

U.S. ARMY CORPS OF ENGINEERS: TULSA DISTRICT KEYSTONE DAM SAFETY MODIFICATION STUDY PUBLIC WORKSHOP



TUESDAY FEBRUARY 12TH, 2019
5:00-8:00PM
CASE COMMUNITY CENTER
SAND SPRINGS, OKLAHOMA

Military



Multipurpose
Reservoirs



Hydropower



Interagency and
International
Support



MKARNS



"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."



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WELCOME

Please review the information boards in the room; U.S. Army Corps of Engineers Keystone Dam Safety Modification study team will be available to answer or discuss any questions or concerns you may have.



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NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NEPA GUIDES THE IMPACT ANALYSIS

National Environmental Policy Act (NEPA) is federal law that requires agencies to evaluate the potential environmental effects of proposed projects, and to inform and involve the public in the decision-making process.

An Environmental Assessment (EA) includes sections describing:

- Purpose and Need
- Existing Conditions
- Alternatives
- Environmental Effects
- Direct Effects
- Indirect Effects
- Cumulative Effects

IMPACT ANALYSIS CRITERIA

USACE has identified a broad spectrum of general and project-specific criteria to analyze impacts of the action alternatives, including:

- NEPA
- Council on Environmental Quality Regulation
- USACE Engineering Regulation 200-2-2
- Environmental Laws and the associated Implementing Regulations and Guidance
- National Historic Preservation Act (Section 106)
- Public Comments

WHAT IS THE PURPOSE OF THIS INFORMATION MEETING?

NEPA is a public process designed to solicit public and agency comments regarding issues that an environmental document should consider.

This Information Meeting aims to:

- Share Information
- Seek Input
- Define How You Can be Involved

This is an opportunity for the public to participate and provide comments on:

- Environmental Concerns
- Local Conditions, Issues, Opportunities, etc.
- Alternative Ways to Meet Purpose

**WE ENCOURAGE YOUR INPUT
DURING THE NEPA PUBLIC
SCOPING PERIOD!**



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HOW CAN YOU PARTICIPATE?

Submit comments between February 12th & March 14th 2019

3 Options to submit your written comments

- » Drop your comments in comment box at tonight's meeting
- » Email to: Keystone-DSMS@usace.army.mil
- » Mail to: Brandon Wadlington, Biologist
 U.S. Army Corps of Engineers
 P.O. Box 17300
 Fort Worth, Texas 76102-0300

Comments must be submitted in writing or they will not be considered

Information can be reviewed at: www.swt.usace.army.mil

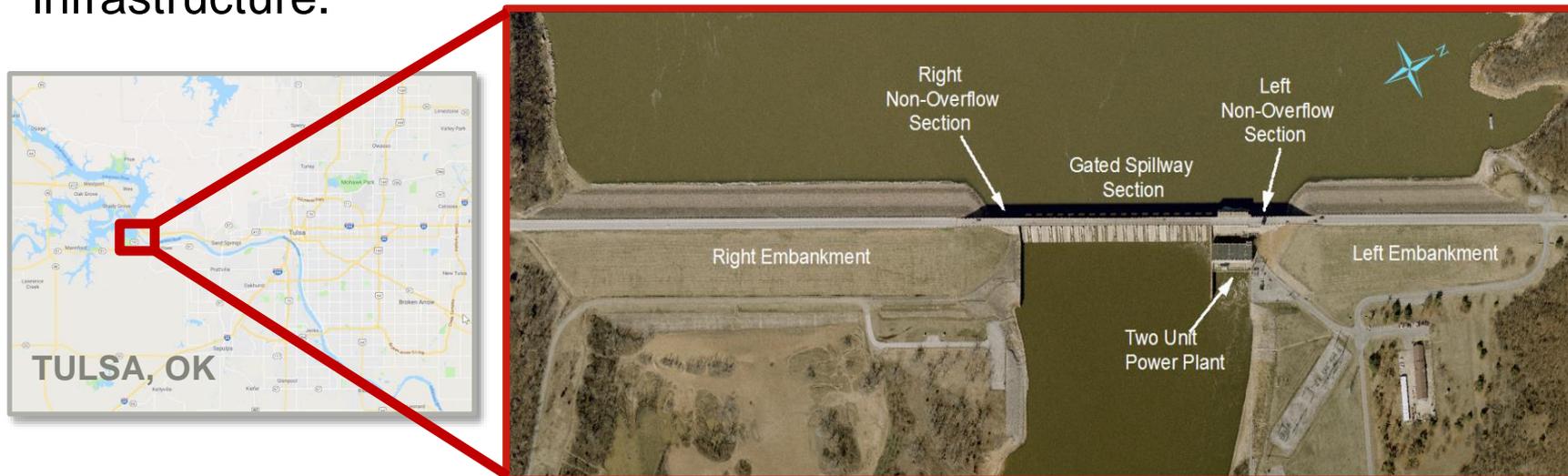


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KEYSTONE DAM HISTORY AND FEATURES

Keystone Dam reduces flood risk for thousands of people including numerous residential, commercial, and industrial buildings and public infrastructure.



Authorized purposes established by Congressional Legislation:

- Flood Risk Management
- Water Supply
- Hydroelectric Power
- Navigation
- Recreation
- Fish and Wildlife



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KEYSTONE DAM OPERATIONS

FLOOD CONTROL STATUS

Keystone Lake near Sand Springs, OK

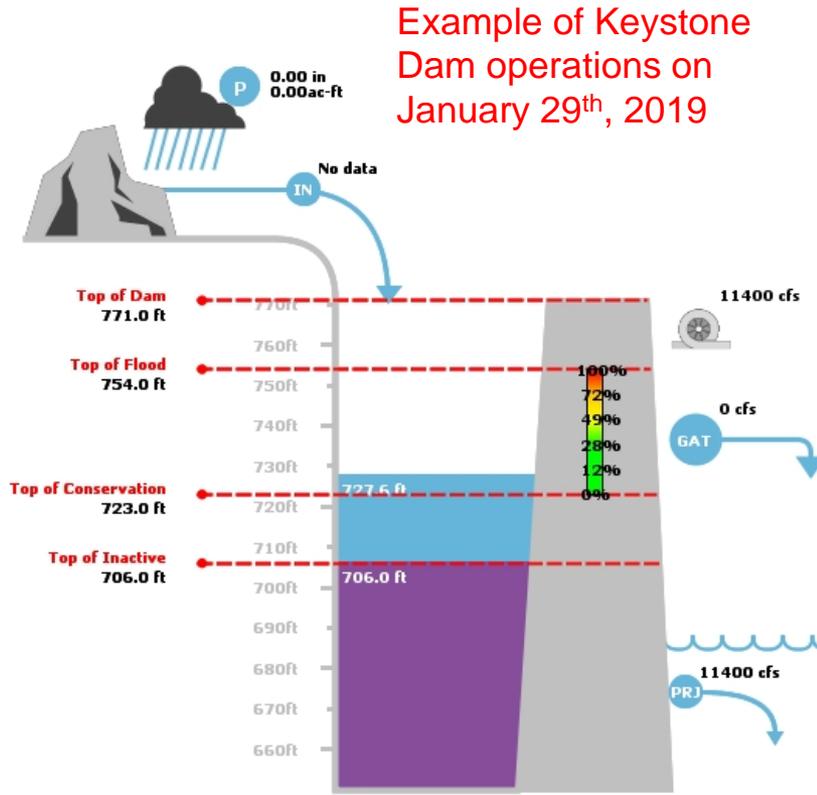
Keystone Lake

29Jan2019
11:00 CST

Drainage Area: 22351 sq. miles
Ungaged Area: 0 sq. miles
Stream: Arkansas_R
Receiving Stream: None
Near Gage: None
Vertical Datum: NGVD29

KEY

- Current Pool
- Dead Pool
- IN Inflow
- P Precip
- T Turbine Total
- PRJ Project Total
- GAT Gated Total



Example of Keystone Dam operations on January 29th, 2019

USACE manages water releases from the flood pool.

Pool of Record
756.49 ft in 1993

Flood Release of Record
300,000 cfs in 1986

Original Design Maximum Pool Release Capacity 939,000 cfs

For the current Keystone Lake pool elevation and water release info visit:
<http://www.swt-wc.usace.army.mil/KEYS.lakepage.html>



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KEYSTONE DAM SAFETY MODIFICATION STUDY

Primary Focus:

Assessments by the U.S. Army Corps of Engineers determined potential risks associated with embankment overtopping during extreme flood events at Keystone Dam.

Flood release of record: October 21, 1986. Equivalent to 3.73 inches of runoff.

Secondary Focus:

There are potential risks associated with water moving through the rock beneath the dam.

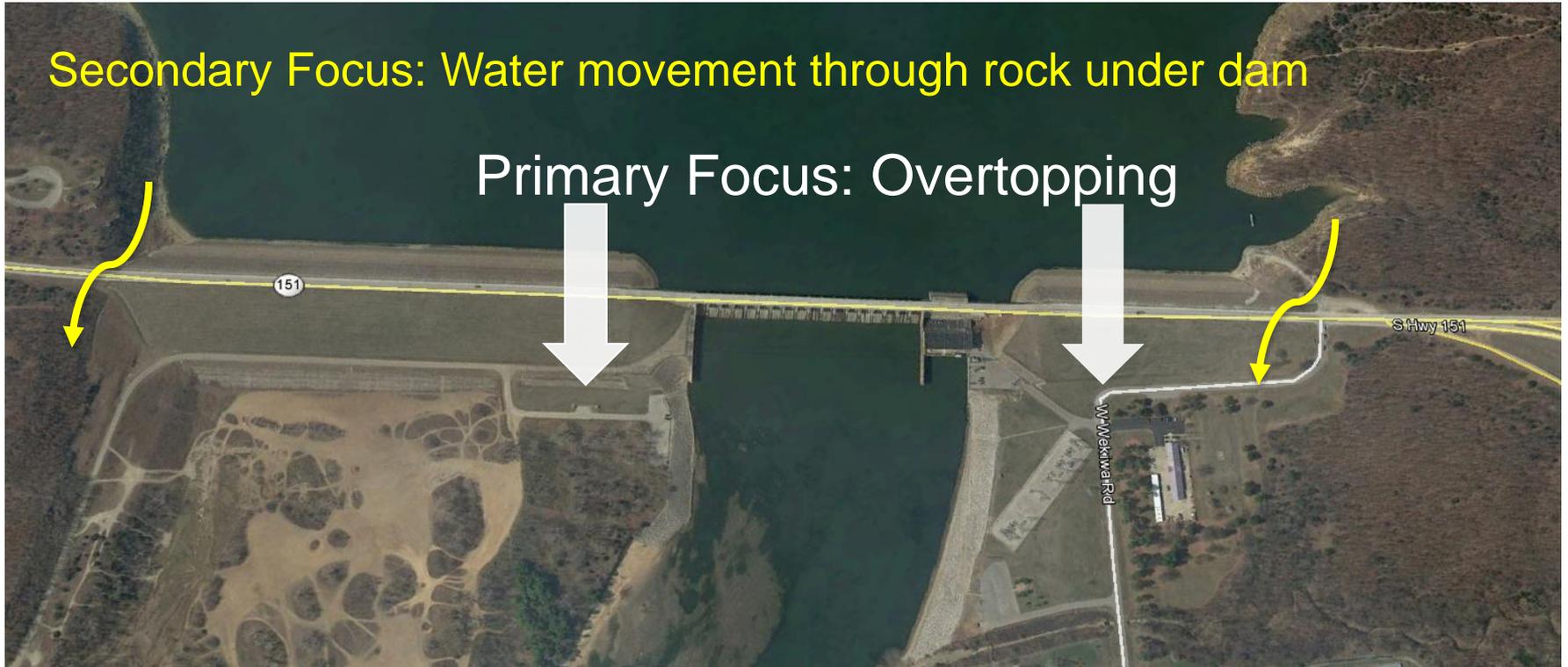


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Secondary Focus: Water movement through rock under dam

Primary Focus: Overtopping



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KEYSTONE DAM SAFETY MODIFICATION STUDY

Opportunities and Objectives

- Define, communicate and address the risk associated with Keystone Dam.

Constraints

- No change to conservation or flood pool elevations
- Minimize impacts to authorized purposes
 - Flood Risk Management
 - Water Supply
 - Hydroelectric Power and Facilities
 - Navigation
 - Recreation
 - Fish and Wildlife



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POTENTIAL ALTERNATIVES

- No Action

- Continue existing operations and maintenance

- Non-structural Measures

- Enhance warning systems

- Structural Measures

- Dam Raise
- Modify Existing Spillway
- Additional Spillway in either abutment
- Various methods to address water movement under the abutments
- Combination of measures



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POTENTIAL IMPACTS & CONSIDERATIONS

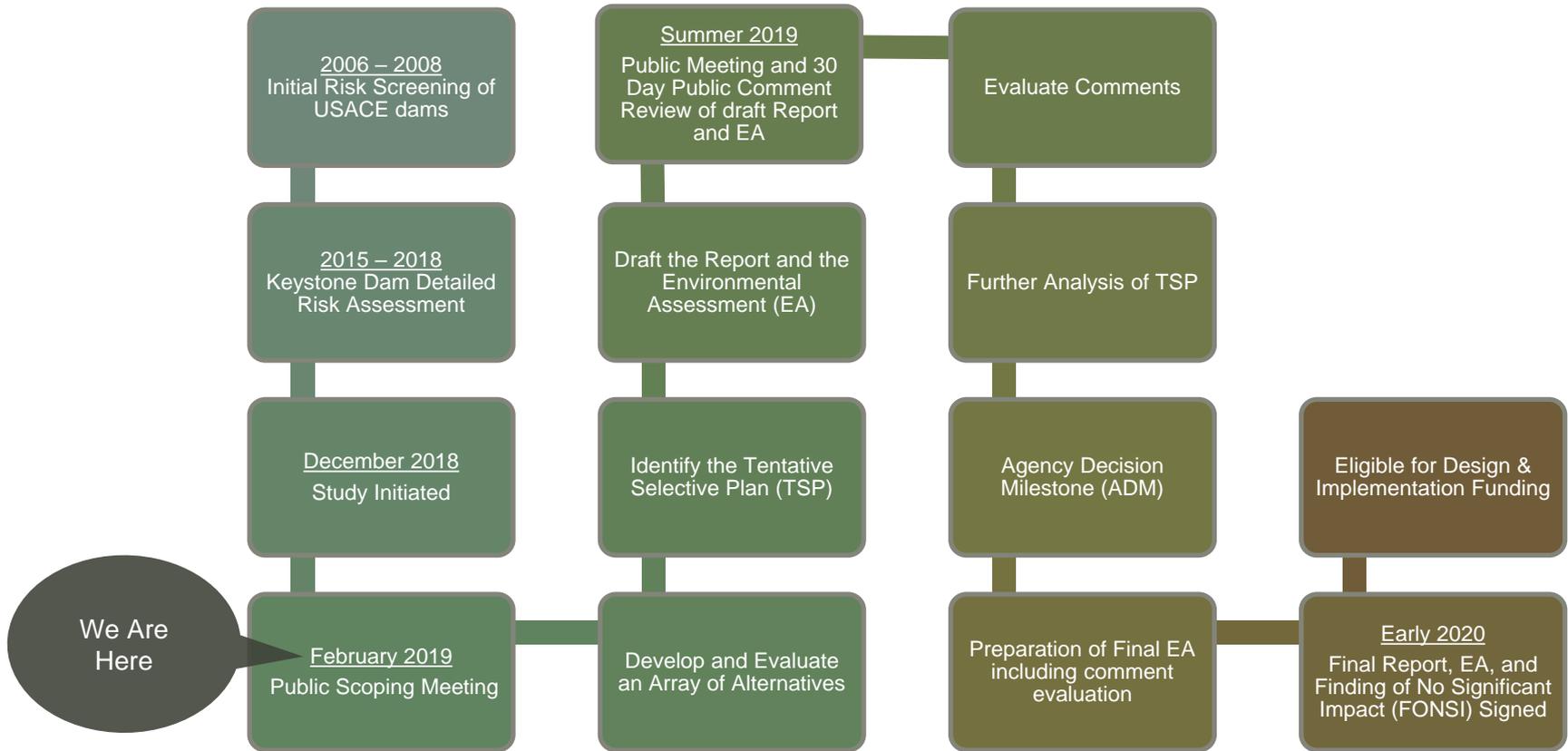
- Life safety & risk management
 - Upstream pool elevation (during extreme flood events)
 - Downstream releases (during extreme flood events)
 - No change to regular operations
- Infrastructure
 - Highway 151 runs across the top of dam
 - Hydropower units in the dam
 - Temporary recreational impacts
- Natural environment
 - Fish, wildlife, and their habitat
 - Threatened & endangered species
- Cultural resources
 - Known resources
 - Potential for new discoveries
 - Keystone Dam is eligible for listing in the National Register of Historic Places
- Public comments
- Constructability & costs



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KEYSTONE DAM SAFETY MODIFICATION STUDY SCHEDULE



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THANK YOU FOR YOUR TIME AND REMEMBER:

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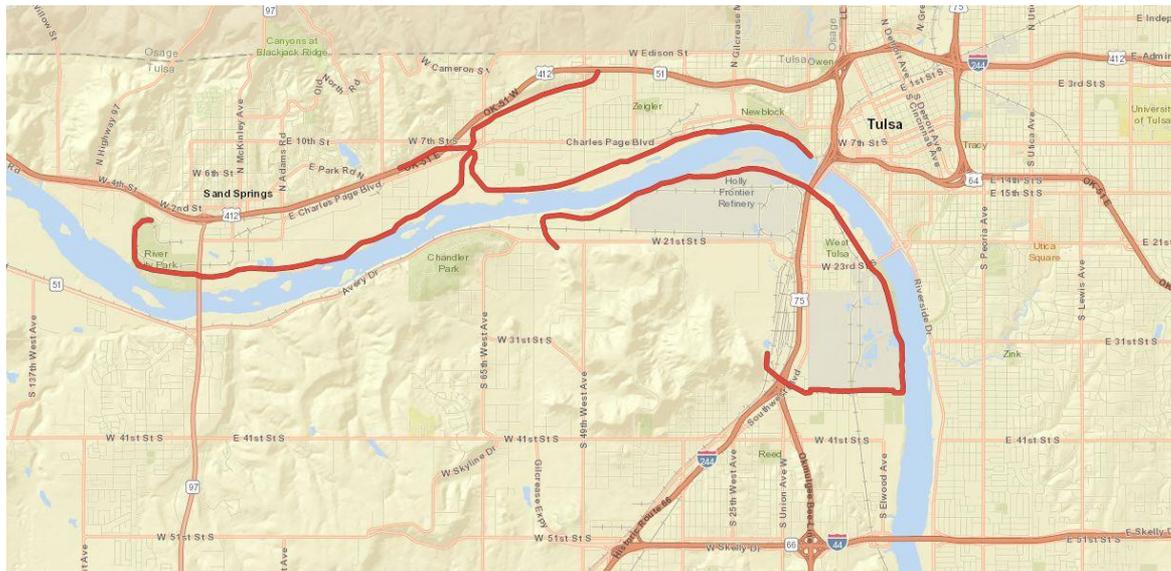
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JOIN US TOMORROW FOR A PUBLIC WORKSHOP ON THE TULSA AND WEST TULSA LEVEES STUDY



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