Facilitating Proactive Risk Management

Challenges, Roles, and Opportunities for Adaptation

Duane Smith, Executive Director
Oklahoma Water Resources Board

State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

Oklahoma COMPREHENSIVE Water PLAN

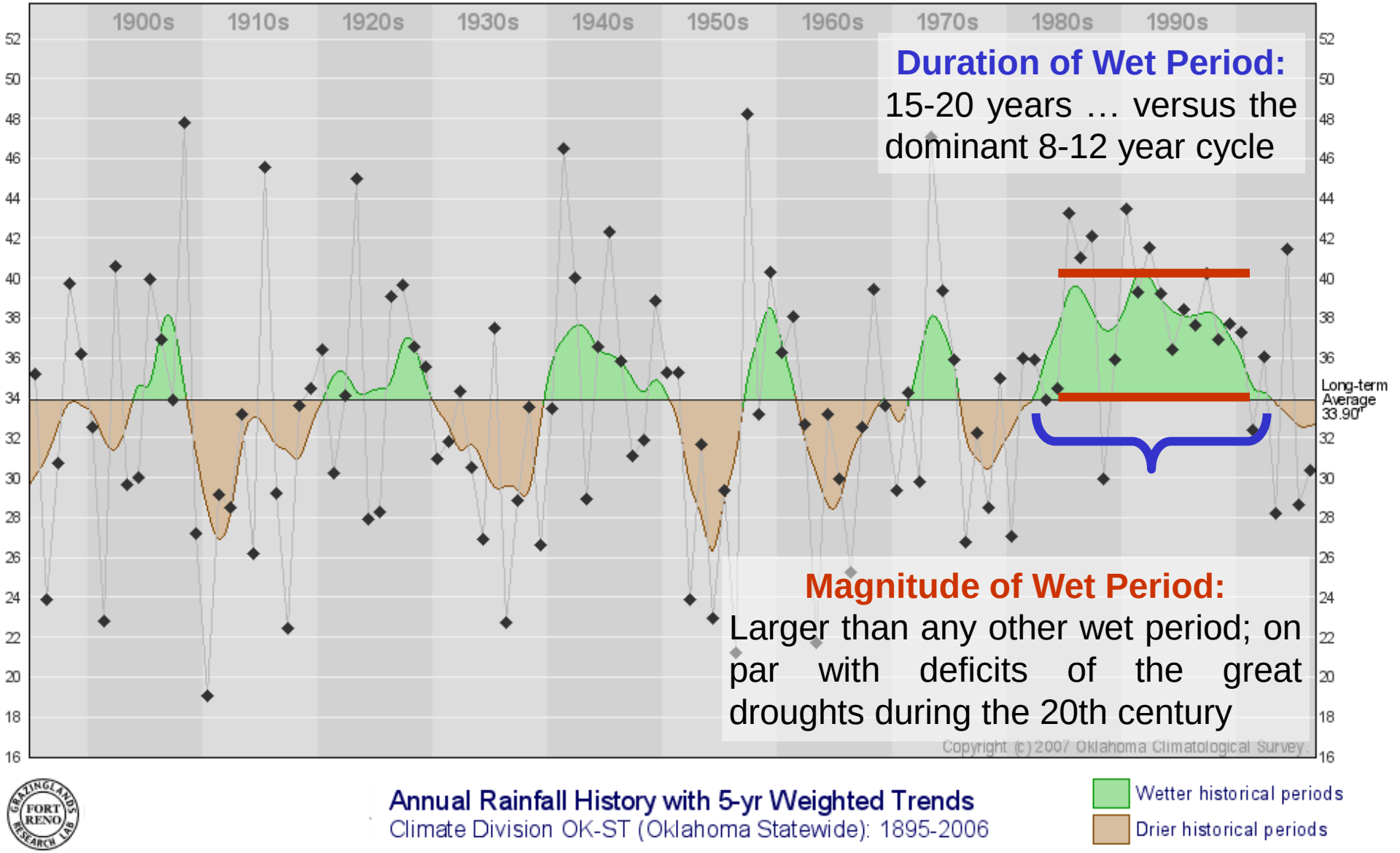
Oklahoma Comprehensive Water Plan

OCWP

Utilizing public input and expert analysis to establish and implement Oklahoma's priority water initiatives.

- Forecasting tomorrow's water needs.
- Identifying reliable water supplies and developing a management system to maintain reliability.
- Assisting water providers in creating 50-year plans.

The Wettest Period in Oklahoma History

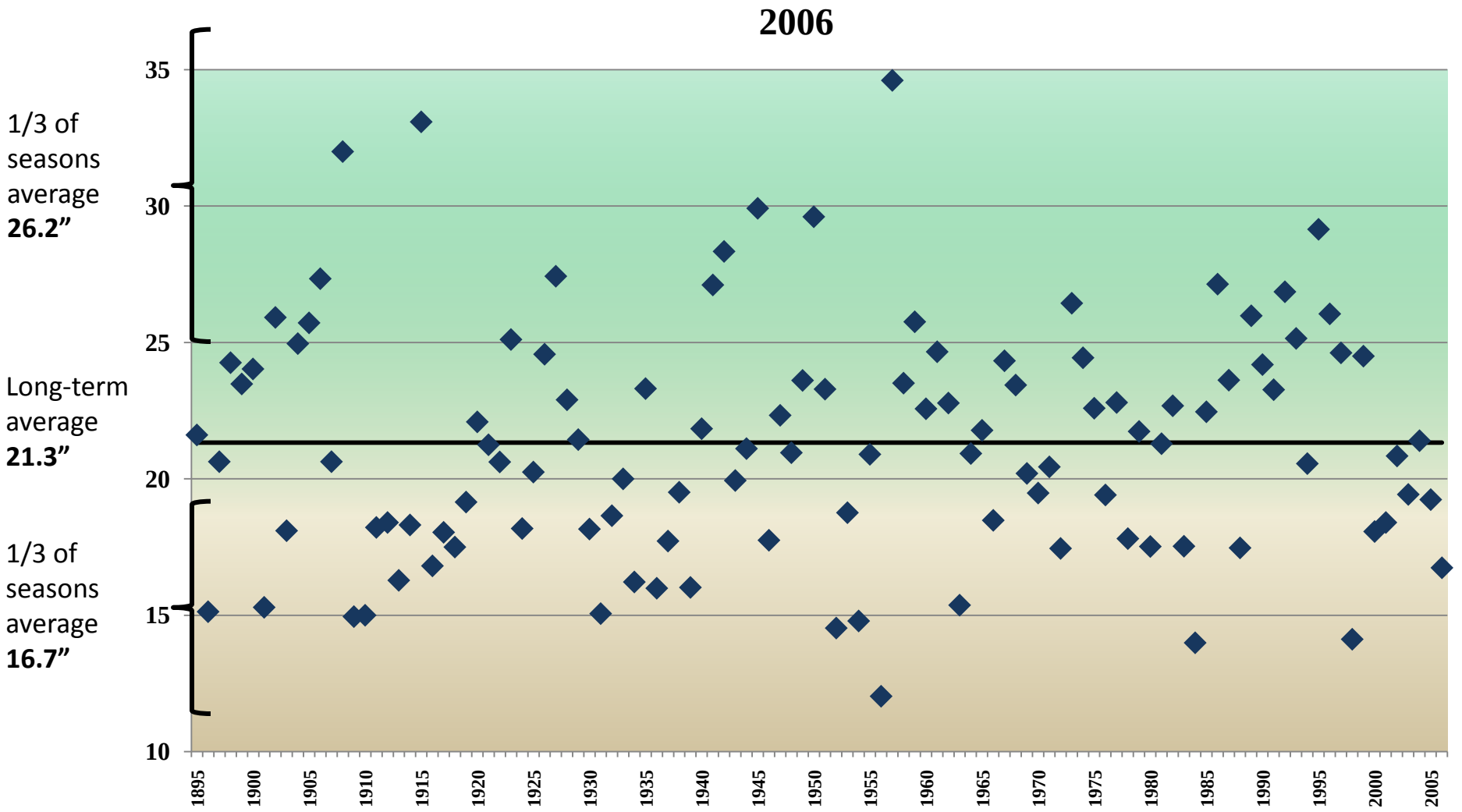


Annual Rainfall History with 5-yr Weighted Trends
Climate Division OK-ST (Oklahoma Statewide): 1895-2006

Wetter historical periods
Drier historical periods

We Don’t Get “Normal” Rainfall

Oklahoma’s Warm Season (April-September) Rainfall: 1895-2006



Implications for Oklahoma

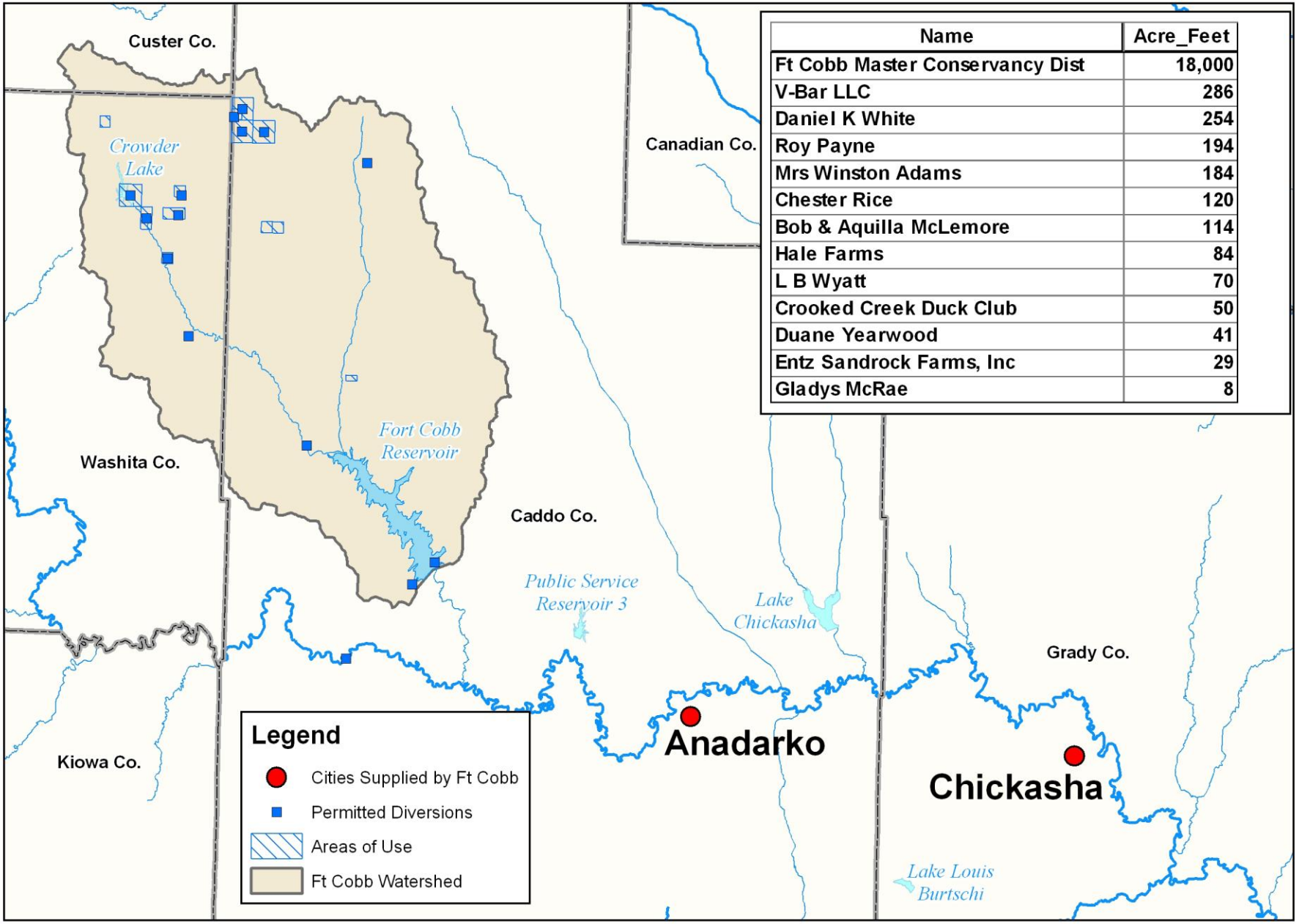
- Longer and earlier warm seasons
- Warmer and shorter cool seasons:
  - longer growing seasons
- Crops (winter wheat) mature earlier:
  - more vulnerable to late freeze events
- Evaporation and transpiration increase
- More frequent and severe droughts
- Increased risk of wildfires
- More intense rainfall events:
  - More runoff and flash flooding

Impacts From Climate Change: At The Citizen Level

- Fewer new sources of water supply.
- Increased water stress.
- Water users will be forced to adapt.
- Water quality and pollution impacts.

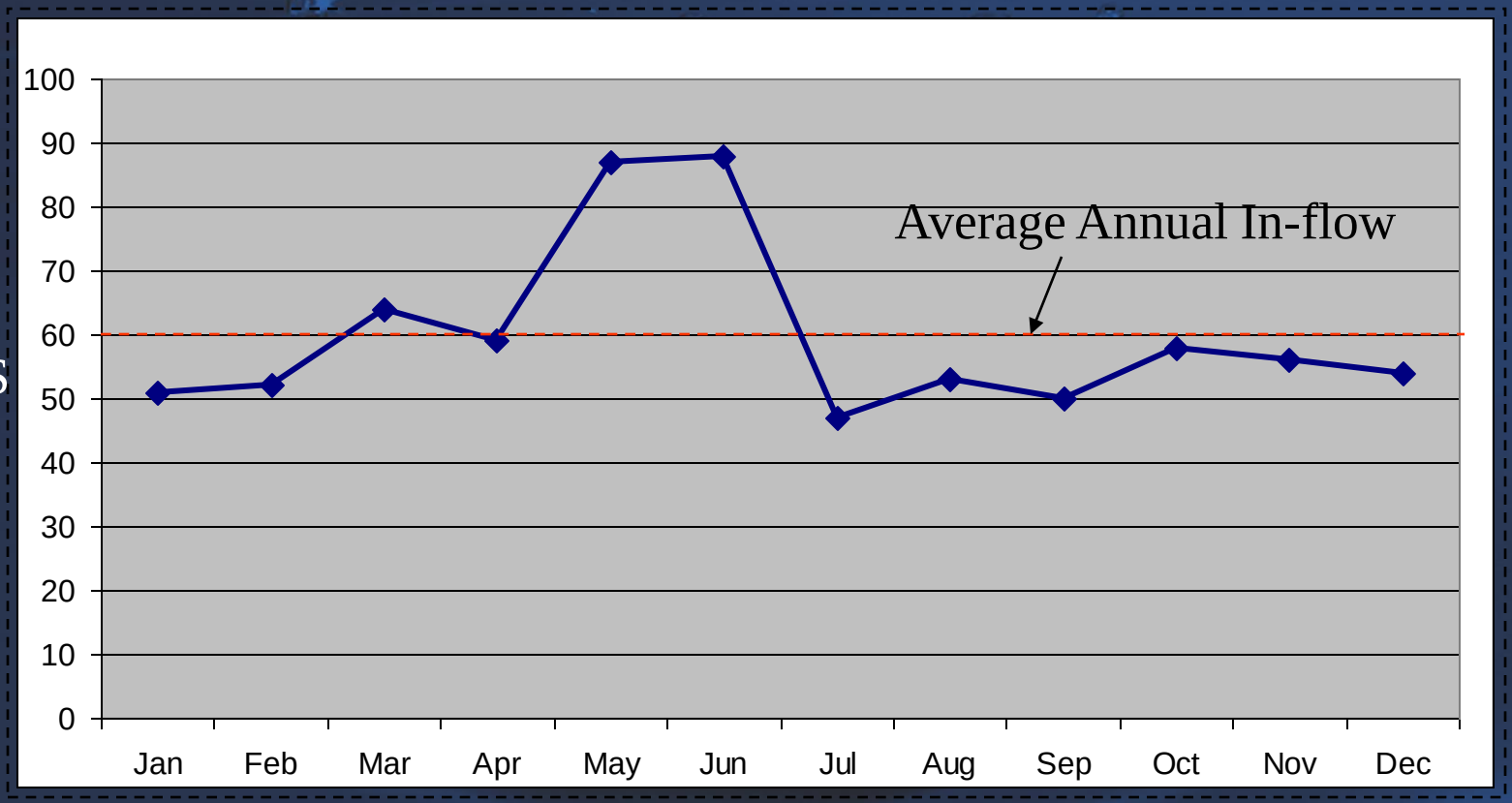
- ***Sustainability must be the design criteria through which to manage Oklahoma's water resources, especially groundwater supplies.***
- ***An accurate water budget for Oklahoma will be critical to management of supplies and development of policy.***

Surface Water Rights in the Ft Cobb Reservoir Watershed

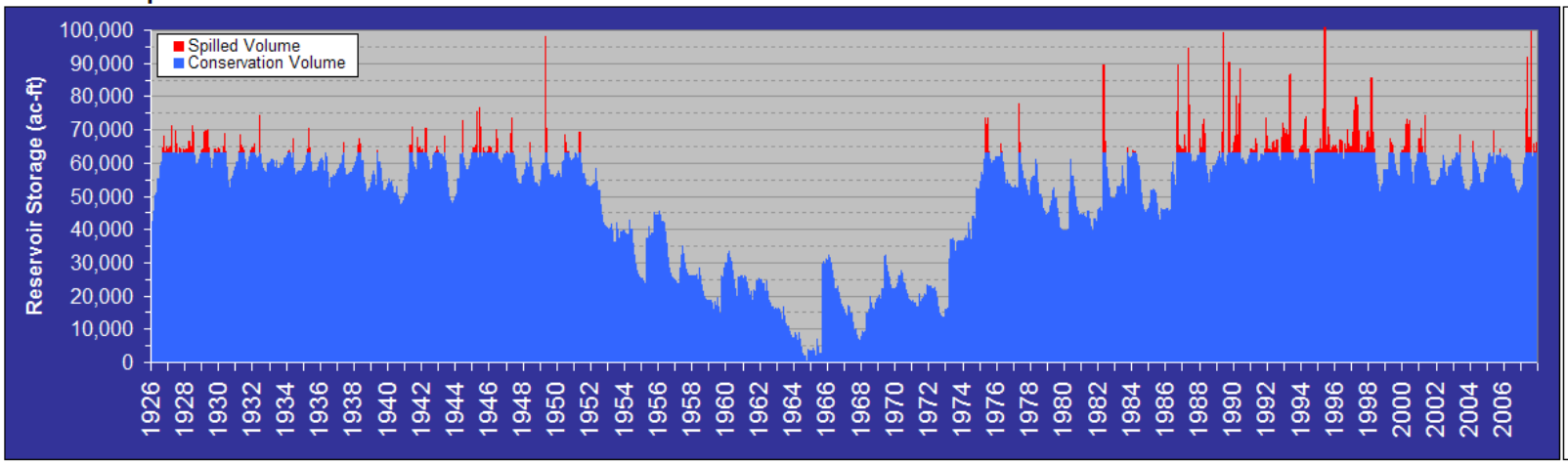


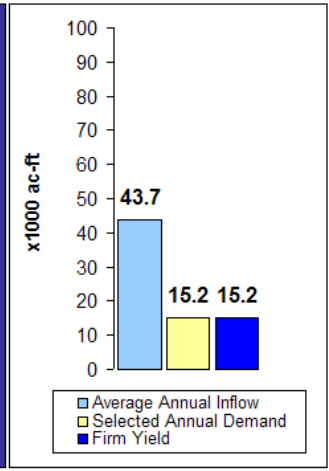
Name	Acre_Feet
Ft Cobb Master Conservancy Dist	18,000
V-Bar LLC	286
Daniel K White	254
Roy Payne	194
Mrs Winston Adams	184
Chester Rice	120
Bob & Aquilla McLemore	114
Hale Farms	84
L B Wyatt	70
Crooked Creek Duck Club	50
Duane Yearwood	41
Entz Sandrock Farms, Inc	29
Gladys McRae	8

Average Monthly In-Flows to Ft. Cobb Reservoir



Reservoir Operations Model





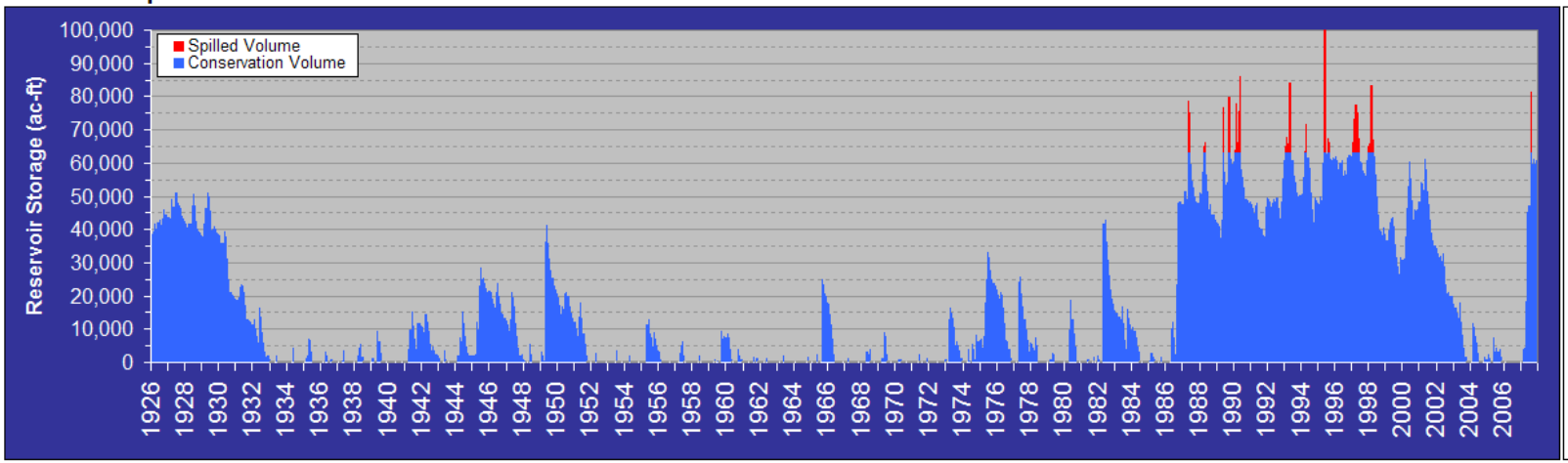
Average Annual Reservoir Inflow: 43,700 ac-ft/yr (Over 82 yr period of record)

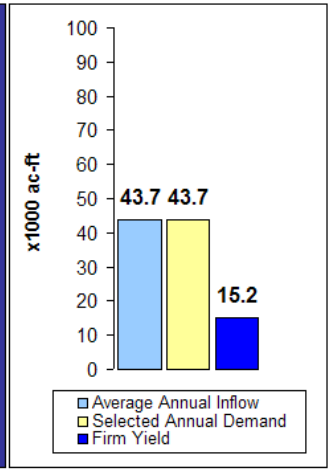
Annual Water Demand Set At: 15,200 ac-ft/yr (Firm Yield based on 82 yr period of record)

Firm Yield = 15,200 ac-ft/yr

Model Study Period: 1926 to 2007 (82 yrs)

Reservoir Operations Model





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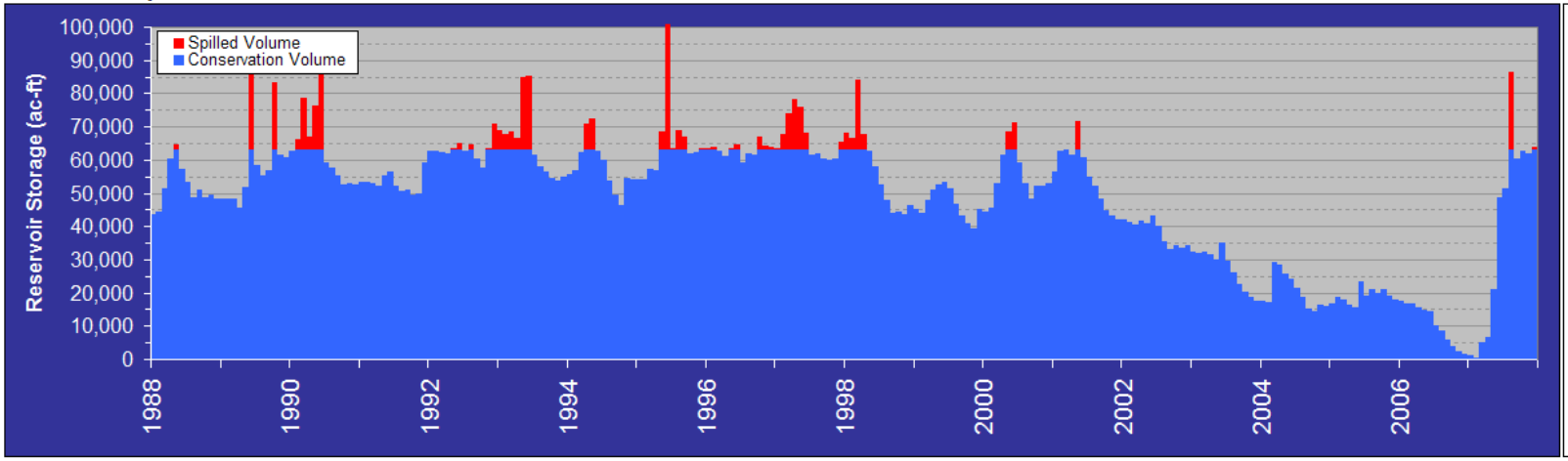
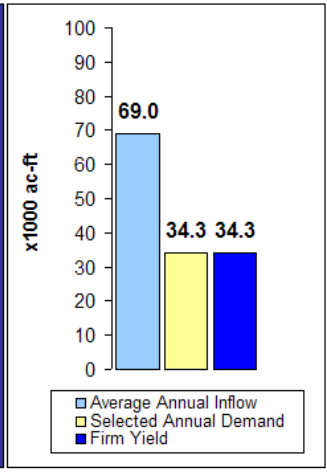




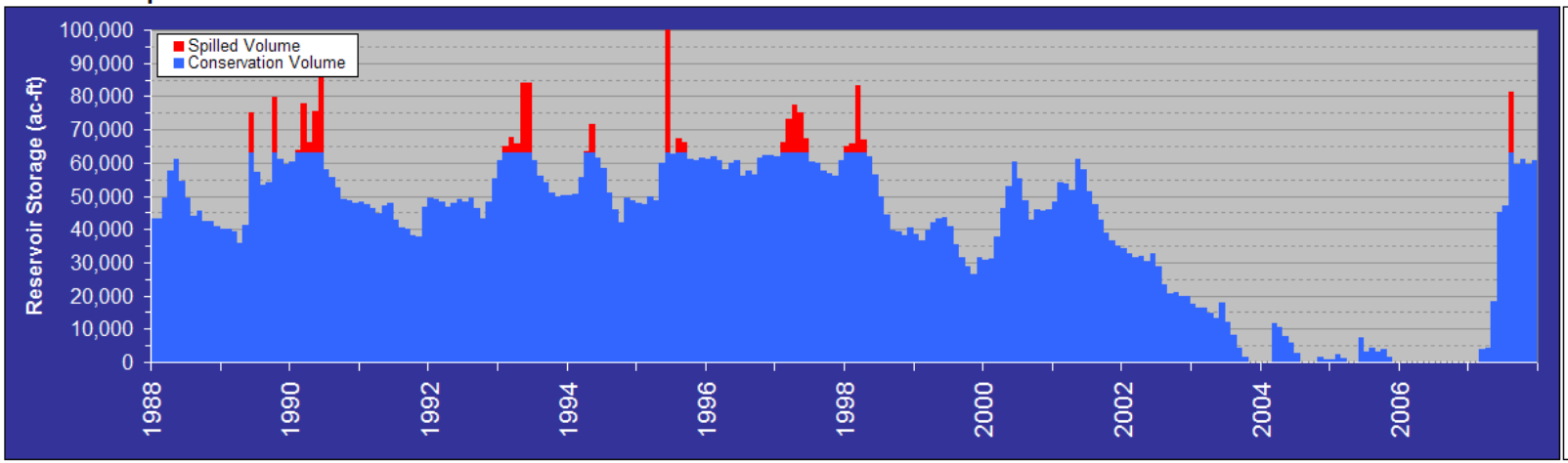
Average Annual Reservoir Inflow: 69,000 ac-ft/yr (over 20 year study period)

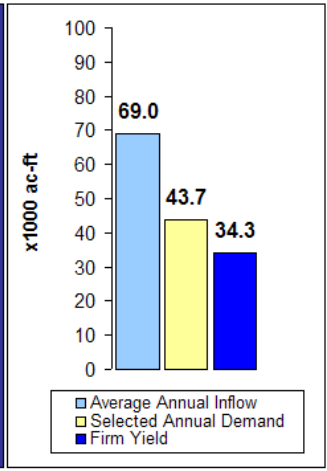
Annual Water Demand Set At: 34,300 ac-ft/yr (Firm Yield based on 20 yr study period)

Firm Yield = 34,300 ac-ft/yr

Model Study Period: 1988 to 2007 (20 yrs)

Reservoir Operations Model





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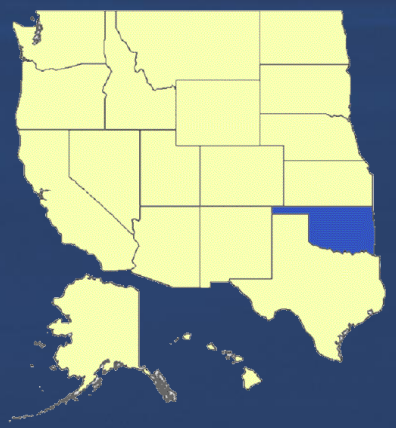
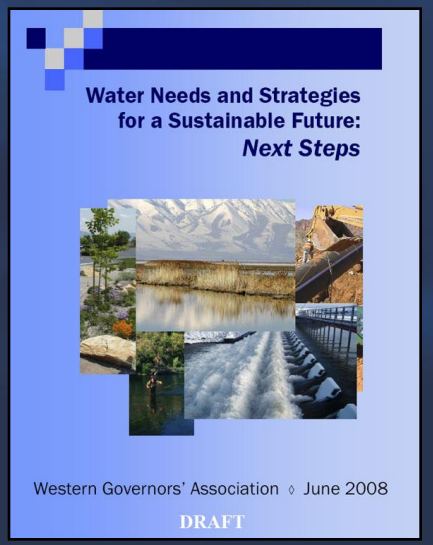
Water Needs and Strategies for a Sustainable Future: Next Steps

Western States Water Council



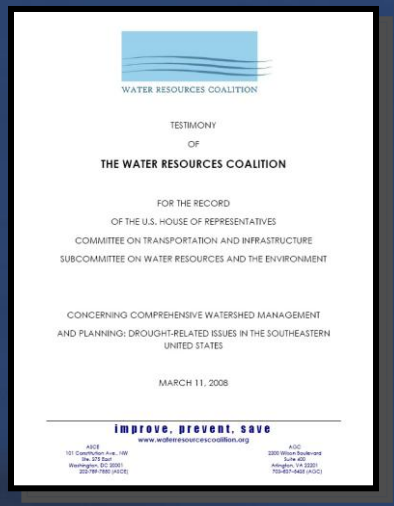
Recommendations:

- Require federal water agencies to include "Integrated Water Resources Planning and Assistance" as a primary mission.
- Encourage state leadership in comprehensive water plan development; with federal assistance.
- Federal agencies should use state water plans to help determine national water policy and priorities.



Testimony to Subcommittee on Water Resources & Environment

Water Resources Coalition


WATER RESOURCES COALITION

TESTIMONY
OF
THE WATER RESOURCES COALITION

FOR THE RECORD
OF THE U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON WATER RESOURCES AND THE ENVIRONMENT

CONCERNING COMPREHENSIVE WATERSHED MANAGEMENT AND PLANNING; DROUGHT-RELATED ISSUES IN THE SOUTHEASTERN UNITED STATES

MARCH 11, 2008

improve, prevent, save
www.waterresourcescoalition.org

Oklahoma's Water Planning (OCWP):

"This is a groundbreaking authority to support state water resources planning through the Corps."

"…an excellent example of what the new trend line should be… the future in water resources planning."

"We believe Congress has provided the Corps' program a model that should be considered on a national scale for proper water planning."

Water Project Funding
"A New Way of Doing Business"

- Refine contracting procedures
- State/regional partnerships through "pooling" of strategic and political resources
- Through the OCWP, establish a consistent priority list of projects
- Leverage funding to maximize benefits

Oklahoma Comprehensive Water Plan

Oklahoma Water Resources Board

State of Oklahoma

OWRB

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the water agency

Governor's Conference on Managing Drought and Climate Risk

Synopsis: Facilitating Proactive Risk Management: Challenges, Roles, and Opportunities for Adaptation

Duane Smith, Executive Director, Oklahoma Water Resources Board,
Past Chairman of Western States Water Council

The State of Oklahoma is currently updating its Oklahoma Comprehensive Water Plan (OCWP), a strategy to ensure water for Oklahoma communities for the next 50 years and longer. Now in its second year of development by the Oklahoma Water Resources Board and its planning partners, the OCWP is utilizing public input and expert analysis to establish and implement Oklahoma's priority water initiatives. Specifically, the OCWP will forecast tomorrow's water needs; identify reliable water supplies and develop a management system to maintain reliability; and assist water providers in creating 50-year plans for community growth.

Oklahoma's history is punctuated by devastating periods of both flood and drought, often complicating planning efforts. And throughout much of the 1980s and 1990s, the state experienced an unprecedented extended wet period. Oklahoma citizens have grown accustomed to having water, but this isn't expected to last, especially in light of a variable and warming climate.

Implications of climate change for Oklahomans include longer and earlier warm seasons; warmer and shorter cool seasons; crops (specifically, winter wheat) maturing earlier; increasing evaporation and transpiration; more frequent and severe droughts; increased risk of wildfires; and more intense rainfall events with increased runoff and flash flooding. With fewer new water supply options and increased water stress, users will be forced to adapt.

Sustainability must be the design criteria through which to manage Oklahoma's water resources, especially groundwater supplies. An accurate water budget for Oklahoma will be critical to management of supplies and development of policy.

The Western States Water Council has recently issued its report entitled "Water Needs and Strategies for a Sustainable Future: Next Steps." Among the excellent recommendations are to require federal water agencies to include "Integrated Water Resources Planning and Assistance" as a primary mission and to encourage state leadership in comprehensive water plan development with federal assistance. Also, federal agencies should use state water plans to help determine national water policy and priorities.

In last year's testimony to the Congressional Subcommittee on Water Resources and the Environment, the Water Resources Coalition proclaimed that the states and federal government should cooperate on water project funding and establish a "new way of doing business." Referring to the OCWP, they said, "We believe Congress has provided the Corps' program a model that should be considered on a national scale for proper water planning." This new model should focus on refining contracting procedures; establishment of state/regional partnerships through "pooling" of strategic and political resources; establishing, through state water plans, a consistent priority list of projects; and leveraging funding to maximize benefits.

DUANE A. SMITH has served as Executive Director of the Oklahoma Water Resources Board (OWRB) since 1997, after having begun his career at the Board in 1978**.** He has comprehensive knowledge in the administration of Oklahoma's Groundwater and Stream Water Law and the management of state water resources through the water rights appropriative process.

The OWRB administers the State of Oklahoma's $1.6 Billion Dollar Financial Assistance Program assisting 67% of Oklahoma communities and rural water districts to finance infrastructure projects, providing good quality water to citizens. Other significant programs administered under Mr. Smith's direction include hydrologic studies, licensure of water well drillers, floodplain management and dam safety, and the state's monitoring program designed to document beneficial use impairments, and detect water quality trends.

A significant effort begun in 2007 under Mr. Smith's leadership is the Update of the Oklahoma Comprehensive Water Plan, a 5-year planning project designed to formulate a 50-year water needs assessment and management plan to meet Oklahoma's future water needs.

Mr. Smith has been selected to serve on the USEPA National Drinking Water Advisory Council, is a member of the Interstate Council on Water Policy, is Oklahoma Commissioner on three interstate stream water compacts, and is a member to the Oklahoma Interstate Oil and Gas Commissioner. Mr. Smith recently served as Chairman of the Western States Water Council, 2006-2008.

Mr. Smith earned a bachelor's degree in meteorology from the University of Oklahoma.