

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



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ASCE Montgomery Branch  
Montgomery, Alabama



**TTL**

*Dam failure looks imminent! At this stage, all we can do is wait and keep our fingers crossed.*



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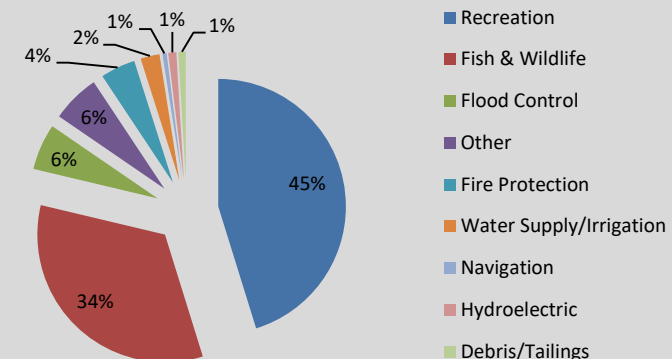
# DAMS IN ALABAMA

- We know of approximately 2,300 dams

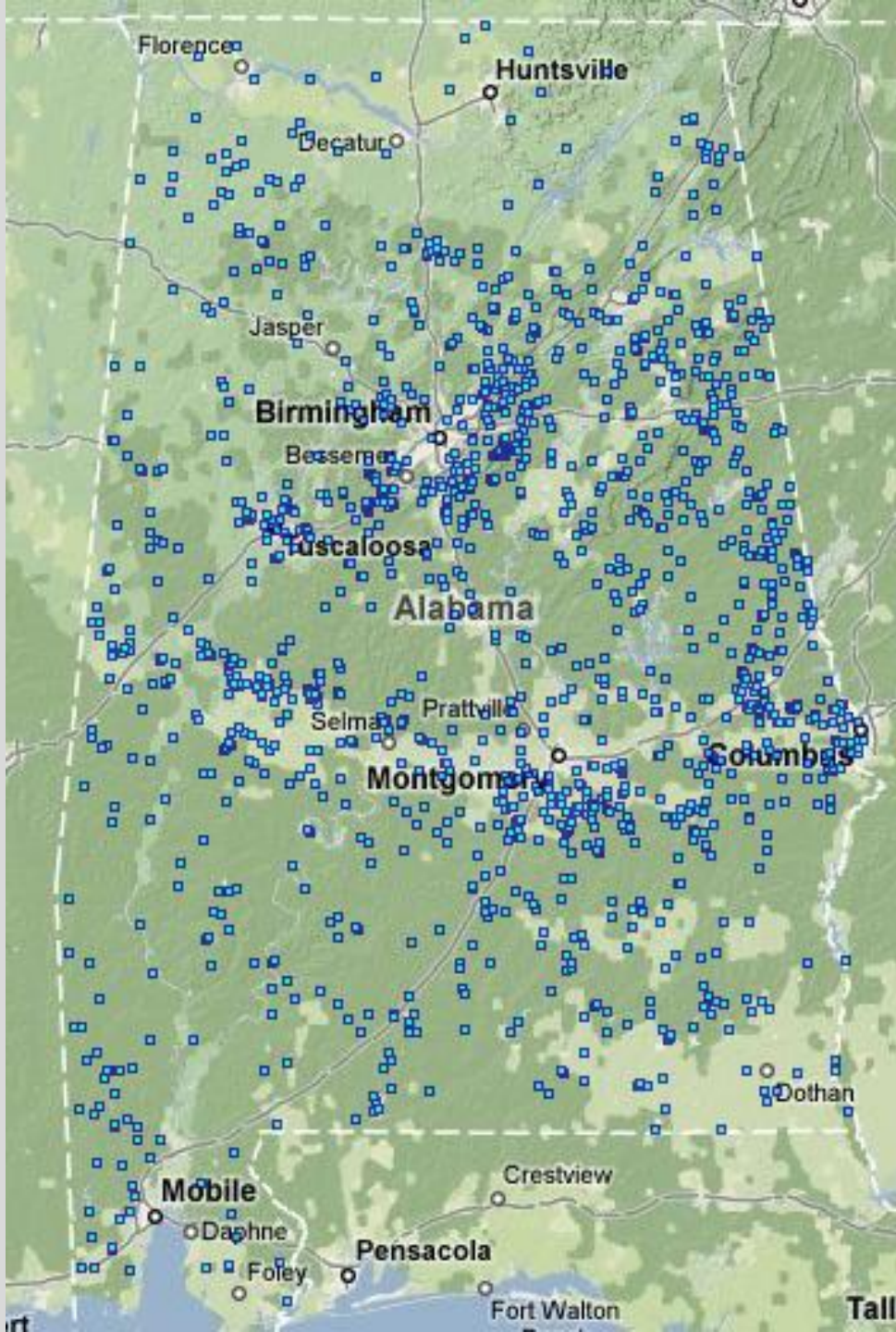
- Dam Owners:

- 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:

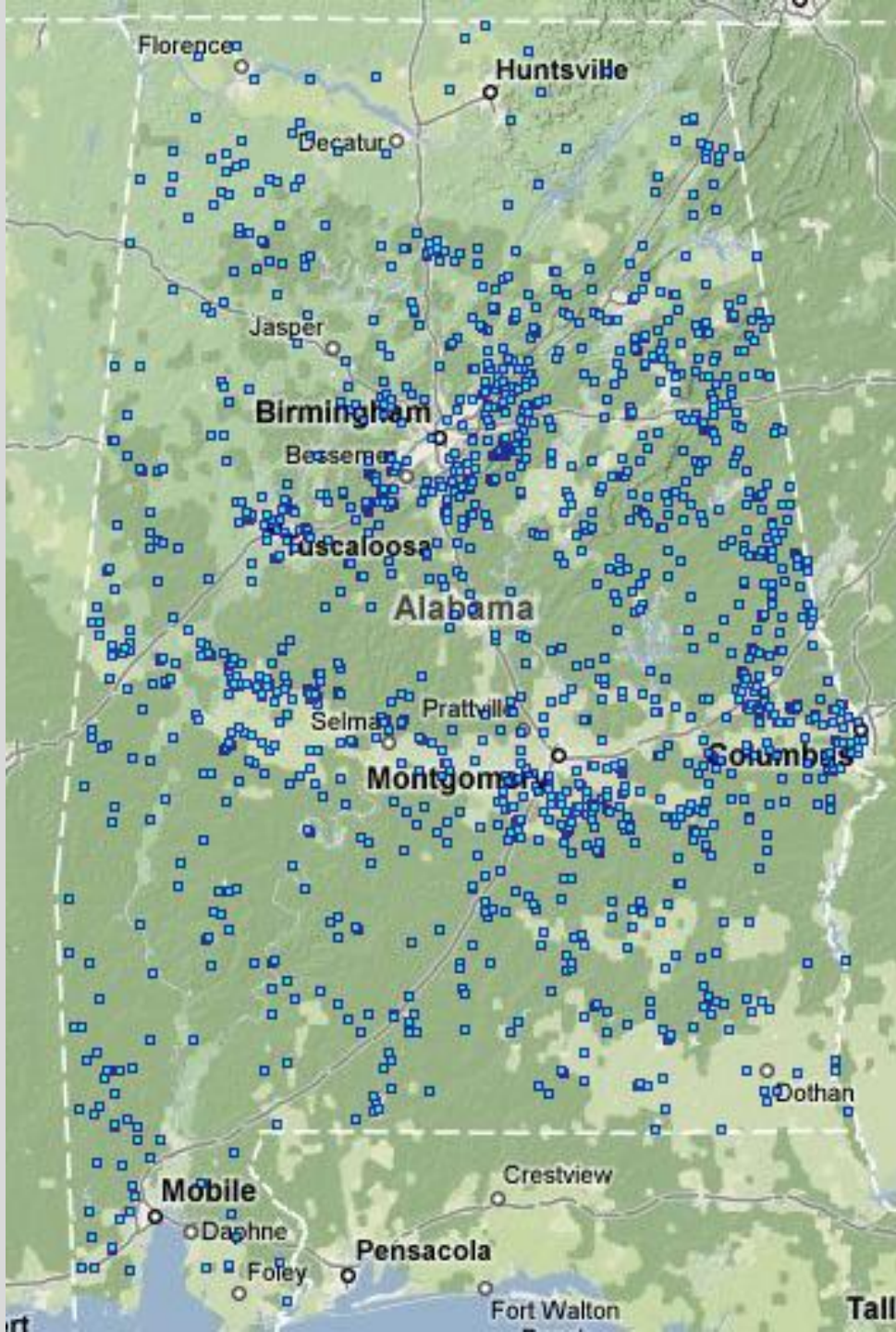


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# DAMS IN ALABAMA

- 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

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# ALABAMA SAFE DAM COALITION TECHNICAL COMMITTEE

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- **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**

# ALABAMA SAFE DAM COALITION

## TECHNICAL COMMITTEE

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- 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

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## 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

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## 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

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- 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



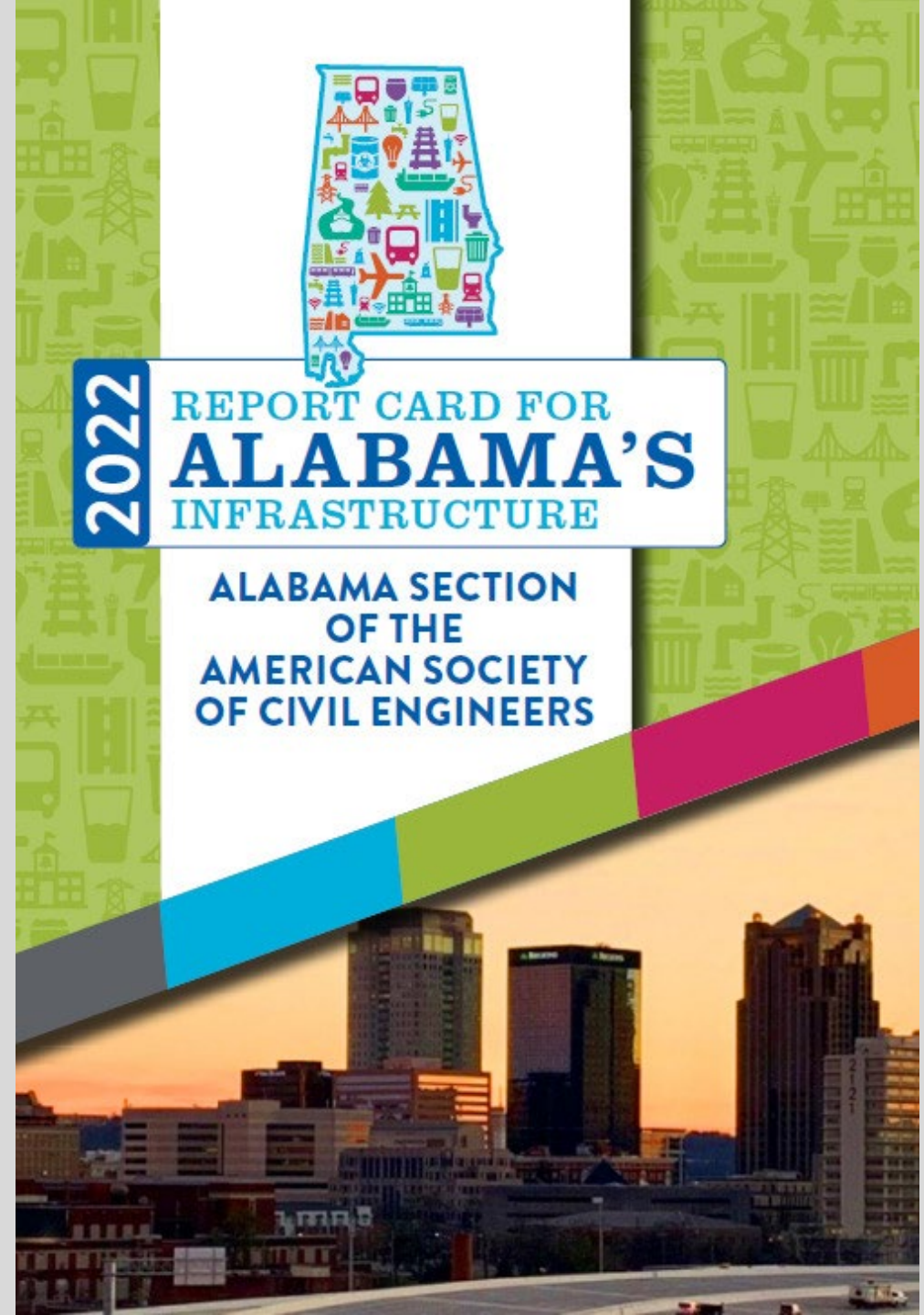
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**2022**

REPORT CARD FOR  
**ALABAMA'S**  
INFRASTRUCTURE

ALABAMA SECTION  
OF THE  
AMERICAN SOCIETY  
OF CIVIL ENGINEERS



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# 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-**



Infrastructure Sectors	2015 ASCE-AL Grades	2022 ASCE-AL Grades	TREND
Aviation	B-	C	↓
Bridges	C-	C+	↑
Dams			
Drinking Water	C+	C-	↓
Energy	B	B	↔
Inland Waterways	D+	D	↓
Ports	B-	B	↑
Rail	B-	B	↑
Roads	D+	C-	↑
Stormwater		D+	New Category
Transit	D	C-	↑
Wastewater	C-	D+	↓
<b>OVERALL GPA</b>	<b>C-</b>	<b>C-</b>	<b>↔</b>

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# SUMMARY

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- 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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