

# Southwest Ark. Red River Navigation

Section 203 Integrated Feasibility Report  
and Environmental Impact Statement

## Public Scoping Meetings

July 30, 2024 (Shreveport) and  
July 31, 2024 (Texarkana)



# Purpose and Need Statement

## ➤ Purpose

- To extend commercial shallow-draft navigation from Shreveport, Louisiana to Index, Arkansas that is technically, economically, and environmentally feasible.

## ➤ Need

- To capture substantial transportation cost savings and other benefits by converting existing and future cargo modes of surface transport to waterborne transport.



# Study Background

- USACE Feasibility Study is "typically" a formal 3-year process used to identify water resource problems, formulate and evaluate solutions, determine federal interest and prepare recommendations.
- 2005 feasibility study authorized by WRDA 1996 Sect 402 ended at the draft stage when insufficient net benefits were found to keep the study progressing.
- 2018 Contributed Funds Navigation Economics Study was conducted at request of Arkansas Red River Commission (ARRC) to provide a market analysis update that identified new and additional potential waterway users and benefits, sufficient to support a study restart.
- ARRC sought to restart a feasibility study under authority of WRDA 1986, Section 203, which allows a Non-Federal sponsor to conduct the feasibility study to submit to the Assistant Secretary of the Army for Civil Works [ASA (CW)] for approval.

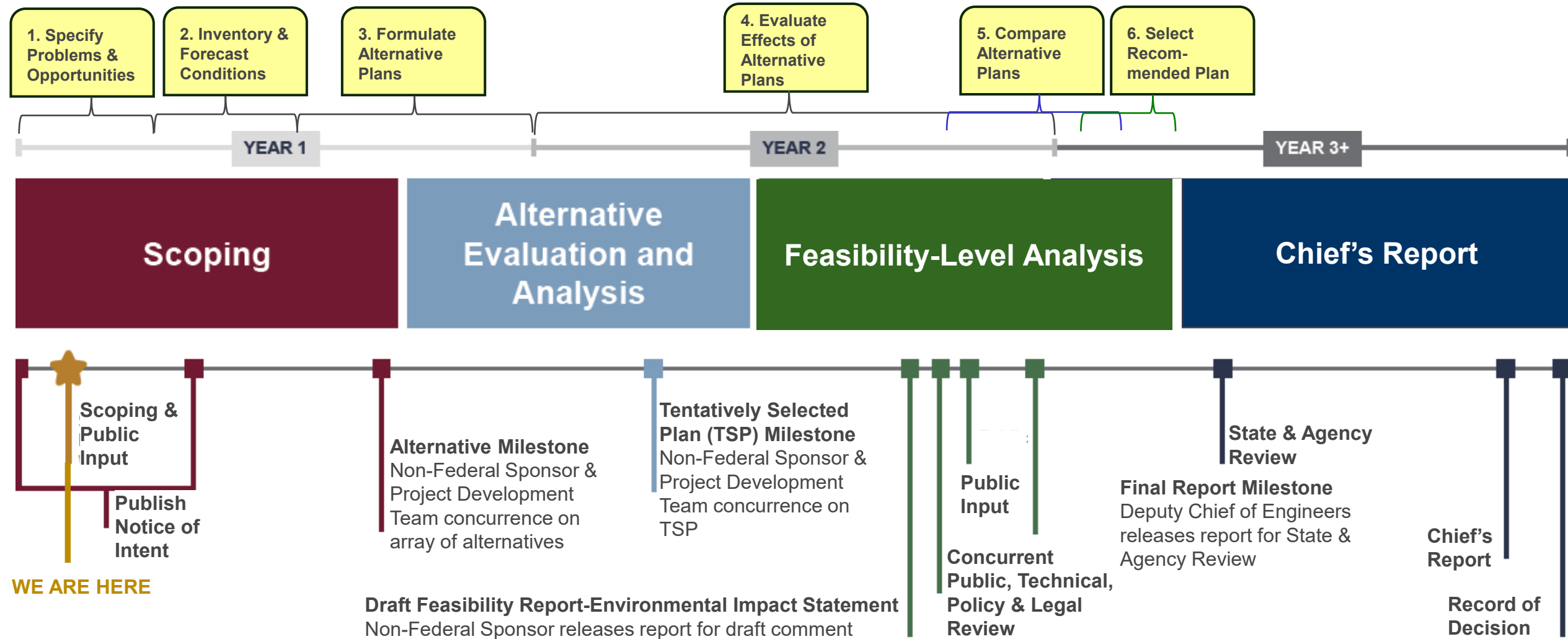


# Study Background

- Study Memorandum of Agreements between USACE and State of Arkansas Department of Agriculture, Natural Resources Division (NRD) signed February 22, 2024
- Section 203 of WRDA 1986 provides:
  - *A non-Federal interest may on its own undertake a feasibility study of a proposed harbor or inland harbor project and submit it to the Secretary.*
  - Review by the Secretary [ASA(CW)] to determine compliance with Federal laws & regulations for navigation feasibility studies
  - Approval and submission to Congress
- Study is \$3 million funded by Non-Federal interests in Louisiana & Arkansas and nominally 3 years



# Planning Steps, SMART Planning & NEPA



# Alternatives Evaluation

During the study process, the Project Development Team will consider several alternatives. Each of these alternatives will be evaluated based on:

- Navigation Benefit
- Benefit vs Cost
- Adverse & Beneficial Effects in 4 Main Categories (“Accounts”)
- Environmental Impacts – habitat, wildlife, air, noise, water, hazmat, cultural etc.
- Socioeconomic Considerations
- Engineering feasibility
- Public/Agency/Stakeholder Feedback
- Real estate
- USACE plan effectiveness criteria – Completeness, Effectiveness, Efficiency, Acceptability



# Plans Required to Evaluate & Identify

- National Economic Development Plan (NED) – reasonably maximizes net NED benefits consistent with protecting the Nation’s environment
- Locally Preferred Plan – if requested by Non-Federal Sponsor and different from any of the others
- Least Environmentally Damaging Practicable Alternative – least impacts but still meets purpose and is practicable (feasible, cost etc.)
- Total Net Benefits Plan – reasonably maximizes net benefits across all four P&G accounts in comparison to costs



# Four Principles & Guidelines Account System

For Evaluating and Displaying Effects of Water Resource Project Alternative Plans



## National Economic Development

Increase in net value of the national output of goods and services, in monetary units

Project benefits and costs

### EXAMPLES

- + Reduction of costs to transport goods
- + Cost to construct project features



## Regional Economic Development

Changes in the distribution of regional economic activity

Increase in regional income or employment

### EXAMPLES

- + Jobs and income from project construction
- + Jobs and income from improved waterborne commerce



## Environmental Quality

Changes in ecological, aesthetic, and cultural attributes of natural and cultural resources

Impacts on amount and quality of environmental resources

### EXAMPLES

- + Acres or habitat units of wetland lost
- + Tons of regulated air pollutants reduced



## Other Social Effects

Effects from perspectives relevant to planning process, but not reflected in the other three accounts

Impacts on people and communities

### EXAMPLES

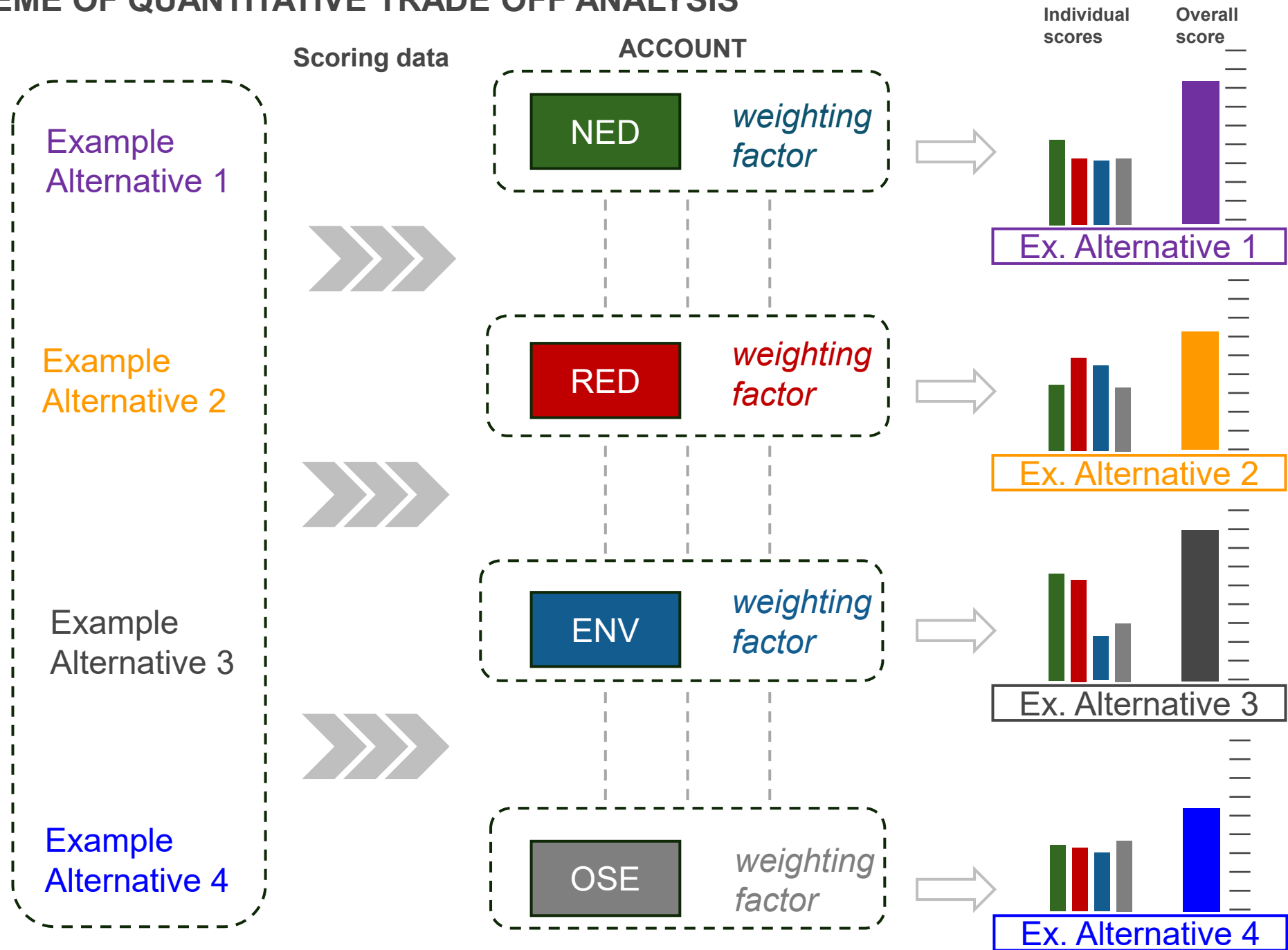
- + Numbers of homes displaced by project
- + Reduction of population at risk from flooding from project

New policy requires Trade-off Analysis to look at effects of alternatives considering all 4 categories using a scoring & decision scheme that weighs each and considers trade offs in benefit versus impact to identify the total net benefits plan which is one of the plans required to be identified by USACE policy.





# GENERAL SCHEME OF QUANTITATIVE TRADE OFF ANALYSIS



# National Economic Development Benefits for Inland Navigation



## National Economic Development

### Benefits come primarily from:

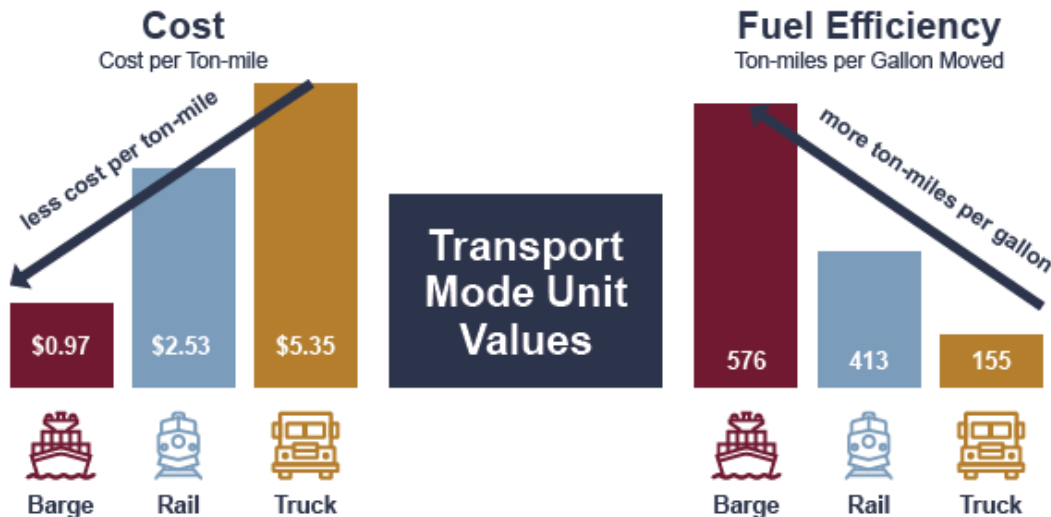
- Transportation cost reduction
- Quantity or value of commodities shipped increases

### Transportation costs are reduced by:

- Mode shift – changing to more efficient modes of shipping (i.e. from truck or rail to barge)
- Origin-destination shift – changing to a route or location that reduces costs

### Quantity or value of commodities shipped increases by:

- More commodity shipped because they are now cheaper
- New commodity shipped because new/better route to producer & market established



Origin to Destination Shift



# National Economic Development (NED) Benefit Analysis

The economic analysis activity will involve tasks such as:

- Establishing the economic study area
- Analyzing existing commodity movements
- Validating existing shipper commodity tonnages/movements
- Identifying and collecting additional commodity tonnages/movements
- Forecasting commodities and vessel traffic
- Performing transportation rate analysis to determine cost by transport modes
- Calculate National Economic Development benefits



# Other Potential NED Benefits



## National Economic Development



### Recreation

On the new pool created  
by Lock and Dam

Value of projected recreational use:

- + Entrance fees, etc.
- + What people would actually pay to do a recreation activity elsewhere

#### EXAMPLES

- + Fishing or boating stimulated by new pool
- + Camping induced by expanded water recreation



### Water Supply

Draw from new pool created  
by Lock and Dam

Resource cost of most likely  
alternative supply in absence of storage  
provided by project

#### EXAMPLE

- + New usable water supply pool provided by lock and dam



### Hydropower

From turbines built  
into Lock and Dam

Energy replacement value – cost of energy  
from alternative generation that would be  
used to replace lost hydropower generation  
from outages

#### EXAMPLE

- + Cost of some other likely generation means to replace hydropower generated by turbines at lock and dam



# Navigation Alternatives

- Must consider existing downstream waterway geometry & constraints
- Both channel depth & lock size
- Basic measures (building blocks of plans) will be locks & dams to pool up river to navigable depth, and associated structures to maintain the channel navigable.
- Locks & dams will pool up river in “lifts” dictated by river bottom elevation.

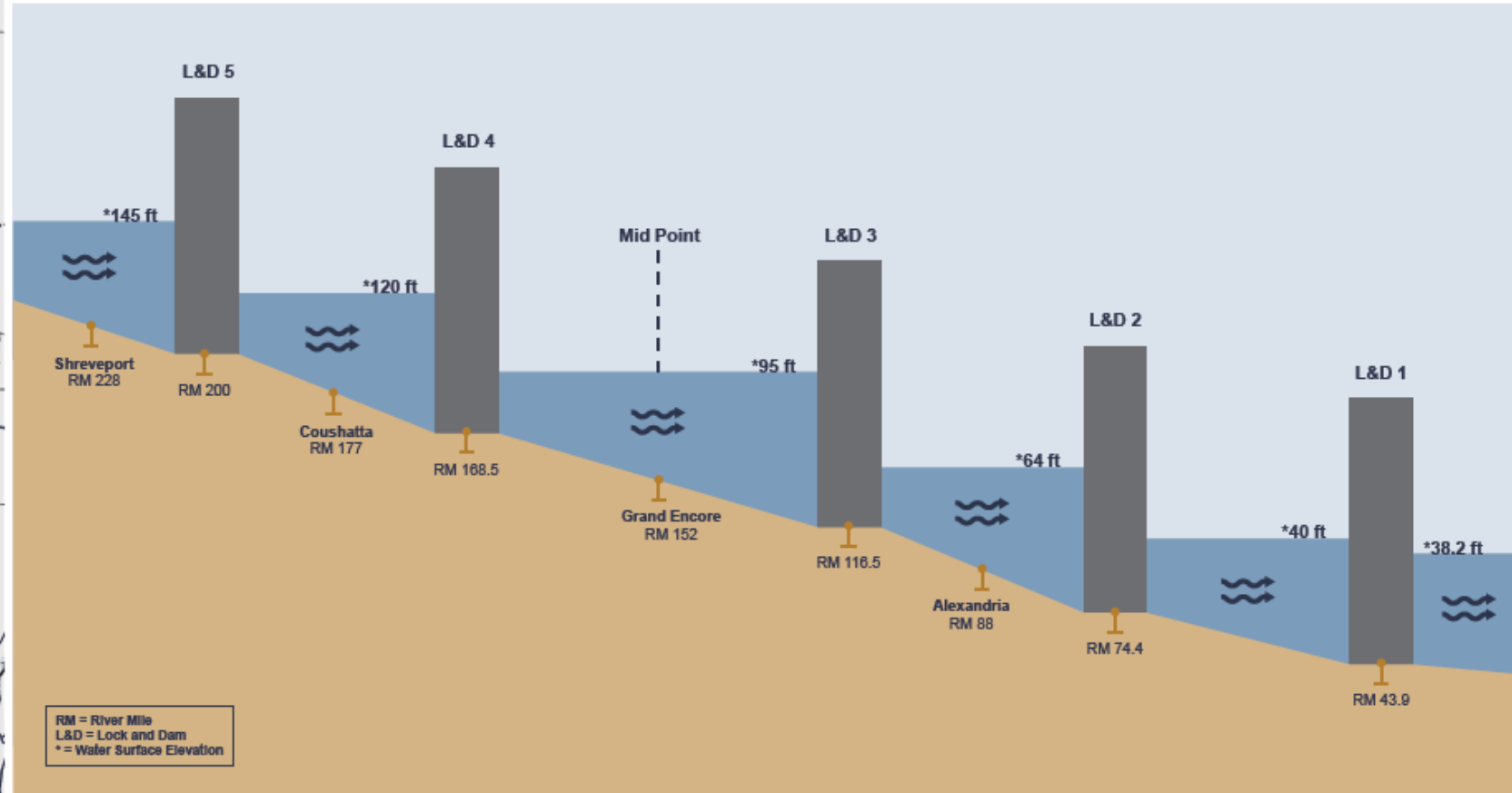


# J. Bennett Johnston Waterway

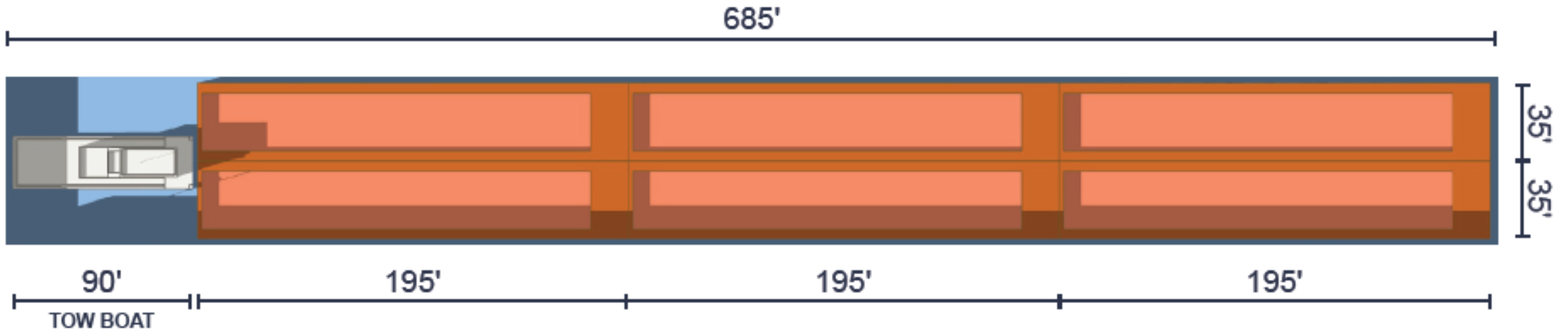
## JBJ Waterway (Plan View)



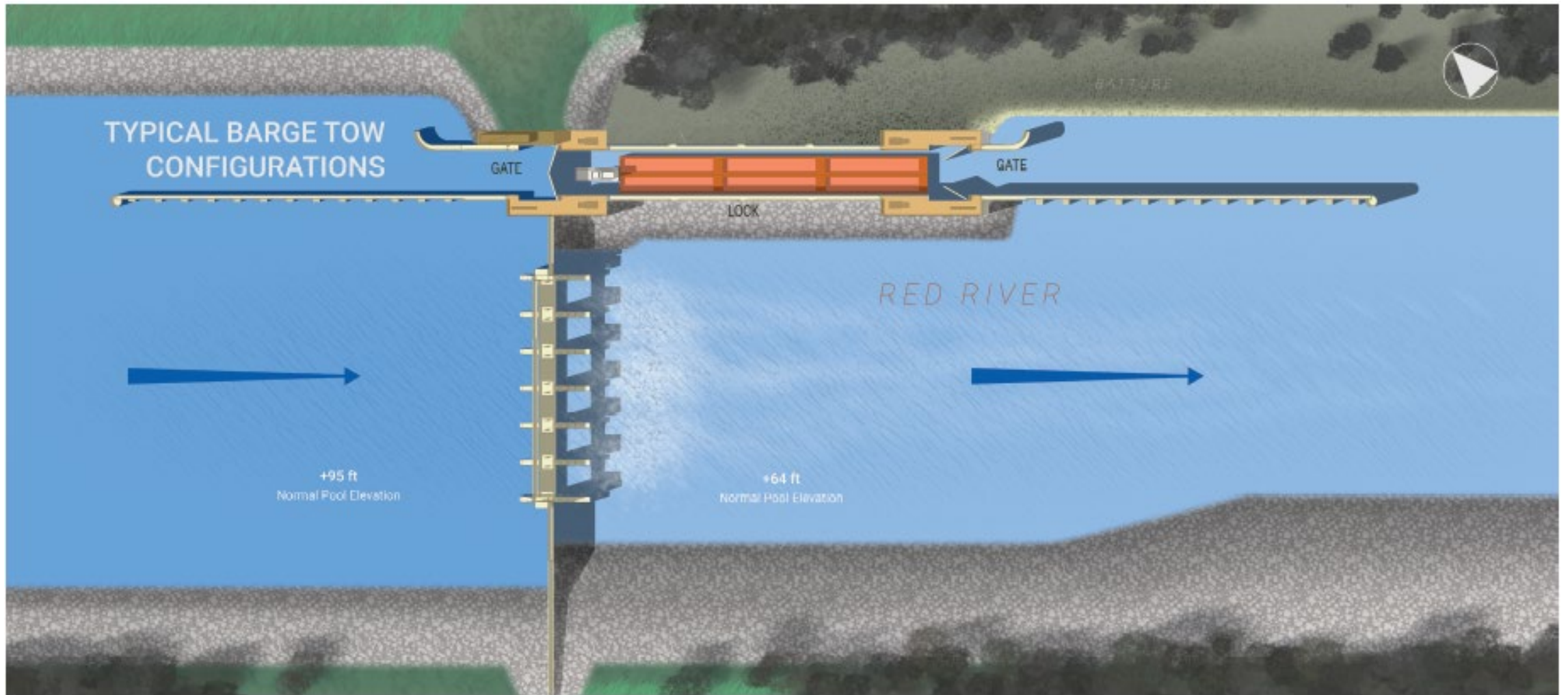
## JBJ Waterway (River Profile) Lock and Dams



# JBJ Waterway Barge Tow Configurations Example

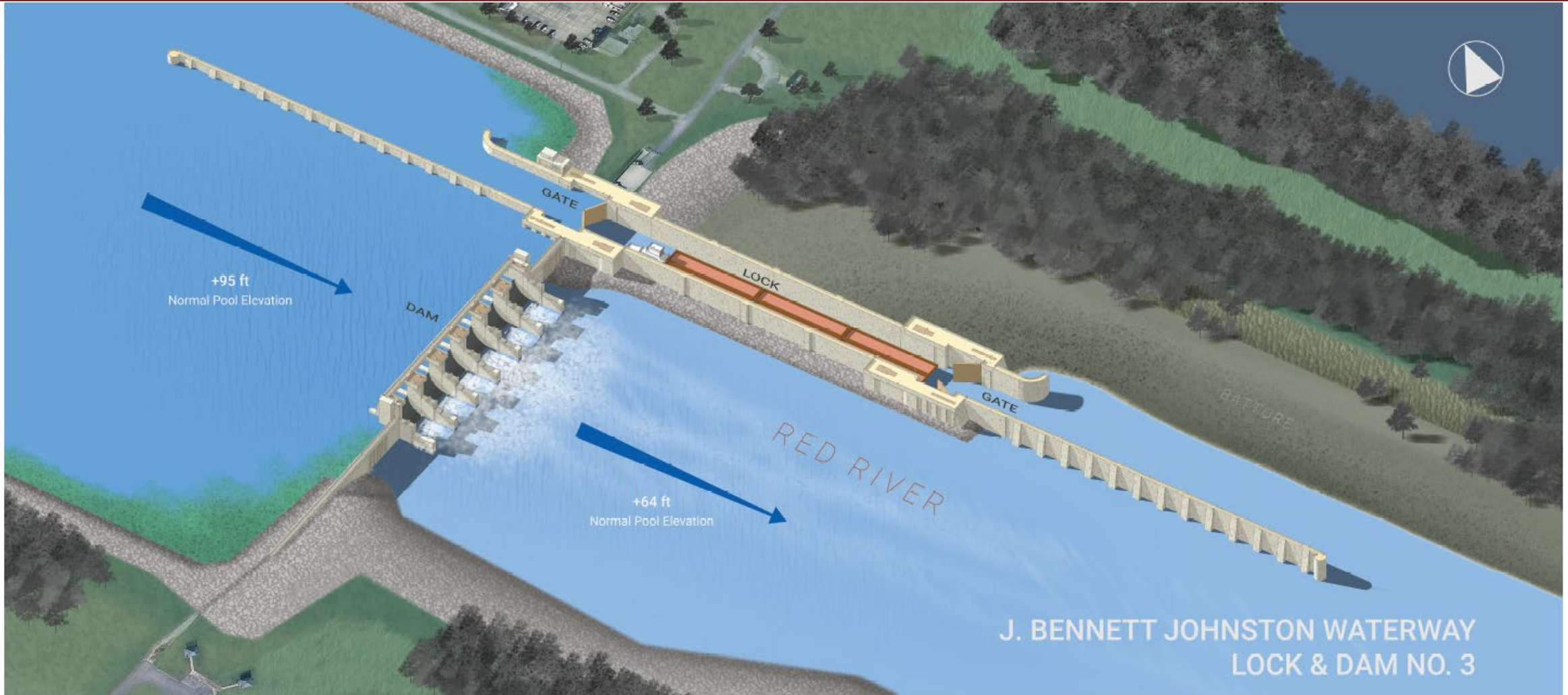


# JBJ Waterway Navigation Channel Geometry





# JBJ Waterway Lock & Dam No. 3

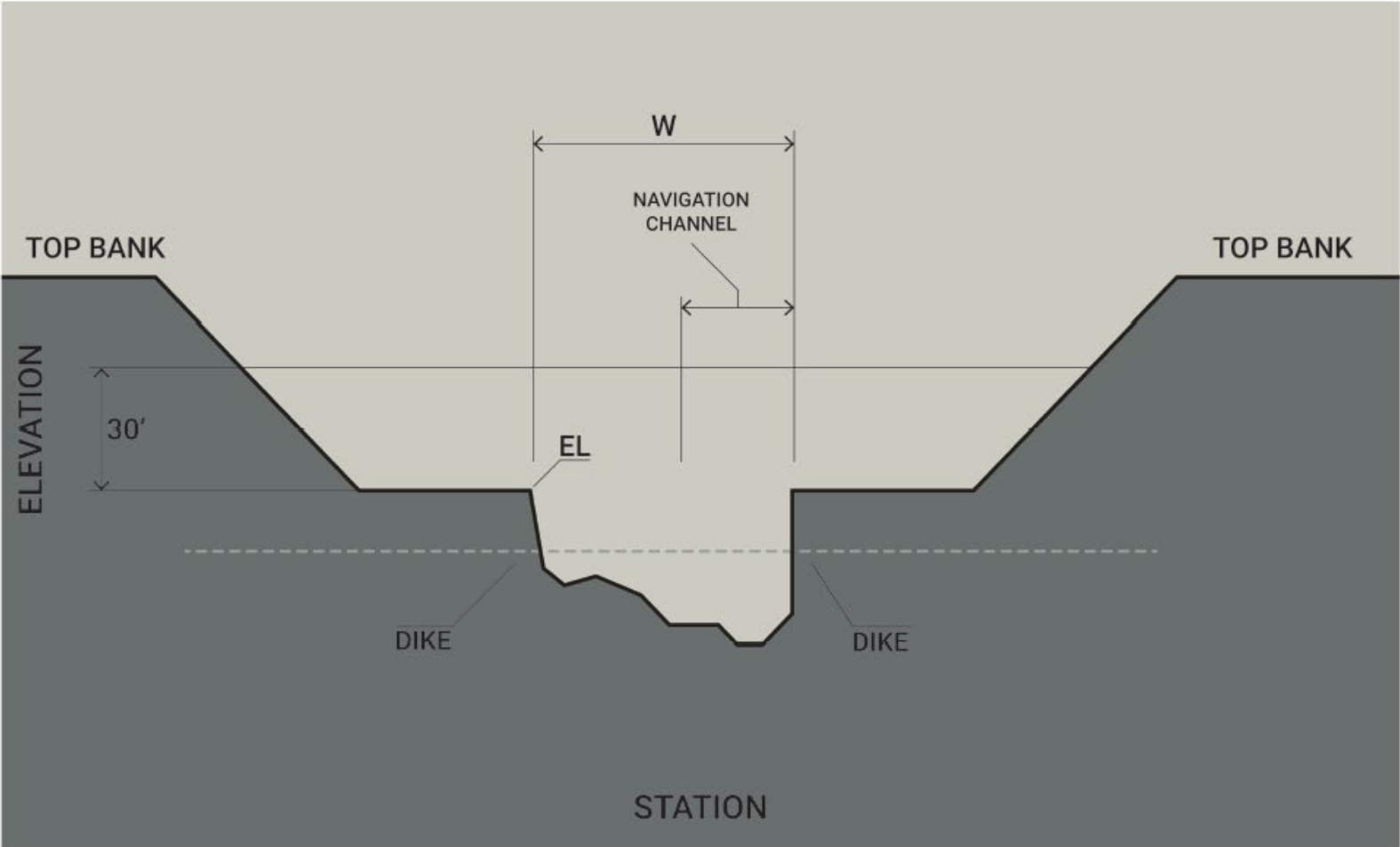


A New Lock Further Upstream Of JBJ Would Look Very Similar



# Southwest Arkansas Red River Navigation Waterway

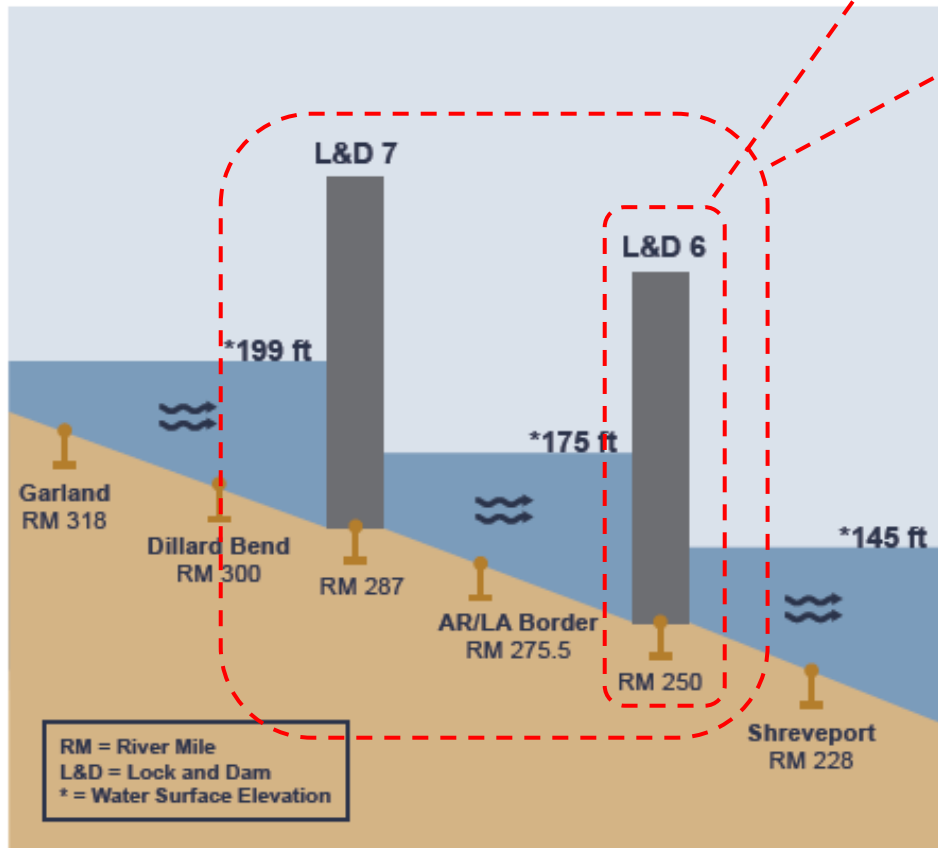
## Generic Waterway Typical Section



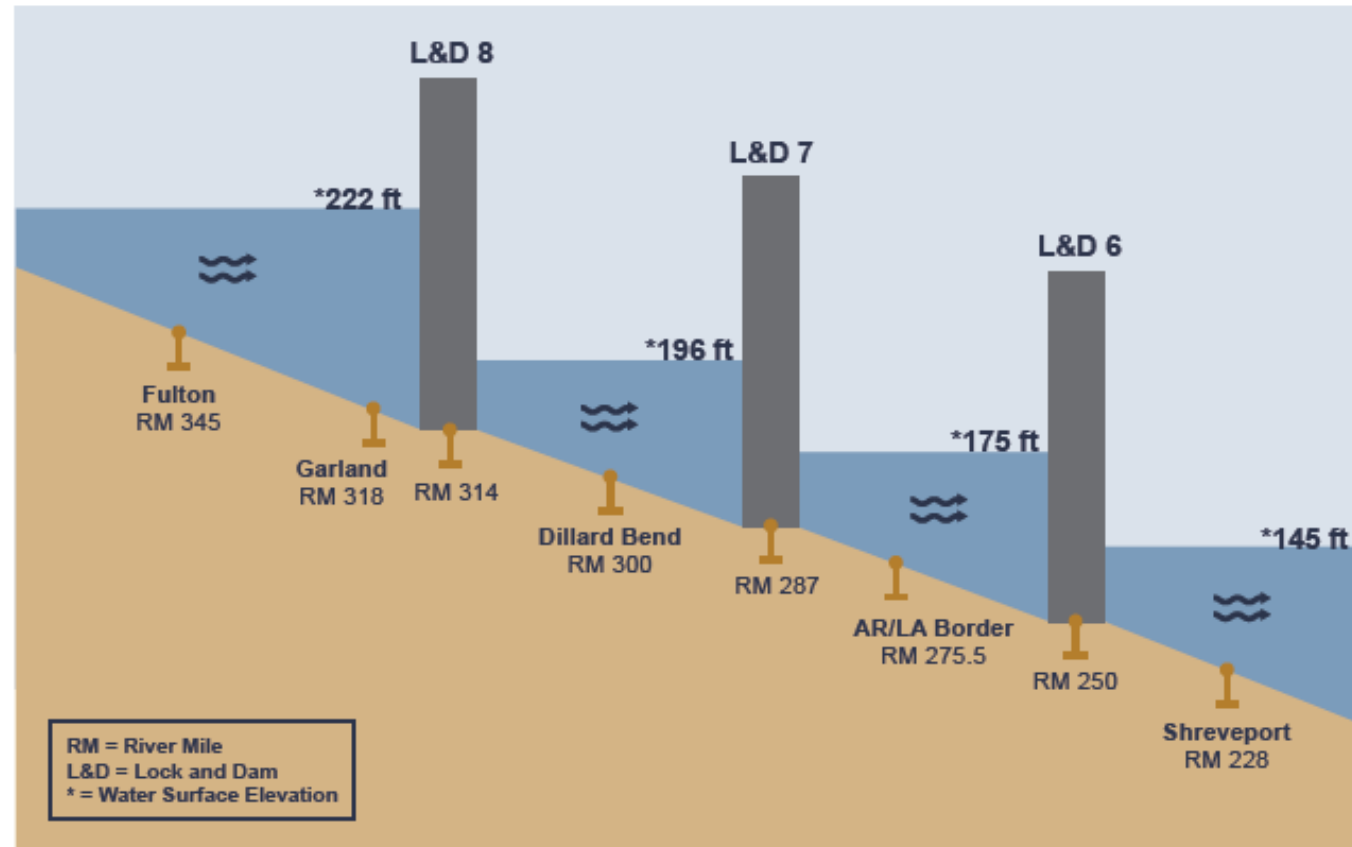
# Southwest Arkansas Red River Navigation Waterway

## EXAMPLE MEASURES AND ALTERNATIVES

### SWARRN (River Profile) Two Lock and Dams



### SWARRN (River Profile) Three Lock and Dams



# Other Potential Project Features

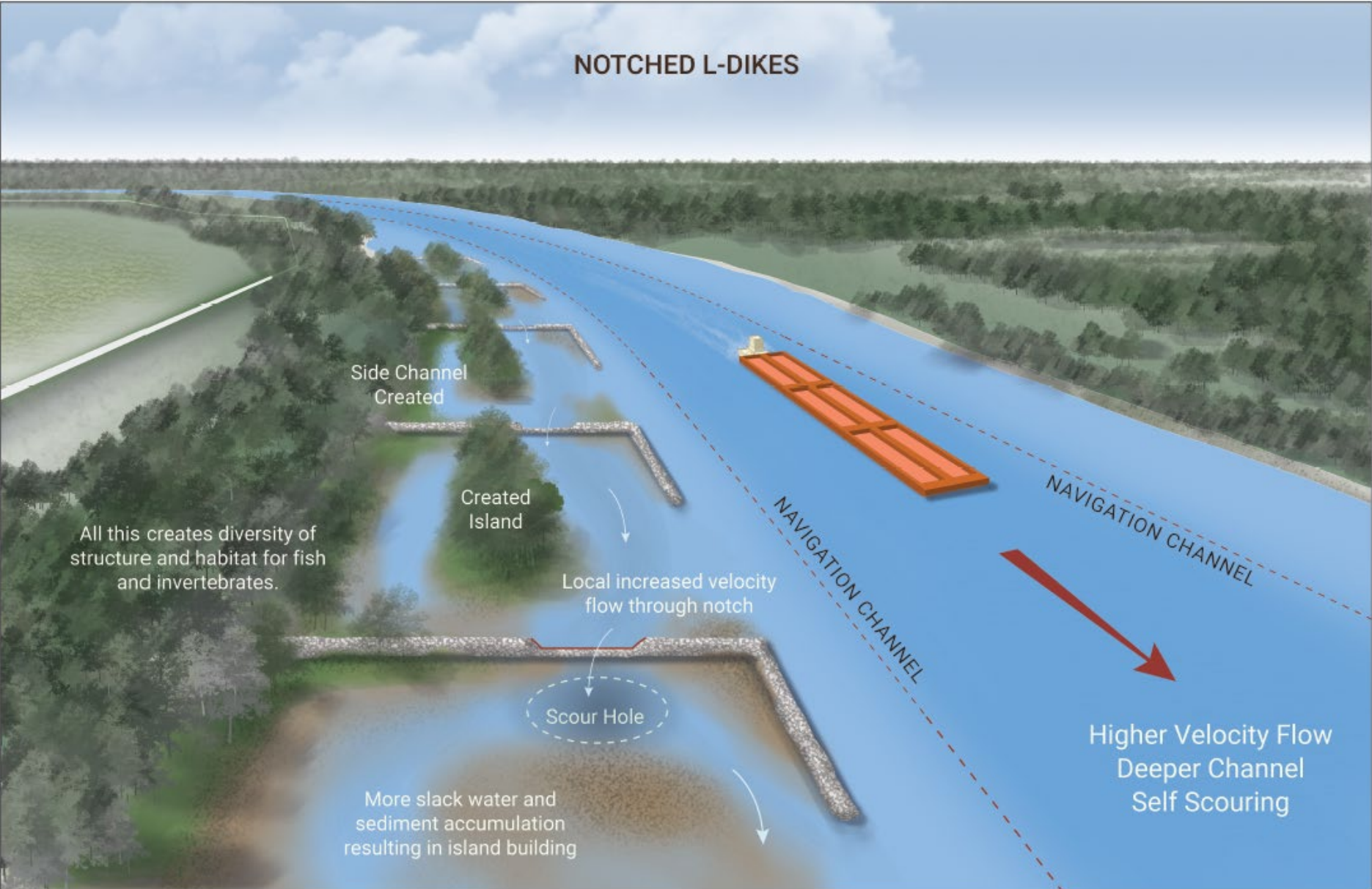
- That needed to enable long tows → channel cut-offs through severe meanders
- That needed to address existing & potential erosion problems → bank revetment
- That needed to maintain a navigable depth → river training that modifies deeper self-scouring flow to navigation channel



# Bank Revetment



# River Training Structures That Work With Nature



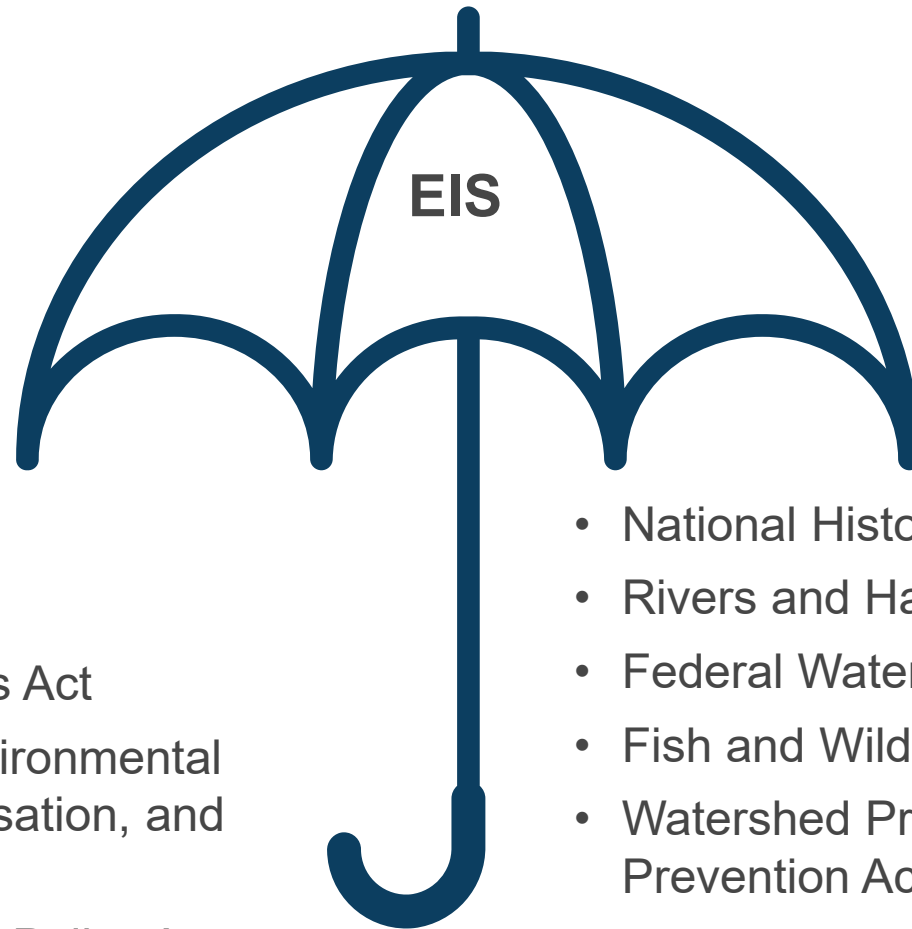
# SWARRN Environmental Impact Statement

## NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)



# Applicable Laws and Regulations

## National Environmental Policy Act (NEPA)



- Clean Water Act
- Clean Air Act
- Endangered Species Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Farmland Protection Policy Act

- National Historic Preservation Act
- Rivers and Harbors Act
- Federal Water Project Recreation Act
- Fish and Wildlife Coordination Act
- Watershed Protection and Flood Prevention Act
- Land and Water Conservation Act,





# EIS Team and Roles

## Lead Federal Agency for NEPA

- U.S. Army Corps of Engineers

## Non-Federal Interest

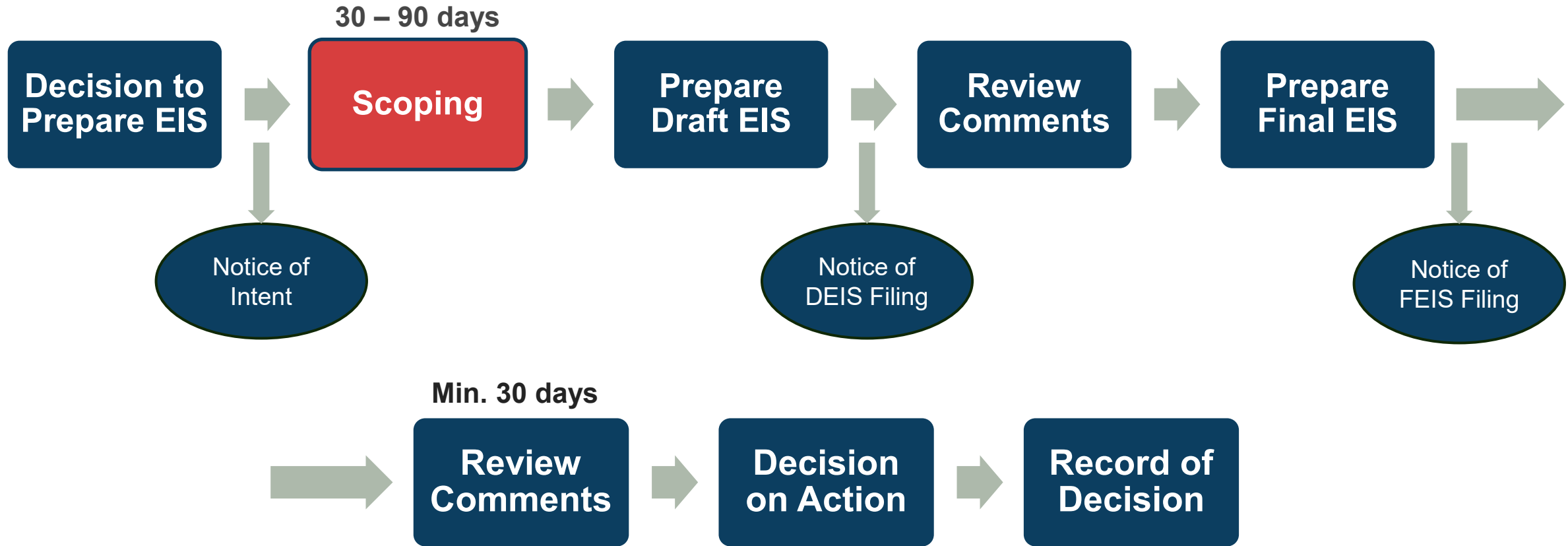
- Arkansas Department of Agriculture, Natural Resource Division

## Environmental Impact Statement Consultant Team Members

- Freese and Nichols, Inc.
- Gulf Engineers & Consultant, Inc.
- Garver, LLC



# Environmental Impact Statement Process



# Scoping Process

The overall goal is to define the scope of issues to be addressed in depth in the analyses that will be included in the EIS. Specifically, the scoping process will:

- Identify people or organizations who are interested in the proposed action;
- Determine the roles and responsibilities of the lead agency by identifying other environmental review and consultation requirements so they can be integrated into the EIS;
- Identify the significant issues to be analyzed in the EIS;
- Identify and eliminate the detailed review those issues that will not be significant or those that have been adequately covered in prior environmental review;
- Identify data gaps in data and information needs;
- Identify any related Environmental Assessments or EISs.



# EIS Content

- Introduction, Purpose and Need
- Description and Evaluation of Alternatives
- Affected Environment / Environmental Consequences
  - General Setting, Physiography, and Topography
  - Geology
  - Climate Setting
  - Floodplains and Flood Control
  - Water Resources
  - Water and Sediment Quality
  - Groundwater and Surface Water Hydrology
  - Soils
  - Energy and Mineral Resources / Hazardous, Toxic, and Radioactive Waste
  - Air Quality
  - Noise
  - Wetlands
  - Aquatic and Wildlife Resources
  - Threatened and Endangered Species
  - Cultural Resources
  - Socioeconomic Conditions
  - Transportation
  - Cumulative Impacts



# Supporting Studies

- Hydrology and Hydraulics Study
- Dredged Material Management Plan
- Clean Water Act 404(b)(1) Evaluation
- Endangered Species Biological Assessment
- Mussel Desktop Analysis
- Habitat Evaluation Procedure / Hydrogeomorphic Approach



# Alternatives for Extending Navigation

- **No-Action**
- **Shreveport to Garland**
- **Shreveport to Fulton**
- **Shreveport to Index**



# How to Submit Written Comments

Written comments regarding the proposed project scope should be addressed to:

U.S. Army Corps of Engineers, Vicksburg District  
Attn: CEMVK-PMP  
4155 Clay Street  
Vicksburg, MS 39183

– Or –

[CEMVK-PPMD-Civil-Works@usace.army.mil](mailto:CEMVK-PPMD-Civil-Works@usace.army.mil)

Emailed comments, including attachments should be provided in .doc, .docx, .pdf, or .txt formats.

