



# **Chapter 2**

## **Description of the Proposed Action**



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**TABLE OF CONTENTS**  
**CHAPTER 2**

**2.1 Introduction..... 2-1**

**2.2 Location ..... 2-1**

**2.3 Proposed Action ..... 2-2**

    2.3.1 River Flow Management ..... 2-2

    2.3.2 Navigation Channel Deepening..... 2-2

    2.3.3 Navigation Channel Depth Maintenance..... 2-2

    2.3.4 Combined Features and Alternatives..... 2-3

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# CHAPTER 2:

## DESCRIPTION OF THE PROPOSED ACTION

### 2.1 Introduction

The U.S. Army Corps of Engineers' (USACE) Civil Works programs include: navigation, flood and storm damage reduction, environmental protection, and regulation of work by others in waters of the United States. As described in Chapter 1, the Little Rock and Tulsa Districts of the USACE constructed the McClellan Kerr Arkansas River Navigation System (MKARNS) and are charged with the operation and maintenance of the system for commercial navigation. The Civil Works mission of the USACE includes supporting navigation by improving and maintaining navigation channels.

### 2.2 Location

The Arkansas River Navigation Study geographically encompasses the MKARNS from the Port of Catoosa near Tulsa, Oklahoma downstream to its confluence with the Mississippi River in southeastern Arkansas, as well as 11 reservoirs in Oklahoma that influence river flow within the MKARNS.

The MKARNS is approximately 445 miles in length and includes a series of 18 locks and dams that provide for commercial navigation throughout the length of the MKARNS.

River flows on the MKARNS are primarily influenced by inputs into the upper Arkansas River upstream of its confluence with the Verdigris River (navigation mile 394); as well as water storage and release from 11 reservoirs in Oklahoma. The 11 Oklahoma reservoirs are:

- Keystone Lake;
- Oologah Lake;
- Grand Lake O' the  
Cherokees (Pensacola  
Dam);
- Lake Hudson;
- Fort Gibson Lake;
- Tenkiller Ferry Lake;
- Eufaula Lake;
- Kaw Lake;
- Hulah Lake;
- Copan Lake; and
- Wister Lake.

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## **2.3 Proposed Action**

The proposed action is to maintain and improve the navigation channel in order to enhance commercial navigation on the MKARNS, while maintaining the other MKARNS project purposes of flood control, recreation, hydropower, water supply, and fish and wildlife. The proposed action involves implementing actions associated with three features that influence navigation on the MKARNS. These three features are:

- River Flow Management (Sustained High Flows);
- Navigation Channel Depth Increase; and
- Navigation Channel Depth Maintenance.

### **2.3.1 River Flow Management**

The proposed River Flow Management Feature is to improve the safety and efficiency of commercial navigation operations by managing the MKARNS to limit periods of sustained high flows. This would be achieved by reducing the number of days when river flows exceed 100,000 cubic feet per second (cfs) at Van Buren. 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. In addition, other authorized project purposes, including flood control, recreation, hydropower, water supply, and fish and wildlife would be maintained.

In general, navigation traffic is severely restricted when flows reach 100,000 cfs at Van Buren, Arkansas. Long durations of high flow events impact the economy of mid-America by reducing the reliability of the system and reducing the use of the waterway as a viable transportation system.

### **2.3.2 Navigation Channel Deepening**

The existing navigation channel depth of 9 feet limits the efficiency and volume of commercial navigation operations on the MKARNS. The proposed Navigation Channel Deepening Feature is to deepen and maintain the navigation channel in the MKARNS up to a depth of 12 feet to allow deeper draft tows to operate on the system. In order to achieve a deeper channel, necessary infrastructure changes (e.g. river training structures and areas for dredge material disposal) would be required. In addition, other authorized project purposes, including flood control, recreation, hydropower, water supply, and fish and wildlife would be maintained.

### **2.3.3 Navigation Channel Depth Maintenance**

Current commercial navigation operation on the MKARNS requires the maintenance of a minimum 9-foot navigation channel throughout the system from the Port of Catoosa to the Mississippi River. The maintenance of the navigation channel is accomplished via 1) a series of “river training structures” and 2) channel maintenance dredging at locations where sediment accumulates within the navigation channel to a point where the channel would be less than 9 feet in depth without dredging. The proposed Navigation Channel Maintenance Feature is to maintain the navigation channel via the existing and new river training structure system and continued maintenance dredging. In addition, other authorized project purposes, including flood control, recreation, hydropower, water supply, and fish and wildlife would be maintained.

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As part of the ongoing operation and maintenance of the designated navigation channel on the MKARNS, periodic dredging is required in some locations within the river. 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 navigation channel.

#### **2.3.4 Combined Features and Alternatives**

Each of the features identified above are broad actions that influence the attainment of the proposed action. Features consist of components, or specific actions that address the attainment of the proposed action. The proposed action alternatives are comprised from combinations of components among one or more features, which address the implementation of the proposed action. These features, components, and alternatives are described in detail in Chapter 3.