the Tulsa District has been requested by the City of Augusta, Kansas to study the feasibility of a flood control project to provide additional flood protection from the Whitewater and Walnut Rivers. We are beginning the process of preparing an Environmental Assessment addressing the affect of various alternatives that would provide additional flood protection for the city. The study is being conducted under authority of Section 205 of the 1948 Flood Control Act, as amended.

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We are preparing documentation for compliance with the National Environmental Policy Act of 1969 and would appreciate comments from your agency concerning this proposed action.

If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,


for Larry D. Hogue, P.E.
Chief, Planning, Environmental and
Regulatory Division



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

May 2, 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. J. Michael Hayden,
Secretary
Kansas Department of Wildlife and Parks
900 SW Jackson St., Suite 502
Topeka, KS 66612

Dear Mr. Hayden:

This is to inform you that the Tulsa District has been requested by the City of Augusta, Kansas to study the feasibility of a flood control project to provide additional flood protection from the Whitewater and Walnut Rivers. We are beginning the process of preparing an Environmental Assessment addressing the affect of various alternatives that would provide additional flood protection for the city. The study is being conducted under authority of Section 205 of the 1948 Flood Control Act, as amended.

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We are preparing documentation for compliance with the National Environmental Policy Act of 1969 and would appreciate comments from your agency concerning fish and wildlife species of concern that might occur in the project area.

If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,

for 
Larry D. Hogue, P.E.
Chief, Planning, Environmental and
Regulatory Division



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

May 2, 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Al LeDoux, Director
Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612

Dear Mr. LeDoux:

This is to inform you that the Tulsa District has been requested by the City of Augusta, Kansas to study the feasibility of a flood control project to provide additional flood protection from the Whitewater and Walnut Rivers. We are beginning the process of preparing an Environmental Assessment addressing the affect of various alternatives that would provide additional flood protection for the city. The study is being conducted under authority of Section 205 of the 1948 Flood Control Act, as amended.

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We are preparing documentation for compliance with the National Environmental Policy Act of 1969 and would appreciate comments from your agency concerning this proposed action.

If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,


for Larry D. Hogue, P.E.
Chief, Planning, Environmental and
Regulatory Division



DEPARTMENT OF THE ARMY
U.S. ARMY, CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

May 2, 2002

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Harold L. Klaege
State Conservationist
Natural Resource Conservation Service
760 South Broadway
Salina, KS 67401

Dear Mr. Klaege:

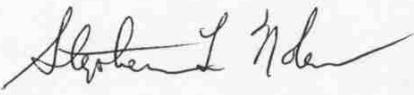
This is to inform you that the Tulsa District has been requested by the City of Augusta, Kansas to study the feasibility of a flood control project to provide additional flood protection from the Whitewater and Walnut Rivers. We are beginning the process of preparing an Environmental Assessment addressing the affect of various alternatives that would provide additional flood protection for the city. The study is being conducted under authority of Section 205 of the 1948 Flood Control Act, as amended.

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If you have any questions or require additional information, please contact Mr. Jerry Sturdy at 918-669-4397.

Sincerely,


for Larry D. Hogue, P.E.
Chief, Planning, Environmental and
Regulatory Division



STATE OF KANSAS
DEPARTMENT OF WILDLIFE & PARKS

Operations Office
512 SE 25th Ave.
Pratt, KS 67124-8174
Phone: (620) 672-5911 FAX: (620) 672-6020



14 June 2002

Mr. Larry D. Hogue, P.E., Chief
U.S. Army Corps of Engineers, Tulsa District
Planning, Environmental and Regulatory Division
1645 South 101st East Avenue
Tulsa, OK 74128-4609

Ref: D1.0500
Butler
Track: 20020335

Dear Mr. Hogue:

We reviewed your request regarding the feasibility study for a flood control project for the City of Augusta. The study involves preparing an environmental assessment to consider alternatives that would provide additional flood protection to the city from the Whitewater and Walnut rivers. As part of NEPA compliance policy, you requested information regarding fish and wildlife species of concern that might occur in the project area.

Please find enclosed a list of threatened and endangered species that are likely or known to occur in Butler County and a list of their state-designated critical habitats. The state and federally-threatened Bald Eagle and the state-threatened and federally-endangered Topeka shiner are the two species in Butler County with state-designated critical habitats. The Topeka shiner likely would not occur within the project area, whereas the Bald Eagle occurs as a winter resident along the Walnut River. The state-threatened eastern spotted skunk could occur in suitable habitats within the project area.

If you have any questions or need more information, please E-mail me at chrish@wp.state.ks.us or call me at extension 198. Thank you for the opportunity to respond to this initial request.

Sincerely,

Chris Hase, Aquatic Ecologist
Environmental Services Section

Enclosures

xc: KDWP Reg. 4 F&W Sup., Swan
USFWS, Gill
EPA, Mulder
KDHE, Mueldener

APPENDIX B

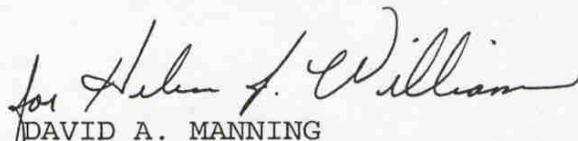
SECTION 404 PERMIT

16 May 2003

MEMORANDUM FOR CESWT-PE-P (R. Thomas)

SUBJECT: Review of Whitewater & Walnut Rivers Section 205 Study

1. Reference the Engineering and Design Quality Control Plan for the above mentioned study.
2. The study is located in the area of Augusta, Butler County, Kansas.
3. The provided information does not indicate that a placement of dredged or fill material will be required, permanently or temporarily, into any "waters of the United States," including jurisdictional wetlands. Therefore, this proposal is not subject to regulation pursuant to Section 404 of the Clean Water Act. Should the scope of work change from the information reviewed, a second review will be needed.
4. This project has been assigned Identification Number 11093. If you have any questions, contact Helen J. Williams at 918-669-7009.


DAVID A. MANNING
Chief, Regulatory Branch

APPENDIX C

FISH AND WILDLIFE

COORDINATION ACT REPORT



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Kansas Field Office
315 Houston Street, Suite E
Manhattan, Kansas 66502-6172

March 4, 2004

Mr. Larry D. Hogue
Chief, Planning, Environmental and Regulatory Division
U.S. Army Corps of Engineers- Tulsa District
Attn: CESWT-PE-E (Sturdy)
1645 South 101st East Ave.
Tulsa, Oklahoma 74128-4609

Dear Mr. Hogue:

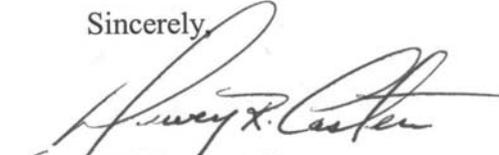
This Final Fish and Wildlife Coordination Act Report (FFWCAR) is provided pursuant to the Fiscal Year 2003 Scope-of-work Agreement for the Augusta Local Flood Protection Project (205 Study), Augusta, Butler County, Kansas between the U.S. Fish and Wildlife Service (Service) and the Tulsa District, Corps of Engineers. Your agency and the city of Augusta have indicated this kind of information would be useful in project planning and in avoiding environmentally sensitive areas during project development. This FFWCAR was prepared in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), and is the report of the Secretary of the Interior on the project within the meaning of Section 2 (b) of this Act.

Cooperation and information utilized in preparation of this report was obtained from the Kansas Department of Wildlife and Parks (Department) and the Corps.

We appreciate the opportunity to discuss impacts to fish and wildlife anticipated by

implementation of this project. If we can be of any assistance please call Mr. Dewey Caster, of my staff, at 785 539-3474 ext. 108.

Sincerely,



For: William H. Gill
Field Supervisor

WHG\drc

**FINAL
FISH AND WILDLIFE
COORDINATION ACT REPORT
FOR THE
AUGUSTA FLOOD DAMAGE REDUCTION PROJECT
AUGUSTA, KANSAS**

**PREPARED FOR THE
UNITED STATES ARMY, CORPS OF ENGINEERS,
TULSA DISTRICT
TULSA, OKLAHOMA**



**BY THE
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
KANSAS FIELD OFFICE
MANHATTAN, KANSAS**

March, 2004

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EXECUTIVE SUMMARY

The Tulsa District, Corps of Engineers, is in the process of developing a feasibility study for flood damage reduction measures for the city of Augusta, Butler County, Kansas. This Final Fish and Wildlife Coordination Act Report describes the study area, identifies important aquatic and terrestrial resources, evaluates impacts of flood damage reduction measures, and describes mitigation measures.

The project area is highly urbanized inside the existing levee system. The primary impact from a fish and wildlife perspective for the proposed project is the loss of shelter belt (woody plantings) established by man in the area of proposed levee improvements. Therefore, the Fish and Wildlife Service recommends the following:

RECOMMENDATIONS

1. Minimize tree removal within construction easements and permanent rights-of-way where feasible.
2. Reestablish suitable trees and shrubs acre for acre, with similar native species composition to that which is lost.

LIST OF FIGURES

Figure 1

Augusta study area

Figure 2

Augusta Project Features

INTRODUCTION

This Final Fish and Wildlife Coordination Act Report (Report) is submitted pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), and the fiscal year 2003 Scope-of-Work Agreement between the U.S. Fish and Wildlife Service (Service) and the U.S. Army Corps of Engineers, Tulsa District (Corps) for the Whitewater and Walnut Rivers Section 205, Local Flood Protection Feasibility Study. This report is designed to accompany and is to be incorporated into the Corps' feasibility report on the proposed project. The purpose of the feasibility study is to determine if there is a practicable alternative for reducing flood damages along the Whitewater and Walnut rivers in the vicinity of Augusta, Butler County, Kansas.

This study was authorized under authority of Section 205 of the Flood Control Act of 1948, as amended.

The Augusta study area is the City of Augusta, Butler County Kansas located at the confluence of the Whitewater and Walnut Rivers. (Figure 1). The city of Augusta lies 12 miles east of Wichita, Kansas, and has a population of approximately 8,449 (2000 census). The Whitewater River flows south along the west side of Augusta and drains 473 square miles of watershed upstream of Augusta. The Walnut River flows southwesterly along the east side of Augusta and drains 221 square miles of watershed downstream of El Dorado Dam and upstream of Augusta. These two rivers form a confluence with one another just south of Augusta. The Walnut and Whitewater flooded frequently in the past causing extensive damage. Floods from the Walnut River have occurred in 1998, 1979, 1976, 1965, 1952, 1944, 1928, and in 1923. Whitewater floods have occurred in 1998, 1985, 1965, 1953, 1951, 1944, and 1923. These floods occurred despite the construction of a levee by the Kansas Works Progress Administration in 1938 along the west, south, and east edges of the city.

The project includes a levee with several flap gate structures to provide drainage during normal river flows and a pumping station to provide interior drainage during high river flows. The levee is approximately 4.24 miles long and includes a reinforced, concrete floodwall approximately 1,013 feet long. The Corps rehabilitated the floodwall around 1976 under Public Law 84-99.

DESCRIPTION OF THE STUDY AREA

Physiographically the study area is located in the Flint Hills, which were formed by the erosion of gently westward-dipping strata. The rock structure is permian-age limestone containing banks of chert or flint. The topography of the Flint Hills is gently rolling to steep hills, characterized by limestone outcrops and shallow soils in the hilly areas, and deeper soils in the bottom areas (Self 1978).

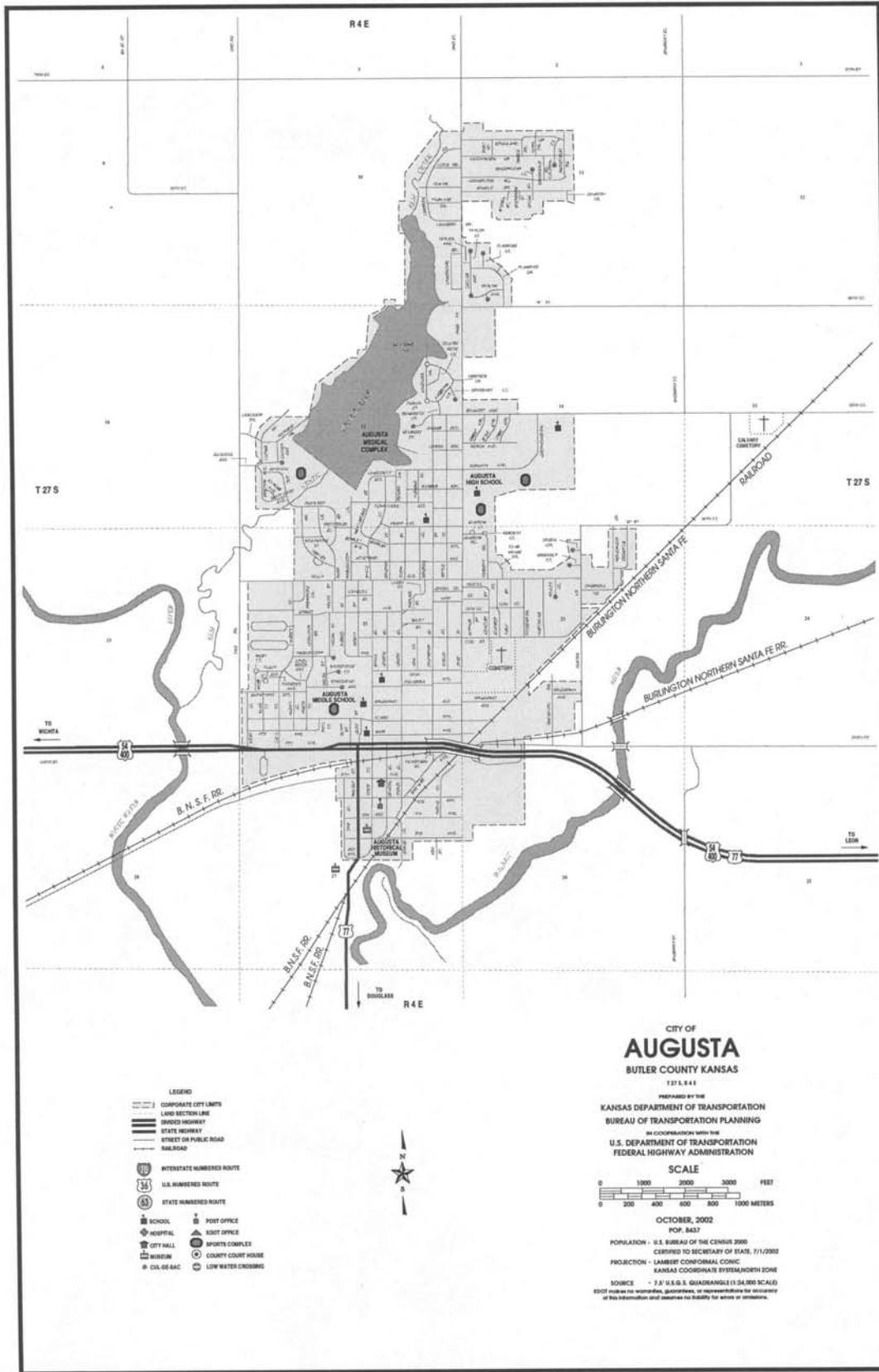


Figure 1. Augusta Study Area

The soils of the study area are of the Verdigris-Brewer-Norge-Association, specifically, Verdigris silt loam, and Brewer silty clay loam. These are typically bottomland soils, well suited for agricultural crops, grasses, and trees (Penner et. Al. 1975).

The climate of the Whitewater and Walnut River Basins is characterized by large seasonal changes in temperature, humidity, and rainfall (Self, 1978). The summer temperatures average 75 to 82 degrees Fahrenheit and winter temperatures fluctuate due to intrusions of cold continental air. Average annual rainfall varies between 31 and 33 inches, with 71 percent of rainfall occurring during the growing season (April through September).

Land use of the study area is primarily urban and industrial, due to the majority of the study area being the city of Augusta. The areas outside the levee system and subject to periodic flooding are devoted to agricultural uses in the form of row crops and livestock grazing. The industrial land uses include the old Mobile Oil Refinery, railroads and other miscellaneous industrial entities.

Terrestrial Resources

The major terrestrial habitat types which may be impacted by the proposed project include cropland, riparian woodland, grassland, old fields, pasture, and woody plantings (shelter belts).

Cropland is predominately found in the floodplain lowlands outside the Augusta levee. Most of the crops grown are for cash crop or livestock feed. Cropland is generally poor wildlife habitat by itself, however it becomes more beneficial when it is interspersed with other habitat types.

The riparian woodlands along the Whitewater and Walnut Rivers exist as continuous bands of well established timber, with a diverse understory of young trees, shrubs, vines, and grasses. Dominant tree species include green ash, cottonwood, box elder, silver maple, black walnut, willow, and mulberry.

Riparian woodland represents the highest quality terrestrial habitat in the project area. The meandering of the two rivers and riparian zones, in conjunction with the interspersion of habitat types, provides high quality feeding, resting, and reproductive areas, along with travel or migration corridors for many game and non-game animals. Some of the wildlife species associated with, and dependent upon, these riparian woodlands include wild turkey, fox squirrel, white-tailed deer, racoon, coyote, beaver, bobcat, bobwhite quail, woodpeckers, barred owl, and many other non-game bird species. Relatively large numbers of deer and turkey are harvested each year in Butler County.

Grasslands in the study area consist of tall-grass prairie that is hayed annually. Grasslands provide good wildlife habitat due to a plant diversity that provides a variety of cover, forage, seed, and insect food. Dominant plant species include big bluestem, switchgrass, Indiangrass, purpletop,, sideoats grama, Baldwin ironweed, daisy fleabane, sunflowers, and milkweed.

Some of the terrestrial species which would use grasslands in the study area include meadowlark, grasshopper sparrow, upland sandpiper, Greater prairie chicken, ring-necked pheasant, coyote, badger, and plains pocket gopher.

Old field habitat type is generally a grass/forb association with varying percentages of invading trees. Some dominant species include annual bromes, purpletop, Johnson grass, Baldwin ironweed, Illinois bundleflower, and compass plant; with elm, hackberry, mulberry, and Osage orange representing the invading tree species. Old field can be important for eastern cottontail, bobwhite quail, coyote, morning dove, pheasant, and white-tailed deer.

Woody plantings (shelterbelts) are usually composed of a variety of even-aged deciduous and/or coniferous trees. Those to be impacted by the proposed project are dominated by red cedar, cottonwood, green ash, and elm. Shelterbelts provide important nesting, feeding and resting cover for many wildlife species. They are also important as travel or migration links across otherwise treeless areas. Some species that use this habitat type include morning dove, bobwhite quail, pheasant, eastern cottontail, white-tailed deer, coyote, and numerous non-game species.

The pasture habitat type to be impacted generally includes only the grasses planted on the old levee and right-of-way. The pasture composed of bromes and/or fescue, is frequently mowed or hayed. For this reason, pasture provides poor habitat for most species. Some species that may use this habitat type include eastern cottontail, bobwhite quail, meadowlark, and several raptors.

Aquatic Resources

Within the Augusta area, the Whitewater and the Walnut rivers provide a diversity of habitat, due to their numerous pool-riffle-run complexes. In addition there are two lowhead dams on the Walnut River within the study area, which provide pooled water, enhanced waterflows, and good angling. The Kansas Department of Wildlife and Parks (Department) has evaluated the Whitewater and the Walnut Rivers, and has deemed both to be high-priority fisheries (Moss and Brunson 1981). Primary species inhabiting both rivers are Largemouth bass, channel catfish, flathead catfish, White crappie, Green sunfish, common carp and smallmouth buffalo.

Angler utilization for the Walnut River is approximately 37,235 angler-days per year. The Walnut River receives 4,000 angler-days per year in utilization. When combined, both rivers provide approximately 125 miles of anglable stream, resulting in over 41,000 angler-days of fishing pressure each year (Jones 1977).

Threatened and Endangered Species

Section 7(c) of the Endangered Species Act (87 Stat. 884, as amended), requires Federal Agencies to ask the Secretary of the Interior, acting through the Service, whether any listed or proposed endangered or threatened species may be present within an area proposed for construction. The bald eagle (*Haliaeetus leucocephalus*), threatened, may be expected to occur

along any river or at any reservoir in Kansas during winter. Eagles utilize areas where large trees provide perch sites in proximity to open water, where they feed on fish and waterfowl. A first nest was documented in Kansas in 1989, increasing to 15 successfully active nests by 2003, with numbers fluctuating annually. If the proposed project does not intrude on the existing riparian habitat of either the Whitewater or the Walnut Rivers there should be no adverse impact to this threatened species.

DESCRIPTION OF THE PROJECT

The current flood protection measures being studied by the Corps, include raising and extending the existing levee originally built in 1938. Levee modifications are those that would raise the levee height to protect the city from future 100 year, 200 year or 500 year flood event. All three alternatives include extending the northwest end of the levee by approximately 600 feet and at a height to protect against a future 100, 200 or 500 year event. Most of the levee work would be accomplished on the south and west side of Augusta. Borrow areas for levee fill has been identified as the NW1/4, NW1/4, Section 28, and NE1/4 Section 28, Township 27 South, Range 4 East, an existing row crop area adjacent to the Whitewater River. (Figure 2)

Levee height could be increased 1.5 or 3 feet maximum with a corresponding widening of the levee base to accommodate the increase in height. With a 2 foot height increase the base would widen by 12 feet. For every mile of 2 foot levee height improvement, approximately, 1.5 acres of land on the landward side or river side of the levee would be incorporated into the levee system. If the land side has no room for expansion, the levee may be "capped" or a toe wall installed, depending on local conditions. The base would then be widened by less than 12 feet, if at all. Increasing the height of 1,013 feet of floodwall would simply entail adding concrete to the top of the existing wall.

We did not evaluate an alternative for channelization of either the Whitewater or the Walnut River as these options appeared economically and environmentally prohibitive. We did not evaluate the alternative of upstream detention structures as the cost of such structures would be prohibitive.

TERRESTRIAL AND AQUATIC RESOURCE IMPACT ANALYSIS

Aquatic Resources

Current proposals or alternatives do not entail encroachment on either the Whitewater or Walnut Rivers or disturbance of the either streams riparian woodland border.

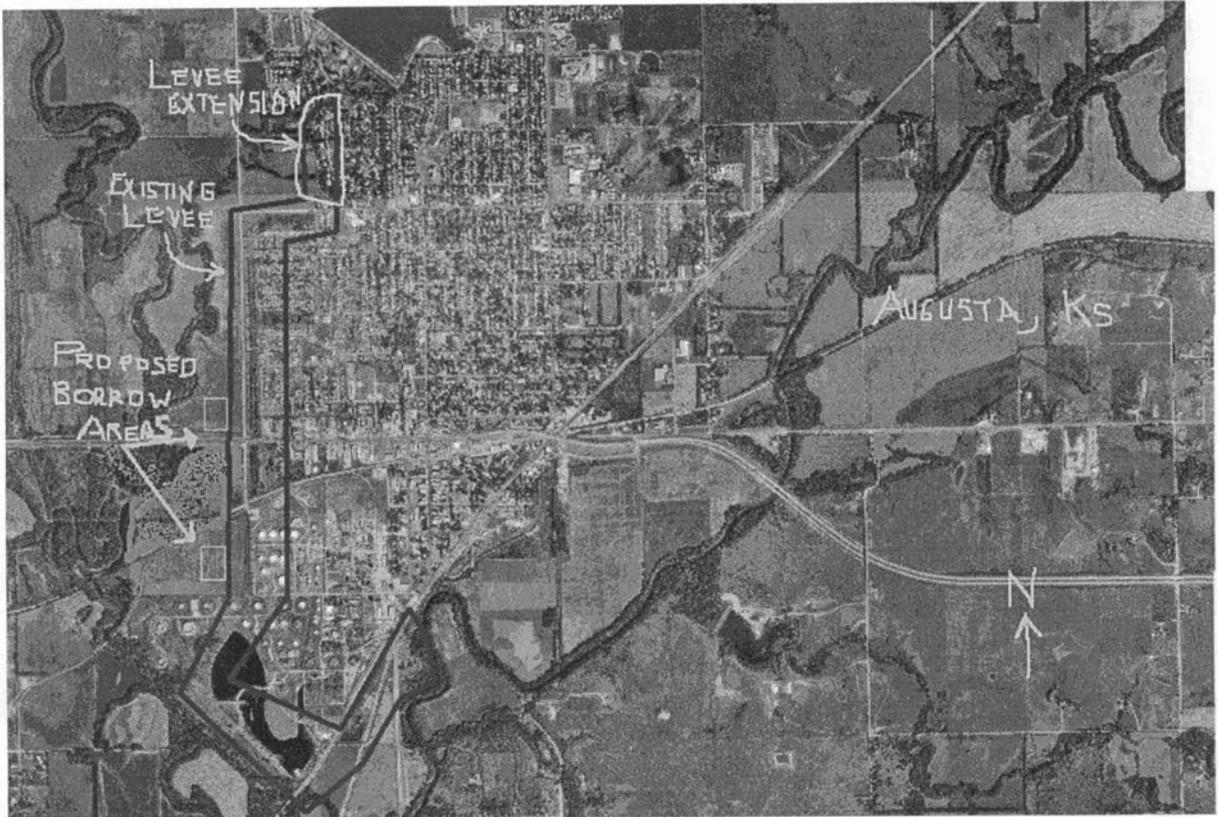


Figure 2. Augusta Project Features

Terrestrial Resources

On the west side of Augusta, a long 4 row shelter belt thrives along the inside base of the existing levee system. The shelter belt is approximately one mile long and 100 feet wide. The mature shelter belt screens the local residents view of the levee and power line, improves aesthetics and provides wildlife habitat. We assume the levee will be expanded riverward (work on the outside face of the levee) through this area thereby preserving the shelter belt and eliminating the need to re-locate the power line.

Impacts to terrestrial and aquatic resources, which are expected to occur as a result of implementing the proposed flood protection plan, would be minimal. The greatest loss in terms of acreage would be a temporary loss of levee vegetive cover (pasture) or brome grasses as the levee is being built higher and wider. An additional 0.8 acres of cropland and 0.01 acres of woody plantings (shelterbelts) would be lost to the 600 foot levee extension.

The loss of levee brome grasses during heightening of the existing levee system will be a short term loss. Re-seeding the levee to reduce erosion and to insure the integrity of the levee system will be a priority of project implementation.

The loss of 0.8 acres of cropland to levee extension is not considered significant due to the proliferation of this habitat type and its' low value to wildlife.

The potential loss of 7.8 acres trees within the shelterbelts (woody plantings) along the remainder of the levee is minor in terms of acres affected but wooded areas in Kansas are important habitats for many species of wildlife. Numerous species of migratory birds use these woodlands for nesting, feeding, and as travel corridors.

MITIGATION DISCUSSION

To date, a formal habitat evaluation has not been conducted on habitats within the project area and none is deemed necessary.

Woody plantings (shelterbelts) are the only habitat resource (approximately 7.8 acres) anticipated to be impacted by proposed flood control work at Augusta, Kansas. If the trees within the shelterbelt are replaced with the same acreage and similar species composition within the same general area, the project in its entirety will have minimal impact to fish and wildlife resources.

Replanting the 10 acre borrow area in the NE1/4 of Section 28, T27S, R4E to native trees and shrubs would adequately mitigate habitat losses due to project implementation.

RECOMMENDATIONS

In the interest of protecting fish and wildlife resources in the vicinity of Augusta, Kansas, the following recommendation is provided.

1. Woody planting clearing should be minimized , and any vegetation removed should be replaced, acre for acre, with similar native species composition, to that which is lost.

LITERATURE CITED

- Jones, L. 1977, Walnut River Basin, Kansas preliminary stream survey.
Kansas Fish and Game Commission. D-J Project F- 15-R-12, Study 010., Job .010. 54pp.
- Moss, R.E. and K. Brunson. 1981. Kansas stream and river fishery resource evaluation. Kansas Fish and Game Commission. 71pp.
- Penner, C.R., S.C. Ekart, D.A. Ewing, G. Shmidt, and J. Smith. 1975. Soil Survey of Butler County, Kansas, USDA, SCS. 60pp.
- Self, H. 1978. Environment and Man in Kansas; A Geographical Analysis, Regents Press of Kansas, Lawrence, KS. 288pp.

APPENDIX D

CULTURAL RESOURCES COORDINATION



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

March 10, 2003

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Ms. Mary R. Allman
State Historic Preservation Officer
Historic Preservation Office
Kansas State Historical Society
6425 SW 6th Avenue
Topeka, KS 66615-1099

Dear Ms. Allman:

The purpose of this letter is to initiate consultation under Section 106 of the National Historic Preservation Act of 1966 (as amended) concerning a proposed flood control project for the City of Augusta in Butler County, Kansas.

The City of Augusta as requested the assistance of the U.S. Army Corps of Engineers (USACE), Tulsa District, to control flooding from the Whitewater and Walnut Rivers, and from Elm Creek, a tributary of the Whitewater. Under Section 205 of the Flood Control Act of 1948, USACE has the authority to assist in the development and construction of local flood control projects. As the result of a reconnaissance phase study of the Whitewater and Walnut Rivers flood problem, recommendations have been developed that will be further explored during the preparation of a feasibility report on the proposed project.

As presently defined, the proposed flood control work in the vicinity of Augusta (Sec. 15, 16, 21, 22, 27, and 28, T27S, R4E) consists of levee improvement, including an increase in height, levee extension, channel improvements, and construction of interior detention areas, drainage structures, access roads, and borrow sites (see enclosed map). We are consulting with you at this time to seek your recommendations on how best to proceed with this undertaking for the purposes of identifying cultural resources within the project areas. Specifically, we are interested in what cultural resources are known to exist within the proposed project area and its vicinity, and for your recommendations regarding the conduct of cultural resources inventory work in this area.

Thank you for your assistance. If you have any questions, please contact Ken Shingleton, Archaeologist, at 918-669-7661.

Sincerely,

Louis E. Vogele, Jr.
for Larry D. Hogue, P.E.
Chief, Planning, Environmental,
and Regulatory Division

Enclosure



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

March 10, 2003

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Gary McAdams, President
Wichita and Affiliated Tribes
P.O. Box 729
Anadarko, OK 73005

Dear President McAdams:

The purpose of this letter is to initiate consultation under Section 106 of the National Historic Preservation Act of 1966 (as amended), regarding a flood control project under study for Augusta, Kansas.

The City of Augusta has requested the assistance of the U.S. Army Corps of Engineers (USACE), Tulsa District, to control flooding from the Whitewater and Walnut Rivers, and from Elm Creek, a tributary of the Whitewater. Under Section 205 of the Flood Control Act of 1948, USACE has the authority to assist in the development and construction of local flood control projects. As the result of a reconnaissance phase study of the Whitewater and Walnut Rivers flood problem, recommendations have been developed that will be further explored during the preparation of a feasibility report on the proposed project.

As presently defined, the proposed flood control work in the vicinity of Augusta (Sec. 15, 16, 21, 22, 27, and 28, T27S, R4E) consists of levee improvement, including an increase in height, levee extension, channel improvements, and construction of interior detention areas, drainage structures, access roads, and borrow sites (see enclosed map). In accordance with Section 106, the Tulsa District will be conducting archaeological investigations of potentially affected areas. If historic properties are identified, they will be evaluated for eligibility to the National Register of Historic Places.

Please review these areas surrounding Augusta, Kansas for information that you may be willing to share with us on archaeological sites, historic properties, sacred sites, or traditional cultural properties that may be significant to the Wichita and Affiliated Tribes. Information you may be able to provide will assist us in assessing the effects of the proposed project on cultural resources.

Any information or comments you are able to provide will be appreciated. Tulsa District is committed to ensuring your proper involvement in the Section 106 consultation process. If you have any questions, please contact Ken Shingleton at 918-669-7661.

Sincerely,

Louis E. Vogele, Jr.

for Larry D. Hogue, P.E.
Chief, Planning, Environmental,
and Regulatory Division

Enclosure



**KANSAS
STATE
HISTORICAL
SOCIETY**

□

**Cultural Resources
Division**

□

6425 S.W. 6th Avenue
Topeka, Kansas
66615-1099
PHONE# (785) 272-8681
FAX# (785) 272-8682
TTY# (785) 272-8683

□

**KANSAS HISTORY
CENTER**

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Center for Historical Research
Cultural Resources
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HISTORIC SITES

Adair Cabin
Constitution Hall
Cottonwood Ranch
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Fort Hays
Goodnow House
Grinter Place
Hollenberg Station
Kaw Mission
Marais des Cygnes Massacre
Mine Creek Battlefield
Native American Heritage
Museum
Pawnee Indian Village
Pawnee Rock
Shawnee Indian Mission

KSR&C No. 03-03-05

March 17, 2003

Larry D. Hogue
Planning, Environmental, and Regulatory Division
Corps of Engineers, Tulsa District
1645 South 101st East Avenue
Tulsa, Oklahoma 74128-4609

RE: City of Augusta Flood Control Project

Dear Mr. Hogue:

The Kansas State Historic Preservation Office has received your letter dated March 10, 2003, concerning the above referenced project. The project area identified as the Levee Extension should be surveyed by a professional archeologist prior to beginning construction, as it is an area of high and/or moderate archeological potential that has never undergone an archeological survey. Two copies of the report documenting the survey, its results, and recommendations for mitigating the effects of construction on archeological sites, if any, should be sent to this office.

Also, the proposed borrow area contains a recorded archeological site (14BU304). Your agency will need to evaluate whether or not 14BU304 is an historic property and ask our office to comment on your finding. The eligibility evaluation of 14BU304 and the results of the levee extension archeological survey can be presented in a single report.

If you have questions or need additional information regarding these comments, please contact Will Banks 785-272-8681 (ext. 214) or Jennifer Epperson (ext. 225).

Sincerely,

Mary R. Allman
State Historic Preservation Officer


Richard Pankratz, Director
Cultural Resources Division

web



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

January 27, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Ms. Mary R. Allman
State Historic Preservation Officer
Historic Preservation Office
Kansas State Historical Society
6425 SW 6th Avenue
Topeka, KS 66615-1099

Dear Ms. Allman:

The purpose of this letter is to continue consultation under Section 106 of the National Historic Preservation Act of 1966 (as amended) concerning a proposed flood control project for the City of Augusta in Butler County, Kansas. In accordance with Section 106, Tulsa District conducted archaeological reconnaissance investigations of the project area, including the levee footprint and proposed borrow areas. The report of these investigations, which were performed by 4G Consulting, is enclosed for your review. Borrow Area 1, in which two previously identified archaeological sites and one newly recorded archaeological site were identified, will not be utilized for levee fill material or any other project purpose. Two other potential sources of fill material, Borrow Areas 2 and 3, were investigated, and no archaeological sites or standing structures were identified. We propose to utilize Borrow Areas 2 and 3 to provide fill material for the improvement of the levee.

Cultural resources investigations were also conducted within the levee footprint. Two Works Progress Administration (WPA) monuments were identified, one on each end of the levee. These monuments commemorate the construction of the levee, which was completed in 1937. While the levee is considered a part of a recognized historic context for Kansas, New Deal-era Resources, we do not believe it is eligible for the National Register. We will ensure that, prior to construction of levee improvements, adequate measures are undertaken to preserve the two WPA monuments, including identification of the reported jar of pennies addressed in the cultural resources report. The National Youth Administration/H.E. Woolery Park facilities addressed in the report of cultural resources investigations are not within the project area and will not be affected by construction or related activities.

In sum, we did not identify historic properties in the course of archaeological investigations of Borrow Areas 2 and 3, or within the levee footprint itself. We therefore request your comment on the enclosed report, and on our determination of "no historic properties affected." Again, proposed Borrow Area 1 will be deleted from consideration.

Thank you for your assistance. If you have any questions, please contact Ken Shingleton, Archaeologist, at 918-669-7661.

Sincerely,

Larry D. Hogue

Larry D. Hogue, P.E.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



KANSAS

KSR&C No. 03-03-059

Kansas State Historical Society
Cultural Resources Division

KATHLEEN SEBELIUS, GOVERNOR

January 29, 2004

Larry D. Hogue
Planning, Environmental
And Regulatory Division
Corps of Engineers, Tulsa District
1645 South 101st East Avenue
Tulsa, OK 74128-4609

RE: City of Augusta Flood Control Project
Butler County

Dear Mr. Hogue:

The Kansas State Historic Preservation Office has received and reviewed the draft report by 4G Consulting entitled *Cultural Resources Inventory for a Flood Control Project, Augusta, Kansas*. We concur with your determination that the WPA constructed levee is not eligible for listing on the National Register, and your plan to preserve the two WPA monuments is appropriate. Since Borrow Area 1 will not be used for levee construction, we concur with your finding of "no historic properties affected". If additional areas, which have not been evaluated for the presence of archeological sites, are needed for borrow during the the project, we ask that our office be contacted so that we can adequately advise you on the necessary course of action.

Sincerely,

Mary R. Allman-Koernig
State Historic Preservation Officer



Richard Pankratz, Director
Historic Preservation Office

APPENDIX E

PUBLIC COMMENTS

APPENDIX F

NEWSPAPER PUBLIC NOTICE