Challenges to Managing Flood Events and Drought Management in Oklahoma

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Civil Works Mission Areas

Water Supply
- 50% of Corps water supply contracts
- 18 lakes, 104 water supply customers
- 2.2 million people served

Water Quality
- Enhances municipal, industrial, irrigation usage
- Protects endangered species
- Improves degraded streams

Hydroelectric Power
- 8 power plants produce 585,000 kw capacity
- Generates power to 8 million customers

Flood Risk Management
- 38 Corps dams + 10 others
- 15,950,000 acre feet of flood storage
- Arkansas River Basin: $11,144B in cumulative flood damage reductions
- Red River Basin: $1,936B in cumulative flood damage reductions

Recreation
- 267 recreation areas at 33 projects
- 22.5 million visitors in 2012

Environmental Stewardship
- Tenkiller Low Flow Pipe
- Supersaturated Dissolved Oxygen System (SDOX)

Inland Navigation (MKARNS)
- 5 locks & dams
- 3 major ports
Maintaining a System Balance
Competing Water Resource Interests

- Water Supply Storage
- Navigation
- Environmental and Fish & Wildlife
- Hydropower
- Recreation
- Water Quality
- Flood Risk Management
Tulsa District Water Management

- 50 Projects
  - 15 in the Red River Basin
  - 35 in the Arkansas River Basin
- 12 Section-7 lakes (owned by others)
- 23 lakes with gated spillways
- 8 COE Hydropower
- 5 Navigation Locks
- 1 Chloride Control Project
FLOOD OPERATION INDIVIDUAL PROJECT

- (ER 1110-2-240) Releases from reservoirs shall be restricted to making decisions based on the principle of water on the ground, which is observed precipitation or observed snowpack.
- The goal of any flood risk management operation is to not exceed the downstream bank capacity.
- Releases from the lake, when combined with downstream runoff will not cause the river to exceed bank capacity, if possible.
- Flood waters will be stored as long as possible in order to accomplish this goal.

SYSTEM WATER CONTROL PLAN

- Tulsa District has flood control projects in two river systems:
  - Arkansas River System
  - Red River System
- Each system water control plan attempts to balance the percent of storage contained in individual project flood pools.
Flood Control Storage

- Ark River Total FC storage – 10.6 M ac-ft
- Red River Total FC Storage – 5.0 M ac-ft
- FC storage within Oklahoma – 13.5 M ac-ft
Total Damages Prevented FY 2015

- Arkansas River Basin, the damages prevented: $552,030,000
- Red River Basin, the damages prevented: $242,640,000
- Total damages prevented in southern Kansas, Oklahoma, and northern Texas: $794,670,000
Drought Management

Drought Management Plans

- Every lake has one
- Devised into four phases
- Identify tasks to be taken at that phase

Interagency Drought Management Committee

- Lesson learned from the last drought: Establish the committee earlier
Updates

Deviations from Approved Water Control Plan - ER 1110-2-240

Cumberland Levee Repair, Lake Texoma

Webbers Falls Lock and Dam 16 Dewatering
For More Information

Tulsa District website: www.swt.usace.army.mil

Headquarters website: www.usace.army.mil