PROJECT MANAGEMENT PLAN

WALNUT RIVER BASIN
FEASIBILITY STUDY

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

October 2001

The attached Project Management Plan for the Walnut River Basin Feasibility Study has been reviewed and is hereby approved [with consensus of the Corporate Board].

_____

Approved
Robert L. Suthard, Jr.
Colonel, U.S. Army
District Engineer
Chairman

ENDORSEMENTS

The Walnut River Basin Feasibility Study Project Management Plan has been reviewed and approved as indicated below:

		Date
Sponsor		
Kansas Water Office	_____	_____
Board Members		
Robert L. Suthard, Jr. **District Engineer, Chairman**	_____	_____
John H. Roberts **Deputy for Programs and Project Management**	_____	_____
Chris Altendorf **Chief, Civil Works Branch, PPMD**	_____	_____
Ralph Hight **Chief, Engineering and Construction Division**	_____	_____
Ross Adkins **Chief, Public Affairs**	_____	_____
Hal Capshaw **Chief, Information Management Office**	_____	_____
John Roselle **District Counsel**	_____	_____
Larry Hogue **Chief, Operations Division**	_____	_____
G. David Steele **Chief, Planning, Env. & Regulatory Division**	_____	_____
Charlotte Stockwell **Chief, Resource Management Office**	_____	_____
Richard T. Freeman **Chief, Real Estate Division**	_____	_____
Rick Hedrick **Chief, Contracting Division**	_____	_____

PROJECT MANAGEMENT PLAN

Approved by FCSA Executive Committee:

Kansas Water Office	Corps of Engineers:
_____	_____ Susan Haslett Chief, Planning Branch
_____	_____ G. David Steele, P.E. Chief, Planning Division

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SECTION 1. INTRODUCTION

This Project Management Plan (PMP) was prepared in accordance with Engineering Circular (EC) 1105-2-208, dated December 1994, Engineering Regulation (ER) 1105-2-100, dated April 2000, and ER 5-1-11, dated 17 August 2001. This PMP was developed in cooperation with the sponsor, the Kansas Water Office (KWO), and describes the scope, schedule, and budget for accomplishing feasibility study tasks. The purpose of the feasibility study is to identify, evaluate, and recommend an implementable solution to restore (and preserve) the riverine ecosystem of the Walnut River Basin.

An important element of project management is the development of a PMP of which this is the first iteration. The PMP is a working document that guides development and subsequent completion of the feasibility study. The PMP ensures that both the Federal Government (Corps) and the KWO are aware of and in agreement with such items as project scope, schedule, cost, and treatment of contingencies, where applicable. The study will be executed through compliance with Corps of Engineers regulations, as well as Federal, State, and local laws.

1. STUDY AUTHORIZATION

The Energy and Water Development Appropriations Act, 2000 (Public Law 106-60) is the authority for the Section 905(b)(Water Resource Development Act 1986) analysis. The appropriations language from the House Committee on Appropriations Report (House Report 106-253), dated July 23, 1999, reads in part:

"The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for energy and water development for the fiscal year ending September 30, 2000, and for other purposes. …Walnut River Basin, Kansas.--The Committee has provided funding to initiate a reconnaissance study of flood control and related water resource issues in the Walnut River Basin, Kansas."

Prior basin studies are reviewed due to changed physical and economic conditions. The authority is the Flood Control Act of 1965 (Public Law 89-298) wherein Section 208, reads in part:

"The Secretary of the Army is hereby authorized and directed to cause surveys for flood control and allied purposes, including channel and major drainage improvements, and floods aggravated by or due to wind or tidal effects, to be made under the direction of the Chief of Engineers, in drainage areas of the United States and its territorial possessions which include the localities specifically named in this section. … Arkansas River and tributaries at and above Tulsa, Oklahoma."

2. PRIOR STUDIES AND REPORTS

The following reports were reviewed as part of the reconnaissance phase:

(1) Working Draft, The Kansas Water Plan, Fiscal Year 2002, April 2000. "The Kansas Water Plan is used to coordinate management, conservation, and development of the water resources of the state. The Kansas Water Plan sets out means to achieve the goals identified in the State Water Resources Planning Act (K.S.A. 82.a-901, et.seq.)."

(2) Kansas River and Stream Corridor Management Guide by the Kansas State Conservation Commission, undated, circa 2000. "Kansas streams and riparian areas provide drinking water for humans and livestock, water for irrigation and industry, aquatic and terrestrial habitat, aesthetic values, and recreational areas. River and stream corridor management affects all citizens of the State. This publication is intended to promote responsible use and management of Kansas stream corridors and watersheds." – signed Governor Bill Graves. The publication is an excellent illustrated guide of best management practices.

(3) Non-Point Source Pollution in Butler County: Changes in Mussels Over the Last 20 Years, Bill Langley and Sara Hunter, Butler County Community College. This publication lends supporting information to the idea that non-point source pollution is contributing to reduced stream quality.

(4) Compilation and Review of Completed Restoration and Mitigation Studies in Developing an Evaluation Framework for Environmental Resources, Volume II, by Timothy D. Feather, Donald T. Capan - IWR Report 95-R-4, April 1995.

(5 Compilation and Review of Completed Restoration and Mitigation Studies in Developing an Evaluation Framework for Environmental Resources, Volume II, by Timothy D. Feather, Donald T. Capan - IWR Report 95-R-5, April 1995.

(6) National Review Of Corps Environmental Restoration Projects, by Joy D. Muncy, Dr. J. Craig Fischenich, E. A. Dardeau - IWR Report 96-R-27, Investments Research Program, November 1996. This report provides descriptive information from 52 Corps environmental restoration studies. The report provides information for each project concerning its general location, resource problems being addressed, objective(s), management measures, outputs, and estimated total costs.

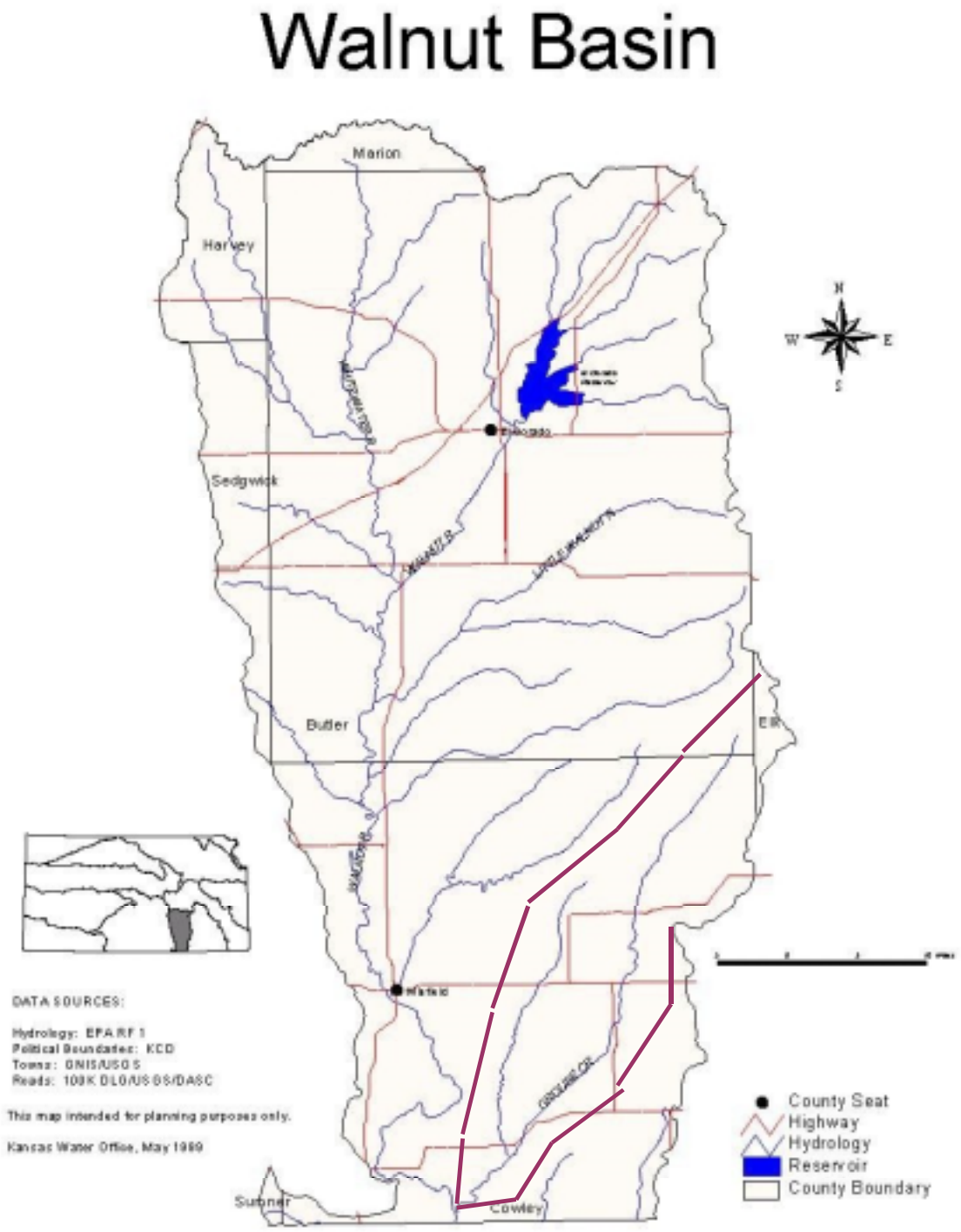
3. STUDY AREA DESCRIPTION

The Walnut River Basin covers about 2,000 square miles in southeastern Kansas. The Walnut River flows from north to south and combines with the Arkansas River at Arkansas City (both pronounced “Ar-KAN-sas”), which flows across the Kansas-Oklahoma State Line within about 10 miles of Arkansas City. The Walnut River Basin covers most of Butler County, about 40% of Cowley County, and small portions of five other counties. The four major tributaries of the Walnut River are Timber Creek (near Winfield), Little Walnut River (near Douglass), Whitewater River (near Augusta), and West Branch Walnut River (near El Dorado). The city of Wichita is located immediately west of the basin. The KWO planning area for the Walnut Basin includes the adjacent Grouse Creek watershed, which has a drainage area of about 380 square miles. The Grouse Creek watershed is located immediately downstream of the Walnut River Basin. The basins are shown on Figure 1-1. The study area is defined to include the Grouse Creek watershed with the Walnut River Basin.

4. STUDY OBJECTIVES AND CONSTRAINTS

The national or Federal objective of water and related land resources planning is to contribute to national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. The maximization of both contributions is the ultimate objective.

Figure 1-1.


Walnut Basin
Marion
Harvey
Sedgwick
Butler
Sumner
Cowley
N
W
E
S
DATA SOURCES:
Hydrology: EPA RF 1
Political Boundaries: KCD
Towns: GNIS/USGS
Roads: 100K DLG/USGS/DASC
This map intended for planning purposes only.
Kansas Water Office, May 1999
County Seat
Highway
Hydrology
Reservoir
County Boundary

a. Contributions to **National Economic Development (NED)** are increases in the net value of the national output of goods and services expressed in monetary units. Contributions to NED are the direct net benefits that accrue in the planning area and the rest of the nation.

b. Contributions to **National Ecosystem Restoration (NER)** are improvements to the nation's ecosystems through preservation and restoration efforts. These contributions are measured by changes in the amount and value of habitat in a system context. The system changes are formulated to improve the potential for long-term survival of aquatic, wetland, and terrestrial complexes as self-regulating, functioning systems. The value of ecosystem restoration outputs shall equal or exceed their cost. Protection measures are included as part of restoration initiatives to prevent future degradation of an ecosystem’s structure and function.

The two national objectives listed above are general statements of emphasis and are not specific enough for plan formulation. The water and related land resource problems and opportunities for this study are stated as more specific objectives to provide focus for the formulation of alternatives. The objectives reflect the problems and opportunities and represent desired positive changes. The general objective of ecosystem restoration is to restore degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition. Restored ecosystems should mimic, as closely as possible, conditions that would occur in the area in the absence of human changes to the landscape and hydrology. Indicators of success include the presence of a large variety of native plants and animals, the ability of the area to sustain larger numbers of certain indicator species or more biologically desirable species, and the ability of the restored area to continue to function and produce desired outputs with a minimum of continuing human intervention. Those restoration opportunities associated with wetlands, riparian, and other floodplain and aquatic systems are most appropriate for Corps involvement. The specific planning objectives are:

a. Restore riparian habitat (including native grass buffer zones) that improves the value and function of the ecosystem.

b. Restore wetlands that improve the value and function of the ecosystem.

c. Restore aquatic riverine habitat that improves the value and function of the ecosystem (including evaluation of low head dams and associated problems and including evaluation of dredging impacts).

d. Preserve riparian habitat (including native grass buffer zones) essential to the value and function of restored habitat (i), (ii), and (iii) above.

e. Preserve wetlands essential to the value and function of restored habitat (i), (ii), and (iii) above.

f. Preserve aquatic habitat essential to the value and function of restored habitat “(iii)” above.

g. Evaluate opportunities to develop recreation in riparian areas.

Whereas the planning objectives represent a desired positive change, planning constraints represent restrictions that should not be violated. If these constraints are not met, mitigating measures must be incorporated. The planning constraints are:

a. Avoid negative impacts to threatened or endangered species.

b. Avoid negative impacts to historic and archaeological features.

c. Avoid negative impacts to wetlands.

d. Avoid negative impacts to bottomland hardwoods.

e. Minimize temporary negative impacts to water quality, particularly turbidity. Avoid long-term impacts.

f. Minimize negative implementation impacts to landowners, agricultural interests, and the auxiliary agricultural, municipal, and industrial infrastructure.

5. STATEMENT OF PROBLEMS AND OPPORTUNITIES

The most significant water resources problems are ecosystem related. Riverine, aquatic, and riparian habitat issues are significant and of primary concern to stakeholders. The KWO identifies the Walnut River Basin in the State Water Plan as a

priority for restoration and identified the Grouse Creek watershed for protection. Degradation of aquatic and terrestrial resources within the Walnut River Basin has resulted in environmental and economic impacts to the State resulting in a significant problem requiring immediate corrective action. Specific impacts are described later in the discussion of existing conditions. One Federal opportunity to address the problem lies within the mission and authorities of the U.S. Army Corps of Engineers. Ecosystem restoration is a primary mission of the Corps of Engineers Civil Works program. Civil Works ecosystem restoration initiatives attempt to return natural areas or ecosystems to a close approximation of their condition prior to disturbance or to less degraded, more natural conditions. The purpose of Civil Works ecosystem restoration activities is to restore significant ecosystem function, structure, and dynamic processes that have been degraded. Protection may be included as part of ecosystem restoration initiatives when such measures involve efforts to prevent future degradation of the ecosystem.

Ecosystem restoration and preservation are currently the only issues under consideration by State resource agencies for potential feasibility studies with the Corps of Engineers. The study team concurs with the State's resource agencies' need assessment. The focus on restoration and preservation does not preclude the recognition of other incidental benefits, such as flood control, water quality, and recreation. Neither does this feasibility study preclude other feasibility studies within the basin.

The study team will follow the processes for "Developing a Restoration Plan and Applying Restoration Principles" as outlined in Chapters 4 through 8 of the report, "Stream Corridor Restoration, Principles, Processes, and Practices," dated October 1998, prepared by The Federal Interagency Stream Restoration Working Group.

The Kansas River and Stream Corridor Management Guide by the Kansas State Conservation Commission, undated, circa 2000, will be used as a guide to best management practices for this geographic area.

6. CONSTRAINTS

The Kansas State legislature cannot commit funds beyond their current fiscal year. The Kansas fiscal year starts July 1. The Kansas Water Office will only implement ecosystem

restoration or preservation measures with the willing cooperation of landowners.

7. EXISTING CONDITIONS

Undisturbed riparian habitat once existed in broad and continuous bands along both banks of over 600 primary watercourse miles within the basin. Riparian habitat has significantly decreased from the limits of the floodplain and losses are still occurring. The result is both a drastic reduction in area and a major reduction in ecological system viability due to fragmentation. Estimates from a Congressional study completed in 1989 document a loss of over 400,000 acres (633 square miles) of wetlands in Kansas between 1780 and 1989. This staggering loss amounts to 50% of the state wetland resource. The Walnut River Basin loss is judged by the study team to be similar in proportion.

The quality of riverine aquatic habitat is also declining due to the loss of wetlands and other direct in-stream impacts. Livestock grazing in and near riparian zones is responsible for significant impacts to stream quality related to increased nutrients, increased sediment (due to vegetation loss), and elevated bacteria levels (including fecal coliforms). In-stream gravel mining is responsible for altering stream flow and degrading habitat conditions. These and other “development” impacts have significantly altered and diminished the stream quality.

Contributors to ecosystem conditions include conversion of bottomland habitat to agriculture; grazing of riparian zones; and non-point source contributions to sediment load; turbidity; pesticides; nitrates; bridges; utility crossings; and in-stream commercial sand and gravel operations. One result of conversion to agriculture is the loss of native grass buffer zones along watercourses.

The loss of riparian wetlands means the urban and rural runoff that was previously “filtered naturally” before entering a watercourse now enters the stream directly. All the sediment and chemicals carried in the runoff are dumped into the stream. Because the wetlands no longer slow runoff, stream discharges accumulate faster which can increase flood stages. The loss of wetland habitat impacts the self-regulating capacity of the ecosystem. Losses in the Grouse Creek watershed are not as significant; therefore, the potential for preservation is high.

Urbanization, including suburban sprawl, causes faster and greater volume of runoff and increases in-stream contaminants such as phosphates and pesticides. The Kansas Department of Health and Environment, Division of Environment report, entitled "2000 Kansas Water Quality Assessment (305(B) Report)", dated March 31, 2000, tabulates total stream mileage impaired by various source categories. Over 50% of total impacts are directly attributable to non-point source agricultural operations. Less than 10% of the total impaired stream miles result from point source discharges. Solutions in the reconnaissance study were not formulated with the intent of mitigating point source impacts.

The Walnut River and Grouse Creek historically drained a landscape dominated by tallgrass prairie. Forest and marshland were largely confined to the floodplains along the lower and middle reaches of these streams and their larger tributaries, whereas savanna and grassland often comprised the principal riparian habitat in the upper reaches of the watershed. Dominant grasses in the watershed included big and little bluestem, switchgrass, and Indiangrass, but many other herbaceous plants (grasses, sedges, and forbs) thrived within the basin. The dominant trees along the lower, forested reaches of the Walnut River and Grouse Creek included cottonwood, elm, green ash, hackberry, and burr oak. Other common woody plants included Walnut, sycamore, locust, Kentucky coffeetree, pecan, box elder, willow, American plum, rough-leaved dogwood, redbud, buckbush, grape, green briar, Virginia creeper, poison ivy, and Euonymus (Küchler 1974; Bailey 1976; McGregor et al. 1986; Chapman et al. 2001).

The eastern half of the Walnut Basin and virtually all the Grouse Creek Basin are situated in the Flint Hills. This region remains largely dominated by native tallgrass vegetation although some row crop production occurs in the stream bottoms. The western portion of the Walnut Basin drains the Wellington-McPherson Lowland. This region possesses deeper and more fertile soils than the adjacent Flint Hills and has been converted largely to cropland use. The loss of native grassland and concomitant suppression of wildfire has encouraged the establishment of gallery forests along many western tributaries. In contrast, some bottomland forest along the Walnut River and Grouse Creek has been cleared for crop production, and most of the remaining forest has been selectively logged for more valuable timber such as walnut and oak (Bailey 1976; Bailey et al. 1994; Chapman et al. 2001).

References

Bailey, R.G., 1976. Ecoregions of the United States. 1:7,500,000 scale map. U.S. Department of Agriculture, Forest Service, Ogden, Utah.

Bailey, R.G., P.E. Avers, T. King, and W.H. McNab, eds. 1994. Ecoregions and subregions of the United States. 1:7,500,000 scale map. U.S. Department of Agriculture, Forest Service, Washington, D.C.

Chapman, S.S., J.M. Omernik, J.A. Freeouf, D.G. Huggins, J.R. McCauley, C.C. Freeman, G. Steinauer, R.T. Angelo, and R.L. Schlepp. 2001.

Ecoregions of Nebraska and Kansas. Color poster with 1:1,950,000 scale map, descriptive text, summary tables, and photographs. U.S. Geological Survey, Reston, Virginia.

Küchler, A.W. 1974. A new vegetation map of Kansas. Ecology 55(3):586-604.

McGregor, R.L., T.M. Barkley, R.E. Brooks, and E.K. Schofield, eds. 1986. Flora of the Great Plains. University Press of Kansas, Lawrence, Kansas.

Numerous faunal species occupy the riparian habitat. Taxa reported for the area include 10 species of amphibians, 42 species of reptiles, 266 species of birds, and 49 species of mammals. Characteristic species include spadefoot toad, ringneck snake, hognose snake, coachwhip, copperhead, green heron, turkey vulture, barred owl, chuck-will's widow, cardinal, opossum, cottontail rabbit, fox squirrel, coyote, raccoon, striped skunk, turkey, and deer.

The overall quality of the aquatic habitat in the basin varies from poor to good depending upon water level and turbidity. Stream segments with a rocky bottom with a rocky substrate and intermittent pools and riffles provide habitat for a diverse aquatic population. Hard streams with a shifting substrate of sand and silt as well as frequent water level fluctuations prevent the establishment of a more diverse aquatic community. Aquatic species include 51 species of fish. Characteristic species include channel catfish, flathead catfish, largemouth bass, carp, sunfish, bullfrog, snapping turtle, painted turtle, and various species of minnows and darters. Samples from the Walnut River and tributaries have

produced about 54 taxonomic categories of benthic macro invertebrates. Loss of riparian timber that shaded streams has resulted in higher water temperatures, which also significantly impact the aquatic ecosystem.

8. FUTURE WITHOUT-PROJECT CONDITIONS

Ecological damages will continue at or slightly below historic rates in the absence of joint Federal and State cooperation and implementation of ecosystem restoration. Current and projected damages will be accompanied by economic consequences. Impacts will continue for a number of years before sufficient public commitment to minimize further impacts and restoration efforts are realized. Valuable habitat will continue to be lost while public understanding of its value gradually improves. If restoration is deferred until the future, costs will be compounded by interim foregone National Economic Development (NED) and National Ecosystem Restoration (NER) benefits. In the absence of near term ecosystem restoration, a limited array of punitive and/or regulatory opportunities will be available to stakeholders to resolve riverine and riparian ecological problems in the future. The potential costs and implications of non-ecosystem institutional approaches will be developed for comparison to the “action” alternatives described next.

9. ALTERNATIVES TO CONSIDER DURING FEASIBILITY

The Corps is required to consider "No Action" as one of the alternatives to comply with requirements of the National Environmental Policy Act (NEPA). No Action is the condition reasonably expected to prevail over the period of analysis, given current conditions and trends, and assuming that no project would be implemented by the Federal Government to achieve the planning objectives. No Action, which is synonymous with the "Future Without-Project Condition," forms the basis from which all other alternative plans are measured.

The Section 905(b) analysis recommended that the planning effort continue into the feasibility phase. As a part of the reconnaissance study, both structural and nonstructural measures were considered as ways to provide ecosystem restoration improvements in the Walnut River Basin. Through agreement with the Kansas Water Office, only nonstructural measures will be studied in the feasibility phase.

Those measures described in the Kansas River and Stream Corridor Management Guide by the Kansas State Conservation Commission, undated, circa 2000, will be examined individually and in combination. The purpose is to find an alternative that most effectively achieves the study goals, works best within the constraints, and minimizes costs. In the case of this basin study, the alternative will most likely be a phased program of implementation over several years. Within that program, and based on costs and need, priorities will be established that result in certain measures being implemented first at certain locations within the basin. These priorities are inherent due to fiscal and other resource limitation realities. The overall program is essential to minimize total costs and to achieve maximum results.

The impacts of cattle grazing and in-stream gravel mining will be examined. Opportunities to modify these practices and provide economic incentives through alternative management methods will be examined.

Potential economic opportunities of improved riparian corridors will be examined.

SECTION 2. RESOURCE ALLOCATION

The work effort for the proposed project has been developed through coordination with the resource elements involved in the project. The responsibility of the Project Manager (PM) is management and leadership of the project throughout its life cycle. The Sponsor's Manager at the Kansas Water Office will provide a central point of contact between the Corps and state resources and will coordinate state resources. The project delivery team PDT is composed of Corps and State resource members and is responsible and accountable for delivering a quality project. The Study Manager in Planning, Environmental, and Regulatory Division provides supervision and coordination of formulation, public involvement, and report production. The functional managers and state agency staff provide technical resources for the study team and must maintain the schedule and costs of their technical resources to meet overall study objectives. The Corps and State technical managers provide quality assurance of contracted products or services provided through their area of expertise, as described in the Quality Assurance Plan. The Corps technical managers ensure that independent technical reviews are utilized to provide quality control of all products. Independent technical review is an inherent process in every technical tasks **throughout** the conduct of each phase of effort. (Technical review started at the end of work phases is not the intent.) The Quality Control Plan for this study is included as Section 7 of this Project Management Plan. The resources needed for this project are briefly described below by functional area. Additional Federal, State, and local groups may participate in the study, but these efforts are not currently estimated in the study costs.

1. FEDERAL GOVERNMENT – CORPS OF ENGINEERS

The Corps' resource organizations are described below. In the project network analysis software (NAS), the spreadsheet view shows the resource allocation of Corps or KWO in-kind or both. The notes in the NAS describe the tasks and the resource allocation and may indicate specific team members, as necessary.

a. Programs and Project Management Division.

(1) Civil Works Branch (PP-C). The PM typically resides in the Civil Works Branch and provides overall management and leadership of the project. For this study, the PM is assigned outside the Programs and Project Management Division. The Study Manager will also fulfill the PM

responsibilities. The PM is responsible and accountable for successful completion and delivery of the project to the customer within established costs, schedules, and quality parameters. The PM assures that the customer's interests are properly represented within the U.S. Army Corps of Engineers and serves as the primary point of contact between the customer and the Corps.

b. Planning, Environmental, and Regulatory Division.

(1) Planning Branch, Plan Formulation and Evaluation Sections (PE-PF and PE-PE). Plan Formulation Section provides the Study Manager who coordinates preparation of the technical data and provides plan formulation to identify a selected plan. Planning Branch prepares the study document, the feasibility report. The economist and the social scientist in the Evaluation Section assess project impacts and benefits and compare them to project costs to check the condition of Federal interest where benefits must exceed costs. The comparison is made for economic values amortized over the project's economic life. The social scientist also directs public involvement activities.

(2) Environmental Analysis and Compliance Branch (PE-E). Provide technical expertise for the study with respect to environmental elements, field studies, and investigations. The Environmental Analysis and Compliance Branch prepares the environmental documents needed for the selected plan. They also coordinate with the U.S. Fish and Wildlife Service (USFWS) for the Service's Coordination Act Report. In conjunction with the Service, they develop a mitigation plan to offset the project's impact on environmental and cultural resources (if required). The archeologist in this branch evaluates impacts to cultural/ historic resources. Other technical staff in the branch determines the potential for hazardous and toxic waste materials within the study area.

(3) Regulatory Branch (PE-R). As part of environmental compliance, the Regulatory Branch provides guidance in accordance with Section 404 of the Clean Water Act and Section 401 water quality certification. Depending on the project scope, the Regulatory Project Manager will issue a nationwide permit or prepare an application for an individual permit on behalf of the applicant. After the designated comment period, a Section 404 permit for the project will be issued, with permit conditions stated.

c. Contracting Division.

(1) Civil Contracts Branch (CT-C). This branch administers and provides any professional services contracts that would be needed on the project that is not fulfilled by Corps or Sponsor labor resources.

d. Engineering and Construction Division.

(1) Civil Design Section (EC-DC). This group provides feature design of alternative measures and the selected plan (in detail), prepares quantity estimates, determines necessary utility relocations, and prepares signed engineering drawings. They prepare right-of-way drawings to show acquisition areas needed for the project, whether in fee or easement. Drawings and other information regarding real estate requirements are shared with Real Estate Division to obtain acquisition cost estimates.

(2) Geotechnical Engineering and Dam Safety Section (EC-DD). This group coordinates soil investigations and soils testing that may be needed for design of the selected plan. The work for this study will most likely be performed by contract. This group will provide the typical design sections. They will also obtain necessary field survey information to verify field conditions for preparation of detailed plans.

(3) Cost Engineering Section (EC-DA). This group prepares the detailed cost estimate (M-CACES format) from the materials quantities, and includes the real estate estimate to determine the project implementation cost of the selected plan. The cost estimate incorporates real estate costs. This estimate is provided to the economist to develop interest during construction and an amortized cost.

(4) Hydrology and Hydraulics (H&H) Branch (EC-HA). H&H Branch provides the hydrologic and hydraulic data needed to determine the design criteria of the selected plan. They determine the existing and modified hydrologic conditions within the study area and help identify alternative plans. They provide data to the economist in Planning Branch to determine the economic benefits of proposed plan features such as flood control damage reduction.

e. Real Estate Division.

Real Estate Division (RE) provides an estimate of the values of the lands, easements, rights-of-way or disposal areas, associated administrative costs, and contingencies. The estimate is provided to Cost Engineering Branch for inclusion in the total implementation cost estimate.

f. Office of Counsel.

The Office of Counsel (OC) provides guidance as needed throughout the study. It provides review compliance with the NEPA and legal reviews of draft and final Project Cooperation Agreements prior to construction. This office also provides the preliminary legal opinion of whether a facility or utility being acquired for the project is due compensation.

g. Public Affairs Office.

The Public Affairs Office (PAO) provides assistance with media and community relations activities needed to keep the public informed of study activities.

h. Operations Division.

Operations Division (OD) provides a review of the proposed project to determine the costs of operation and maintenance, including rehabilitation, repair, and replacement of features.

i. Southwestern Division (SWD) and Headquarters (HQUSACE).

SWD provides quality assurance and HQUSACE provides policy guidance on project specific issues. HQUSACE will prepare the Chief of Engineers report signifying approval of the report recommendation. The Assistant Secretary of the Army for Civil Works reviews the report and requests the Office of Management and Budget (OMB) to review it for compliance with the President’s program. With approval of the OMB, the report can be released to Congress for authorization and funding.

2. LOCAL SPONSOR – KANSAS WATER OFFICE

The Kansas Water Office is the cost-sharing partner on the project. As the local sponsor, the KWO agrees to the terms of the Feasibility Cost-Sharing Agreement. They will provide a combination of in-kind services and cash contributions, which is

their 50% share of the total feasibility study cost. In-kind services are valued at the actual labor cost plus associated overhead for the individual team members. A final audit will verify the Federal and Sponsor shares. Because there is a large resource pool from several State environmental resource agencies and other State offices, the sponsor has the opportunity to apply adaptive management practices during the feasibility study in the assignment and accomplishment of in-kind services. Therefore, participating offices will be identified below and primary team members will be identified in the description of team members. But, the presentation of the study Gantt chart will only indicate KWO for resources. Accounting of in-kind services, of course, will identify specific individuals, their agency, and appropriate time and cost information.

a. Kansas Water Office (KWO). The KWO is the local sponsor. Their study team leader will participate on the Study Management Team to keep the Executive Committee informed of the progress of study activities.

b. Kansas Department of Wildlife and Parks (KDWP). Agency staff will provide technical assistance in biological assessment work in various areas of the basin and local assistance through the Riparian and Wetland Easement Program and the Wildlife Habitat Improvement Program. The agency may also provide information on potential riparian hiking, biking, and horse trails, and recreation areas. The KDWP will also assist in identifying economic incentives related to riparian corridors.

c. State Conservation Commission (SCC). Agency staff will provide technical assistance in restoration and preservation project design; local assistance through the Riparian and Wetland Protection Program, and the Water Quality Buffer Initiative Program. The SCC has a good link with the county conservation districts and provides local cost-share assistance through the Water Resource Cost-Share Program and the Non-Point Source Pollution Control Fund. The SCC also works with watershed districts and provides assistance through its Watershed Planning Assistance Program, which helps in development of general plans and rehabilitation projects. The SCC also has a Stream Rehabilitation Program to stabilize and restore channelized streams. Much of the money for these programs comes from State water plan funds, and some might be shifted to the Walnut project. Some of this work, especially the restoration design, can be used for in-kind.

d. **Kansas Corporation Commission (KCC).** The KCC will be involved, along with the Kansas Department of Health and Environment (KDHE), for oil and gas well regulation. There is a potential to identify abandoned oil wells during field investigations and during implementation. While this study will not seek to remedy point source problems, there is an opportunity to share information to the mutual benefit of the KCC, KDHE, KWO, and the Corps.

e. Kansas Department of Agriculture (KDA). The KDA will be involved in any project that alters the "course, current, or cross section" of a stream under their Stream Obstruction Program responsibilities. They can facilitate State permits for implementation, and will provide in-kind technical assistance and review of plans.

f. Kansas Geological Survey (KGS). The KGS can provide maps and geo-hydrological data and can also provide technical assistance.

g. Kansas State Historical Society (KSHS). The KSHS will provide information of sites of known historical significance in the proposed demo areas to avoid violation of historic preservation laws.

h. Kansas Department of Transportation (KDOT). The KDOT, in conjunction with the KDWP, will provide information as to potential site locations and available funding for transportation related hiking and biking trails.

i. Kansas Department of Health and Environment (KDHE). The KDHE is responsible for stream monitoring and lake monitoring data. The KDHE staff will coordinate on TMDL issues and needs. TMDL development in the Walnut Basin is scheduled to start this year. The Environmental Remediation Bureau can provide listings and locations of waste sites. Non-Point Source Section has individuals who can contribute to project design and implementation plans.

j. **Kansas Forest Service (KFS).** KFS staff will provide technical assistance and advice in preferable tree species and materials for various areas of the State. The KFS will help in identifying economic incentives related to riparian hardwoods. They will provide local assistance through the Forest Stewardship Program, Community Forestry Program, and Conservation Tree Planting Program. The KFS are potential participants in operation and maintenance of riparian buffers.

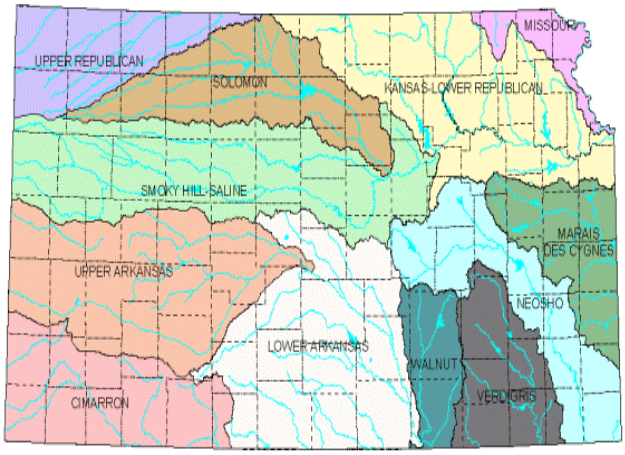
3. ADDITIONAL PARTICIPANTS

a. U.S. Fish and Wildlife Service (USFWS). The USFWS will participate in the evaluation and design of restoration measures and will assist through the NEPA Coordination Act Report process.

b. Watershed Districts.

c. Walnut River Basin Advisory Committee. Basin advisory committees provide advice to the Kansas Water Office and the Kansas Water Authority regarding formulation and revision of the Kansas Water Plan, its implementation, and other matters. Committees represent each of the 12 major river basins in the state and are comprised of 11 members. New members are nominated by the present membership, subject to confirmation by the Kansas Water Authority. Members must reside in the basin in which they serve and serve voluntary 4-year terms without compensation.

MAJOR RIVER BASINS IN KANSAS



Kansas Water Office, July 1999
This map intended for planning purposes only.

Basin advisory committee members represent one of five water user categories.

Domestic Users - To be represented by anyone that uses water for cooking, cleaning, sanitation, and other purposes normally associated with operation of a household, including use by industries, restaurants, hotels, motels, churches, camps, schools, or similar entities using water for household purposes.

Municipal Users - To be represented by an employee, elected, or other appointed official of a city that operates a public water supply system as defined by K.S.A. 65-162a, and amendments thereto, or by a consulting engineer that focuses on municipal public water supply issues.

Other Public Water Supply Users - To be represented by an employee, elected, or other appointed official of a city that operates a public water supply system as defined by K.S.A. 65-162a, and amendments thereto, including a rural water district, water district, public wholesale water supply district, or other similar entity, but excluding a municipality.

Industrial - To be represented by an individual or an employee of a business that uses water in manufacturing, production, transport or storage of products or in providing commercial services, including use in connection with steam electric power plants, secondary and tertiary oil recovery, air conditioning and aggregate extraction including hydraulic dredging, or water used for stock watering of over 100 head.

Irrigation - To be represented by an individual that uses water for the production of crops; the watering of parks and golf courses; and the watering of gardens, orchards, and lawns exceeding 2 acres in area.

Fish, Wildlife, and Recreation - To be represented by an individual that uses water “in-stream” for entertainment, enjoyment, and relaxation, including management and protection of aquatic and riparian resources for habitat and other environmental benefits, or by an individual with expertise on these issues, as exhibited by employment or education

SECTION 3. RESPONSIBILITY ASSIGNMENT MATRIX

1. ORGANIZATIONAL BREAKDOWN STRUCTURE

The Organizational Breakdown Structure (OBS) identifies the organizations that work on each study task. The association of organizational elements to individual tasks is presented in the spreadsheet portion of the Gantt chart. The Gantt chart is a powerful management tool and will be more frequently updated than any other PMP component. Resource assignments are shown in the NAS, including task-resource relationships, duration, start and finish dates, and cost allocation estimates.

Organizational Breakdown Structure

Resource	Technical Element/Description
Corps (CESWT-)	
PP-C	Programs and Project Management – Civil Works Branch
PE-PF PE-PE	Planning, Environmental and Regulatory (PER) Division – Formulation Section and Evaluation Section
PE-E	PER Division - Environmental Analysis and Compliance Branch
PE-R	PER Division - Regulatory Branch
PA	Public Affairs Office
EC-D	Engineering and Construction (E&C) Division – Design Branch
EC-H	E&C Division - Hydrology and Hydraulics Branch
OD	Operations Division
OC	Office of Counsel
RE	Real Estate Division
KWO	Kansas Water Office (in-kind services)
USFWS	U.S. Fish and Wildlife Service

SECTION 4. SCOPE OF STUDIES

1. INTRODUCTION

This section of the PMP describes the categories of work to be accomplished. The work required for this study primarily consists of detailed technical studies, field investigations, and study management activities to identify ecosystem restoration opportunities in the Walnut River Basin. The study results will be compiled in a feasibility report, which will include an Environmental Assessment (EA), supporting appendices, and an engineering appendix.

The feasibility report will describe the problems identified; plans formulated; engineering, economic, social, and environmental feasibility of each alternative; and the constraints and impacts. It will include the design and costs and the benefits and impacts of the recommended plan. The work follows the guidelines set forth in the Planning Guidance Notebook, ER 1105-2-100, dated April 22, 2000, and associated Corps of Engineers regulations and guidance.

2. BASIC REQUIREMENTS

The work to be performed will be split into informal phases with built-in checkpoints that allow the sponsor to evaluate their willingness to continue the feasibility study and the appropriateness of the Federal government to continuing. These checkpoints occur at every meeting scheduled in the NAS and as requested by the sponsor or the Corps in addition to scheduled meetings.

The work to be performed consists of:

- Evaluating ecosystem losses and needs,
- Developing alternatives to provide ecosystem restoration,
- Evaluating the alternatives to determine which plan will result in the greatest NER benefits through use of an incremental analysis, and
- Selecting a recommended plan of action.

We will be following the processes for Developing a Restoration Plan and Applying Restoration Principles as outlined in Chapters 4 through 8 of the report entitled “Stream Corridor Restoration, Principles, Processes, and Practices,” dated October 1998, prepared by The Federal Interagency Stream Restoration Working Group. This process incorporates the Corps’ “Six Step Process”. Detailed evaluation of outputs and costs will use the cost

effectiveness analysis and incremental cost analysis approach. The Institute for Water Resources IWR-PLAN software will be used in the analysis.

3. PLAN FORMULATION

The Study Manager from the District's Planning, Environmental, and Regulatory Division will coordinate the plan formulation process with involvement and assistance of the coordinator from the local sponsor. Management of the plan formulation effort includes such activities as planning team meetings, upward reporting, preparing study management documents, coordinating with the local sponsor and other agencies, and integrating technical investigations. The District planner will summarize the results of the technical studies leading to plan selection in the plan formulation section of the feasibility report. The report will document the alternative formulation, evaluation, and selection process used to identify cost effective plans, best buy plans, and the tentatively selected plan.

The feasibility study follows the six-step planning process specified in the Planning Guidance Notebook, ER 1105-2-100. Generally the process is: (1) identify the problems and opportunities; (2) describe existing and future without-project conditions; (3) formulate alternative plans that address planning objectives; (4) evaluate the alternatives against specified criteria, (5) compare alternative plans, and (6) select a plan for recommendation.

Screening of the alternatives is an iterative process. A preliminary set of alternatives is identified. Conceptual design, cost estimates, and preliminary ecosystem restoration benefit analysis are determined. This information, plus information obtained from the local sponsor and the interested public, is used to screen the alternatives to a final set which is then subject to detailed evaluation. Alternatives are evaluated in a risk-based framework as specified in ER 1105-2-100. Cost Effectiveness Analysis and Incremental Cost Analyses (CEA/ICA) are performed to compare the alternatives and determine the NER plan. IWR-PLAN will be used to conduct CEA/ICA. IWR-PLAN assists with plan formulation by combining user-defined solutions to planning problems and calculating the effects of each combination, or "plan." The program can assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are best financial investments and displaying the effects of each on a

range of decision variables. The locally preferred plan will also be evaluated if it differs from the NER plan. Annual and periodic activities for operating and maintaining the completed project are also described in the final report. This includes environmental mitigation, if required; however, mitigation should not be necessary for an ecosystem restoration plan.

4. HYDROLOGY AND HYDRAULIC STUDIES

The Hydrology & Hydraulic (H&H) activities will provide dependable yields of proposed reservoirs and will evaluate the availability of water in the Walnut River Basin for implementing any of the alternatives considered in the feasibility study.

a. An existing hydrologic model of the Walnut River Basin will be updated using the Corps of Engineers computer program Watershed Modeling System (WMS), version 6.0. As base data, 7.5-minute series U.S. Geological Survey Digital Elevation Models (DEM's) will be used for determining all basin parameters, such as drainage areas, basin centroids, lengths, slopes, etc. The Walnut River Basin will be subdivided into smaller subbasins to model flows into and out of proposed reservoir sites.

b. Rainfall and evaporation data to be used in the water accounting process will be developed from available NOAA precipitation stations located within and adjacent to the Walnut River Basin. Rainfall and evaporation data will be put into the format needed for the Corps of Engineers' WSROUT computer program.

c. The H&H Branch will provide support for all GIS activities. Included will be development of a basin map with all proposed dam sites, roads, highways, railroads, rivers and streams, and other pertinent information.

d. Field reconnaissance visits of the Walnut River Basin will be conducted during the course of the study to verify data and confirm potential restoration measure applicability and specific locals.

e. A section of the Engineering Appendix will be prepared documenting the methodology and results of the hydrologic and hydraulic analysis. The H&H Branch will provide supporting graphics, plates, tables, and figures to adequately describe the study process, methodologies, results, and conclusions.

f. Changes to time of peak flow, flood hydrograph volume, and flood discharges resulting from proposed implementation measures will be determined.

g. Stream channel velocities will be estimated to support design of aquatic structures and terrestrial corridor protection.

h. An independent technical review will also be undertaken of all hydrologic and hydraulic computations, assumptions, procedures, and methodologies.

5. SURVEYS AND GEOTECHNICAL STUDIES

This task will provide essential information necessary to complete engineering analysis and design.

a. Surveys. Field surveys may consist of cross sectional surveys across the creeks and any other surveys needed to accurately locate specific topographic features or structures that could impact the study. The Study Team may also consider it necessary to establish first floor elevations (surveys) of structures within the floodplain on a limited basis where these structures may be impacted by proposed restoration measures that may have an individual or cumulative relationship to flood damage reduction.

b. Geotechnical Studies. These studies will consist of obtaining soil samples along the streams, as necessary; analyzing those samples; and incorporating the laboratory tests results into a report to be included as an appendix to the feasibility report. Existing soil classifications may be suitable for restoration measure design.

6. ENGINEERING AND DESIGN ANALYSIS, COST ESTIMATES, AND PRELIMINARY DRAWINGS

This task includes preparing conceptual and detailed designs for ecosystem restoration features. Preliminary designs will be prepared for the project alternatives using a level of detail sufficient to screen the alternatives.

a. A site plan will be developed for all restoration measures and will show relationships to floodplain structures, access roads, utilities, etc. Currently available topographic information will be utilized unless it is evident that material quantities cannot be estimated within plus or minus 20% of their

probable actual values. If this occurs, additional survey information in the form of a topographic survey will be obtained, consistent with site conditions, to develop details of the structural features necessary for each alternative plan (typical sections or drainage structure profiles), so that all major costs relative to the project may be determined within an acceptable accuracy. The designs prepared shall be in sufficient detail to develop cost estimates that meet Corps of Engineers report standards.

b. Detailed engineering design of the NER plan will be described in a Design Appendix in the feasibility report. The associated drawings will present a plan of the overall project; plan and profiles; and typical sections of features, along with any other pertinent details such that the engineering concepts and considerations are readily apparent.

c. Cost estimates of construction, preparation of plans and specifications, and construction management shall be prepared for each of the alternative plans. Quantity estimates of materials will be prepared to allow a reasonable estimate of construction costs. Unit costs will be current average unit costs of materials. Minor features may be estimated on a lump sum basis after determining the size of the feature and comparing costs of similar features. The detailed cost estimates will be included in the Design Appendix.

d. When the project costs are determined, the economist will develop average annual costs for each alternative using the current Federal interest rate. Interest accruing during construction will be determined and added to the project cost. The total project investment will then be amortized over a 50-year period of analysis, using the discount rate specified by the Corps of Engineers at the time of calculation. An annual cost of operation and maintenance and any major replacements will be determined and added to the amortized value. All operation, maintenance, and major replacement costs are the responsibility of the local sponsor.

7. SOCIOECONOMIC STUDIES AND ANALYSIS

The existing social, economic, and demographic conditions for the project area are documented in the feasibility report. The with- and without-project conditions are described. The without-project condition would reflect actions that may be taken in the absence of a Federal project. Social impacts on the region, communities, and groups within the project’s area of

influence will be evaluated. Socioeconomic impacts considered include income distribution; employment distribution; population distribution and composition; fiscal condition of the State and local governments; quality of community life; life, health, and safety factors; displacements; long-term productivity; energy requirements; and energy conservation. Impacts to minorities and low-income groups are also evaluated and incorporated into the environmental justice analysis in the NEPA document. The social and economic impacts of the proposed modifications and mitigation measures are evaluated, and any impacts on the environment from the proposed project that can be translated to economic and social losses or gains are identified and evaluated.

The benefits of the environmental restoration features will be determined and included in the benefits analysis. Cost Effectiveness and Incremental Cost Analyses will be used to determine which alternative provides the greatest NER benefits.

A narrative report of the socioeconomic impacts and environmental restoration benefits evaluation will be prepared and included as an appendix in the report. The calculable benefits will be discussed in the report supported by descriptions of the methodology of analysis and surveys conducted, documentation of the source of material, and a display of the results of the analyses. Supporting studies will be included.

8. FINANCIAL ANALYSIS

The non-Federal sponsor will provide a Statement of Financial Capability and a financing plan for supporting its share of the proposed project recommended as a result of the study. The Statement of Financial Capability will provide evidence of the sponsor's authority to utilize the identified source(s) of funds and its capability to obtain remaining funds, if any are required. This will require evidence that sufficient funds are currently available or that the sponsor has a large revenue base and a good bond rating.

The financing plan will include a current schedule of estimated Federal and non-Federal costs by fiscal year; a schedule of the sources and use of non-Federal funds during and after construction by fiscal year; and the method of finance for all non-Federal outlays, including OMRR&R associated with the project.

The financial analysis will provide data and information that demonstrates that the sponsor is credit worthy. If the sponsor is relying on non-guaranteed debt to obtain remaining funds, the analysis will include data and information to demonstrate that the projected revenues are reasonably certain and sufficient to cover the sponsor's stream of costs through time.

The District Commander will assess the non-Federal sponsor's financial capability in accordance with EC 1105-2-180, dated 29 January 1988, which provides procedures and responsibilities for financial analysis in support of construction recommendations. The assessment will demonstrate that: 1) the sponsor has adequate funds to meet its financial obligations as delineated by the project funding schedule provided by the Corps; 2) the reliability of the sources of funds has been demonstrated; 3) the sponsor has full and legal access to those funds; and 4) all parties providing funding essential to meeting the sponsor’s financial obligation are legally committed to providing those funds.

9. REAL ESTATE SUPPLEMENT

In accordance with ER 405-1-12, Chapter 12, a Real Estate Supplement (RES) that outlines the minimum real estate requirement for the proposed project will be prepared as an appendix to the feasibility report. The RES will provide a description of the area; the acreage and proposed estates; a discussion of any land owned by State, Federal, or local public entity or the sponsor; an estimate of the relocation assistance required under Public Law 91-646; the M-CACES cost estimate for real estate; a discussion of the local sponsor’s ability to acquire Lands, Easements, Rights-of-Way, Relocations and Disposal area (LERRD’s); a discussion of mineral activity if any; a schedule of land acquisition; a preliminary assessment of the facilities or utilities to be relocated; and any other real estate information relevant to the project. At the request of the Real Estate Division, the District legal counsel will prepare the Opinion of Compensability regarding utilities being relocated.

The Real Estate Division will prepare a gross appraisal of land requirements in accordance with the Real Estate Handbook (ER 405-1-12). The appraisal foundation will be based on the necessary estates to be acquired, i.e., fee or type of easement. Data will be collected on the local real estate market regarding recent sales and offers for sale of improved and unimproved

properties comparable to the right-of-way required for alternative plans. Research will involve searching deed records and contacting local appraisers, brokers, attorneys, central appraisal districts, and others knowledgeable of the local real estate market. This market information will be the basis for the values of the various types of properties within the proposed project.

The Real Estate Division, in coordination with the local sponsor, will obtain right-of-entry permits for activities that require entry onto private property. Representatives will also attend meetings with the study team or sponsor when necessary.

10. RESTORATION MEASURE DESIGN

A technical group, termed the Restoration Measure Design (RMD) Team, will develop restoration measure designs. The RMD Team is a subset of the project delivery team. This team will be responsible for field evaluations, site specific composition of best management practices in three levels of scope, assessment of existing and with-project habitat values, development of quantities for implementation of measures, and definition of operation and maintenance requirements. The RMD Team will receive general guidance from the full study team prior to initiating field evaluations. The RMD Team will review their field evaluations and measure designs with the full study team. The Corps's lead biologist will coordinate the activities of the RMD Team. The full study team will be responsible for selecting the recommended level of development and implementation priorities.

11. ENVIRONMENTAL STUDIES AND ENVIRONMENTAL ASSESSMENT (EA)

Environmental studies will include all activities necessary to comply with the NEPA and all applicable environmental laws and regulations. The Tulsa District will produce an Environmental Assessment (EA) with the assistance of the sponsor and contractors, as required.

Public involvement will include interagency coordination between the Tulsa District, Federal and State natural resource agencies; environmental, watershed, and community groups; and interested parties. Meetings will be held to discuss data collection needs, alternatives, and environmental concerns. Newsletters, fact sheets, and/or individually written letters will be generated to keep interested parties updated on the status of the project. Public involvement activities will

include public meetings/workshops and interagency meetings. Coordination with State, Federal, and local agencies will be initiated immediately and maintained throughout the NEPA process. The Public Involvement Team will conduct all NEPA public involvement and implement the community relation plan.

Environmental impacts associated with construction and operation of the project will be discussed and addressed in the EA in accordance with 40 CFR Part 1502.2. Categories of impacts to be addressed include air quality, riparian vegetation, faunal communities, floodplains and wetlands, wild and scenic rivers, water supply, threatened and/or endangered species, soils, agriculture, cultural resources, economic impacts, and cumulative impacts.

All functional elements of the District and the KWO will be involved with determining impacts. Planning, Environmental, and Regulatory Division is the lead element for this activity.

Coordination with the U.S. Fish and Wildlife Service (USFWS) and the Kansas Department of Wildlife and Parks (KDWP) will be accomplished in accordance with the Fish and Wildlife Coordination Act of 1958. Study funds will be made available to the USFWS in accordance with the Act for justified fish and wildlife studies. Additional coordination with the USFWS will be required for threatened and endangered species in accordance with the Endangered Species Act of 1973. (The Service does not use District funds for Threatened and Endangered Species studies or for Section 7 consultation.) Coordination with natural resource agencies will be the responsibility of Planning, Environmental, and Regulatory Division. Support from other Tulsa District functional elements will also be required.

A USFWS Coordination Act Report (CAR) will be furnished by the USFWS for inclusion in the EA. A detailed evaluation will be conducted of possible actions that would offset unavoidable impacts associated with the project. Planning, Environmental, and Regulatory Division will be responsible for funding all USFWS activities, report review, and dissemination of information to the natural resource agencies.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires Federal agencies or project sponsors seeking Federal funding and/or permits to conduct cultural resource surveys to locate, identify, and evaluate historic properties in advance of approving an undertaking. Cultural resource surveys and evaluations of effects of undertakings on

historic properties will be performed in consultation with the State Historic Preservation Office (SHPO) and affected Native American tribes. Because the scope of the study is large, no detailed surface or subsurface investigations will be performed. Recommended plans of development will include contingencies, negotiated with the SHPO, to conduct surface investigations during real estate appraisals prior to implementation, and adaptive management will address potential impacts prior to physical implementation.

After completion of the Draft EA and public review and comment period, Planning, Environmental, and Regulatory Division will respond to review comments, revise the document, and prepare a Final EA in accordance with 40 CFR Part 1502.9.

After review and evaluation of public comments, the District may decide to conduct additional workshops or hearings on the project.

12. PUBLIC INVOLVEMENT AND COORDINATION

A public involvement (PI) Team of the District Planner, Public affairs Specialist, Social Scientist, NEPA coordinator, and the local sponsor will oversee implementation of the Public Involvement Plan. Close communication between technical staff and the PI Team will be required to ensure the release of accurate information about study activities to the local community, property owners, interest groups, local officials, and the media. These activities include preparing for and conducting public workshops and coordination meetings with other agencies and interested persons. The valuable resources of the conservation districts, watershed districts and Basin Advisory Committee, City and County staff, technical groups, Resource Conservation and Development groups, individual conservation groups, the Extension Council, watershed staff specialists, local farm bureau, commodity groups are available to assist in development and implementation of community relations.

The PI team will develop and distribute letters, notices, news articles, or radio announcements to inform the public of meetings and workshops. The team will maintain a public involvement mailing list of interested persons, media, agencies, or groups for notification of study events. They will also maintain memoranda of the public meetings and prepare a brief summary of the comments received during and after the workshops and how they were addressed.

The results of the public involvement activities will be documented in an appendix of coordination activities. The appendix will be part of the feasibility report.

13. PROJECT AND STUDY MANAGEMENT

The feasibility study will be managed under the guidance of ER 5-1-11, Program and Project Management, and will follow the six-step planning process specified in the Planning Guidance Notebook, ER 1105-2-100. Under ER 5-1-11, the PM provides leadership to a multi-disciplined team with responsibility for assuring that the project stays focused on the customer's needs and expectations and that all work is done in accordance with a management plan and approved business processes. The Study Manager from the District's Planning, Environmental, and Regulatory Division will lead the team in day-to-day activities and coordinate the plan formulation process and preparation of the feasibility report. Management of the plan formulation effort will include activities such as team meetings, preparation of study management documents, technical coordination with the local sponsor and other agencies, and integration of all technical investigations. The Study Manager will summarize the results of the technical studies leading to plan selection in the feasibility report. The report will document the alternative formulation, evaluation, and selection process used to identify the tentatively selected plan.

As part of the formulation process, the study will consider technical feasibility; economic feasibility; environmental impact; real estate acquisition; and views of the USFWS, the local sponsor, and study proponents. The Study Manager will lead the study team in screening alternatives. Based on review of existing data and limited field reconnaissance, the team will develop concept level designs and cost estimates and conduct a preliminary benefit-to-cost analysis of alternatives. This information, plus information obtained from the USFWS, will be used to screen alternatives.

This feasibility study will be managed by the Project Manager (PM), with periodic assistance and assessment from other members of the team. Day-to-day technical activities will be conducted by the Study Manager, Real Estate managers, and project team members to ensure tight control on time and cost of project execution. A variety of management control tools have been provided through the Project Management system and through working level relationships with members of the study team. The tools include computer software designed for project and

resource scheduling and funds control. In addition, the PM will have frequent informal contact as well as formal meetings with resource managers and project team members. The District and Division Project Review Boards (PRB) will be kept informed of the project status, and will assist the PM in setting priorities and regulating the progress of the land transfer process. In addition, the Corps of Engineers Financial Management System (CEFMS) will be used to control funds within the Tulsa District.

Study status reports will be sent on a quarterly basis to Congressional representatives and Corps higher authority, when requested.

The PM will be responsible for copies of letters exchanged with the local sponsor that affect study costs, scopes, and/or schedules; official correspondence with higher authority on similar subjects; internal memoranda that bear on significant study elements, and, in general, any other correspondence that affects significant aspects of the study.

The PM will be responsible for preparation and management of internal funds control documents for allocation and management of the study. The non-Federal Sponsor will assist in project management. The PM will monitor expenditures, prepare project management reports, report study status and issues to the District Engineer and the Executive Committee, and prepare the PMP. This includes preparation of budget documents and financial reports.

The PM will prepare written trip reports that document study area visits; meetings with the non-Federal sponsor; and other trips that affect the scope, cost, or schedule of the reevaluation.

The PM will be responsible for development and negotiation of a Project Cooperation Agreement (PCA) to document project cost sharing, OMRR&R, relative roles and responsibilities for the project, and an analysis of the local sponsor's ability to meet their responsibilities under the terms of the PCA. The Initial Draft PCA Package will accompany the feasibility report and will include: (1) the PCA, (2) Federal/Non-Federal allocation of funds table; (3) PCA deviation report, if appropriate; (4) certification of legal review; and (5) District review comments.

The Study Manager will ensure that the study will accomplish the goals established, proceed at the anticipated rate, and that the items in the Scope of Studies are followed.

a. Progress Meetings. At least once each quarter during the study period, or more often if deemed necessary by the Study Management Team, the team will hold meetings or telephone conference calls to discuss progress, problems, or other issues. The Corps of Engineers and the local sponsor will hold the meetings in Kansas locations mutually agreed upon. The costs to the local sponsor of attending meetings will be considered a part of project management costs and will be included in the annual and final accounting of study costs. The Study Management Team will prepare a written Memorandum for the Record (MFR) of team meetings or telephone conference calls. The MFR will identify persons participating, subjects discussed, and conclusions reached. A copy of these reports will be available to study team members and the Executive Committee to keep them informed of the progress of the work items underway.

b. Technical Meetings. The Study Team will hold periodic meetings with technical elements to review study progress; prepare budget documentation; monitor and manage funds; prepare project-related correspondence; coordinate with Federal, State, and local agencies to inform them of the alternatives identified and the progress of the study; participate in Executive Committee meetings as requested; and provide guidance and support as required to ensure responsiveness to questions and concerns from the start of the study to review and approval of the final report.

c. Monitoring of Funds. The Study Team will use the Corps Financial Management System (CEFMS) to monitor and manage study funds. The team will use CEFMS-generated reports to monitor the obligation and expenditures of funds, prepare funds transfer with other agencies, and track funding progress

d. Budgeting. The general investigation study process requires preparation of quarterly and annual budget documentation and monitoring of study expenditures. Budget documentation may consist of project cost estimates, benefit estimates, study cost estimates, and related project information sheets needed to support budget requests. Budget documents shall be updated periodically during each year in support of budget reviews and to reflect changing interest rates or cost estimates.

e. Contracts. Contract negotiation and administration may require that some or all of the following items be performed for each study element by individuals other than those employed by the local sponsor or the Tulsa District, Corps of Engineers: preparation of a scope of work and a cost estimate; selection and negotiation of a contractor; monitoring progress of the work, and reviewing interim and final products.

f. Agency Coordination. Coordination with other agencies will require on-site visits and/or correspondence with Federal, State, and local government agencies, institutions, businesses, or groups with expertise, responsibilities, or resources related to drainage, flood control, transportation, agricultural activities, environmental resources, or other areas of interest to this study. Particular attention will be directed to the agencies, special interest groups, affected cities, the U.S. Fish and Wildlife Service, and those responsible for existing physical facilities directly related to or affected by the study.

g. In-Kind Services Report. The local sponsor will provide a quarterly written statement of its in-kind services. The quarterly statement will describe the kind of service performed during that period and will include a summary of total in-kind services for the study. For contracts, the report should be supported by a copy of the contractor's billing or written report of progress. For labor resources the statement will identify the individual staff, study activity, the number of individual staff hours, the individual direct cost, and associated administration costs (overhead). In-kind credit will be verified and documented by the Project Manager following consultation with functional elements within the district. A final audit will verify in-kind service cost values.

h. Feasibility Report. The feasibility report will consist of a main report, an Environmental Assessment, and the engineering appendix. The report will be a complete decision-making document; with plan formulation based on technical studies data and published reports applicable to the project study area. The main report will be written in an easy-to-understand style using graphics, illustrations, and/or photographs to summarize study findings.

(1) The length and detail of the Environmental Assessment will conform to the regulations contained in 40 CFR, Parts 1500-1508, "National Environmental Policy Act," dated 29 November 1978.

(2) The engineering appendix will be technical reports written for technical reviewers. The length and detail of the appendix will be sufficient to cover the main aspects of the subject and will follow applicable regulations for each discipline. Appendices for the following subjects may be prepared: Hydrology and Hydraulics; Economic and Social Analysis; Geology and Soils; U.S. Fish and Wildlife Service Coordination Act Report; Design and Cost Estimates; Real Estate Plan; Pertinent Correspondence; and Financial Capability Analysis.

i. Review and Acceptance. During the feasibility study, the Corps and the local sponsor will review the technical products as required. An independent, interdisciplinary peer technical review team will review the products (technical appendix). Southwestern Division (SWD) will assure quality compliance, and Headquarters (USACE) will evaluate for policy compliance. After responses are made to the review comments and the draft report has been modified accordingly, the feasibility report will be reviewed by appropriate Federal, State, and local government officials; local agencies; and interested groups and individuals. Their comments will be included in the final report.

j. Review Contingency. During the review process, the report will be submitted for Washington level review. These reviews may require that Tulsa District personnel and the local sponsor participate in preparing responses to the review comments to ensure that report approval is processed in a timely manner. The amount of work during review is determined by the number and nature of review comments and cannot be predetermined. To ensure that the local sponsor is afforded an opportunity to participate in any significant effort as a result of that review, a separate item will be included for that activity. In accordance with EC 1105-2-108, funding for this activity will be the lesser of 5% or $50,000; the line item included in the study cost estimate will be 5% of the total study cost.

k. Issue Resolution Conferences. Two issue resolution conferences are mandatory during the feasibility phase. The first is the Feasibility Scoping Meeting (FSM). The second is either an Alternative Formulation Briefing (AFB) or a Feasibility Review Conference (FRC).

The FSM is called early in the study, soon after the NEPA scoping process and the preliminary plan formulation and evaluation have been accomplished. The FSM helps everyone to focus the study on key alternatives, define the depth of analysis required, and refine study constraints.

The Feasibility Review Conference (FRC) is held prior to the release of the draft Environmental Assessment and draft feasibility report, unless an Alternative Formulation Briefing (AFB) was held early in the study phase. The AFB process is planned for this feasibility study. (If Washington-level policy concerns are resolved by the AFB, the District would be allowed to submit the draft feasibility report concurrently for Washington level review and public release of the draft EA. This process saves the time involved in a sequential review process necessary for the FRC.)

After the tentatively selected plan is identified, the AFB will be scheduled to ensure that the Corps and the local sponsor focus their resources on alternatives that are in the Federal interest. The District, the local sponsor, SWD, and HQUSACE will attend the AFB. The purpose of the AFB is to review study findings concerning problems and needs; evaluate the array of alternatives and determine their consistency with Federal interest; and review the preliminary analysis of the impacts of alternatives. This meeting will be a key decision point in determining whether alternatives meet Federal policies and should be recommended for project implementation. If the local sponsor has a preferred alternative that differs from the tentatively selected plan, it will be identified and reviewed at this time. The conference may be convened at a physical location or conducted through virtual electronic means.

Background material in the form of pre-conference materials will be sent to SWD and HQUSACE at least 35 days prior to the AFB conference. The design and costs presented at the AFB will be at a level of detail sufficient to screen alternatives and select the plan that will be subject to a detailed analysis. Pre-conference materials are outlined in ER 1101-2-100, Appendix G, Exhibit G-4. Discussion and resolution of all policy issues are documented in an AFB Policy Guidance Memorandum prepared by HQUSACE.

l. Final Report Documentation. The final feasibility report (including the final NEPA document) will incorporate the review comments from agencies, the public, SWD, and HQUSACE resulting from review of the draft document. The SWD Commander

will prepare a public notice to announce endorsement of the final report. HQUSACE will prepare a written assessment of the final report to document compliance with current policy. The Chief of Engineers will prepare a brief summary of the report and send it to the Assistant Secretary of the Army for Civil Works (ASA(CW)). The Office of Management and Budget (OMB) will notify the ASA(CW) of the Administration's position on transmitting the report to Congress for authorization. If recommended by the OMB, the ASA(CW) will transmit the report with the recommendations to Congress. At that point, the feasibility phase will be complete.

SECTION 5. WORK BREAKDOWN STRUCTURE

The Work Breakdown Structure (WBS) is a task-oriented hierarchy of the scope of study, and is embodied in a codified system, which organizes the study in a logical manner. The final product for this project is the completion of a Feasibility Report. Following is a list of generic Work Breakdown Structure (WBS) efforts and products. A functional WBS code is automatically generated within the Network Analysis Software (NAS) used to schedule, monitor, and manage this study. The NAS is Microsoft Project 2000. Because the NAS is the data entry portal and is subject to frequent change, it is the single display location for the WBS to reduce redundant information revision. To facilitate initial review of the NAS, a graphical summary representation will be included.

GENERIC WORK BREAKDOWN ITEMS

Public Involvement
Project Management
Plan Formulation
Inventory
Habitat Evaluation
Survey/Mapping
Mitigation Measure Design
Socioeconomic
Hydrology/Hydraulics
Geotechnical
Design and Costs
Real Estate
Quality Assurance
Policy Compliance
IWR-PLAN Model Preparation
Cost Effectiveness Analysis (CEA)
Incremental Cost Analysis (ICA)
Feasibility Scoping Meeting (FSM)
Alternative Formulation Briefing (AFB)
Draft Report
Independent Technical Review (ITR)
Incorporate Comments
Final Report
Division Engineers Final Notice

SECTION 6. REFERENCES TO STATUTES, REGULATIONS, AND GUIDANCE

The principal ER that guides the Corps of Engineers planning process is ER 1105-2-100, Planning Guidance Notebook, dated 22 April 2000, U.S. Army Corps of Engineers. Appendix A of ER 1105-2-100 contains references to the applicable statutes, public laws, executive orders, and engineering regulations that guide preparation of Corps feasibility studies.

Additional references that will be utilized during the completion of work tasks include the following:

EC 1105-2-208, "Preparation and Use of Project Management Plans," 23 December 1994, U.S. Army Corps of Engineers.

EC 1165-2-203, "Technical and Policy Compliance Review," Department of the Army, U.S. Army Corps of Engineers, 15 October 1996.

ER 1110-2-1150, "Engineering and Design of Civil works Projects", 31 August 1999.

ER 5-1-11, "Program and Project Management Regulation," Department of the Army, U.S. Army Corps of Engineers, 17 August 2001.

CECW-PM, Planning Guidance Letter 97-1, "WRDA 96 Implementation," 19 November 1996, U.S. Army Corps of Engineers.

CECW-PE, Planning Guidance Letter 97-10, "Shortening the Planning Process," 26 March 1997, U.S. Army Corps of Engineers.

Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies, 1983.

Economic and Environmental Consideration for Incremental Cost Analysis in Mitigation Planning, IWR Report 91-r-1, 1991.

SECTION 7. QUALITY CONTROL PLAN

1. STUDY TEAM

The study is assigned to and executed under the general funds and schedule management of the PM. The PM is responsible for ensuring that the products and services of the team meet the quality, expectations, and cost/schedule commitments made to the customer. In general, the study is directed by the Study Manager and is executed by team members. The study team is a multi-disciplinary group consisting of members of the functional elements of the district and may include members from other districts or the A-E community. Team members have adequate training, technical expertise, and experience to perform the work required. Appendix 4 contains biographies of team members.

2. STUDY PROGRESS

Overall progress of the study is maintained through the project schedule and budget. Study progress is also measured through coordination mechanisms, such as monthly Project Review Board meetings, study team meetings, in-progress-review meetings, and issue resolution conferences.

Review meetings and issue resolution conferences are scheduled to maintain coordination, support, and policy guidance from Division and Headquarters. A Feasibility Scoping Meeting is scheduled to follow the NEPA scoping meeting (public workshop). An Alternative Formulation Briefing is also scheduled to achieve early Headquarters acceptance of the recommendation prior to report preparation.

3. TECHNICAL, LEGAL, AND POLICY REVIEW

Technical products from plan formulation, environmental, economics, engineering, cost estimating, real estate, and other disciplines essential to preparing a quality report will have an independent technical review. Reviews will be ongoing throughout the study, using a review team of engineers and scientists. The reviewers will represent the appropriate disciplines utilized in the study. Participants include but are not limited to disciplines covering Civil Engineering, Water Resources Planning, Biology, Archeology, Economics, Counsel, and Real Estate.

The technical review team will be composed of senior level technical staff, with oversight provided by senior technical

managers. The review team may perform individual or group reviews. They will review the decision document, technical appendix applicable to their discipline, and any A-E contractor reports that are part of the study. Participants of the review team will be provided with a Technical Review Checklist (Figure 7-1). The checklist will facilitate their review and help ensure that the decision document of the study conforms to regulations, guidance, and sound professional practice. The checklist is not intended to replace the reviewer's technical expertise or engineering judgement. Reviewer concerns or comments should be noted along with the checklist. Review team members will provide written comments to the Study Manager. The Study Manager will coordinate a written response through the study team members. The PM will facilitate any meetings with the review and study teams if responses to comments are deemed inadequate. Sponsor issues or concerns will also be resolved through coordination efforts of the PM. Each functional area is responsible for scheduling and coordinating additional checks and/or reviews as required by their functional area. Final responsibility for resolution of technical review issues will reside with the technical functional chief at the District. The functional chief will sign the Certification of Independent Technical Review (Figure 7-2) documenting that major concerns and issues were considered and resolved.

The review team will sign the Completion of Independent Technical Review (Figure 7-3), and District Counsel will sign the Certification of Legal Review (Figure 7-4). The project study team and the technical reviewers are listed in Figure 7-5. (The list will be updated if there are personnel changes or changes in work load.) Documentation of in-progress reviews and the final quality control review will be maintained in the project files and will be available to the PM.

A policy compliance review will be conducted in accordance with guidance provided in EC 1165-2-203, dated 15 October 1996. The policy compliance review ensures that the proposed action is consistent with the overall goals and objectives of the Civil Works program. An important milestone in policy review occurs at the Alternative Formulation Briefing. At this briefing, policy issues that have been identified will be addressed. Appendix B of EC 1165-2-203 presents a checklist of items considered during that review.

4. COORDINATION DOCUMENTATION

Project information documenting study team meetings, study status, decisions, or issue resolution is maintained in the District's project files. This includes technical review coordination and completion and the Certifications of Technical and Legal Review. Examples of other pertinent technical data or correspondence available in the project files include:

- Site maps/locations of the project area
- Real estate requirements, including right-of-entry permits, right-of-way maps, and easements
- Technical data and appendix
- Environmental Assessment, EA, and FONSI
- Section 404 Determination and Permit
- Technical review comments
- Fact sheets
- Project related correspondence and memoranda
- Letter of support or concern

Figure 7-1
TECHNICAL REVIEW CHECKLIST

1. STUDY AUTHORITY

Does the study conform to the intent of the cited study authority?

2. SCOPE OF INVESTIGATION

a. Have the water resource related problems been fully and clearly evaluated?

b. Have all significant resource uses been adequately considered?

c. Have all foreseeable short- and long-term needs been adequately considered?

3. OBJECTIVE OF INVESTIGATION

Are planning objectives clearly stated?

4. PLAN FORMULATION

a. Have the assumptions and rationale for the without-project condition been explicitly stated and are they reasonable?

b. Have all reasonable alternatives, including nonstructural and no action plans, been adequately addressed?

c. Have alternatives that are not implementable by the Corps been fully considered?

d. For water supply, has a range of measures been adequately considered that can, over time, balance water demand for various purposes with water availability?

e. Has a justified plan been identified and properly evaluated?

f. Have a sufficient number of alternatives been analyzed to determine if there is a justified plan?

g. Is there sufficient rationale for any recommended departure from the NED plan?

h. Are the reasons for selection of major elements of the recommended plan sound and adequate?

i. Does the selected plan conform to existing policy? If not, have the reasons for departure been adequately documented?

j. Would staged construction be appropriate?

k. Is the selected plan consistent with applicable comprehensive plans for the area?

1. Have both beneficial and adverse effects been adequately evaluated for the

selected plan and alternatives?

m. Has acquisition of necessary land for future project elements been adequately considered?

5. ECONOMIC ANALYSIS

a. Has adequate consideration been given to trade-offs between economic and environmental effects?

b. Do the combined beneficial economic and environmental quality effects outweigh the combined adverse economic and environmental effects?

c. Are separable features, including mitigation measures, incrementally justified?

d. Does the report state the benefit-to-cost ratio (BCR) for the recommended plan assuming existing conditions prevail over the period of analysis?

1. Annual Charges

a. Do the interest rate and the amortization period conform to present practice?

b. Has interest during construction been correctly calculated and included in the economic analysis?

2. Benefit Evaluation

a. Have NED benefits been evaluated in accordance with appropriate guidelines and procedures? If not, are acceptable reasons for deviation from standard procedures furnished?

b. Is the benefit estimate mathematically correct?

c. Are the assumptions regarding future alternative conditions clearly stated and justified, and are these assumptions reasonable?

d. Have all known benefits been included in the benefit estimate?

e. Are the economic projections reasonable?

f. Have methodologies and assumptions been explained in sufficient detail?

g. Is the information and data adequate to reasonably support the benefit estimate?

h. Is the without-project condition reasonable and believable, and does it actually reflect how non-Federal interests will act if the resource under study is not developed?

i. Have possibilities of windfall benefits and appropriate special cost

sharing been thoroughly investigated?

j. Are average annual benefits on the same time basis as average annual costs?

k. Have possible negative benefits been adequately considered and evaluated?

l. If NED employment benefits are claimed, is the area still eligible?

m. If as a result of investigations by planning and regulatory staffs it is apparent that an activity to be conducted by a project beneficiary is not in the public interest, has (have) the projected economic benefit(s) associated with that activity been eliminated?

n. If recreation benefits are claimed, does the report include an adequate description of competing facilities and their existing and expected future use with and without the proposed project? Also, does the report adequately distinguish between and describe the impacts on peak versus average use in the with- and without-project conditions?

6. HYDROLOGY AND HYDRAULICS

a. Does the hydrologic and hydraulic engineering analysis conform to current criteria?

b. Have water control plans been developed to the point that pertinent regulation schedules and water control diagrams have been prepared?

c. Have the regulation schedules and water control diagrams been coordinated with the local sponsor/project owner?

d. Has an interim water control plan for control of water during construction been prepared?

e. If this is the final document before plans and specifications, are all necessary engineering studies to assure that the proposed project will function as intended (including physical and mathematical models) completed or ongoing during PED?

f. Have the engineering analyses identified project impacts upstream and downstream of the project?

g. Are the residual flooding problems and other necessary project impact information adequate to form a basis for the OMR&R cost estimate and to provide a full disclosure of project performance for the local sponsor?

7. RISK AND UNCERTAINTY - SENSITIVITY ANALYSIS

a. Have the plans and their effects been sufficiently examined to determine the uncertainty inherent in the data or in the assumptions of future economic, demographic, social, attitudinal, environmental, and technological trends?

b. Have the areas of sensitivity been adequately identified and proper analysis performed so that decisions can be made with knowledge of the degree of reliability of available information?

c. Does the report address the risk and uncertainty of the without-project condition assumptions, and does it test for sensitivity?

d. Have the advantages and costs of reducing risk and uncertainty been adequately considered in the planning process?

8. ENGINEERING

a. Is the supporting engineering data of sufficient detail to adequately describe the proposed design?

b. Have adequate subsurface investigations been made to reasonably assure that the foundation is satisfactory?

c. Does the structural stability analysis conform to current criteria?

d. Are special design provisions required for seismic resistance?

e. Has an adequate inspection and monitoring plan been developed and a means of providing feedback to the designers been provided?

f. Is the proposed project based on sound engineering, and will the intended purpose be performed over the life of the project?

g. Is the construction schedule and period reasonable?

h. Are there any potential problems that could result from structural failure or operational procedure? If so, are measures proposed or available to minimize or eliminate the impact?

i. Are there any potential problems that could result from a catastrophic natural event? If so, are measures proposed or available to minimize or eliminate the impact?

j. Have all the necessary project features assumed in the engineering analysis, both existing or proposed (either by the Corps project or some other future effort), been identified and

any necessary real estate subjugation taken to ensure project function and viability over the life of the project?

9. OPERATION, MAINTENANCE, AND REPLACEMENT

a. Does the report indicate the physical criteria for satisfactory project performance that can be used as a basis for establishing sponsor's operation, maintenance, and repair and land use management responsibilities?

b. Are annual costs for operation, maintenance, and replacement reasonable?

10. REAL ESTATE PLAN

a. Do the real estate interests to be acquired adequately reflect land requirements necessary for recommended project elements?

b. Are the cost estimates for land requirements reasonable (including clean-up costs that may be associated with contaminated lands)?

c. Is the acquisition schedule for land requirements reasonable?

d. Are there estimates of the number and types of ownership?

e. Is there an estimate of the acreage involved in each project purpose?

f. Does the study include the proposed estates, and are they appropriate?

g. Is there an estimate of the number of Uniform Relocation Assistance displaced persons and businesses?

h. Is there an estimate of the number and type of utility or facility relocations?

i. Does the initial Real Estate Cost Estimate include estimates for lands and damages, including lands associated with the relocation of facilities, utilities, etc.; URA relocations; and administrative costs to acquire the necessary land and contingencies?

11. COST ESTIMATES

a. Are quantity and cost estimates reasonable and in adequate detail?

b. Are cost estimates assembled by the code of accounts in EC 1110-2-538?

c. Are contingency allowances documented and distributed? Are they adequate to ensure high probability of achieving implementation within estimated costs?

d. Are engineering and design and supervision and

administration charges reasonable and/or in conformance with current experience?

e. Have induced and associated costs been given proper treatment? Is this mitigation/environmental?

f. Has the work to be performed by local interests, as required by the items of local cooperation, been properly included in the cost estimate?

g. Have trade-offs between risk and costs been explicitly identified as areas for detailed evaluation in proper design?

h. Does the overall project cost estimate reflect the costs associated with State and local permit actions required to implement the recommended plan?

12. COST ALLOCATION

a. Is the cost allocation in conformance with existing policies?

b. Has the necessity for sub-allocation been adequately considered?

c. Have all project purposes been included in the allocation?

13. COST APPORTIONMENT

a. Is the apportionment of cost to local interests in conformance with present policy and evaluation procedure?

b. Are there special circumstances associated with the project that warrant consideration of increased non-Federal cost sharing?

14. COMPLIANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT

a. Have the necessary technical studies and coordination been conducted in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and other applicable environmental laws?

b. Has mitigation of adverse effects been considered in each alternative plan and evaluated in accordance with appropriate Corps of Engineer guidelines?

c. Is the appropriate NEPA document (EA/FONSI) included in the report?

d. Has the NEPA document been developed and coordinated in accordance with 40 CFR, Parts 1500-15 and ER 200-2-2?

e. Have the environmental impacts of all reasonable alternatives been properly evaluated and displayed?

f. Will the activity to be conducted require a Department of the Army permit (e.g., Section 404 or Section 10 permit), and if so, has the activity been included in the environmental documentation of the project as required by the NEPA?

g. Is the appropriate Fish and Wildlife Coordination Act document included in the report?

h. Have HTRW site assessment results been incorporated in environmental considerations?

i. Is Section 7 coordination required on endangered species?

j. Have environmental issues been adequately and thoroughly considered in plan formulation, including impacts on historic and cultural resources?

k. Cultural resource clearances.

15. COORDINATION

a. Has there been adequate coordination with appropriate State, local, and Federal agencies, and have their views been considered in formulating the recommended plan?

b. Has coordination conformed to law, executive orders, and agreements between agencies, and, if not, has the departure been satisfactorily explained?

c. Have the proper preservation, conservation, historical, and scientific interests been consulted, and were their views given adequate consideration during plan formulation?

16. PUBLIC INVOLVEMENT

a. Was adequate public involvement conducted during the planning process to fully inform interested parties and to ascertain their views?

b. Have any international implications associated with the recommended plan been properly addressed?

17. LOCAL COOPERATION

a. Are the items to be furnished by local interests those normally required under the law and by present policy, and, if not, is adequate support given for classifying the items as those to be furnished by local interests?

b. If recreation or fish and wildlife enhancement is included in multiple-purpose projects, is a letter of intent from non-Federal interests included in accordance with Public Law 89-72?

c. Have reporting officers established that local

interests fully understand and are willing and capable of furnishing the local cooperation specified?

d. Has the non-Federal sponsor requested special conditions different from provisions in the model PA, and, if so, have these conditions been agreed to by HQUSACE and the ASA(CW)?

18. FINANCIAL ANALYSIS

a. Does the report include a letter of intent to cost share from the non-Federal sponsor?

b. Does the non-Federal sponsor's letter of intent to cost share provide evidence of the sponsor's authority to utilize the identified source or sources of funds and provide information on the non-Federal sponsor's capability to obtain remaining funds, if any?

c. If the sponsor is relying on third party contributions, does the letter of intent include comparable data for the third party together with evidence of its legal commitment to the sponsor?

d. If a non-Federal sponsor's financing depends on contributions of funds by a third party or parties, and the non-Federal sponsor does not have the capability to meet its financial obligations without said contribution, does the report have a separate statement of financial capability and financing plan for the contributions from the third party or parties?

19. POLICY ASPECTS

a. Does the proposed project conform to policies established by law and USACE directives governing Federal participation?

b. Has the review considered current Administration policies and decisions, as well as directions, actions, and interpretations by the OMB and the ASA (CW)?

Figure 7-2
CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact and resolution)

As noted above, all concerns resulting from independent technical review of the project have been considered. The report and all associated documents required by the National Environmental Policy Act have been fully reviewed.

_____	_____
Chief, Planning, Environmental and Regulatory Division	Date
_____	_____
Chief, Engineering and Construction Division	Date
_____	_____
Chief, Operations Division	Date
_____	_____
Chief, Real Estate Division	Date

Figure 7-3
COMPLETION OF INDEPENDENT TECHNICAL REVIEW

The District has completed the feasibility study of Walnut River Basin. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures utilizing justified and valid assumptions was verified. This included review of assumptions, methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy. An independent District team accomplished the independent technical review.

_____ _____

Technical Review Team Leader Date

Signatures Team Members:

Figure 7-4

CERTIFICATION OF LEGAL REVIEW

The draft report, Walnut River Basin Ecosystem Restoration, including all associated documents required by the National Environmental Policy Act, has been fully reviewed by the Office of Counsel, Tulsa District and is approved as legally sufficient.

_____

JOHN ROSELLE, JR.
DISTRICT COUNSEL
_____ day of _____, 2001

Figure 7-5
WALNUT RIVER BASIN
ECOSYSTEM RESTORATION STUDY

EXECUTIVE COMMITTEE

NAME	SECTION	DISCIPLINE
Margaret Fast	Kansas Water Office	Manager, Planning Unit
Susan J. Haslett	U.S. Army Corps of Engineers	Chief, Planning Branch
Al LeDoux	Kansas Water Office	Director
G. David Steele	U.S. Army Corps of Engineers	Chief, Planning, Environmental, Regulatory Division

FEASIBILITY STUDY TEAM

NAME	SECTION	DISCIPLINE
Robert T. Angelo	Kansas Department of Health & Environment	Chief, Technical Services Section
Robert Atchison	Kansas Forest Service	Rural Forestry Coordinator
Philip G. Balch	Kansas State Conservation Commission	Riparian & Wetland Program Coordinator
Charlie Barton	U.S. Forest Service	Riparian Forester
Rob Beilfuss	Kansas Department of Health & Environment	Watershed Management Section
Kurt Bookout	City of El Dorado	Director of Public Utilities
Roger L. Boyd	Baker University Kansas Water Authority	Chair, Biology Department Chair, Planning Committee
Dennis Carlson	Kansas State Forest Service	District Forester
Dewey Caster	U.S. Fish and Wildlife Service	Fish and Wildlife Biologist, Federal Projects
Tim Christian	Kansas Wetland and Riparian Areas Alliance	Coordinator
Rick Davis	Kansas Department of Health & Environment	Non Point Source Consultant
Brock Emmert	Kansas Water Office	Stream Morphology – Project Manager
James M. Fry	U.S. Army Corps of Engineers	Chairman, Walnut Basin Advisory Committee
Marilyn Kay Hoover	U.S. Army Corps of Engineers Counsel (CESWT-OC)	Attorney
Stephen A. Hurst	Kansas Water Office	Legal Counsel/Policy Planner
David Jackman, Jr.	Committee Member	Walnut Basin Advisory Committee
Fred Kloeckler	U.S. Army Corps of Engineers Engineering and Design (CESWT-EC-D) Cost - Engr Ted McCleary Specs - Steve Walter Geotec - Mike Southern	Civil Engineer
Sandra K. Koontz	Butler County Conservation District	Water Quality Coordinator
R. Dean Krehbiel	Natural Resources Conservation	Butler County District

	Commission	Conservationist

FEASIBILITY STUDY TEAM (Continued)

NAME	SECTION	DISCIPLINE
William M. Langley	Butler County Community College	Instructor
Chris S. Mammoliti	Kansas Department of Wildlife and Parks	Chief, Environmental Services Section
Ron Marteney	Kansas Department of Wildlife and Parks	Fisheries Biologist
Marc L. Masnor	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-PF and CESWT-PP-C)	Project Manager/Study Manager
Angela McPhee	U.S. Army Corps of Engineers Chief, Acquisition & Realty Services Branch (CESWT-RE-A)	Branch Chief
Jim E. Michaels	Land Services, Inc.	President of Land Services, Inc., and Whitewater Watershed Manager
Rick Miller	State of Kansas	State GIS Coordinator
James C. Randolph	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-E)	Environmentalist, NEPA Team Leader, and RMD Team Leader
Edwin J. Rossman	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-PE)	Sociological Analysis and Public Involvement
Lawrence (Leigh) Skaggs	U.S. Army Corps of Engineers Institute for Water Resources (CEIWR-MD)	IWR-PLAN Expert
James R. Sullivan	U.S. Army Corps of Engineers Planning, Environmental & Regulatory(CESWT-PE-PE)	Economic Analysis
Paula R. Willits	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-PE)	Writer - Editor
Brownie Wilson	Kansas Water Office	Environmental Scientist
Russell Wyckoff	U.S. Army Corps of Engineers Hydrology & Hydraulics Branch (CESWT-EC-H)	Hydraulic Engineer
Not Confirmed (_____)	U.S. Army Corps of Engineers Operations Division (CESWT-OD)	Operations Management

RESTORATION MEASURE DESIGN TEAM
(a subset of the study team)

NAME	SECTION	DISCIPLINE
James C. Randolph	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-E)	Environmentalist, NEPA Team Leader, and RMD Team Leader
Robert T. Angelo	Kansas Department of Health & Environment	Chief, Technical Services Section
Robert Atchison	Kansas Forest Service	Rural Forestry Coordinator
Philip G. Balch	Kansas State Conservation Commission	Riparian & Wetland Program Coordinator
Charlie Barton	U.S. Forest Service	Riparian Forester
Dennis Carlson	Kansas State Forest Service	District Forester
Rick Davis	Kansas Department of Health & Environment	Environmental Scientist
Fred Kloeckler	U.S. Army Corps of Engineers Engineering and Design (CESWT-EC-D) Cost- Engr Ted McCleary Specs- Steve Walter Geotec- Mike Southern	Civil Engineer
Sandra K. Koontz	Butler County Conservation District	Water Quality Coordinator
R. Dean Krehbiel	Natural Resources Conservation Commission	Butler County District Conservationist
Marc L. Masnor	U.S. Army Corps of Engineers Planning, Environmental & Regulatory (CESWT-PE-PF and CESWT-PP-C)	Project Manager/Study Manager
Angela McPhee	U.S. Army Corps of Engineers Chief, Acquisition & Realty Services Branch (CESWT-RE-A)	Branch Chief
Lawrence (Leigh) Skaggs	U.S. Army Corps of Engineers Institute for Water Resources (CEIWR-MD)	IWR-PLAN Expert
Russell Wyckoff	U.S. Army Corps of Engineers Hydrology & Hydraulics Branch (CESWT-EC-H)	Hydraulic Engineer

TECHNICAL REVIEW TEAM

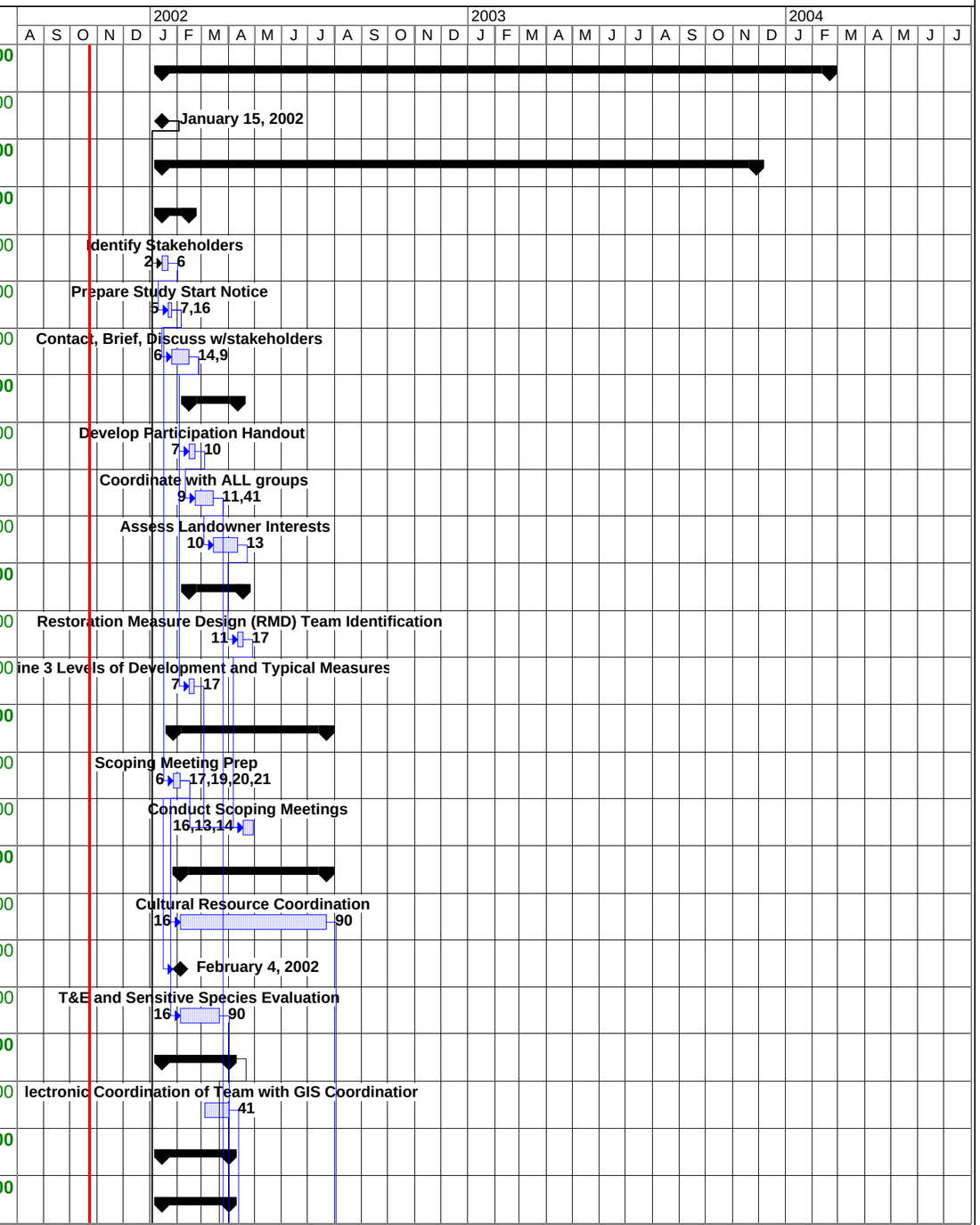
NAME	SECTION	DISCIPLINE
Managed by Russell Wyckoff	An SWD Sister District	H&H Resource
Rick Gardner	U.S. Army Corps of Engineers Chief, Acquisition & Realty Services Branch (CESWT-RE-A)	Real Estate Acquisition
Managed by Fred Kloeckler	Cost Engr - Ted McCleary Specs Steve Walter Geotec - Mike Southern	Design Technical Review
Managed by James Randolph	An SWD Sister District or Contract Resource	Ecosystem Restoration Design and Formulation, and NEPA Coordination.
Craig Wells	U.S. Army Corps of Engineers Planning, Environmental & Regulatory CESWT-PE-PF	Economics and Plan Formulation

Figure 7-6
WALNUT RIVER BASIN
ECOSYSTEM RESTORATION STUDY

GANTT CHART

Walnut NAS v1

ID	Task Name	Duration	Start	Finish	Corps Funds	KWO In-Kind	KWO Cash	Total Cost
1	**Walnut Feasibility Phase**	**549 days**	**Jan 15**	**Feb 20**	**485,000.00**	**$385,000.00**	**$100,000.00**	**$970,000.00**
2	Start	0 days	Jan 15	Jan 15	$0.00	$0.00	$0.00	$0.00
3	**Feasibility Study**	**489 days**	**Jan 15**	**Nov 28**	**395,000.00**	**$380,000.00**	**$15,000.00**	**$790,000.00**
4	**Start Community Relations Planning**	**23 days**	**Jan 15**	**Feb 14**	**$8,000.00**	**$25,000.00**	**($17,000.00)**	**$16,000.00**
5	Identify Stakeholders	5 days	Jan 15	Jan 21	$2,000.00	$2,000.00	$0.00	$4,000.00
6	Prepare Study Start Notice	4 days	Jan 22	Jan 25	$2,000.00	$5,000.00	($3,000.00)	$4,000.00
7	Contact, Brief, Discuss w/stakeholders	20 edays	Jan 25	Feb 14	$4,000.00	$18,000.00	($14,000.00)	$8,000.00
8	**Stakeholder Participation and Landowner Assessment**	**40 days**	**Feb 15**	**Apr 11**	**$14,000.00**	**$38,400.00**	**($24,400.00)**	**$28,000.00**
9	Develop Participation Handout	5 days	Feb 15	Feb 21	$2,000.00	$5,000.00	($3,000.00)	$4,000.00
10	Coordinate with ALL groups	15 days	Feb 22	Mar 14	$4,000.00	$8,000.00	($4,000.00)	$8,000.00
11	Assess Landowner Interests	20 days	Mar 15	Apr 11	$8,000.00	$25,400.00	($17,400.00)	$16,000.00
12	**Formulation Concepts**	**44 days**	**Feb 15**	**Apr 17**	**$2,500.00**	**$4,500.00**	**($2,000.00)**	**$5,000.00**
13	Restoration Measure Design (RMD) Team Identification	4 days	Apr 12	Apr 17	$1,000.00	$1,500.00	($500.00)	$2,000.00
14	Define 3 Levels of Development and Typical Measures	4 days	Feb 15	Feb 20	$1,500.00	$3,000.00	($1,500.00)	$3,000.00
15	**NEPA Compliance**	**126 days**	**Jan 28**	**Jul 22**	**$16,600.00**	**$4,600.00**	**$12,000.00**	**$33,200.00**
16	Scoping Meeting Prep	6 days	Jan 28	Feb 4	$2,500.00	$0.00	$2,500.00	$5,000.00
17	Conduct Scoping Meetings	8 days	Apr 18	Apr 29	$5,000.00	$1,000.00	$4,000.00	$10,000.00
18	**Initiate Start of EA**	**120 days**	**Feb 4**	**Jul 22**	**$9,100.00**	**$3,600.00**	**$5,500.00**	**$18,200.00**
19	Cultural Resource Coordination	120 days	Feb 5	Jul 22	$3,000.00	$3,000.00	$0.00	$6,000.00
20	Initiate USFWS CAR Coordination	0 days	Feb 4	Feb 4	$100.00	$100.00	$0.00	$200.00
21	T&E and Sensitive Species Evaluation	45 edays	Feb 4	Mar 21	$6,000.00	$500.00	$5,500.00	$12,000.00
22	**Compile Existing Information**	**55 days**	**Jan 15**	**Apr 1**	**$1,100.00**	**$45,300.00**	**($44,200.00)**	**$2,200.00**
23	Electronic Coordination of Team with GIS Coordinatior	20 days	Mar 5	Apr 1	$100.00	$11,800.00	($11,700.00)	$200.00
24	**Digital**	**55 days**	**Jan 15**	**Apr 1**	**$1,000.00**	**$14,500.00**	**($13,500.00)**	**$2,000.00**
25	**GIS**	**55 days**	**Jan 15**	**Apr 1**	**$1,000.00**	**$14,500.00**	**($13,500.00)**	**$2,000.00**

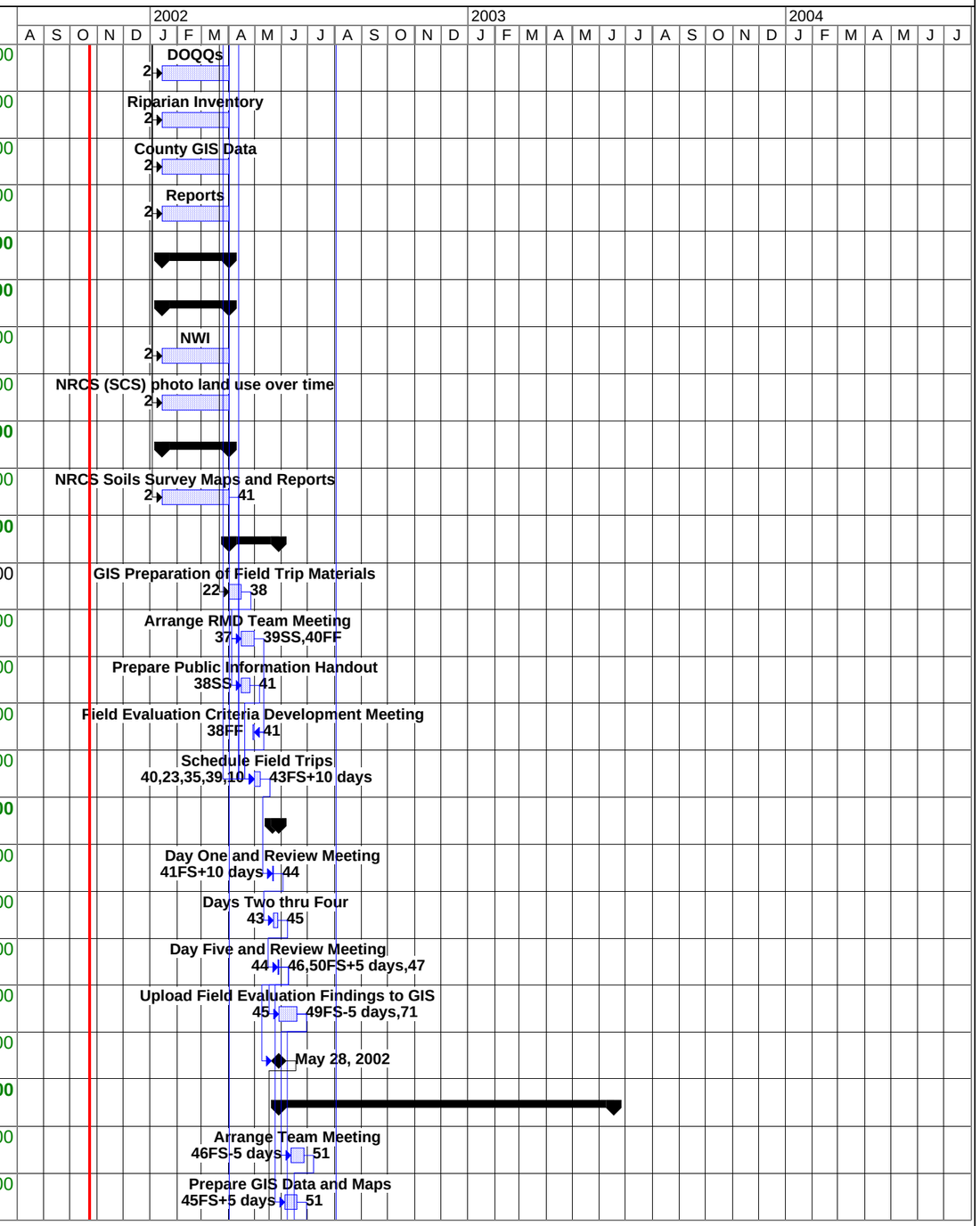


Project: Walnut NAS v1
Date: Oct 23

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Walnut NAS v1

ID	Task Name	Duration	Start	Finish	Corps Funds	KWO In-Kind	KWO Cash	Total Cost
26	DOQQs	55 days	Jan 15	Apr 1	$1,000.00	$8,000.00	($7,000.00)	$2,000.00
27	Riparian Inventory	55 days	Jan 15	Apr 1	$0.00	$4,000.00	($4,000.00)	$0.00
28	County GIS Data	55 days	Jan 15	Apr 1	$0.00	$2,500.00	($2,500.00)	$0.00
29	Reports	55 days	Jan 15	Apr 1	$0.00	$5,000.00	($5,000.00)	$0.00
30	**Paper**	**55 days**	**Jan 15**	**Apr 1**	**$0.00**	**$14,000.00**	**($14,000.00)**	**$0.00**
31	**Maps**	**55 days**	**Jan 15**	**Apr 1**	**$0.00**	**$11,000.00**	**($11,000.00)**	**$0.00**
32	NWI	55 days	Jan 15	Apr 1	$0.00	$6,000.00	($6,000.00)	$0.00
33	NRCS (SCS) photo land use over time	55 days	Jan 15	Apr 1	$0.00	$5,000.00	($5,000.00)	$0.00
34	**Reports**	**55 days**	**Jan 15**	**Apr 1**	**$0.00**	**$3,000.00**	**($3,000.00)**	**$0.00**
35	NRCS Soils Survey Maps and Reports	55 days	Jan 15	Apr 1	$0.00	$3,000.00	($3,000.00)	$0.00
36	**Field Evauations**	**41 days**	**Apr 1**	**May 28**	**$11,900.00**	**$39,000.00**	**($27,100.00)**	**$23,800.00**
37	GIS Preparation of Field Trip Materials	14 edays	Apr 1	Apr 15	$1,000.00	$5,000.00	($4,000.00)	$2,000.00
38	Arrange RMD Team Meeting	15 edays	Apr 15	Apr 30	$0.00	$1,000.00	($1,000.00)	$0.00
39	Prepare Public Information Handout	8 days	Apr 16	Apr 25	$3,000.00	$5,000.00	($2,000.00)	$6,000.00
40	Field Evaluation Criteria Development Meeting	2 days	Apr 29	Apr 30	$2,000.00	$6,500.00	($4,500.00)	$4,000.00
41	Schedule Field Trips	5 days	May 1	May 7	$0.00	$500.00	($500.00)	$0.00
42	**Field Trip**	**5 days**	**May 22**	**May 28**	**$5,900.00**	**$21,000.00**	**($15,100.00)**	**$11,800.00**
43	Day One and Review Meeting	1 day	May 22	May 22	$1,200.00	$4,500.00	($3,300.00)	$2,400.00
44	Days Two thru Four	3 days	May 23	May 27	$3,500.00	$12,000.00	($8,500.00)	$7,000.00
45	Day Five and Review Meeting	1 day	May 28	May 28	$1,200.00	$4,500.00	($3,300.00)	$2,400.00
46	Upload Field Evaluation Findings to GIS	15 days	May 29	Jun 18	$1,200.00	$12,000.00	($10,800.00)	$2,400.00
47	Start Upload of Alternatives to IWR-PLAN	0 days	May 28	May 28	$0.00	$0.00	$0.00	$0.00
48	**Evaluate & Cost Alternatives and Outputs**	**275 days**	**May 29**	**Jun 17**	**192,700.00**	**$179,200.00**	**$13,500.00**	**$385,400.00**
49	Arrange Team Meeting	15 edays	Jun 12	Jun 27	$0.00	$1,000.00	($1,000.00)	$0.00
50	Prepare GIS Data and Maps	10 days	Jun 5	Jun 18	$0.00	$6,000.00	($6,000.00)	$0.00

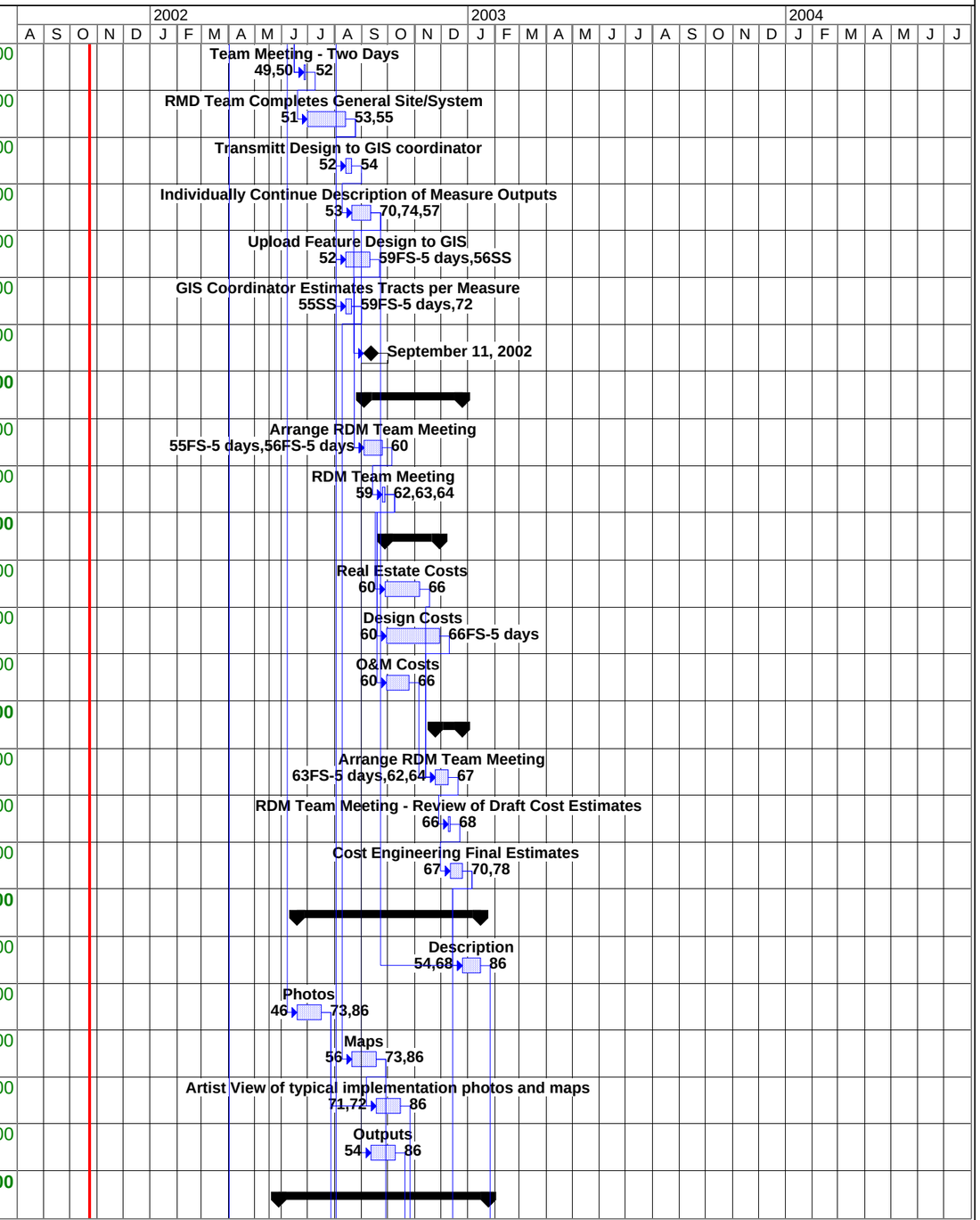


Project: Walnut NAS v1
Date: Oct 23

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

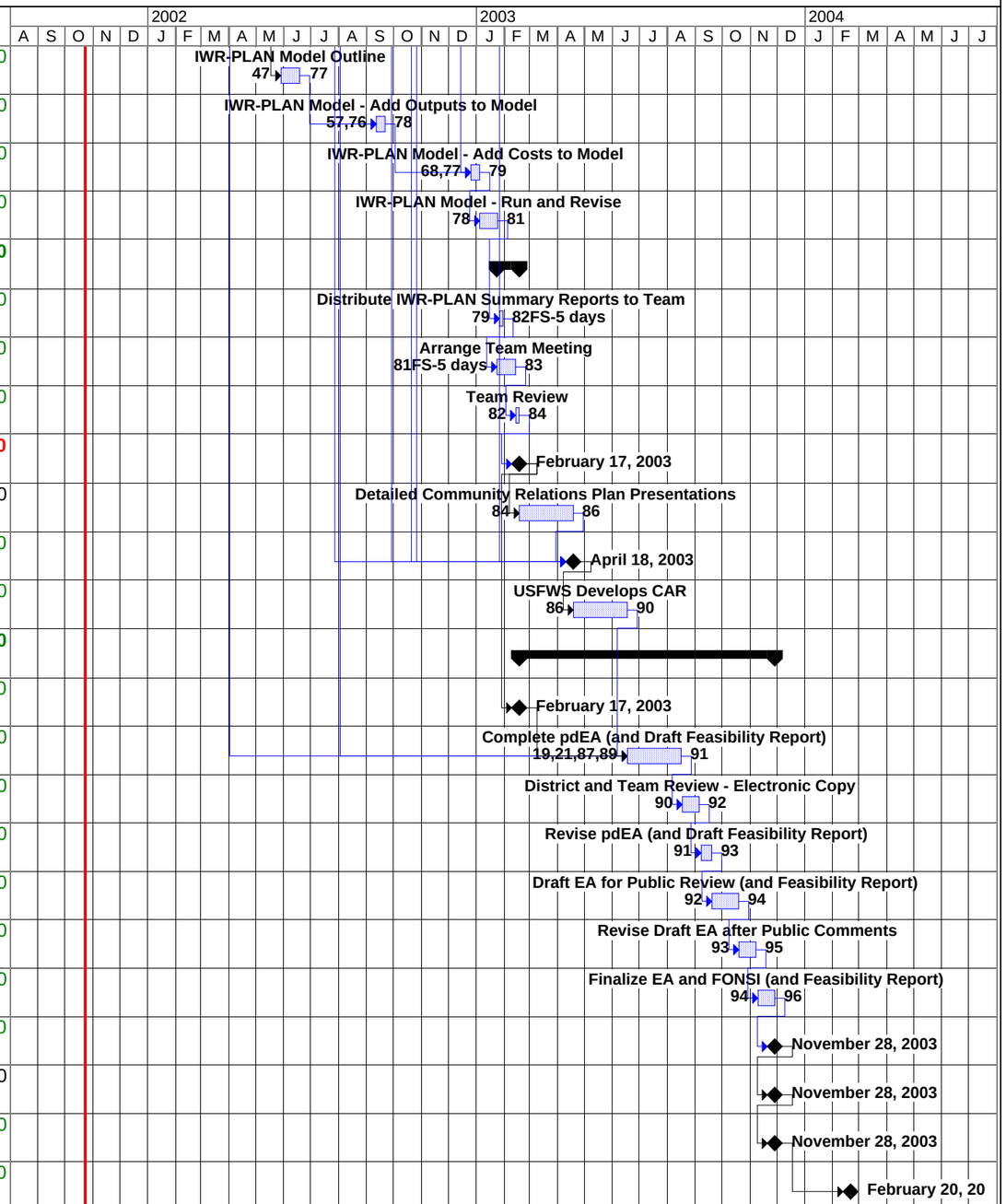
Walnut NAS v1

ID	Task Name	Duration	Start	Finish	Corps Funds	KWO In-Kind	KWO Cash	Total Cost
51	Team Meeting - Two Days	2 days	Jun 27	Jun 28	$2,000.00	$5,000.00	($3,000.00)	$4,000.00
52	RMD Team Completes General Site/System	32 days	Jul 1	Aug 13	$9,000.00	$45,500.00	($36,500.00)	$18,000.00
53	Transmitt Design to GIS coordinator	5 days	Aug 14	Aug 20	$2,000.00	$3,500.00	($1,500.00)	$4,000.00
54	Individually Continue Description of Measure Outputs	16 days	Aug 21	Sep 11	$3,000.00	$8,000.00	($5,000.00)	$6,000.00
55	Upload Feature Design to GIS	20 days	Aug 14	Sep 10	$500.00	$5,000.00	($4,500.00)	$1,000.00
56	GIS Coordinator Estimates Tracts per Measure	5 days	Aug 14	Aug 20	$0.00	$2,000.00	($2,000.00)	$0.00
57	Start Upload of Measure Outputs to IWR-PLAN	0 days	Sep 11	Sep 11	$0.00	$0.00	$0.00	$0.00
58	**Develop Scoping Costs**	**81 days**	**Sep 4**	**Dec 25**	**$71,200.00**	**$38,200.00**	**$33,000.00**	**$142,400.00**
59	Arrange RDM Team Meeting	15 days	Sep 4	Sep 24	$0.00	$500.00	($500.00)	$0.00
60	RDM Team Meeting	3 days	Sep 25	Sep 27	$1,500.00	$4,500.00	($3,000.00)	$3,000.00
61	**Cost Engineering Estimates**	**45 days**	**Sep 27**	**Nov 29**	**$64,200.00**	**$27,200.00**	**$37,000.00**	**$128,400.00**
62	Real Estate Costs	40 edays	Sep 27	Nov 6	$17,400.00	$17,400.00	$0.00	$34,800.00
63	Design Costs	45 days	Sep 30	Nov 29	$41,800.00	$800.00	$41,000.00	$83,600.00
64	O&M Costs	20 days	Sep 30	Oct 25	$5,000.00	$9,000.00	($4,000.00)	$10,000.00
65	**Review Cost Estimate**	**23 days**	**Nov 25**	**Dec 25**	**$5,500.00**	**$6,000.00**	**($500.00)**	**$11,000.00**
66	Arrange RDM Team Meeting	15 edays	Nov 25	Dec 10	$0.00	$1,000.00	($1,000.00)	$0.00
67	RDM Team Meeting - Review of Draft Cost Estimates	2 days	Dec 10	Dec 11	$1,500.00	$4,500.00	($3,000.00)	$3,000.00
68	Cost Engineering Final Estimates	10 days	Dec 12	Dec 25	$4,000.00	$500.00	$3,500.00	$8,000.00
69	**Compile Alternative Descriptions, Costs, and Outputs**	**151 days**	**Jun 19**	**Jan 15**	**$28,000.00**	**$7,000.00**	**$21,000.00**	**$56,000.00**
70	Description	15 days	Dec 26	Jan 15	$6,000.00	$1,000.00	$5,000.00	$12,000.00
71	Photos	20 days	Jun 19	Jul 16	$3,000.00	$1,000.00	$2,000.00	$6,000.00
72	Maps	20 days	Aug 21	Sep 17	$3,000.00	$3,000.00	$0.00	$6,000.00
73	Artist View of typical implementation photos and maps	20 days	Sep 18	Oct 15	$8,000.00	$1,000.00	$7,000.00	$16,000.00
74	Outputs	20 days	Sep 12	Oct 9	$8,000.00	$1,000.00	$7,000.00	$16,000.00
75	**Economic Evaluation**	**173 days**	**May 29**	**Jan 24**	**$30,000.00**	**$2,000.00**	**$28,000.00**	**$60,000.00**



Walnut NAS v1

ID	Task Name	Duration	Start	Finish	Corps Funds	KWO In-Kind	KWO Cash	Total Cost
76	IWR-PLAN Model Outline	15 days	May 29	Jun 18	$4,000.00	$500.00	$3,500.00	$8,000.00
77	IWR-PLAN Model - Add Outputs to Model	10 edays	Sep 11	Sep 21	$8,000.00	$500.00	$7,500.00	$16,000.00
78	IWR-PLAN Model - Add Costs to Model	10 edays	Dec 25	Jan 4	$8,000.00	$500.00	$7,500.00	$16,000.00
79	IWR-PLAN Model - Run and Revise	20 edays	Jan 4	Jan 24	$10,000.00	$500.00	$9,500.00	$20,000.00
80	**Establish Initial Priority List USING IWR-PLAN**	**17 days**	**Jan 24**	**Feb 17**	**$5,000.00**	**$16,000.00**	**($11,000.00)**	**$10,000.00**
81	Distribute IWR-PLAN Summary Reports to Team	4 days	Jan 27	Jan 30	$2,000.00	$5,000.00	($3,000.00)	$4,000.00
82	Arrange Team Meeting	15 days	Jan 24	Feb 13	$0.00	$1,000.00	($1,000.00)	$0.00
83	Team Review	2 days	Feb 14	Feb 17	$3,000.00	$10,000.00	($7,000.00)	$6,000.00
84	**Initial Ecosystem Restoration Alternative Priority List**	**0 days**	**Feb 17**	**Feb 17**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
85	Detailed Community Relations Plan Presentations	60 edays	Feb 17	Apr 18	$12,000.00	$40,000.00	($28,000.00)	$24,000.00
86	Final Data for USFWS CAR	0 days	Apr 18	Apr 18	$0.00	$0.00	$0.00	$0.00
87	USFWS Develops CAR	60 edays	Apr 18	Jun 17	$30,000.00	$0.00	$30,000.00	$60,000.00
88	**Environmental Assessment EA (and Feasibility Report)**	**204 days**	**Feb 17**	**Nov 28**	**147,000.00**	**$32,000.00**	**$115,000.00**	**$294,000.00**
89	Start Preliminary Draft (pd) EA (and Draft Feasibility Report)	0 days	Feb 17	Feb 17	$0.00	$0.00	$0.00	$0.00
90	Complete pdEA (and Draft Feasibility Report)	60 edays	Jun 17	Aug 16	$40,000.00	$11,000.00	$29,000.00	$80,000.00
91	District and Team Review - Electronic Copy	15 days	Aug 18	Sep 5	$5,000.00	$11,000.00	($6,000.00)	$10,000.00
92	Revise pdEA (and Draft Feasibility Report)	10 days	Sep 8	Sep 19	$8,000.00	$2,000.00	$6,000.00	$16,000.00
93	Draft EA for Public Review (and Feasibility Report)	30 edays	Sep 19	Oct 19	$48,000.00	$4,000.00	$44,000.00	$96,000.00
94	Revise Draft EA after Public Comments	15 days	Oct 20	Nov 7	$11,000.00	$1,000.00	$10,000.00	$22,000.00
95	Finalize EA and FONSI (and Feasibility Report)	15 days	Nov 10	Nov 28	$35,000.00	$3,000.00	$32,000.00	$70,000.00
96	Feasibility Report and EA Complete	0 days	Nov 28	Nov 28	$0.00	$0.00	$0.00	$0.00
97	Sponsor Review Contingency AND Matching Corps Contingency	0 days	Nov 28	Nov 28	$45,000.00	$0.00	$45,000.00	$90,000.00
98	Submission to Congress	0 days	Nov 28	Nov 28	$45,000.00	$5,000.00	$40,000.00	$90,000.00
99	Authorized in WRDA	0 days	Feb 20	Feb 20	$0.00	$0.00	$0.00	$0.00



Project: Walnut NAS v1
Date: Oct 23

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APPENDIX A

FEASIBILITY COST-SHARING AGREEMENT

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FEASIBILITY COST-SHARING AGREEMENT
AGREEMENT
BETWEEN THE DEPARTMENT OF THE ARMY
AND
THE KANSAS WATER OFFICE
FOR THE WALNUT RIVER BASIN ECOSYSTEM RESTORATION STUDY

THIS AGREEMENT is entered into this _____ day, of _____, 2002, by and between the Department of the Army (hereinafter the "Government"), represented by the District Engineer executing this Agreement, and the Kansas Water Office (hereinafter the "Sponsor"),

WITNESSETH, that

WHEREAS, the Congress (Senate and/or House Committees) has authorized the Secretary of the Army to conduct a study of flood control and related water resource issues in the Walnut River Basin, Kansas pursuant to the Energy and Water Development Appropriations Act, 2000 (Public Law 106-60); and

WHEREAS, the U.S. Army Corps of Engineers has conducted a reconnaissance study of ”flood control and related water resources issues in the Walnut River Basin, Kansas” pursuant to this authority, and has determined that further study in the nature of a "Feasibility Phase Study" (hereinafter the "Study") is required to fulfill the intent of the study authority and to assess the extent of the Federal interest in participating in a solution to the identified problem; and

WHEREAS, Section 105 of the Water Resources Development Act of 1986 (Public Law 99-662, as amended) specifies the cost sharing requirements applicable to the Study;

WHEREAS, the Sponsor has the authority and capability to furnish the cooperation hereinafter set forth and is willing to participate in study cost sharing and financing in accordance with the terms of this Agreement; and

WHEREAS, the Sponsor and the Government understand that entering into this Agreement in no way obligates either party to implement a project and that whether the Government supports a project authorization and budgets it for implementation depends upon, among other things, the outcome of the Study and whether the proposed solution is consistent with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and with the budget priorities of the Administration;

NOW THEREFORE, the parties agree as follows:

ARTICLE I - DEFINITIONS

For the purposes of this Agreement:

A. The term "*S*tudy *C*osts" shall mean all disbursements by the Government pursuant to this Agreement, from Federal appropriations or from funds made available to the Government by the Sponsor, and all negotiated costs of work performed by the Sponsor pursuant to this Agreement. Study Costs shall include, but not be limited to: labor charges; direct costs; overhead expenses;

supervision and administration costs; the costs of participation in Study Management and Coordination in accordance with Article IV of this Agreement; the costs of contracts with third parties, including termination or suspension charges; and any termination or suspension costs (ordinarily defined as those costs necessary to terminate ongoing contracts or obligations and to properly safeguard the work already accomplished) associated with this Agreement.

B. The term “estimated Study Costs” shall mean the estimated cost of performing the Study as of the effective date of this Agreement, as specified in Article III.A. of this Agreement.

C. The term “excess Study Costs” shall mean Study Costs that exceed the estimated Study Costs and that do not result from mutual agreement of the parties, a change in Federal law that increases the cost of the Study, or a change in the scope of the Study requested by the Sponsor.

D. The term "study period" shall mean the time period for conducting the Study, commencing with the release to the U.S. Army Corps of Engineers Tulsa District of initial Federal feasibility funds following the execution of this Agreement and ending when the Assistant Secretary of the Army (Civil Works) submits the feasibility report to the Office of Management and Budget (OMB) for review for consistency with the policies and programs of the President.

E. The term "PMP" shall mean the Project Management Plan, which is attached to this Agreement and which shall not be considered binding on either party and is subject to change by the Government, in consultation with the Sponsor.

F. The term "negotiated costs" shall mean the costs of in-kind services to be provided by the Sponsor in accordance with the PMP.

G. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.

ARTICLE II - OBLIGATIONS OF PARTIES

A. The Government, using funds and in-kind services provided by the Sponsor and funds appropriated by the Congress of the United States, shall expeditiously prosecute and complete the Study, in accordance with the provisions of this Agreement and Federal laws, regulations, and policies.

B. In accordance with this Article and Article III.A., III.B. and III.C. of this Agreement, the Sponsor shall contribute cash and in-kind services equal to fifty (50) percent of Study Costs other than excess Study Costs. The Sponsor may, consistent with applicable law and regulations, contribute up to 50 percent of Study Costs through the provision of in-kind services. The in-kind services to be provided by the Sponsor, the estimated negotiated costs for those services, and the estimated schedule under which those services are to be provided are specified in the PMP. Negotiated costs shall be subject to an audit by the Government to determine reasonableness, allocability, and allowability.

1. Crediting and/or reimbursement is subject to satisfactory compliance with applicable federal labor laws covering non-Federal construction, including, but not limited to the Davis-Bacon Act (40 USC 276a et seq), the Contract Work Hours and Safety Standards Act (40 USC 327 et seq) and the Copeland Anti-Kickback Act (40 USC 276c) Crediting and/or reimbursement may be withheld, in whole or in part, as a result of the Non-Federal Sponsor’s failure to comply with its obligations under these laws.

C. The Sponsor shall pay a fifty (50) percent share of excess Study Costs in accordance with Article III.D. of this Agreement.

D. The Sponsor understands that the schedule of work may require the Sponsor to provide cash or in-kind services at a rate that may result in the Sponsor temporarily diverging from the obligations concerning cash and in-kind services specified in paragraph B. of this Article. Such temporary divergences shall be identified in the quarterly reports provided for in Article III.A. of this Agreement and shall not alter the obligations concerning costs and services specified in paragraph B. of this Article or the obligations concerning payment specified in Article III of this Agreement.

E. If, upon the award of any contract or the performance of any in-house work for the Study by the Government or the Sponsor, cumulative financial obligations of the Government and the Sponsor would result in excess Study Costs, the Government and the Sponsor agree to defer award of that and all subsequent contracts, and performance of that and all subsequent in-house work, for the Study until the Government and the Sponsor agree to proceed. Should the Government and the sponsor require time to arrive at a decision, the Agreement will be suspended in accordance with Article X., for a period of not to exceed six months. In the event the Government and the sponsor have not reached an agreement to proceed by the end of their 6 month period, the Agreement may be subject to termination in accordance with Article X.

F. No Federal funds may be used to meet the Sponsor's share of Study Costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

G. The award and management of any contract with a third party in furtherance of this Agreement which obligates Federal appropriations shall be exclusively within the control of the Government. The award and management of any contract by the Sponsor with a third party in furtherance of this Agreement which obligates funds of the Sponsor and does not obligate Federal appropriations shall be exclusively within the control of the Sponsor, but shall be subject to applicable Federal laws and regulations.

H. The Sponsor shall be responsible for the total cost of developing a response plan for addressing any hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Pub. L. No. 96-510, 94 Stat. 2767, (codified at 42 U.S.C. Sections 9601-9675), as amended, existing in, on, or under any lands, easements or rights-of-way that the Government determines to be required for the construction, operation, and maintenance of the project. Such costs shall not be included in total study costs.

ARTICLE III - METHOD OF PAYMENT

A. The Government shall maintain current records of contributions provided by the parties, current projections of Study Costs, current projections of each party's share of Study Costs, and current projections of the amount of Study Costs that will result in excess Study Costs. At least quarterly, the Government shall provide the Sponsor a report setting forth this information. As of the effective date of this Agreement, estimated Study Costs are $ 970,000 and the Sponsor's share of estimated Study Costs is $485,000. In order to meet the Sponsor's cash payment requirements for its share of estimated Study Costs, the Sponsor must provide a cash contribution currently estimated to be $100,000. The dollar amounts set forth in this Article are based upon the Government's best estimates, which reflect the scope of the study described in the

PMP, projected costs, price-level changes, and anticipated inflation. Such cost estimates are subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Sponsor.

B. The Sponsor shall provide its cash contribution required under Article II.B. of this Agreement in accordance with the following provisions:

1. For purposes of budget planning, the Government shall notify the Sponsor by 15 January of each year of the estimated funds that will be required from the Sponsor to meet the Sponsor's share of Study Costs for the upcoming fiscal year.

2. No later than 60 calendar days prior to the scheduled date for the Government's issuance of the solicitation for the first contract for the Study or for the Government's anticipated first significant in-house expenditure for the Study, the Government shall notify the Sponsor in writing of the funds the Government determines to be required from the Sponsor to meet its required share of Study Costs for the first fiscal year of the Study. No later than 30 calendar days thereafter, the Sponsor shall provide the Government the full amount of the required funds by delivering a check payable to "FAO, USAED, Tulsa" to the District Engineer.

3. For the second and subsequent fiscal years of the Study, the Government shall, no later than 60 calendar days prior to the beginning of the fiscal year, notify the Sponsor in writing of the funds the Government determines to be required from the Sponsor to meet its required share of Study Costs for that fiscal year, taking into account any temporary divergences identified under Article II.D of this Agreement. No later than 30 calendar days prior to the beginning of the fiscal year, the Sponsor shall make the full amount of the required funds available to the Government through the funding mechanism specified in paragraph B.2. of this Article.

4. The Government shall draw from the funds provided by the Sponsor such sums as the Government deems necessary to cover the Sponsor's share of contractual and in-house fiscal obligations attributable to the Study as they are incurred.

5. In the event the Government determines that the Sponsor must provide additional funds to meet its share of Study Costs, the Government shall so notify the Sponsor in writing. No later than 60 calendar days after receipt of such notice, the Sponsor shall make the full amount of the additional required funds available through the funding mechanism specified in paragraph B.2. of this Article.

C. Within ninety (90) days after the conclusion of the Study Period or termination of this Agreement, the Government shall conduct a final accounting of Study Costs, including disbursements by the Government of Federal funds, cash contributions by the Sponsor, the amount of any excess Study Costs, and credits for the negotiated costs of the Sponsor, and shall furnish the Sponsor with the results of this accounting. Within thirty (30) days thereafter, the Government, subject to the availability of funds, shall reimburse the Sponsor for the excess, if any, of cash contributions and credits given over its required share of Study Costs, other than excess Study Costs, or the Sponsor shall provide the Government any cash contributions required for the Sponsor to meet its required share of Study Costs other than excess Study Costs.

D. The Sponsor shall provide its cash contribution for excess Study Costs as required under Article II.C. of this Agreement by delivering a check payable to "FAO, USAED, Tulsa" to the District Engineer as follows:

1. After the project that is the subject of this Study has been authorized for construction, no later than the date on which a Project Cooperation Agreement is entered into for the project; or

2. In the event the project that is the subject of this Study is not authorized for construction by a date that is no later than 5 years of the date of the final report of the Chief of Engineers concerning the project, or by a date that is no later than 2 years after the date of the termination of the study, the Sponsor shall pay its share of excess costs on that date (5 years after the date of the Chief of Engineers or 2 year after the date of the termination of the study).

ARTICLE IV - STUDY MANAGEMENT AND COORDINATION

A. To provide for consistent and effective communication, the Sponsor and the Government shall appoint named senior representatives to an Executive Committee. Thereafter, the Executive Committee shall meet regularly until the end of the Study Period.

B. Until the end of the Study Period, the Executive Committee shall generally oversee the Study consistently with the PMP.

C. The Executive Committee may make recommendations that it deems warranted to the District Engineer on matters that it oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider such recommendations. The Government has the discretion to accept, reject, or modify the Executive Committee's recommendations.

D. The Executive Committee shall appoint representatives to serve on a Study Management Team. The Study Management Team shall keep the Executive Committee informed of the progress of the Study and of significant pending issues and actions, and shall prepare periodic reports on the progress of all work items identified in the PMP.

E. The costs of participation in the Executive Committee (including the cost to serve on the Study Management Team) shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

ARTICLE V - DISPUTES

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. The parties shall each pay 50 percent of any costs for the services provided by such a third party as such costs are incurred. Such costs shall not be included in Study Costs**.** The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VI - MAINTENANCE OF RECORDS

A. Within 60 days of the effective date of this Agreement, the Government and the Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Study Costs. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative

Requirements for Grants and Cooperative Agreements to state and local governments at 32 C.F.R. Section 33.20. The Government and the Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures for a minimum of three years after completion of the Study and resolution of all relevant claims arising therefrom. To the extent permitted under applicable Federal laws and regulations, the Government and the Sponsor shall each allow the other to inspect such books, documents, records, and other evidence.

B. In accordance with 31 U.S.C. Section 7503, the Government may conduct audits in addition to any audit that the Sponsor is required to conduct under the Single Audit Act of 1984, 31 U.S.C. Sections 7501-7507. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits shall be included in total Study Costs and shared in accordance with the provisions of this Agreement.

ARTICLE VII - RELATIONSHIP OF PARTIES

The Government and the Sponsor act in independent capacities in the performance of their respective rights and obligations under this Agreement, and neither is to be considered the officer, agent, or employee of the other.

ARTICLE VIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, nor any resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE IX - FEDERAL AND STATE LAWS

In the exercise of the Sponsor's rights and obligations under this Agreement, the Sponsor agrees to comply with all applicable Federal and State laws and regulations, including Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.11 issued pursuant thereto and published in 32 C.F.R. Part 195, as well as Army Regulations 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army". The Non-Federal Sponsor is also required to comply with all applicable federal labor standards requirements including, but not limited to the Davis-Bacon Act (40 USC 276a et seq), the Contract Work Hours and Safety Standards Act (40 USC 327 et seq) and the Copeland Anti-Kickback Act (40 USC 276c)

ARTICLE X - TERMINATION OR SUSPENSION

A. This Agreement shall terminate at the conclusion of the Study Period, and neither the Government nor the Sponsor shall have any further obligations hereunder, except as provided in Article III.C.; provided, that prior to such time and upon thirty (30) days written notice, either party may terminate or suspend this Agreement. In addition, the Government shall terminate this Agreement immediately upon any failure of the parties to agree to extend the study under Article II.E. of this agreement, or upon the failure of the sponsor to fulfill its obligation under Article III. of this Agreement. In the event that either party elects to terminate this Agreement, both parties shall conclude their activities relating to the Study and proceed to a final accounting in accordance with Article III.C. and III.D. of this Agreement. Upon termination of this Agreement, all data and information generated as part of the Study shall be made available to both parties.

B. Any termination of this Agreement shall not relieve the parties of liability for any obligations previously incurred, including the costs of closing out or transferring any existing contracts.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the District Engineer for the U.S. Army Corps of Engineers, Tulsa District.

DEPARTMENT OF THE ARMY

BY_____
Robert L. Suthard, Jr.
Colonel, Corps of Engineers
District Engineer
Tulsa District

KANSAS WATER OFFICE

BY_____
Al LeDoux
Director

KANSAS WATER AUTHORITY

BY_____
Kent Lamb
Chairman

APPENDIX B

FEASIBILITY COST ESTIMATE

For reduced PMP management, revision, and redundant information entry, the cost estimate is entered in the network analysis software. The NAS summary is Figure 7-6.

APPENDIX C

PROJECT SCHEDULE

For reduced PMP management, revision, and redundant information entry, the project schedule is entered in the network analysis software. The NAS summary is Figure 7-6.

APPENDIX D

BIOGRAPHIES

Name: Robert T. Angelo, Ph.D

Organization: Bureau of Environmental Field Svcs.
Kansas Dept. of Health & Environ.
Forbes Field, Building 283
Topeka, KS 66620

Phone: (785) 296-8027/296-6603
Fax: (785) 291-3266
E-mail: bangelo@kdhe.state.ks.us

Position: Chief, Technical Services Section

Anticipated Labor Contribution: 8 hours/month

Nature of Contribution:

Provision of information on physicochemical and biological condition of Walnut River (and selected tributaries) and factors responsible for documented water quality impairments.

Education:

Ph.D., Biological Sciences, Montana State University, 1989
M.S., Biology, Wichita State University, 1978
B.S., Biology, Wichita State University, 1976

Pertinent Work Experience:

Have served as an environmental program manager for 5 years with the North Dakota State Department of Health and for 12 years with the Kansas Department of Health and Environment (KDHE). Both positions have emphasized water quality monitoring and the identification of factors responsible for observed water quality impairments. Current responsibilities at KDHE include but are not limited to: (1) supervision of ten environmental scientists and technicians implementing statewide surface water, groundwater, and fish tissue contaminant monitoring programs, compliance monitoring operations, surface water use designation program, and special water pollution investigations; (2) participation in regional and national scientific workgroups responsible for developing technical guidelines for tiered aquatic life uses and biological criteria in surface water quality standards; and (3) participation in Federal-State-Tribal task force responsible for identification and enumeration of mining related damages to natural resources of Tri-State Mining Area under Comprehensive Environmental Response, Compensation and Liability Act.

Name: Robert Atchison

Organization: Kansas State Forest Service
9 West 28th, Suite B
Hutchinson, KS 67502

Phone:
Fax:
E-Mail:

Position: Rural Forestry Coordinator

Name: Philip G. Balch
Wildlife Biologist/Geomorphologist

Organization: Kansas State Conservation Commission
109 SW 9th Street, Suite 500
Topeka, KS 66612-1283

Phone: (785) 296-3600
Fax: (785) 296-6172
E-mail: pbalch@scc.state.ks.us
Office Web: www.ink.org/public/kscc

Position: Riparian and Wetland Program Coordinator

Labor / Contribution to Study:

Can assist in conducting stream and riparian condition assessments along with stream bank stabilization assessment, surveys and design. 10 hours per month.

Education:

B.S., Wildlife Biology, Kansas State University

Qualifications:

Have worked for the State Conservation Commission since December 1992. Since that time, have worked to develop and implement a Riparian and Wetland Protection Program for the State of Kansas. Since 1995, have specialized in stream bank stabilization design and riparian restoration, providing technical assistance to Kansas landowners.

Work Related Training:

Wildland Hydrology
- Applied Fluvial Geomorphology
- River Morphology and Applications
- River Assessment and Monitoring
- River Restoration and Natural Channel Design

Robbin B. Sotir
- Soil Bioengineering for Stream Bank Stabilization

U.S. Army Corps of Engineers
   Bendway Weir Design
   Advanced Stream Bank Stabilization

USDA
   Stream Visual Assessment

U.S. Department of Interior
   Assessing Riparian Proper Functioning Condition

Illinois Water Survey
   Illinois Stream Bank Stabilization

Publications:

Principle Author and Editor, *Kansas River and Stream Corridor Management Guide*

Name: Rob Beilfuss

Organization: Kansas Department of Health & Environment
Watershed Management Section
Forbes Field, Building 283
Topeka, KS 66620

Phone:
Fax:
E-mail:

Position:

Name: Kurt Bookout

Organization: City of El Dorado
380 E. Central
El Dorado, KS 67042

Phone: (316) 321-9100
Fax: (316) 321-1898
E-mail: wildcat@eldoks.com

Position: Director of Public Utilities

Labor / Contribution to Study:

The City of El Dorado is definitely interested in participating in any project that will protect the water quality in El Dorado Reservoir. The feasibility study of Ecosystem Restoration possibilities in the basin will definitely be a step towards protecting our most valuable resource – water. I am not familiar enough with the project to know what we can offer, but we will help out in any way we can.

Education:

B.S. Wildlife and Fisheries Biology, Kansas State University
Class IV Water and Wastewater – State of Kansas Certifications

Qualifications:

First job out of college was working on habitat assessment studies for the Kansas Dept. of Wildlife and Parks to create habitat models for the U.S. Fish and Wildlife Service.

Have a minor in Agriculture and life experiences in agriculture having grown up on a farm.

Name: Roger L. Boyd

Organization: Baker University
Kansas Water Authority

Phone:
Fax:
E-mail:

Position: Chair, Biology Department
Chair, Planning Committee

Name: Dennis Carlson

Organization: Kansas State Forest Service
9 West 28th, Suite B
Hutchinson, KS 67502

Phone: (316) 663-3501
Fax:
E-mail: dcarlson@oznet.ksu.edu

Position: District Forester

Work Experience Relative to the Project:

Expertise in riparian forest management, timber harvesting and thinning to improve the health and productivity of existing woodlands, and establishment of riparian forest buffers to reduce non-point source of pollution and improve water quality.

Contact's Interests:

Service landowners and natural resource agency personnel for riparian forest management and establishment practices.

Name: Dewey Caster

Organization: U.S. Fish and Wildlife Service
Manhattan, KS

Phone: (785)-539-3474, ext. 108
Fax: (785) 539-8567
E-mail: Dewey_Caster@fws.gov

Position: Fish and Wildlife
Biologist, Federal Projects

Education:

B.S., Fishery Biology and Wildlife Management, Kansas State University, 1970.

Experience:

Thirty years of experience with the Service, working in New England, the Dakotas, and Kansas.

Name: Tim Christian

Organization: Kansas Wetland and Riparian Areas Alliance

Phone:
Fax:
E-mail:

Position: Coordinator

Education:

Experience:

Name: Rick Davis

Organization: Kansas Dept. of Health & Environ.
Bureau of Water, Non-Point Source Section
Forbes Field, Building 283
Topeka, KS 66620

Phone: 785-296-8037
Fax: 785-296-5509
E-mail: rdavis@kdhe.state.ks.us
Office web: www.kdhe.state.ks.us/water/nps.htmlc

Position: Non-Point Source Consultant

Labor/ Input Contribution:

Management guidance and advice, restoration design, project implementation and general fieldwork will be provided as needed.

Education:

B.A., Agriculture; major horticulture, Kansas State University, 1977
Master of Landscape Architecture, Kansas State University, 1992

Work Experience Relevant To Project:

Has been employed by the Kansas Department of Health and Environment since 1992 to implement riparian area management practices for water quality protection.

Name: Clark Duffy

Organization: Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 296-4094
Fax:
E-Mail:

Position: Assistant Director

Name: Brock Emmert

Organization: Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 296-3185
Fax:
E-mail:

Position: Stream Morphology – Project Manager

Name: Margaret Fast

Organization: Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 296-0865
Fax:
E-Mail:

Position: Manager, Planning Unit

Name: James M. Fry

Organization: U.S. Army Corps of Engineers
2710 N.E. Shady Creek Access Road
El Dorado, KS. 67042

Phone: 316-321-9974
Fax: 316-321-7611
E-mail: fryj@swt02.swt.usace.army.mil

US Army Corps of Engineers
Tulsa District

Position: Lake Manager El Dorado/Chairman, Walnut Basin Advisory Committee

Labor/Contribution to Study:

At this point I am not sure how much time will be needed. While I will wear two hats, my agency involvement should not take much time. I see my primary role as providing information and keeping Basin Advisory Committee members informed.

Education:

B.A. Biology, Emporia State University
M.S. Biology, Emporia State University

Qualifications:

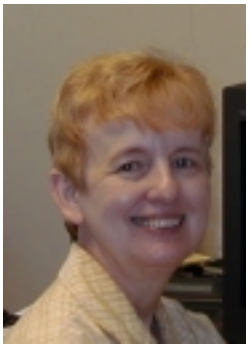
Have served as Lake Manager at El Dorado for past 21 years. Have served the Walnut Basin Advisory Committee of the Kansas Water Office for the past __ years.

Name: Al LeDoux

Organization: Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 296-0868
Fax:
E-mail:

Position: Executive Director



Name: Marilyn Kay Hoover

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-7572
Fax: (918) 669-7576
E-Mail:

Position: Attorney

US Army Corps of Engineers
Tulsa District

Name: Stephen A. Hurst

Organization: Kansas Water Office
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 368-6201
Fax: (785) 296-0878
E-Mail: shurst@kwo.state.ks.us
Office Web: www.kwo.org

Position: Legal Counsel / Policy Planner

Labor / Contribution to Study:

Will serve as Kansas Water Office Project Manager / Coordinator, acting as communications liaison with the Corps and State Agencies and local participants on "Project Management Team". Time will involve meeting notices; e-mail communication; agenda development in conjunction with Corps of Engineers; phone contact; meeting attendance, project planning sessions, progress reports review and analysis. Since these duties are closely tied with my Walnut Basin Advisory Committee staffing duties and Walnut Basin State Water Plan development duties, as much as 20-30 hours per month could be involved.

Education:

Juris Doctor, University of Missouri, Kansas City
Masters in Public Administration, University of Kansas, Lawrence
B.A., Political Science, University of Missouri, Kansas City

Qualifications:

Have been employed with the Kansas Water Office for 18 years and currently serve as Legal Counsel and Water Resource Policy Planner. The Kansas Water Office is the State's water resource planning and coordination agency. Have served as Director of the agency from June 1991 - July 1995.

During 18 years with the agency, have provided legal support to both the agency and the Kansas Water Authority; worked in the areas of water resource policy development and legislation; public education and information; hydrology; Large Reservoir financing; Fish, Wildlife & Recreational issues; Basin Plan development in the 12

river basins in Kansas; water marketing (public water supply); River Water Assurance Program development (in coordination with Kansas City and Tulsa Corps of Engineers). Most recently have been working with State, Federal, and local officials on developing a statewide wetland and riparian implementation plan to address water quality, sedimentation, flooding, and recreational issues in the State's 12 river basins.

Licenses:

State of Kansas Bar
U.S. District Court - Kansas

Name: Fred Kloeckler

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-7055
Fax: (918) 669-7526
E-Mail:

Position: Civil Engineer

US Army Corps of Engineers
Tulsa District

Name: Sandra K. Koontz (Sandy)

Organization: Butler County Conservation District
2503 Enterprise, Suite B
El Dorado, KS 67042

Phone: 316-320-5891
Fax: 316-321-4956
E-mail: sandy.koontz@ks.usda.gov

Position: Water Quality Coordinator

Labor/Contribution to Study:

Conservation Districts are the grass roots representative of landowners and the general public. Districts provide leadership and direction and encourage voluntary cooperation in natural resource conservation programs. Soil and water conservation practices are encouraged and cost share monies are expended throughout Butler County to assist landowners in protecting our natural resources. The Conservation District's Non-Point Source Pollution Program addresses issues concerning agriculture waste and chemicals, urban runoff, on-site waste sewage systems, riparian and wetland restoration and development, abandoned water wells and pasture and rangeland management. An ongoing water monitoring and education/information program above El Dorado Lake has also been implemented to make residents aware of the issues concerning non-point source pollution. The Water Quality Coordinator, under the direction of the District's Board of Supervisors, can contribute to this study by writing news articles, putting information about this program in newsletters, assisting with the coordination/setup of public information meetings, attending meetings and providing one-on-one contact with landowners in the study area. It is estimated that the Coordinator can contribute 5 to 10 hours per month.

Education:

B.S., Agriculture Education, Kansas State University

Qualifications:

Butler County Conservation District Water Quality Coordinator, 5 years.

Natural Resources Conservation Service (NRCS) Technician, Washington State, 2 years.

Pierce County (WA) Conservation District Resource Technician, 3 years.

NRCS Soil Conservationist, Marion and Sedgwick Counties, 3 years.

Name: R. Dean Krehbiel

Organization: U.S. Department of Agriculture
Natural Resource Conservation
Service (NRCS)
2503 Enterprise, Suite B
El Dorado, KS 67042-3229

Phone: (316) 321-5814
Fax: (316) 321-4956
E-Mail: dean.krehbiel@ks.usda.gov

Position: Butler County District Conservationist

Name: William M. Langley

Organization: Butler County Community College
2425 Gentry Lane
El Dorado, KS 67042

Phone: (316) 321-3495
Fax:
E-Mail:

Position: Instructor

Education:

Ph.D. 1978, Arizona State University, Tempe, AZ
M.S., 1968, Michigan State University, E. Lansing, MI
B.S., 1965, Earlham College, Richmond, IN

Teaching and Research Experience:

Instructor, 1983 - present, Butler County Community College, 901 S. Haverhill Rd., El Dorado, KS 67042. Taught courses in Anatomy & Physiology, Biology Majors I and II, General Biology, Bird Identification, Human Cadaver Dissection, General Chemistry, Statistics, General Physical Science, College and Intermediate Algebra.

Honors Program, Director, 1991- 1996, Butler County Community College, 901 S. Haverhill Rd., El Dorado, KS 67042. Developed program, managed budget and operations, taught Honors Seminars, directed research projects of students.

Water Quality Monitoring Program, Director, 1994 - present, Butler County Community College, 901 S. Haverhill Rd., El Dorado, KS 67042. Initiated and developed program, obtained grants from College, Butler County Conservation District, City of El Dorado Water Department, taught summer offering for high school seniors, and directed student research projects.

Adjunct Professor, summers 1987, 1988, 1989, Phillips University, Field Camp, Box 2000 University Station, Enid, OK 73702. Taught courses in Ornithology and directed student research projects.

Instructor, summer 1987, College of Education, Wichita State University, Wichita, KS 67208. Taught at NSF Workshop for middle school science teachers.

Adjunct Professor, 1985-86, Division of Psychology and Educational Testing, College of Education, Emporia State University, Emporia, KS 66801. Engaged in joint research projects.

Adjunct Professor, 1985-86, College of Education, Wichita State University, Wichita, KS 67042. Taught courses for NSF workshop for middle school science teachers.

Assistant Professor, 1975-82, Department of Biological Sciences, Wichita State University, Wichita, KS 67208. Taught courses in Majors Biology, Animal Behavior, Sociobiology, Biometry and Ornithology. Directed labs for majors biology and masters thesis for two students.

Recent Grants:

Turner Foundation, 1999, Storm sewer stenciling project.

Kansas Good Neighbor Grant from Kansas Department of Health and Environment, 1998 – 2001, Nutrient removal by buffer strips in runoff from cattle grazed areas.

Environmental Protection Agency Grant, 1997-1998, Water festival program for Walnut River Basin Drainage.

Osprey Introduction Project, 1996 - 2000, Hacking young osprey at El Dorado State Lake and supervising cooperative education students, Kansas Department of Wildlife and Parks.

Fellowships and Awards:

Educators Environmental Excellence Aware, EPA region VII 2000.

Gustav Ohaus Innovations Award in Science Teaching at College level, 2nd Place, 2000.

Kansas Leadership Training Program, Kansas State University, 1999 – 2000.

Who's Who among America's Teachers, 1998, 2000.

Faculty Assisted Science and Technology Fellowship, 1998, National Science Foundation.

Greatest Institute Fellowship, 1997, Summer workshop in Environmental Technology Training, North Central Partnership in Environment, Technology and Education.

Who's Who among America's Teachers, 1995.

Publications:

W. M. Langley, **2000**, Grassroot Groups, National Honors Report, 21, 37- 38.

W. M. Langley, **2000**, Water quality monitoring program: an honors program approach, Splashings, April, 22-24.

W. M. Langley, **2000**, Water quality testing program. Hydrogram, Spring, 22-23.

W. M. Langley, **1999**, Changes in wintering crow populations in Kansas. Bulletin of Kansas Ornithological Society, 50, 35-38.

W. M. Langley, **1999**, Perch and habitat use by red-tailed hawks and American Kestrels along a highway in eastern Kansas. Transactions of Kansas Academy of Sciences, 102, 92-99.

W. M. Langley, Chris Frey and Mike Taylor, **1998**, Comparison of waterfowl and shorebird use of a man-made wetland, lake and pond. Transactions of Kansas Academy of Sciences, 101, 114-119.

W. M. Langley, **1994**, Comparison of predatory attack behaviors in deer mice (Peromyscus maniculatus) and grasshopper mice (Onychomys leucogaster). Journal of Comparative Psychology, 108, 394-400.

W. M. Langley, **1992**, Foraging behavior of winter roosting crows in the Wichita area. Report for Kansas Department of Wildlife and Parks. 56 p.

W. M. Langley, **1991**, Relationship between attack and feeding in the insect-predatory behavior of grasshopper mice. Aggressive Behavior, 17, 275-284.

W. M. Langley, **1989**, Behavior of winter roosting crows in the Wichita area. Report for Kansas Department of Wildlife and Parks, 29 p.

W. M. Langley, **1989**, Grasshopper mouse's use of visual cues during a predatory attack. Behavioural Processes, 19, 115-125.

W. M. Langley, H. Lipps and J. Theis, **1989**, Comparison of the inhibitory effects of denatonium saccharide and quinine in grasshopper mice, Onychomys leucogaster. Perceptual and Motor Skills, 68, 551-557.

W. M. Langley, H. Lipps and J. Theis, **1989**, Responses of Kansas motorists to snake models on a rural highway. Transactions of the Kansas Academy of Sciences, 92, 43-48.

J. R. Choate, W. M. Langley, V. Bailey, **1988**, The least weasel in southeastern Kansas. Prairie Naturalist, 20, 57.

G. A. Cress and W. M. Langley, **1988**, Effects of annual and habitat variations in prey on the growth and productivity of red-tailed hawks (Buteo jamaicensis). Transactions of the Kansas Academy of Sciences, 91, 96-102.

W. M. Langley, **1988**, Spiny mouse's (Acomys cahirinus) use of distance sense in localization of prey. Behavioural Processes, 16, 67-73.

W. M. Langley, **1987**, Specializations in the predatory behavior of grasshopper mice (Onychomys leucogaster and O. torridus): a comparison with the golden hamster (Mesocricetus auratus). Journal of Comparative Psychology, 101, 322-327.

W. M. Langley, J. Theis, S. Davis, M. Richard, and C. Grover, **1987**, Effects of denatonium saccharide on the drinking behavior of the grasshopper mouse (Onychomys leucogaster). Bulletin of the Psychonomic Society, 25, 17-19.

W. M. Langley, **1986**, Development of predatory behaviour in the southern grasshopper mouse (Onychomys torridus). Behaviour, 99, 275-295.

W. M. Langley, **1986**, Differences in the decision to attack between grasshopper mice and hamsters: effects of novel, noxious and aversive stimuli. Bulletin of the Psychonomic Society, 24, 294-296.

W. M. Langley and A. Weigand, **1986**, Importance of tactile and olfactory cues to the inhibition of the grasshopper mouse's attack through toxicosis. Behavioral and Neural Biology, 46, 337-347.

S. F. Davis, L. A. Cunningham, T. J. Burke, M. Richard, W. M. Langley and J. Theis, **1986**, A preliminary analysis of the

suppressive effects of denatonium saccharide. Bulletin of the Psychonomic Society, 24, 229-232.

W. M. Langley, **1985**, Relative importance of distance senses in hamster predatory behavior. Behavioural Processes, 10, 229-239.

W. M. Langley and K. Knapp, **1984**, Effects of toxicosis on the predatory behavior of the golden hamster (Mesocricetus auratus). Journal of Comparative Psychology, 98, 302-310.

W. M. Langley, **1984**, Recognition of prey species by their odors in the grasshopper mouse (Onychomys leucogaster). Behavioural Processes, 9, 277-280.

W. M. Langley, **1983**, Stimulus control of feeding behavior in the grasshopper mouse. Zeitschrift fur Tierpsychologie, 62, 291-306.

W. M. Langley, **1983**, Relative importance of distance senses in grasshopper mouse predatory behaviour. Animal Behaviour, 31, 199-205.

W. M. Langley and K. Knapp, **1982**, Importance of olfaction to the suppression of the attack response through conditioned taste aversion. Behavioral and Neural Biology, 36, 368-378.

W. M. Langley, **1981**, The effects of prey defenses on the attack behavior of the southern grasshopper mouse (Onychomys torridus). Zeitschrift fur Tierpsychologie, 56, 115-127.

W. M. Langley, **1981**, Failure of food-aversion conditioning to suppress predatory attack of the grasshopper mouse, Onychomys leucogaster. Behavioral and Neural Biology, 33, 317-333.

W. M. Langley and B. Bowman, **1980**, Effectiveness of portable audiotutorial vs. lecture formats in presentation of ecological concepts. Journal of College Science Teaching, 10, 236-238.

W. M. Langley, **1980**, Habitat preference in the southern grasshopper mouse, Onychomys torridus (Muridae). Southwestern Naturalist, 25, 266-267.

W. M. Langley, **1979**, Preference of the striped skunk and opossum for auditory over visual stimuli. Carnivore, 2, 31-34.

R. L. Smith and W. M. Langley, **1978**, Cicada stress sound: an assay of its effectiveness as a predator defense mechanism. Southwestern Naturalist, 23, 187-196.

G. Brown and W. M. Langley, **1975**, Outside activities in audiotutorial format. American Biology Teacher, 37, 432.

Professional Organizations:

Kansas Academy of Sciences
Kansas Ornithological Society
Wichita Audubon Society
  President 1991-92, 1992-93
  Vice President 1988-89, 1989-90
Kansas Water and Environment Association
  Chairperson for Education Session, 1997 - 2000
Partnership for Environment, Technology and Education

Name: Chris S. Mammoliti, Chief
Environmental Services Section

Organization: Kansas Department of Wildlife & Parks
512 S.E. 25th Ave
Pratt, KS 67124

Phone: 620/672-5911
Fax: 620/672-2972
E-mail: chrism@wp.state.ks.us
<mailto:chrism@wp.state.ks.us>

Discipline: Aquatic Ecology

Labor/input Contribution to Study:

CY 2001 = 40 hours
CY 2002 = 80 hours

Education:

B.S., Fisheries and Wildlife Biology
Master of Science in Environmental Science.

Qualifications:

Chief of the Environmental Services Section with the Kansas Department of Wildlife and Parks. In this position, oversee a staff of three full-time ecologists and two full-time stream biologists. The overall mission of the Environmental Services Section is to deter and mitigate degradation and loss of aquatic and terrestrial wildlife habitat through review, assessment, and coordination input to proposed development projects, and to conduct special investigations regarding the status of the state's stream ecosystems. The section also administers the regulatory permit program for development projects impacting State-listed threatened and endangered species.

Work Experience:

Have been with Kansas Department of Wildlife and Parks 17 years. Currently hold membership in the American Fisheries Society; the Kansas Chapter of the American Fisheries Society, serving as Secretary/Treasurer; and the Kansas Herpetological Society.

Contribution to the Study:

Technical resource consultant on aquatic and terrestrial habitat conditions as well as State- and Federally-listed T/E species within the Walnut Basin. Coordination of biological sampling to document aquatic and terrestrial wildlife communities.

Name: Ron Marteney

Organization: Kansas Department of Wildlife & Parks

Phone: (316) 322- 7513
Fax:
E-Mail: ronm@wp.state.ks.us

Position: Fisheries Biologist

Labor Contribution to Study:

Amount of time will vary depending upon the time of year and other work commitments. Hopefully, I could contribute an average of 3 or 4 days a month.

Professional Duties:

Administer and coordinate fisheries management plans for two Federal reservoirs, three State fishing lakes, five community lakes, and numerous private waters in four counties in south-central Kansas. Duties include collecting, compiling, and analyzing fish population data; determining supplemental stocking needs; formulating water-level fluctuation plans; and submitting and justifying recommendations on regulation changes. Develop and submit budget proposals for Federal aid projects. Design, submit, and initiate fisheries research projects within my district. Participate in state-wide research projects. Formulate state-wide stocking guidelines and management recommendations while serving on species-specific management task forces. Other duties include liaison with various agencies and organizations, brood fish collection, and fish kill investigations. Experienced with IBM compatible and MacIntosh computers. Proficient in SAS, Excel, Quatro Pro, Excel, dBase III+, FishCalc, Word Perfect, Microsoft Word, PowerPoint, and DesignCAD software packages. Directly supervise permanent and temporary personnel on a variety of projects.

Previous Professional Experience:

Watershed District Manager, Wolf River Watershed Joint District 6

Name: Marc L. Masnor P.E.

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-7349
Fax: (918) 669-7546
E-Mail:

US Army Corps of Engineers
Tulsa District

Position: Project Manager/Study Manager

Professional Duties:

Lead planner for various Civil Works projects in the Planning Branch of the Planning, Environmental, and Regulatory Division.

Education:

B.S., Civil Engineering, University of Missouri at Rolla (formerly the Missouri School of Mines and Metallurgy)

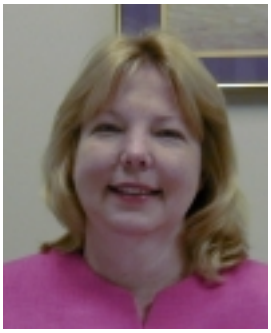
Experience:

- hydrology and hydraulics,
- project management,
- study and project planning,
- District website evaluation, acquisition, and installation,
- District Office telephone system evaluation, acquisition, and installation,
- PER Division office automation planning and acquisition, and
- District Co-webmaster.

Duties:

Lead planner for:

- Grand Lake studies,
- Wichita River Basin Chloride Control Reevaluation, and
- Walnut River Basin Reconnaissance Study
- PER Division computer acquisition planner
- District Co-Webmaster



Name: Angela McPhee

Organization: U.S. Army Corps of Engineers,
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1645 S. 101st East Avenue
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Phone: (918) 669-7677
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E-Mail:

US Army Corps of Engineers
Tulsa District

Position: Branch Chief, Real Estate
Acquisition and Realty Services

Duties:

Responsible for acquiring a variety of interests in real property. Responsible for monitoring real estate activities of cost-sharing sponsors.

Name: Jim E. Michaels

Organization: Land Service, Inc.
12698 S.W. Thunder Road
Augusta, KS 67010

Phone: (316) 775-1554
Fax:
E-mail: landservice@worldnet.att.net

Position: President of Land Service, Inc., and Whitewater Watershed Manager

Experience:

Spent 15 years in public segment dealing with water quality, wetland habitat and management, urban erosion and sedimentation control, domestic herd waste management, dry land agriculture, and golf course and professional turf management related issues. Have done extensive work with multi-levels of government and on private lands, primarily on the west coast.

Expertise in land mitigation and mediation.

Name: Rick Miller

Organization: State of Kansas

Phone:
Fax:
E-mail:

Position: State GIS Coordinator

Name: James C. Randolph

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-4396
Fax: (918) 669-7546
E-Mail:

US Army Corps of Engineers
Tulsa District

Position: Environmentalist, NEPA Team Leader, and RMD Team Leader

Duties:

Environmental compliance and NEPA documentation and threatened and endangered studies.

Education:

B.S. Degree in Biology
M.S. Degree in Zoology

Name: Edwin J. Rossman, Ph.D.

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-4921
Fax: (918) 669-7546
E-Mail:

US Army Corps of Engineers
Tulsa District

Position: Sociological Analysis and Public Involvement

Education:

Ph.D. University of North Texas, 1990
M.A., Texas Tech University, 1977
B.A., Texas Tech University, 1974

Experience:

Have been a social scientist in Planning Branch, Planning, Environmental, and Regulatory Division at Tulsa District since 1980. Responsible for conducting social impact and demographic analyses for military and civil works projects.

Have provided social and economic information in support of the original round of Base Realignment and Closure actions and compliance with the National Environmental Policy Act. Have been involved in developing methodologist, policies, and procedures for evaluating social and economic parameters in the Corps of Engineers civil and military programs. Work includes public involvement and community relations strategies for civil and military projects. Have provided support for clients such as Fort Sill, Fort Chaffee, Longhorn Army Ammunition Plant, U.S. Department of Energy Pantex Plant, Oklahoma Army National Guard, Oklahoma Department of Tourism and Recreation, U.S. Navy, and U.S. Air Force. Corps districts in Sacramento, St. Paul, San Juan, and Puerto Rico have used his expertise in public involvement and social impact assessment.

Active in professional organizations and recently published in the International Journal of Mass Emergencies and Disasters, Sociological Practice Review, Environmental Modeling and Assessment, and Industrial and Environmental Crisis Quarterly. My writings on

public involvement also has been published in Spanish in Desmond Connor's book How to Prevent and Resolve Public Conflict (title translated).

Project Experience:

Served as Technical Manager on Community Relations Plans – Department of Energy Pantex Plant, Corps of Engineers Formerly Used Defense Sites in Oklahoma and Texas.

Served as Technical Manager on civil works social impact assessments for Red River Chloride, Mingo Creek Flood Control Project, and other large water resource projects.

Served as Assistant Project Manager, Social and Economic Analysis Team, Base Realignment and Closure Office (through the U.S. Army Corps of Engineers Institute for Water Resources).

Work History:

Social Scientist: U.S. Army Corps of Engineers, Tulsa, Oklahoma, September 1980 – Present

Teaching Fellow: University of North Texas, 1978-1980

Research Associate: Texas Tech University School of Medicine, 1976-1978

Professional Registrations/Certifications/Clearances/Memberships:

Member, American Sociological Association
Southwestern Social Science Association

Name: Lawrence (Leigh) Skaggs

Organization: U.S. Army Corps of Engineers
Institute for Water Resources (CEIWR)
7701 Telegraph Road
Casey Building
Alexandria, VA 22315-3868

Phone: (703) 428-9091
Fax: (703) 428-8435
E-mail: lawrence.l.skaggs@usace.army.mil

Position: IWR-PLAN Expert

Experience:

Leigh Skaggs is a Geographer with the U.S. Army Corps of Engineers, Institute for Water Resources (IWR). A native of Atlanta, he graduated from the University of Georgia with a BA in Economic Geography. He has worked at IWR since 1987 in the Technical Analysis and Research (now Decision Methodologies) Division, working on the Planning Methodologies, Risk Analysis, Evaluation of Environmental Investments, and Decision Support Technologies research programs. Prior to his Corps experience, he attended graduate school at the University of Georgia and worked as a researcher at the National Geographic Society in Washington, DC. Leigh currently volunteers for the Clarendon Alliance, an urban planning partnership in Arlington, Virginia, and gives tours at the Smithsonian Institution's National Museum of American History on weekends.

Name: James R. Sullivan

Organization: U.S. Army Corps of Engineers,
Tulsa District
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Phone: (918) 669-7547
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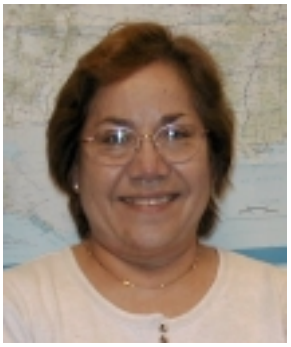
E-Mail:

Position: Economic Analysis

US Army Corps of Engineers
Tulsa District



Name: Paula R. Willits

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Tulsa District
1645 S. 101st East Avenue
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Phone: (918) 669-4928
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E-mail:

Position: Writer-Editor

US Army Corps of Engineers
Tulsa District

Name: Brownie Wilson

Organization: Kansas Water Office
Conservation and Evaluation Unit
901 S. Kansas Avenue
Topeka, KS 66612-1249

Phone: (785) 296-4231
Fax:
E-Mail: bwilson@kwo.state.ks.us

Position: Environmental Scientist

Name: Russell Wyckoff

Organization: U.S. Army Corps of Engineers,
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629

Phone: (918) 669-7107
Fax:
E-mail:

Position: Hydraulic Engineer

US Army Corps of Engineers
Tulsa District