
Chapter 1 Purpose and Need

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CHAPTER 1:

PURPOSE AND NEED

1.1 Introduction

The Rivers & Harbors Act of July 24, 1946, authorized the development of the Arkansas River and its tributaries for the purposes of navigation, flood control, hydropower, water supply, recreation, and fish and wildlife. Public Law 91-629 stated that the project would be known as the McClellan-Kerr Arkansas River Navigation System (MKARNS). For the purposes of this study, the navigation system and its associated reservoirs are hereafter referred to as the "MKARNS". Several reservoirs on the Arkansas River and its tributaries support water control on the MKARNS and are operated as part of the navigation system. MKARNS project purposes include navigation, flood control, hydropower, water supply, recreation, and fish and wildlife. Development of and construction on the MKARNS began in 1952 and was completed in 1971 at a cost of \$1.3 billion.

The Arkansas River Navigation Study was initiated in a Fiscal Year (FY) 99 Congressional Add to study MKARNS operational issues in the Fort Smith, Arkansas area. As a result of the reconnaissance study, a Section 905(b) Analysis (WRDA 86), dated September 1999, was prepared by the Southwestern Division, Little Rock District, and approved by Headquarters, on January 4, 2000. The study recommended that a navigation feasibility study be prepared. Additional language was included in Section 13b of the Energy and Water Development Act of 2004, which authorized a project depth of 12 feet.

The authority for the current effort and other recent studies of the Arkansas River comes from a Resolution by the Committee on Public Works and Transportation of the United States House of Representatives, dated March 11, 1982, and referred to as the Arkansas River Basin Study Authority. The Study Authority reads as follows:

" RESOLVED BY THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, that the Board of Engineers for Rivers and Harbors, established by Section 3 of the River and Harbor Act approved June 13,

1902, is hereby requested to review in cooperation with the states of Arkansas and Oklahoma, political subdivisions, agencies and instrumentalities thereof, and appropriated Federal agencies as a shared effort, the report of the Chief of Engineers on the Arkansas River and tributaries, published as House Document No. 308, seventy-fourth Congress, and other pertinent reports, with a view to determining whether any modification of the recommendation contained therein are advisable at this time, with particular reference to developing an implementable plan for storage, conservation, treatment, and conveyance of water in the Arkansas River and tributaries in Arkansas and Oklahoma, for municipal, industrial, and agricultural uses and other purposes. This study should include an assessment of the usability of the water for various uses."

The study area includes the entire MKARNS in Arkansas and Oklahoma including:

- Approximately 445 miles of river from the Mississippi River to the Port of Catoosa near Tulsa, Oklahoma. A series of 18 locks and dams (including Montgomery Point Lock and Dam), 13 in Arkansas and 5 in Oklahoma, provides for commercial navigation throughout the length of the MKARNS; and
- Eleven upstream reservoirs in Oklahoma that influence river flow on the MKARNS. The upstream reservoirs assist with the control of water releases through spillways and power generating units. The rate and amount of water released from each reservoir depends on many factors including available water storage, power requirements, navigation water requirements, inflow rates, river flow rates downstream, and weather conditions.

1.2 Purpose and Need For The Action

1.2.1 Purpose for Taking the Action

The U.S. Army Corps of Engineers (USACE) seeks to improve commercial navigation operation on the MKARNS. The USACE would accomplish this action while maintaining the other project purposes of flood control, recreation, hydropower, water supply, and fish and wildlife.

1.2.2 Need for the Action

1.2.2.1 General Need for the Action

The USACE's Civil Works mission is to contribute to national welfare by providing quality water resources and emergency response programs. Civil Works programs are: navigation, flood and storm damage reduction, environmental protection, ecosystem restoration, regulation of work by others in waters of the United States, including wetlands, emergency operations, research and development, and support to other Federal agencies. Additional outputs of USACE's Civil Works projects may include hydropower, water supply (municipal/industrial, irrigation), and recreation.

The Little Rock and Tulsa Districts of the USACE are charged with accomplishing various Civil Works missions including the operation and maintenance of the MKARNS. Dating to Federal laws enacted in 1824, part of the USACE Civil Works mission includes supporting navigation by improving and maintaining channels. Improving a channel means making the channel deeper and/or wider. Maintaining a channel means keeping the channel at specified depths and widths by dredging and other means.

1.2.2.2 Specific Need for the Action

Commercial navigation is an historic and ongoing activity on the MKARNS. Three elements associated with the maintenance and improvement of the MKARNS navigation channel are considered in this document:

1) River Flow Management: Sustained high flows on the MKARNS have adversely influenced the safety and efficiency of commercial navigation operations and have resulted in flood damages along the river. The reliability and predictability of river flows affect navigation traffic utilization of the MKARNS.

Commercial navigation traffic is severely restricted when river flows reach 100,000 cubic feet per second (cfs) at Van Buren, Arkansas. Van Buren is the critical control point in the system because it is the most downstream regulation station for the MKARNS. That is, all the upstream releases are adjusted based on what is happening at the Van Buren gage. For shippers and vessel operators, three specific problems exist.

- The limitations on commercial navigation during and after storm events that cause high flow rates reduces reliability of shipping on the MKARNS. Shippers and vessel operators are in the position of absorbing costs associated with the unreliability of the navigation system. For shippers these costs include the risk of plant shut down due to inventory depletion or, conversely, high inventory cost of carrying excess inventories to avoid the stock out condition. For vessel operators, the costs associated with “parking” tows and towboats during high flows are not offset by revenues. Prices for towing services are established weeks before vessel departure, and vessel “parking” is not included.
- Extended higher flow conditions require vessel operators to utilize higher horsepower towboats and smaller tow size. In anticipation of probable storm events, vessel operators on the MKARNS utilize above average horsepower towboats and smaller than average tow sizes for similar tributary river situations. With these higher operating costs tow operators have higher towing rates, requiring barge operators to aggressively market the Arkansas River to effect the most efficient two-way loaded hauling and avoid empty barge movement. On an annual basis, up bound loaded covered hopper barges exceed down bound loaded covered hopper barges, resulting in new barge operators being reluctant to bring equipment on to the river.
- Shipping charges during high flows, such as barge demurrage (a charge for detaining a barge or tow beyond the time allowed for loading and unloading) and “hot water” charges (additional charge for transporting barges during periods of high river flows) for special services, are assessed to the shipper. For shippers and terminal operators on the MKARNS, the high flow storm events place uncertainty on shipping charges and costs. Specifically, when barges are “parked” and free time expires, demurrage charges are incurred. In addition, upon arrival barges become bunched at the terminals, exposing either the terminal or shipper to demurrage charges. Special charges, commonly referred to as “hot water” charges, can be incurred by shippers if they elect to have their barges moved to destinations in a one or two barge tow service.

2) Navigation Channel Depth: Commercial navigation is not at optimum productivity within the MKARNS since its 9-foot draft navigation channel limits towboat loads compared to the Lower Mississippi River’s authorized 12-foot draft channel.

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- Shipments between the Arkansas and Lower Miss amount to 6.3 million tons and 56% of all tonnage shipments on the regional inland navigation system. Channel deepening would enhance shipments of commodities that benefit from increased depth (such as agricultural chemicals and farm products). Thus, a larger percentage of tonnage could be shipped between the Lower Miss and Arkansas River. A detailed analysis of the economic benefits associated with the connectivity between these two systems is presented in the Economics Analysis Appendix of the Draft Feasibility Report (USACE 2005).
 - Because the barge drafts are limited by the MKARNS 9-foot draft channel, and it is not cost-effective to re-load at the MKARNS/Mississippi confluence, upbound tows from the Mississippi must be configured to the limitations of the MKARNS channel.
 - Similarly, downbound tows on the MKARNS are not able to take advantage of the Mississippi River's 12-foot draft channel and are loaded to accommodate the 9-foot channel rather than a 12-foot channel.

The disparity between the navigation channel depths in the two river systems results in less efficient barge operations than could be achieved with a consistent 12-foot navigation channel throughout the MKARNS and Lower Mississippi River commercial navigation systems.

3) Navigation Channel Maintenance: The ongoing operation and maintenance of the existing 9-foot navigation channel on the MKARNS entails the use of "river training structures" as well as periodic dredging at some locations within the navigation channel. Since the completion of the MKARNS in 1971, some authorized maintenance dredged material disposal sites have reached capacity and new disposal sites are required to continue channel maintenance activities. Additionally the construction of new river training structures is warranted to facilitate the maintenance of the 9-foot navigation channel. Without the proper maintenance of the 9-foot channel, commercial navigation would not be able to operate on the MKARNS.

1.3 Public Involvement

1.3.1 General Public Involvement Process

The USACE invites full public participation in the National Environmental Policy Act (NEPA) process, and promotes both open communication between the public and the USACE and better decision-making. All persons and organizations that have a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the NEPA environmental analysis process. The scoping process is useful in helping the USACE focus the Environmental Impact Statement (EIS) on issues of importance to the public and other interested agencies and organizations.

The President's Council on Environmental Quality (CEQ) guides public participation opportunities, with respect to the proposed action on environmental regulations and Engineering Regulation 200-2-2, *Procedures for Implementing NEPA*. These regulations provide for six major elements of public participation available in conjunction with preparation of this EIS including:

- 1) Notice of Intent (NOI),
- 2) Scoping,

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- 3) Public review of the Draft EIS (DEIS),
 - 4) Public hearing on the DEIS,
 - 5) Public release of the Final EIS (FEIS) and 30-day waiting period, and
 - 6) Publication of the Record of Decision (ROD).

Each of these public participation elements is discussed below.

1.3.2 Notice of Intent

The NOI is the first formal step in the NEPA public involvement process. The public was first notified of the USACE's intent to prepare an EIS for Phase I of the Arkansas River Navigation Study through the publication of a NOI in the August 23, 2000 issue of the *Federal Register*. Phase II of the EIS was announced through the publication of a NOI in the May 31, 2002 issue of the *Federal Register*. Comments received from the scoping process of Phase I and II were key in the decision by the USACE to combine Phase I and Phase II into one comprehensive EIS addressing all the issues of the navigation study. The public was notified of the USACE's intent to prepare the EIS for the combined Arkansas River Navigation Study through the publication of a NOI in the July 16, 2004 issue of the *Federal Register*. The July 16, 2004 NOI announced the intent to prepare this EIS that incorporates the previous announcements in the *Federal Register*.

1.3.3 Scoping Process

The scoping process was designed to solicit public comment on issues or concerns that should be addressed early in the EIS process. Public comments were solicited through mailings, media advertisements, and both agency and public scoping meetings. These items were developed to ensure the public was informed and given the opportunity to participate in the decision-making process. While informal comments were welcome at any time throughout the process, the scoping period and scoping meeting provided formal opportunities for public participation in, and comment on, the environmental impact analysis process. Public comments from the scoping process can be found in Appendix B.

1.3.3.1 Project Mailing List

An initial project mailing list was developed to solicit public input throughout the scoping process. The initial (August 2000) list included over 600 names and included members of the general public who had expressed interest in prior environmental documents prepared by the USACE Little Rock and Tulsa Districts, special interest groups, Federal, State and local agencies and elected officials, minority, disadvantaged, and Native American groups, public repositories (libraries), and regional, state and local media outlets (television, radio and newspaper). This list is maintained and updated throughout the EIS process, and any additional individuals or organizations that express interest in the process are added to the list. The current list contains over 900 names. The mailing list is used to distribute project notices and information, as appropriate, throughout the EIS process.

1.3.3.2 Public Scoping

Three public scoping periods occurred, each associated with the publication of an NOI in the *Federal Register*.

Public Scoping Period 1 (February/March 2001). Legal notices were published for public scoping meetings held in February 2001. These legal notices were published in the *Arkansas Democratic Gazette*, *Southwest Times Record*, *Tulsa World*, *Pine Bluff Commercial*, *Dumas Clarion*, *Courier*, and the *Muskogee Daily Phoenix & Times*. In addition, press releases inviting the public to express their views at the referenced scoping meeting were distributed to local/regional newspapers, television and radio stations.

Announcements or “scoping fliers” were mailed to public agencies, public interest groups and organizations, political representatives, and individuals known, or thought to have, an interest in the Arkansas River Navigation Project. The fliers consisted of a description of the purpose of the meeting, with an invitation to attend the meeting and/or submit written comments identifying key issues that should be considered as part of the EIS. Notices were mailed to the interested parties on the mailing list approximately two weeks prior to the scheduled scoping meetings.

Public scoping meetings were held at the following locations in February 2001:

- February 13, Tulsa Technology Center, Broken Arrow, Oklahoma;
- February 14, Westark College, Fort Smith, Arkansas; and
- February 15, Southeast Arkansas College, Pine Bluff, Arkansas.

An informational flyer, comment sheet, and registration card were provided to all attendees at the public scoping meetings.

Public Scoping Period 2 (May/June 2003). Legal notices were published for public scoping meetings held in May 2003. These legal notices were published in the *Arkansas Democratic Gazette*, *Southwest Times Record*, *Tulsa World*, *Pine Bluff Commercial*, *Dumas Clarion*, *Courier*, and the *Muskogee Daily Phoenix & Times*. In addition, press releases inviting the public to express their views at the referenced scoping meeting were distributed to local/regional newspapers, television stations and radio stations.

Announcements or “scoping fliers” were mailed to public agencies, public interest groups and organizations, political representatives, and individuals known, or thought to have, an interest in the Arkansas River Navigation Project. The fliers consisted of a description of the purpose of the meeting, with an invitation to attend the meeting and/or submit written comments identifying key issues that should be considered as part of the EIS. Notices were mailed to the interested parties on the mailing list approximately two weeks prior to the scheduled scoping meetings.

Public scoping meetings were held at the following locations in May 2003:

- May 19, OSU Tulsa Conference Center, Tulsa, Oklahoma;
- May 20, University of Arkansas, Fort Smith, Arkansas;
- May 21, Ramada Inn Hotel, Pine Bluff, Arkansas; and
- May 22, Central Arkansas Library System, Main Library, Little Rock, Arkansas.

An informational flyer, comment sheet, and registration card were provided to all attendees at the public scoping meetings.

Public Scoping Period 3 (July/August 2004). The third scoping period coincided with the publication of the NOI in the Federal Register on July 16, 2004. This NOI announced the preparation of this combined EIS to address the combined issues associated with the study.

Announcements or “scoping fliers” were mailed to public agencies, public interest groups and organizations, political representatives, and individuals known, or thought to have, an interest in the Arkansas River Navigation Project. The announcement defined the elements of the new combined study. The public was invited to submit any additional comments on and to identify issues that should be considered in the EIS. Especially sought was information that would assist the USACE in analyzing the impacts of the combined study alternatives. The announcement noted that all comments received during the Phase I and Phase II scoping periods were on record and will be considered for the combined EIS and therefore there was no need to re-submit duplicate comments.

1.3.3.3 Agency Coordination Meetings

Agency coordination meetings were held in Tulsa, Oklahoma and Little Rock, Arkansas in February 2001 and July 2003.

The intent of these meetings was to address the project with key Federal and State agencies early in the EIS process. Invitations were sent to Federal, Arkansas, and Oklahoma Agencies. The notification letters were prepared and mailed by USACE Little Rock District staff. Notifications were mailed approximately two weeks prior to the meetings.

The meetings consisted of a brief welcome and introduction, a PowerPoint presentation giving an overview of the Arkansas River Navigation Study and describing scoping requirements of the project, followed by a questions and answer period. USACE staff was present, representing relevant project disciplines to answer questions.

Informal agency coordination meetings occurred throughout the period when the DEIS was being prepared to discuss issues and clarify information.

1.3.3.4 Scoping Results

A total of 221 comments were received during the public scoping periods. As detailed in Appendix B, both oral and written comments were received from a variety of agencies, organizations, and individuals, including:

- Federal Agencies;
- State Agencies;
- Local Agencies;
- Elected Officials;
- Interest Groups;
- Commercial / Industrial Groups; and
- Citizens.

1.3.3.5 Summary of Major Scoping Issues Identified

The following paragraphs provide a summary of major issues identified through the scoping process.

Key Areas of Concern:

- **Biological Resources.** Concerns were raised about possible negative impacts to the interior least tern, paddlefish, and other bird and fish communities as a result of the proposed action. Comments were received regarding negative impacts to threatened and endangered species, their habitats, and the habitats of other wildlife. Suggestions were made to monitor wildlife populations, mitigate for the loss of habitat and ecosystem services, use dredged materials to create wildlife habitat, and enhance wildlife habitat along the MKARNS.
- **Environment.** Many comments were received expressing concern about negative impacts to the MKARNS channel as a result of the proposed action. These impacts included: channel degradation such as bank destabilization, head cutting, and the drying of shallow areas, reduced water quality, increased erosion, water supply losses, water treatment plant losses, and sanitary sewer line and pump station failures.

Comments were also received describing the possible benefits of the proposed action, including opportunities for wildlife habitat enhancement and maintenance along the MKARNS and the lower emissions and reduced noise pollution barges produce compared to truck and train transportation.

- **Feasibility.** Concerns were identified regarding the cost of maintaining the increased depth of the MKARNS channel and whether or not they outweigh the benefits of the proposed action.

Other comments stated that most of the MKARNS channel depth is already at 12 feet and lock chambers were built to accommodate a 12-foot channel. According to these comments the MKARNS is currently underused relative to its capacity, and the proposed action would be quite feasible.

- **Recreation.** Some comments addressed concern over the loss of riverfront parks, boating access, and camping areas due to flooding and/or land acquisition. Other comments stated the expected benefits to recreation the proposed action would achieve, such as greater fishing, hunting, and boating opportunities.
- **Socioeconomics.** Concerns were raised about losses in agricultural land and hydroelectric power due to the proposed action, while great optimism was raised as to the economic benefits. Many farmers and other private land owners believed that the proposed action could result in a loss of private land including agricultural land, due to possible flooding and/or government land acquisition. This loss of land would have negative financial impacts to farmers and citizens along the MKARNS channel. Also, the proposed action was expected to reduce available head at hydropower facilities, reducing the power they are able to produce.

Positive comments were also received describing the economic benefits from the increased barge capacity and the increased number of navigation days the proposed action would achieve. These increases were expected to result in an increase in jobs, public and private investments, and benefits to trade and industry. Additionally, reduced fuel consumption was predicted due to barges higher fuel efficiencies relative to highway transportation.

- **Transportation.** Comments were received stating the benefits of the proposed action to transportation on the MKARNS. Increasing barge capacity and the number of navigation days on the MKARNS channel were expected to provide economic benefits and to reduce highway congestion and road repairs. The proposed action was also predicted to provide greater flexibility in barge transportation, making the MKARNS compatible with the 12-foot channel on the lower Mississippi River and the Gulf Intracoastal Waterway. It was noted that the higher fuel efficiencies of barges relative to other means of transporting goods, such as by air or highways, could result in lower fuel consumption. However, there were concerns that dredging and/or channel widening could cause an increase in the vulnerability of bridges and piers.

1.3.4 Draft Environmental Impact Statement

Copies of the DEIS were made available for public review and comment. A Notice of Availability (NOA) was published in the *Federal Register* on April 8, 2005 to inform the public that the DEIS had been released. A similar notice was also placed in the legal section of local area newspapers *Arkansas Democratic Gazette*, *Southwest Times Record*, *Tulsa World*, *Pine Bluff Commercial*, *Dumas Clarion*, *Courier*, and the *Muskogee Daily Phoenix & Times*. These notices identified a point of contact to obtain more information regarding the EIS process, identified means of obtaining a copy of the DEIS for review, and listed several public libraries where paper copies of the DEIS could be reviewed. A 45-calendar day review period (starting with the publication of the NOA in the *Federal Register* on April 8, 2005) was established to provide all agencies, organizations and individuals with the opportunity to comment on the DEIS.

Copies of the DEIS were located at the following repositories (Table 1-1).

Table 1-1. DEIS Public Repositories.	
Fort Smith Public Library 61 S. 8 th Street Fort Smith, Arkansas 72901	Arkansas River Valley Regional Library 501 N. Front Street Dardanelle, Arkansas 72834
Clarksville Public Library 2 Taylor Circle Clarksville, Arkansas 72830	Franklin County Library 407 W. Market Ozark, Arkansas 72949
Pope County Library 116 E. 3rd St. Russellville, AR 72801-5198	Morrilton County Library 101 W. Church St. Morrilton, AR 72110-3399
Faulkner County Library 1900 Tyler St.	Maumelle Library 10 Lake Pointe Dr.

Table 1-1. DEIS Public Repositories.	
Conway, AR 72032	North Little Rock, AR 72113
Little Rock Public Library 2015 Napa Valley Dr. Little Rock, AR 72212	Jefferson County Library 200 E. 8th Ave. Pine Bluff, AR 71601-5092
Melville Library 4010 S. Mulberry St. Pine Bluff, AR 71603	Dumas Public Library 120 E. Choctaw St. Dumas, AR 71639
Tulsa City-County Library 400 Civic Center Tulsa, OK 74103	OSU Library Oklahoma State University Stillwater, OK 74074
Tulsa Public Library 1207 E. 45th Pl. Tulsa, OK 74105	South Regional Library 6737 S. 85th East Ave. Tulsa, OK 74133
Broken Arrow Library 300 W. Broadway Ave. Broken Arrow, OK 74012	South Broken Arrow Library 3600 S. Chestnut Ave. Broken Arrow, OK 74011
Linscheid Library ATTN: OEIMC East Central State College Ada, OK 74820	University of Oklahoma Library 401 West Brooks Norman, OK 73069
Eastern Oklahoma District Library 814 W. Okmulgee St. Muskogee, OK 74401	Stanley Tubbs Memorial Library 101 E. Cherokee St. Sallisaw, OK 74955

In addition to the public repositories the DEIS was shipped to the public and agencies who requested copies (paper copy and/or CD). Additionally, the document was available for review via internet posting on the USACE Little Rock District Website.

1.3.5 DEIS Public Hearings

Public hearings were held in Tulsa, Fort Smith, and Little Rock during the initial 45-day DEIS review period to receive oral and written comments on the DEIS from those desiring to present them in a public forum.

A NOA was published in the *Federal Register* and the newspapers identified in section 1.3.4 to inform the public that the DEIS had been released. These notices identified a point of contact from whom to obtain more information regarding the EIS process and specified the public repositories (as listed in section 1.3.4) where the DEIS could be reviewed. At the request of the U.S. Fish and Wildlife Service, the comment period was extended an additional 30 days.

Written and oral comments received at the public meetings were considered, along with other written comments received during the comment period, in the development of the FEIS. Based on input received from the public, two additional meetings were held to discuss mitigation and

mitigation coordination. These meetings were held during the 30-day comment period extension.

1.3.6 Final Environmental Impact Statement (FEIS)

The USACE assessed and considered comments, both individually and collectively, provided by members of the interested public and Federal, State, and local agencies. The FEIS incorporates changes suggested by comments on the DEIS, as appropriate, and contains responses to all comments received during the DEIS review period. A NOA was published in the *Federal Register* on August 19, 2005, and in the newspapers identified in section 1.3.2.2 above to inform the public that the FEIS has been released. These notices identify a point of contact to obtain more information regarding the EIS process and note the public repositories (same as in section 1.3.4) where the FEIS is available for review.

1.3.7 Record of Decision (ROD)

Following a 30-day waiting period from the date of the FEIS NOA, a ROD will be prepared by the USACE and published in the *Federal Register*. The decision-maker will consider comments received during the FEIS 30-day waiting period in reaching the final decision on this action. The ROD will describe the USACE’s decision regarding the Arkansas River Navigation Study. The ROD will also describe actions to be taken by the USACE to reduce or mitigate any significant adverse impacts associated with the USACE’s action.

1.4 Relevant Regulatory Requirements

Federal and State regulations that may apply to the proposed action include, but are not limited to, those listed below.

Environmental Regulation	Compliance Status
American Indian Religious Freedom Act of 1978 42 USC 1996	Full
Archaeological and Historical Preservation Act as Amended, 16 USC469, <i>et seq.</i>	Pending ¹
Clean Air Act (CAA) of 1970 as amended, 42 USC 7401	Full
Clean Water Act, of 1977, as amended, 33 USC. 1251 <i>et seq.</i>	Pending ¹
Comprehensive Environmental Response Compensation and Liability Act of 1980 42 USC 9601	Full
Endangered Species Act (ESA), as amended, 16 USC 1531, <i>et seq.</i>	Full
Farmland Protection Policy Act, 7 USC 4201, <i>et seq.</i>	Full
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, E.O. 12898 (1994)	Full
Federal Compliance with Pollution Control Standards, E.O. 12088 (1978)	Full
Federal Water Project Recreation Act, as amended, 16 USC 460 (L),(12)	Full

Table 1-2. Major Federal and State Environmental Regulations Applicable to Federal Projects	
Environmental Regulation	Compliance Status
Fish and Wildlife Coordination Act, as amended, 16 USC <u>661</u>	Full
Floodplain Management, E.O. 11988 (1977)	Full
Indian Sacred Sites, E.O. 13007 (1996)	Full
Land and Water Conservation Fund Act, as amended, 16 USC 4601-4, <u>et seq.</u>	Full
Migratory Bird Treaty Act of 1918,as amended, 16 USC 703 <u>et seq.</u>	Full
National Environmental Policy Act (NEPA), as amended, 42 USC 4321, <u>et seq.</u>	Full
National Historic Preservation Act (NHPA), as amended, 16 USC 470a, <u>et seq.</u>	Full
Native American Graves Protection and Repatriation Act, 25 USC 3001, <u>et seq.</u>	Full
Prime or Unique Agricultural Lands NEPA, CEQ Memorandum August 11, 1980	Full
Protection and Enhancement of the Cultural Environment, E.O. 11593	Full
Protection of Children from Environmental Health Risks and Safety Risks, E.O. 13045 (1997)	Full
Protection of Wetlands, E.O. 11990 (1977)	Full
Quiet Communities Act of 1978 42 USC 4901, <u>et seq.</u>	Full
Resource Conservation and Recovery Act of 1976, as amended, 42 USC 6901, <u>et seq.</u>	Full
Rivers and Harbors Act of 1946, PL 79-525, 60 Stat 634	Full
Safe Drinking Water Act of 1986 as amended, 42 USC 201	Full
Water Resources Planning Act of 1965, 42 USC 1962	Full
Wild and Scenic Rivers Act, as amended, 16 USC 1271, <u>et seq.</u>	Full
¹ Full compliance will occur prior to implementation of the proposed action.	

1.5 Impact Analysis Performed

This EIS identifies, documents, and evaluates the effects of implementing a plan for 1) storage and conveyance of water in the Arkansas River and tributaries in Arkansas and Oklahoma, 2) potential navigation channel deepening, and 3) navigation channel maintenance activities, for commercial navigation and other designated project purposes.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, and archaeologists performed the impact analysis in the context of the alternatives defined in Section 3. Section 4 provides a discussion of existing or "baseline" environmental and socioeconomic conditions within and adjacent to the MKARNS. Relevant beneficial and adverse effects associated with study features, components, and alternatives are described in Sections 5.0 through 8.0. Impacts have been identified in consideration of the degree of change from existing baseline conditions and have considered direct, indirect and cumulative effects as applicable.

The document analyzes direct impacts (those caused by the proposed action and occurring at the same time and place) and indirect impacts (those caused by the proposed action but occurring later in time or farther removed in distance but still reasonably foreseeable). Cumulative effects are also addressed (Chapter 7). Mitigation measures are identified where appropriate (Chapter 8).

1.6 Major Areas of Comment on the DEIS and Changes in the FEIS

As outlined in the Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1503.5, dated July 1, 2004), comments received on the Draft EIS have been attached to this FEIS. Appendix B documents all DEIS review comments and provides responses to all substantive comments. Comments received on the DEIS were organized into the following categories:

- Comments that were noted, but required no response;
- Comments that required clarification of information that was provided in the DEIS;
- Comments that required expansion of the information presented in the DEIS in order to fully address the issue(s) raised; and
- Comments that warranted additional analysis and incorporation of results and conclusions in the FEIS.

The principal changes that have been made in the FEIS in response to comments on the DEIS are summarized below.

- The mitigation plan has been finalized and included in Appendix C.
- The FEIS provides updated acreages for different land uses.
- The results of sediment contaminant testing have been utilized in the Affected Environment section of the FEIS. The test results are included as Appendix E.
- The FEIS documents potential impacts to prime and unique farmlands.
- The FEIS documents potential cropland conversion.
- The FEIS clarifies differences in potential impacts resulting from dredging vs. dredged material disposal.
- The FEIS clarifies demographic information about the project area.
- The FEIS provides additional detail about potential impacts to aquatic habitats.
- The FEIS expanded the scope of reasonably foreseeable actions in the cumulative impacts chapter.

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