STATUS OF THE ALABAMA DAM SAFETY PROGRAM: WHY WE SHOULD GIVE A DAM

Presented by: J. Steve Newton, P.E.
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Dam failure looks imminent! At this stage, all we can do is wait and keep our fingers crossed.
We know of approximately 2,300 dams

**Dam Owners:**
- Industries, agriculture and other private entities (89%)
- State and local government including public water systems (8%)
- U.S. Army Corps of Engineers and Tennessee Valley Authority (2%) – have dam safety protocols
- Electric utilities – Hydropower generation (1%) - Dam safety is a critical part of FERC's hydropower program and receives top priority.

**Dams by usage:**
- Recreation (45%)
- Fish & Wildlife (6%)
- Flood Control (34%)
- Other (4%)
- Fire Protection (2%)
- Water Supply/Irrigation (1%)
- Navigation (1%)
- Hydroelectric (1%)
- Debris/Tailings (1%)
Alabama is the only state with no dam safety program.

A state dam safety program would:

- Provide a comprehensive and complete dam inventory
- Identify the risks
- Design and Construction standards
- Inspection requirements
- Operations and Maintenance
- Corrective actions/rehabilitation strategies
- Federal funding eligibility

**Dam Hazard Classifications**

- **Low Hazard Potential** – no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner’s property.
- **Significant Hazard Potential** – no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.
- **High Hazard Potential** – probable loss of human life
DAMS IN ALABAMA

• 87% of the known dams have an earthen component
• Earthen dams are the most problematic from a safety perspective
• Over 75% of the known dams in Alabama are more than 40 years old
• Over 200 dams are classified as high hazard potential – loss of life
  – Comprehensive Inspections
  – Instrumentation
  – Emergency Spillway Design Flow for the Probable Maximum Flood or other flood event
  – Corrective actions and rehabilitation
  – Emergency Action Plans (EAPs)
• Only 19% of high hazard potential dams in Alabama are being inspected, maintained and have EAPs.
• EAPs are used by the state and local EMA to facilitate emergency evacuations
ALABAMA SAFE DAM COALITION
TECHNICAL COMMITTEE

• Technical Committee Membership:
  – Alabama Section of the American Society of Civil Engineers (leading the effort)
  – American Council of Engineering Companies of Alabama
  – Alabama League of Municipalities
  – Association of County Engineers of Alabama
  – Alabama Department of Economic and Community Affairs
  – State Sen. Clyde Chambliss, P.E.

• Last attempt at dam safety legislation was in 2014
• We are currently making measurable progress
The Committee has developed a road map that includes the following goals:

- Build broad support around the urgent need
- Improve the confidence of the existing inventory in several of the most populous counties
- Help understand overall risks and liabilities
- Recommend practices to manage liabilities
- Provide a means for the general public to understand their risk
- Provide dam safety education
ALABAMA SAFE DAM COALITION
TECHNICAL COMMITTEE

Proposed Pilot Study:

- Establish a Steering Committee
- Develop best practices to develop the inventory of existing dams in 3 selected counties
- Proposed methods for developing a comprehensive state-wide dam inventory
- Identify appropriate dam inspection and maintenance protocols
ALABAMA SAFE DAM COALITION
TECHNICAL COMMITTEE

Proposed Pilot Study:

• Provide recommendations for the framework of the Alabama Dam Safety Program
  – Cost-effectively meet the needs of Alabama
  – Meet the Federal Emergency Management Agency minimum criteria
  – Identify dams that will initially be included in the program
  – Identify the enabling state agency and funding
  – Identify stakeholders

• The 2022 legislature approved supplemental appropriations to fund this effort

• ADECA received pilot study proposals from consultants on October 14, 2022 and is currently evaluating each

• This pilot study will begin soon
DAM INSPECTIONS AND MAINTENANCE

• Federally owned or licensed dams – dam safety programs are established

• For Private and Public Owned Dams:
  – Don’t wait for the state
  – Confirm the hazard classification of your dam which is based on probable impacts if a failure were to occur
  – Look carefully at your risks and liabilities along with consensus methods for dam integrity assessments:
    • Emergency spillway design capacity
    • Security
    • Inspections
    • Monitoring Instrumentation
    • Corrective actions/rehabilitation
  – If high hazard potential...
    • Develop and implement an EAP
    • Coordinate evacuation plan with the County Emergency Management Agency
2022 ALABAMA REPORT CARD

- Part of the national ASCE Infrastructure Report Card
- Unveiled in Montgomery on March 31, 2022
- Twelve Infrastructure Categories
- Overall infrastructure grade for Alabama: C-
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SUMMARY

• When it comes to dam safety and related risks in Alabama, we don’t know what we don’t know

• Progress is being made on the Alabama Dam Safety Program

• Talk with your state legislative representative about the urgent need for this program

• Need to implement a state dam safety program before a catastrophic failure occurs

• Dam owners need to begin or continue with dam inspection and repair activities

• Don’t wait on the state
Questions?

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