OVERVIEW OF THE U.S. ARMY CORPS OF ENGINEERS OPERATIONS DURING LOW FLOW CONDITIONS IN THE SOUTHEAST

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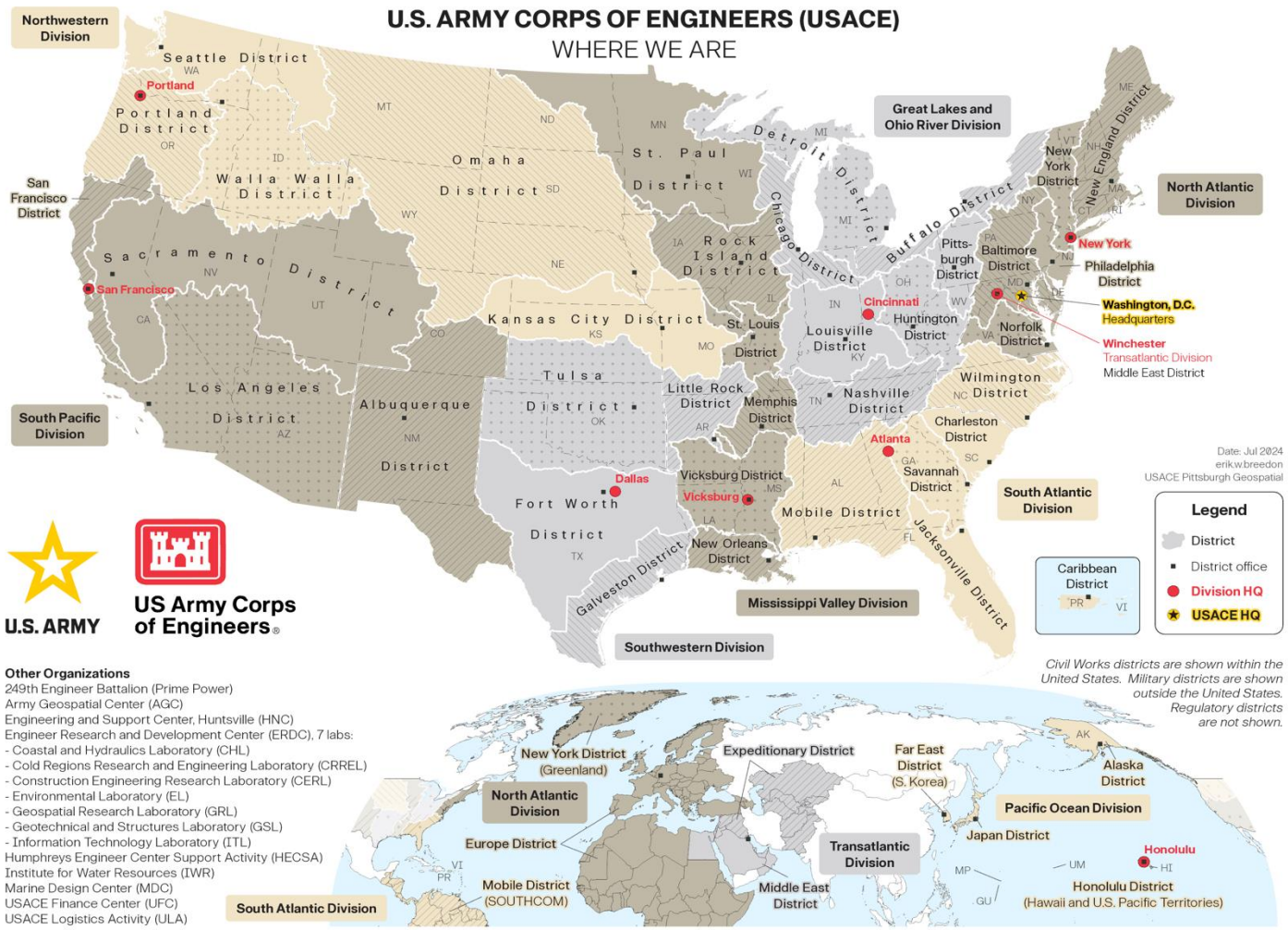
US Army Corps of Engineers®

US ARMY CORPS OF ENGINEERS



- Primary Missions
  - Civil Works
  - Military
- Organization:
  - 9 DIVISIONS
  - 44 DISTRICTS (?)
  - 7 RESEARCH LABRATORIES (ERDC)

Fast Facts:

- 37,000 Civilian and Soldiers
- Working in 130 Countries

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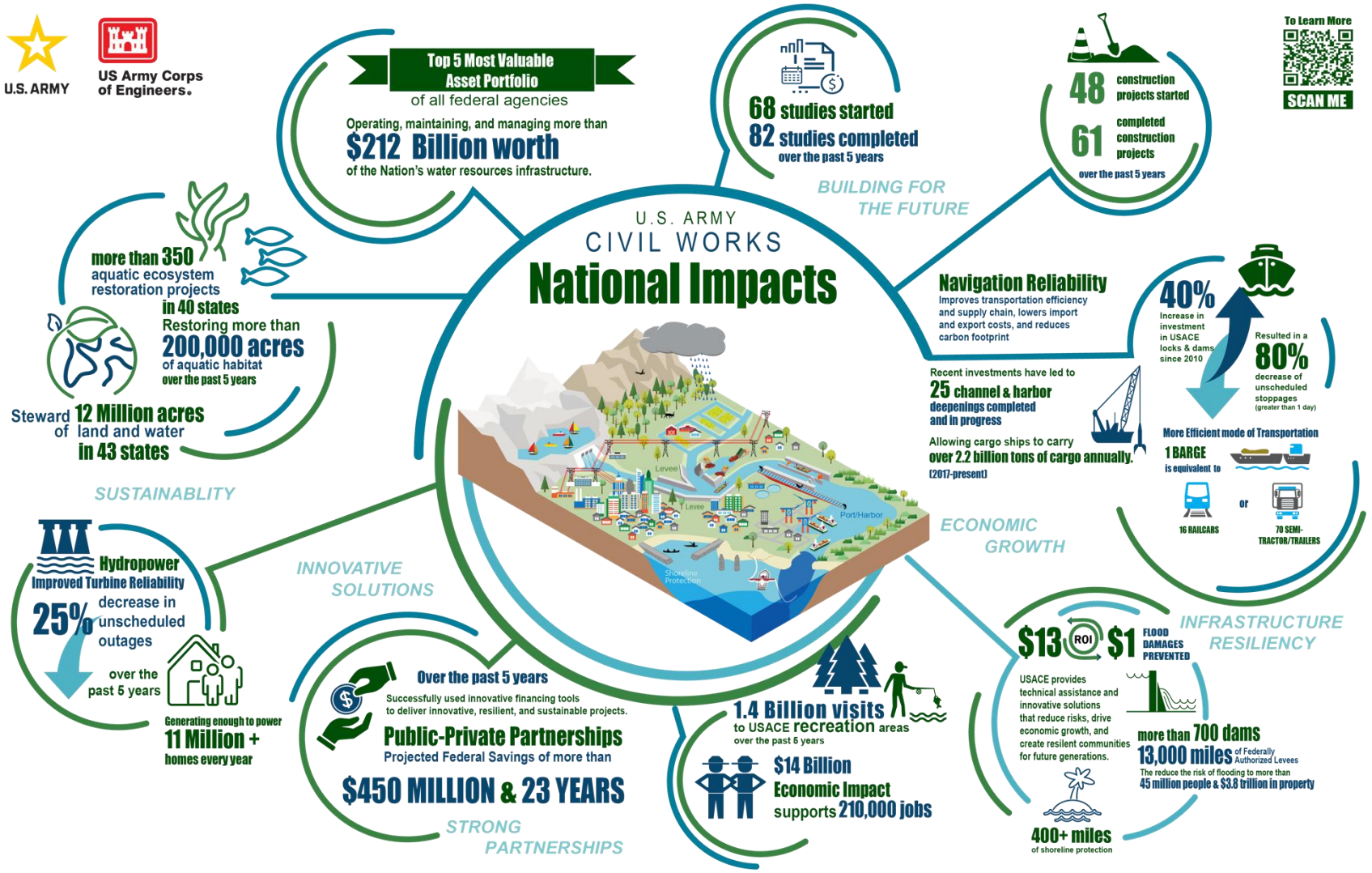
USACE, CIVIL WORKS PROGRAM

- Over 700 Dams
- 13,000 Miles of Federally Authorized Levees
- Over 400 Miles of Shoreline Protection
- Over 25,000 Miles of Channel
- 926 Harbors Maintained
- Largest Generator of Hydropower
- 5th Largest Electric Supplier
- Over 260 Million Visitors Annually to USACE Projects
- Over $202 Billion Annually in Flood Damages Prevented (10 yr average)



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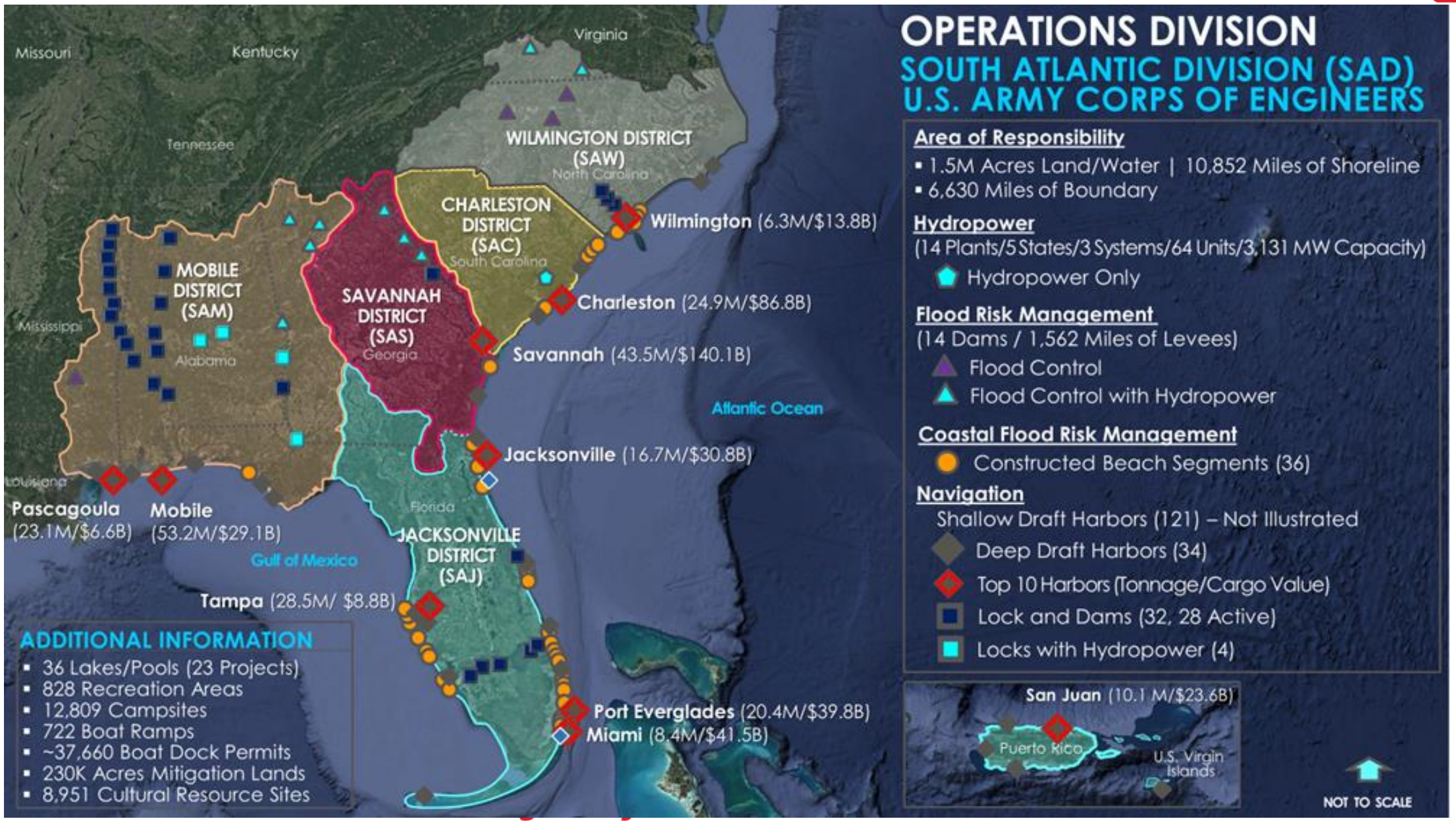
SOUTH ATLANTIC DIVISION



AUTHORIZED PURPOSES

- **Primary Purpose: The purpose for which the project was authorized by Congress**

  1.) Laws initially authorizing construction of the project*
  2.) Laws specific to the project passed subsequent to construction

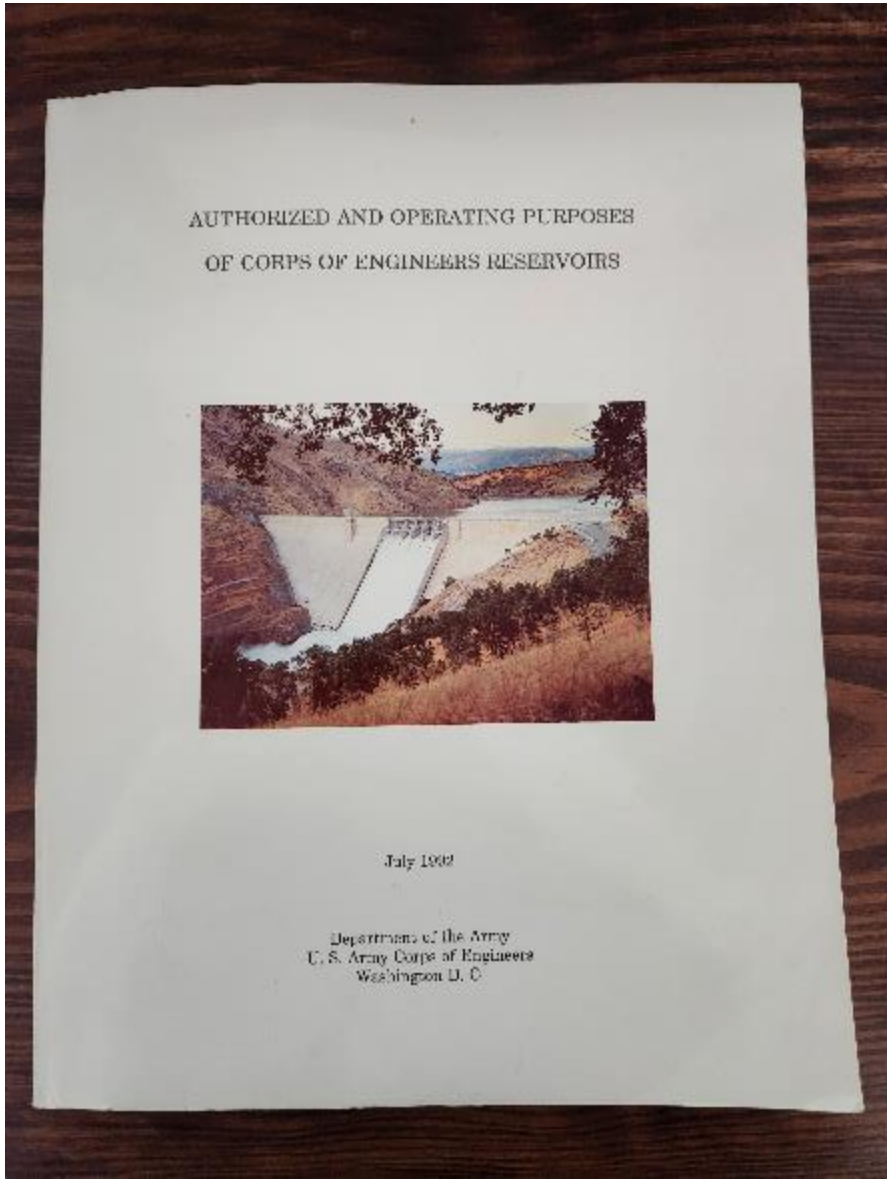
Typically, the specific information is contained in the Chief's Report

- General (Secondary) Purpose: Laws that apply generally to all USACE reservoirs
  - PL 78-534, Flood Control Act of 1944 – provides authority to add recreation as a purpose and to contract for use of surplus water for domestic purposes
  - PL85-500, Title III, Water Supply Act of 1958 – provides authority to include storage for municipal and industrial water supply
  - PL 85-624, Fish and Wildlife Coordination Act of 1958 – provides authority to modify projects to conserve fish and wildlife
  - PL 92-500, Federal Water Pollution Control Act Amendments of 1972 – establishes goal to restore and maintain the quality of the Nation's waters
  - PL 93-205, Endangered Species Act of 1973 – provides authority for operating projects to protect threatened or endangered fish/wildlife

AUTHORIZED PURPOSES

8 General Categories:

- Flood Risk Management (formerly Flood Control)
- Navigation
- Hydropower
- Irrigation
- Municipal/Industrial Water Supply
- Water Quality
- Fish and Wildlife
- Recreation

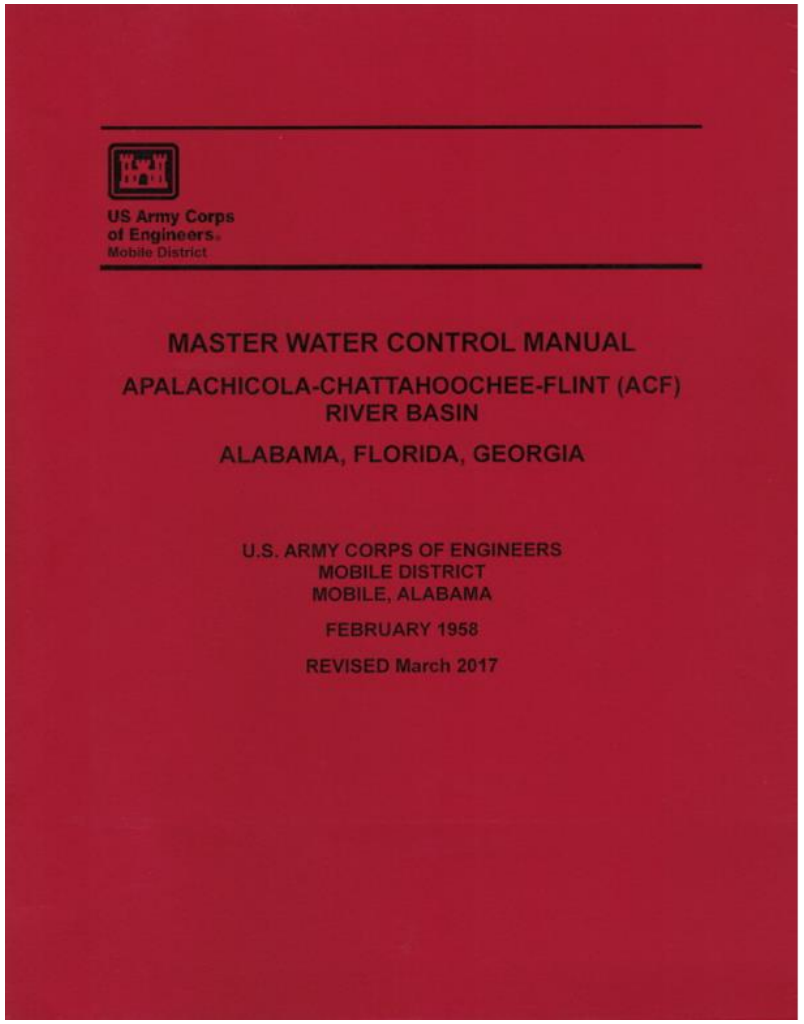


ENGINEERING REGULATIONS

Water Management Related Official Policies and Procedures

ER – 1110-2-240 – Water Control Management
ER – 1110-2-249 – Management of Water Control Data Systems
ER – 1110-2-1400 – Reservoir/Water Control Management
ER – 1110-2-1941 – Drought Contingency Plans
ER – 1110-2-8154 – Water Quality Management
ER – 1110-2-8156 – Preparation of Water Control Manuals
ER – 1165-2-119 – Modifications to Completed Projects

HOW DOES USACE OPERATE THESE PROJECTS?



Projects are operated by approved water control plans/manuals.

3 Basic Objectives:

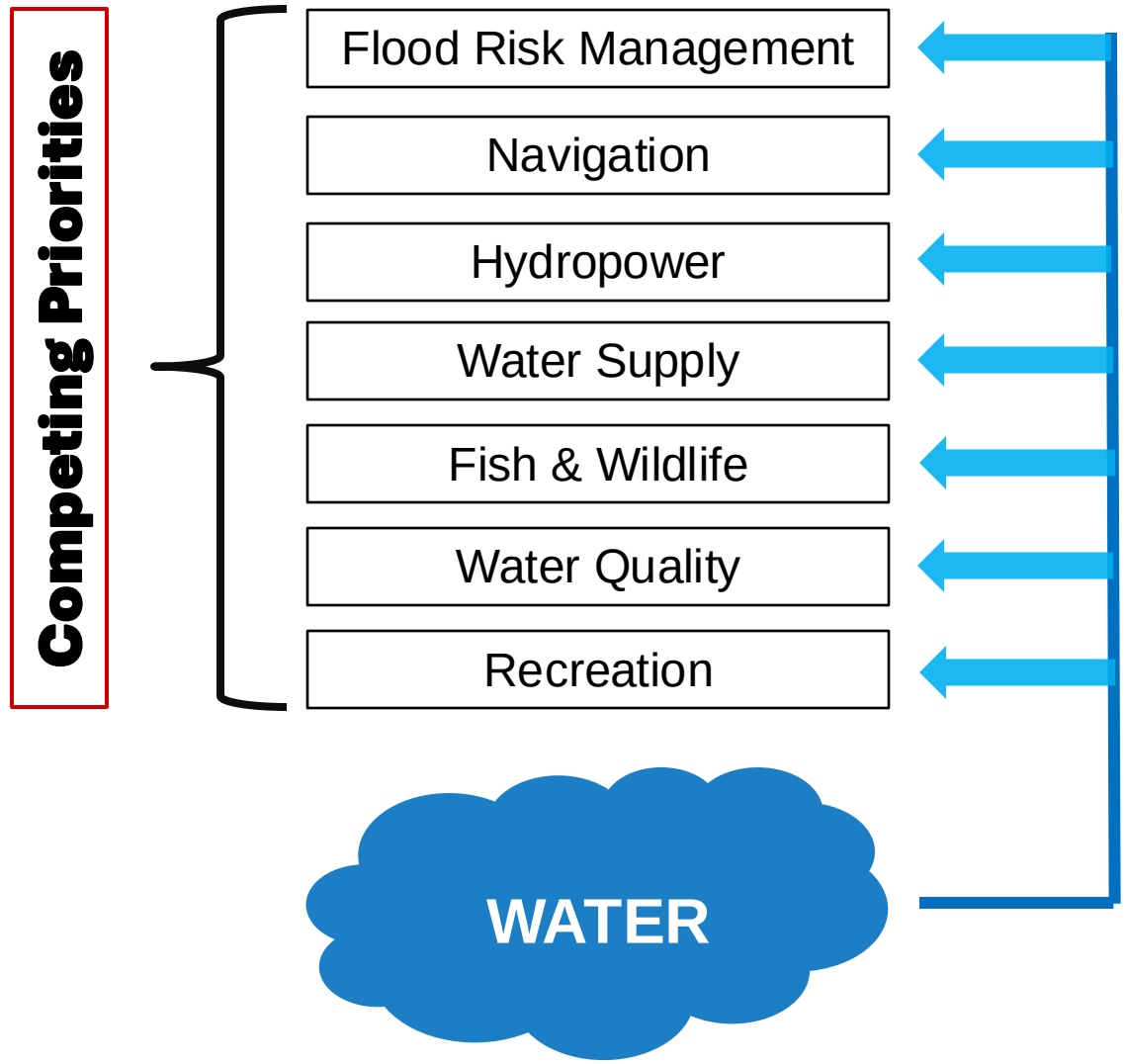
1.) Operate in accordance with *authorized* purposes and applicable law

2.) Maintain the structural and operational integrity of the project

3.) Avoid risk to the public health and safety, life and property

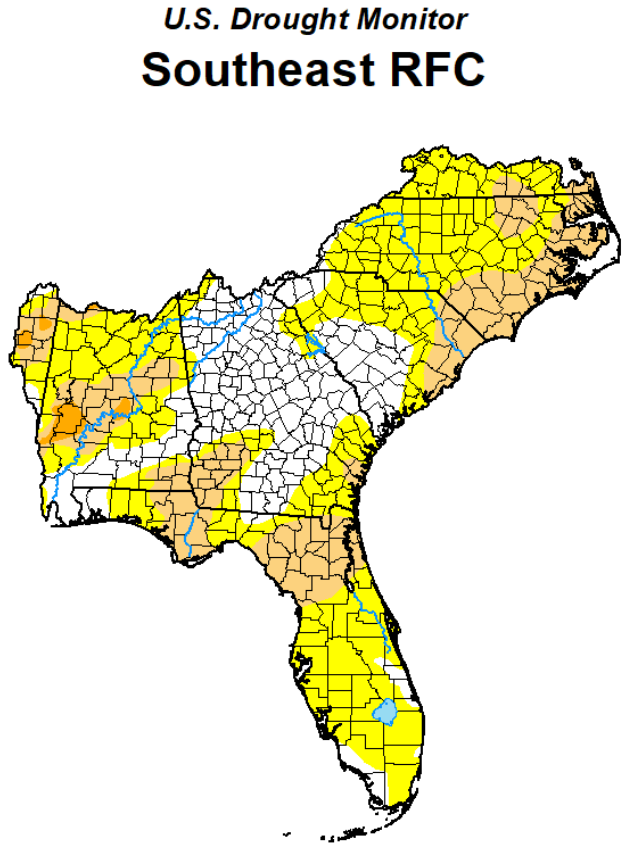
WATER CONTROL PLANS & MANUALS

- The main purpose of the water control manual is to direct the day-to-day operation of the project/system.
- The plan should address foreseeable conditions affecting the operation of a project or system. (Flood & Drought Operations)
- The goal of the water control plan to conform project operation to *authorizing* legislation.
- If a project is *authorized* for multiple purposes, the water control plan will need to strike a balance among the project purposes.

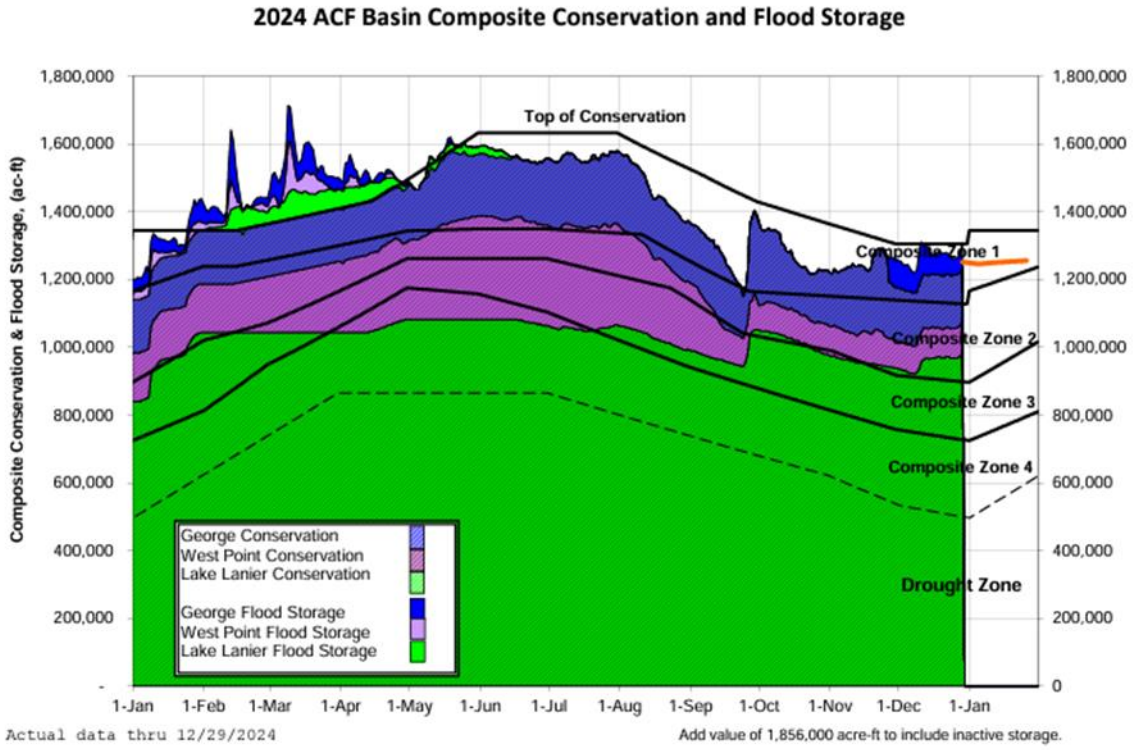


DROUGHT CONTINGENCY PLANS

- Required by ER 1110-2-1941 – Drought Contingency Plans
- Drought Contingency Plans identify potential modifications to operations that increase the projects capability to respond to drought under current *authorities*, regulations and policies.
- Drought Contingency Plans are integrated into the water control plans.
- Drought Contingency Plans are based upon best available science at that time.



DROUGHT CONTINGENCY PLANS



- Plans have metrics or triggers to identify drought conditions and end of drought conditions, such as:
  - Reservoir Pool Level
  - Basin Composite Storage
  - Reservoir Inflow percentages
  - Combination of above
- Typical response is to modify or reduce reservoir releases
- Plans usually include some coordination component
- Drought Contingency Plans are to be within *authorities* of the project

OPERATIONS TO SUPPORT ECOLOGY

Pulse Releases

Downstream ramping rates

Releases to support fish spawn

Split releases (being studied) – turbines and sluice

Quasi-Run of River (QRR)

*Measures listed are unique operations to individual projects.

**Measures listed are not implemented or implementable at every project.

Sustainable Rivers Program

Questions?

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