



# Arkansas Water Plan Update



## Navigation Water Demand and Forecasting Technical Work Group: Agenda, Approach, and Key Questions

Conference Call - January 29, 2013 from 10:00 a.m. – 12:00 p.m.

### Meeting Purposes:

1. Request input from Corps of Engineers Districts on the quantification of current navigation water use.
2. Identify and discuss major factors (“drivers” if any) to include in the quantification of future navigation water use.
3. Obtain support from the Navigation Demand Technical Working Group to help CDM Smith begin the path forward in the development of the scenarios and assumptions, and completion of the draft navigation water demand forecast.

The role of the Technical Working Group is to review the draft methodology, provide input and information, and work with the consultant to develop the draft navigation water demands for the Arkansas Water Plan Update.

### Agenda:

10:00 a.m. – 10:15 a.m. – Review of December 17<sup>th</sup> demand methodology meeting

10:15 a.m. – 10:45 a.m. – Outline of current navigation water demand, available data, and preliminary assumptions

10:45 a.m. – 12:00 p.m. – Discussion/Questions

### Initial Approach and Assumptions

It should be noted that the draft methodology white paper is to serve as an initial outline for approaching water demand forecasting for the Arkansas Water Plan Update. Any assumptions presented may be adjusted or revised based upon the input and expertise of the Technical Working Group and incorporation of data and new information as we conduct data collection and analysis.

Forecasting water demand for any water use sector is complex. However, if one steps back there are realistically only three plausible overall outcomes.

Water use for navigation will:

- a. Increase
- b. Remain the same



c. Decrease

It is not anticipated that navigation flow and depth requirements will change over the planning horizon. That is to say, regardless of the future demand for navigation in Arkansas, the minimum flows for rivers and streams and depth of lakes and reservoirs needed to satisfy these demands will not be any more or less than they are today. Therefore, for planning purposes, it is assumed that the instream water demand for navigation in Arkansas will not grow or decline in the future. Water demand for navigation is determined based upon the range of preferred flows and/or depths. As part of the supply analysis component of the AWP Update, the impact of demands on these flow and depth availabilities will be analyzed.

## Identified Navigation Systems

### *White River*

- Releases from upstream projects are based on hydropower operations, controlled by the energy companies, and minimum flows.
- Lower reach is operated as an “open river” system through dredging and bank stabilization
- Dredging is required to keep the channel navigable. Many small harbors are not being dredged, so navigation has been cut off.
- Navigation channel goals are:
  - 9-ft deep by 300-ft wide channel from the mouth to the Arkansas Post Canal.
  - 5-ft deep by 125-ft wide channel from the Arkansas Post Canal to Augusta.
  - 4.5-ft deep by 100-ft wide channel from Augusta to Newport. The required flow at Newport to maintain navigation is 7,700 cfs.
  - An 8-ft channel can be maintained when the river stage at Clarendon exceeds 12 feet.
  - Flow requirements to meet the Arkansas Post Canal to Augusta navigation for a 5-ft channel:
    - White River at DeValls Bluff – 2,750 cfs
    - White River at Clarendon – 2,800 cfs
  - Flow requirements to meet the Arkansas Post Canal to Augusta navigation for an 8-ft channel (when the stage at Clarendon exceeds 12.0 feet):
    - White River at DeValls Bluff – 6,890 cfs
    - White River at Clarendon – 7,500 cfs



# Arkansas Water Plan Update



- WRDA, 1986, authorized improvements to provide a 9-ft deep by 200-ft wide channel from Arkansas Post Canal to Newport. Required flows for these improvements:
  - White River at DeValls Bluff – 8,850 cfs
  - White River at Clarendon – 9,650 cfs
- Environmental concerns limit dredging (mussels and possibly other endangered species).

## ***Arkansas River***

- Operated as part of the McClellan-Kerr Arkansas River Navigation System (ARNS) – 13 locks and dams through its length in Arkansas. Provides a 9-ft navigation channel through flow management of dam releases and dredging.
- Flows are controlled upstream of Arkansas by the Corps of Engineers Tulsa District whose main concern is flood control, while Little Rock District's main concern is navigation.
- A minimum flow of 3,000 cfs is needed to maintain navigation in the lower reaches of the river.

## ***Red River***

- No current navigation projects in Arkansas; however, the possibility is being investigated for navigation between Shreveport and Denison Dam.
- Minimum flow requirements for navigation have not been established on either the Red River or the Sulphur River.

## ***Ouachita River***

- There are four locks and dams in Arkansas – Camden, AR, is the head of the navigation project.
- A 9-ft channel is maintained for the Ouachita-Black Navigation Project.
- A minimum release of 100 cfs from Lake Ouachita to Camden is maintained for navigation.
- Currently dredging is only taking place up to Calion, AR.

## **Key Questions/Discussion Items:**

### ***Legal, Technical, and Operational Authorities, Requirements, and Procedures***

- Federal vs State



# Arkansas Water Plan Update



- What are the threats to navigation?
- Summary of flow regimes
- Operational criteria

## *Additional Navigational Potentials or Initiatives – Future Conditions or Forecast*

- Southwest Arkansas Navigation Study
- Arkansas River proposed 12 ft channel
- White River Basin Comprehensive – with respect to navigation
- White River Navigation Project to Batesville / Newport
- White River, Arkansas, and Missouri Authorized Report
- Factors to consider in determining future navigation needs
- Potential sources of data to quantify navigation requirements, current and future

## *Interstate Compacts*

- Source of compact data, contact information
- Missouri to allow additional flow downstream in Arkansas

## **Next Steps:**

- Write up a summary of this call
- Send out to group for comments
- Begin collecting the data needed to quantify the navigation water needs