



Tennessee River

A Shared Resource

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Tennessee River

Provides Multiple Benefits



Flood Damage Control



Navigation



Hydropower



Recreation



Water Supply



Water Quality



Water Supply

In-Stream vs. Off-Stream





Water Use

Off-Stream Water Supply



Thermoelectric Cooling



Municipal Supply



Industrial Supply

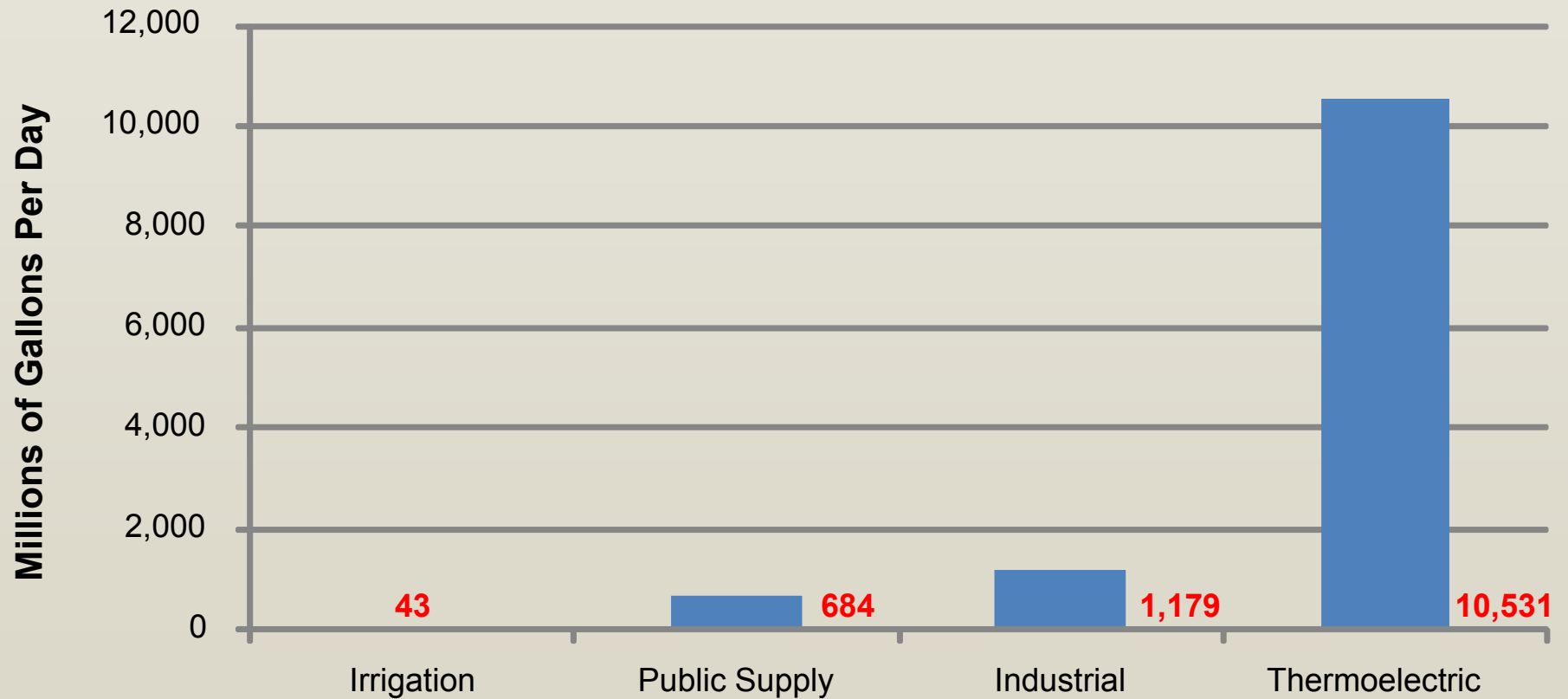


Irrigation



Water Withdrawals

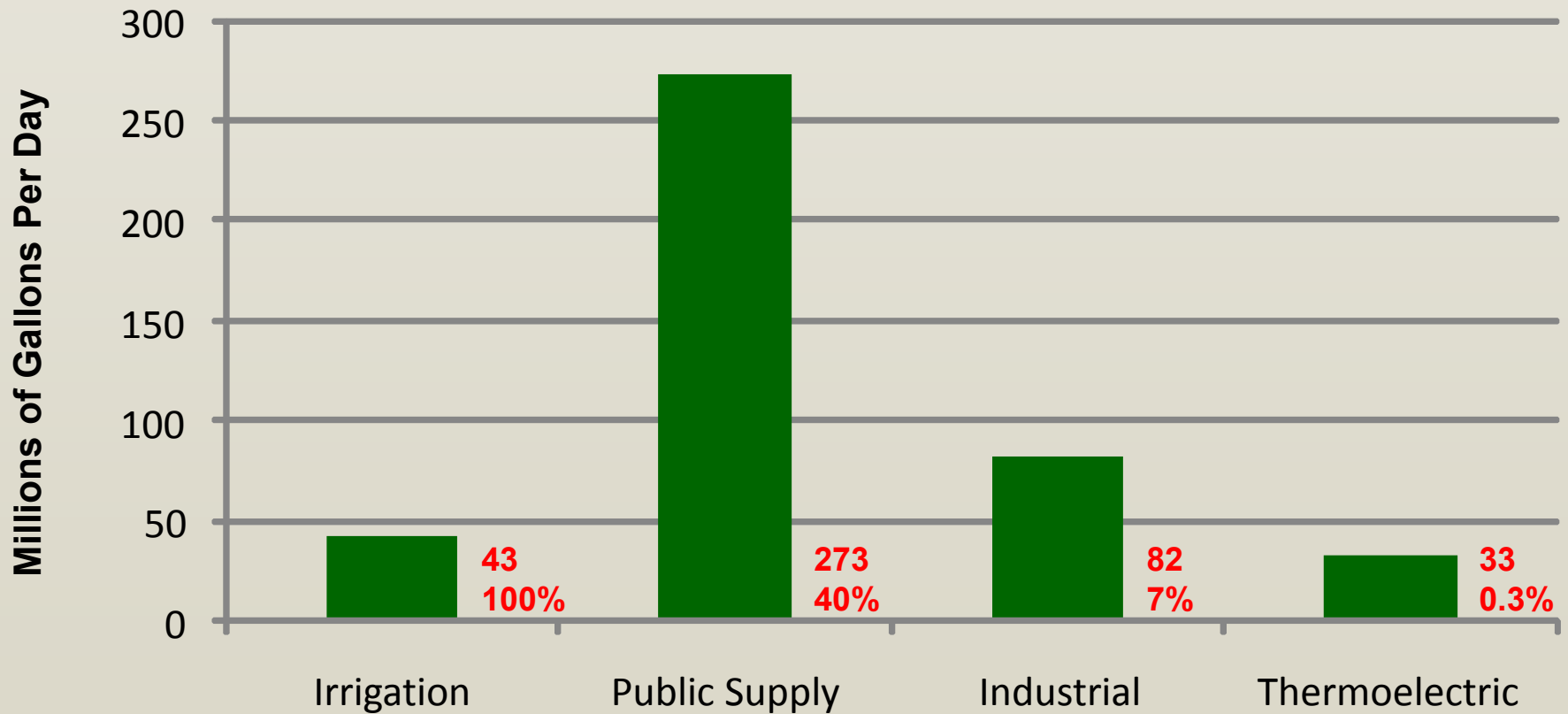
Current Data (2005)





Consumptive Use

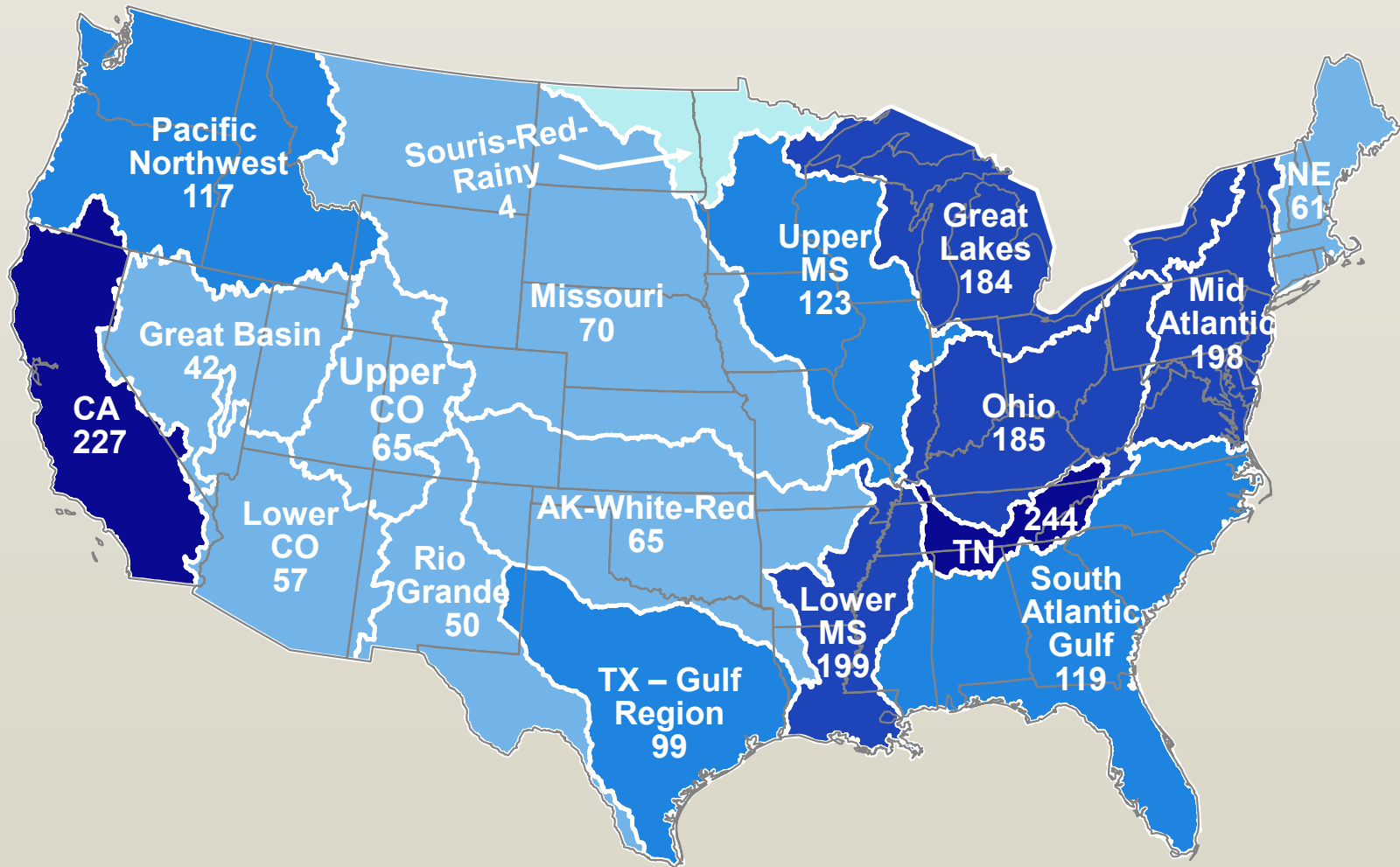
Current Data (2005)





Water Use

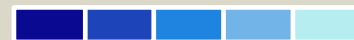
U.S. Water Withdrawals



in 1000 gallons per square mile

High

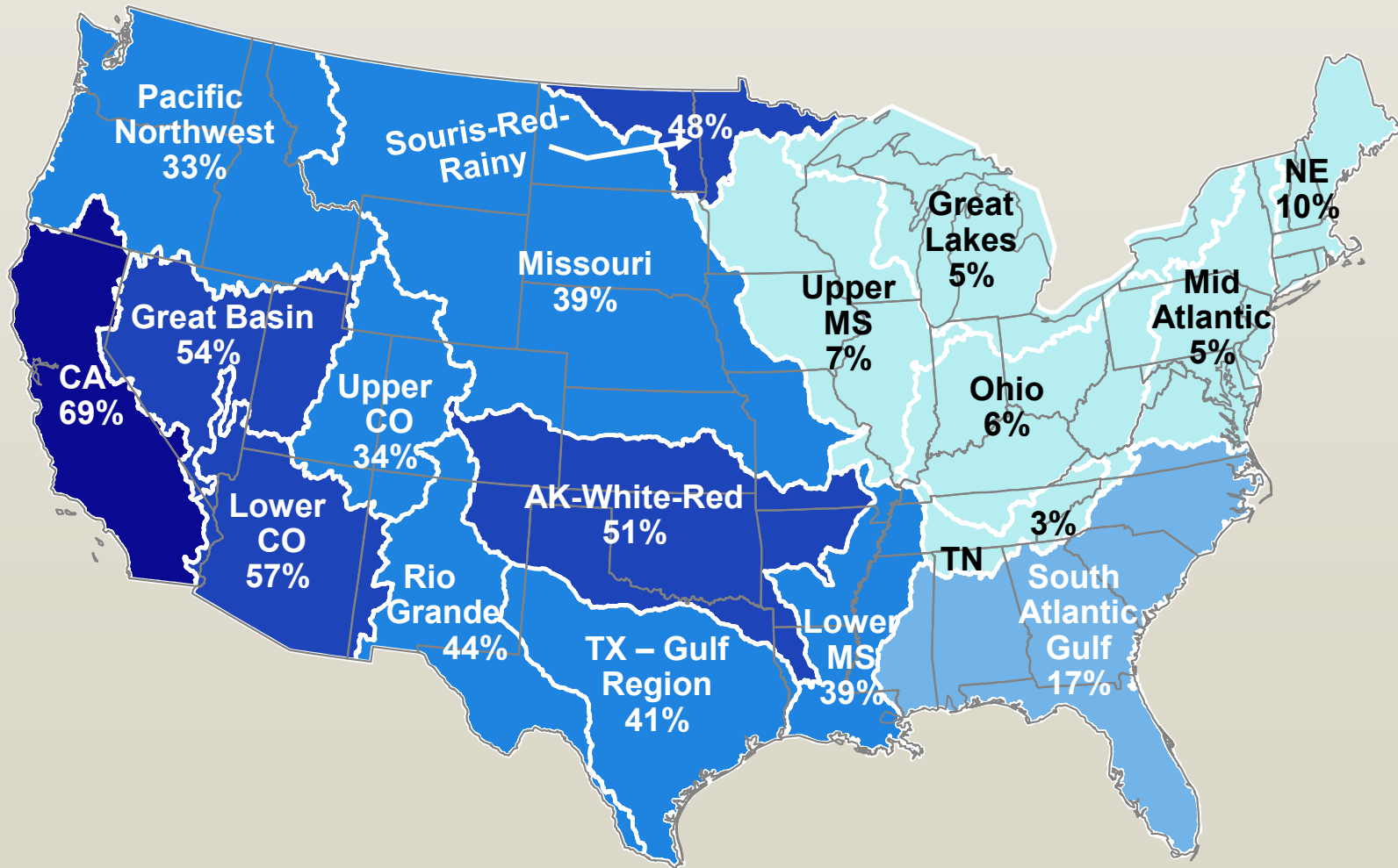
Low





Water Use

U.S. Consumptive Use





Water Use

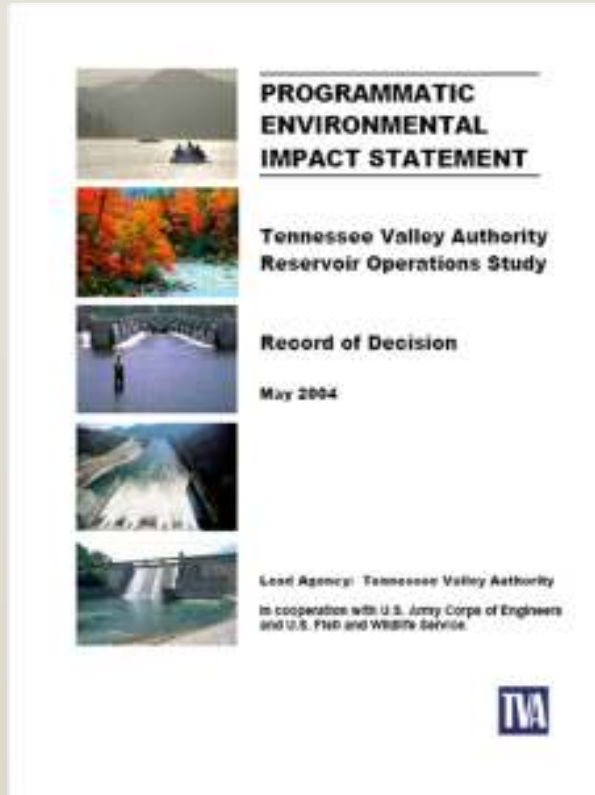
Water Extractions and TVA's Reservoir Operations





Reservoir Operations Study

Water Use - ROS

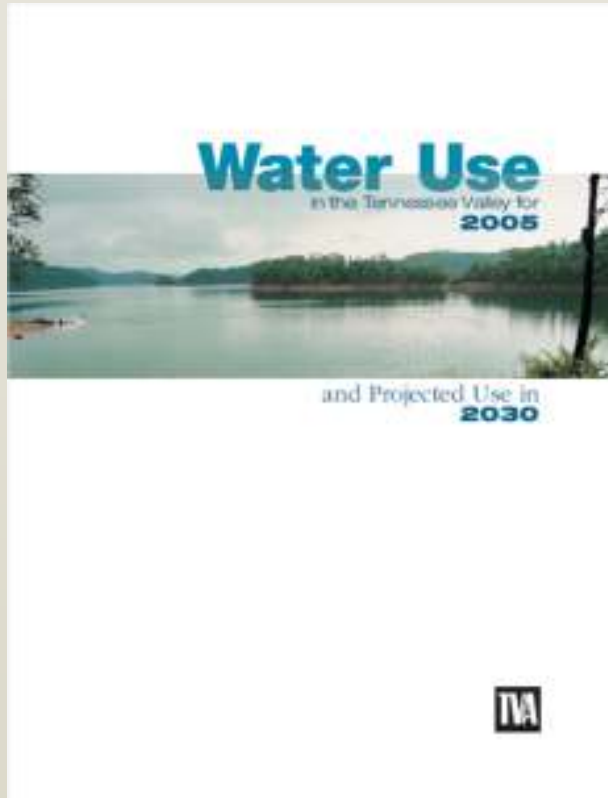


- TVA's Reservoir Operations Study (ROS) developed a new operating policy that was implemented by TVA in 2004.
- Water supply demand analyses in the ROS included 2000 water-use data and projected demand for 2030.



Water Use

Evaluating Water Use



- Every 5 years, TVA evaluates water use demand and projects 2030 demand. The new 2030 water use demand is compared to that developed during the ROS.
- TVA is currently working on the next 5 year update.



26a Permitting

TVA's Water Withdrawal Permitting

- NEPA review.
- Withdrawal volume limited to need.
- Withdrawals permitted for a finite period.
- Pre-existing, non-permitted withdrawals required to be permitted once withdrawal volume is increased.



Water Use

Drought

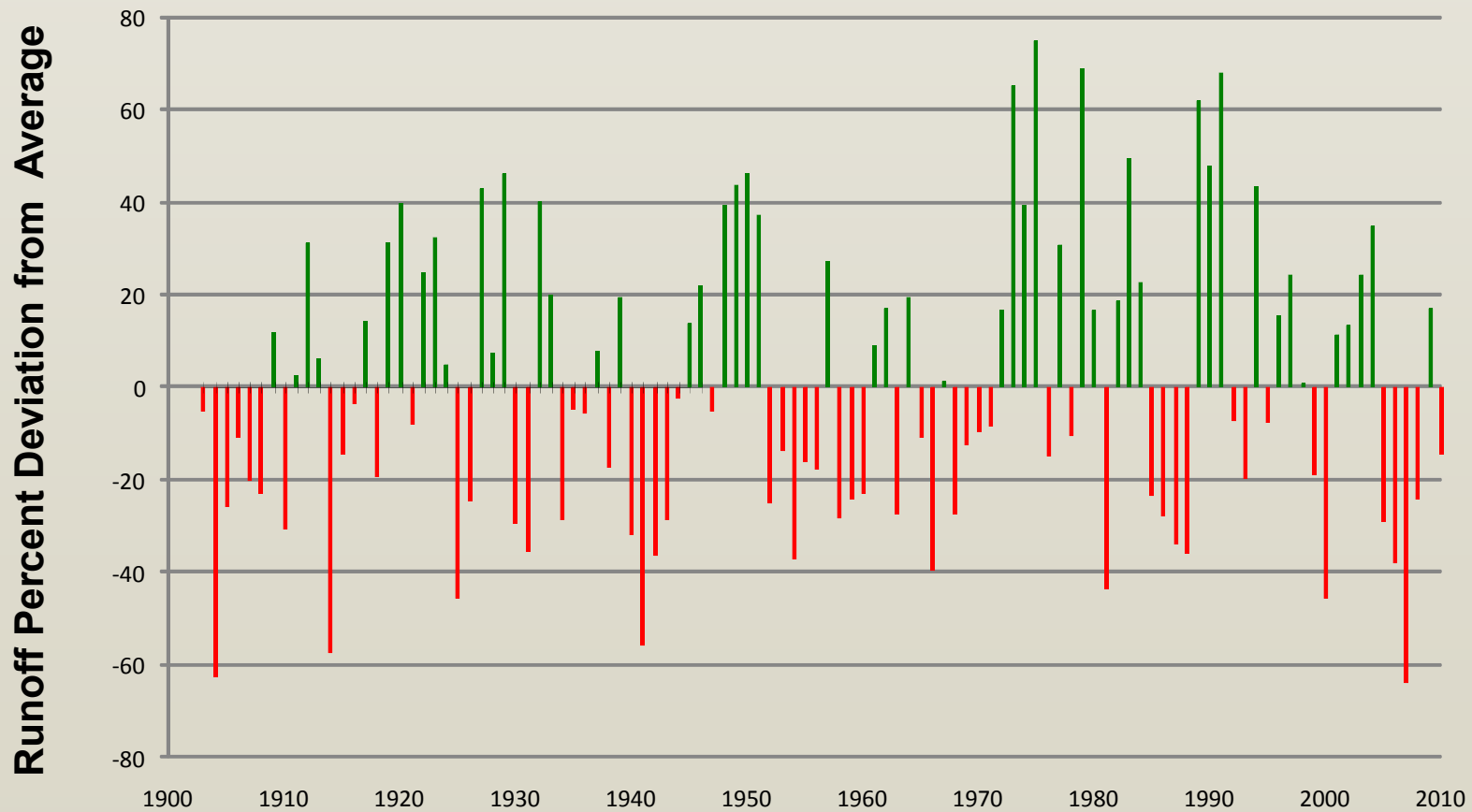


2007 really brought home the fact that water in the Tennessee Valley is a replenishable, but not an infinite, resource.



Runoff

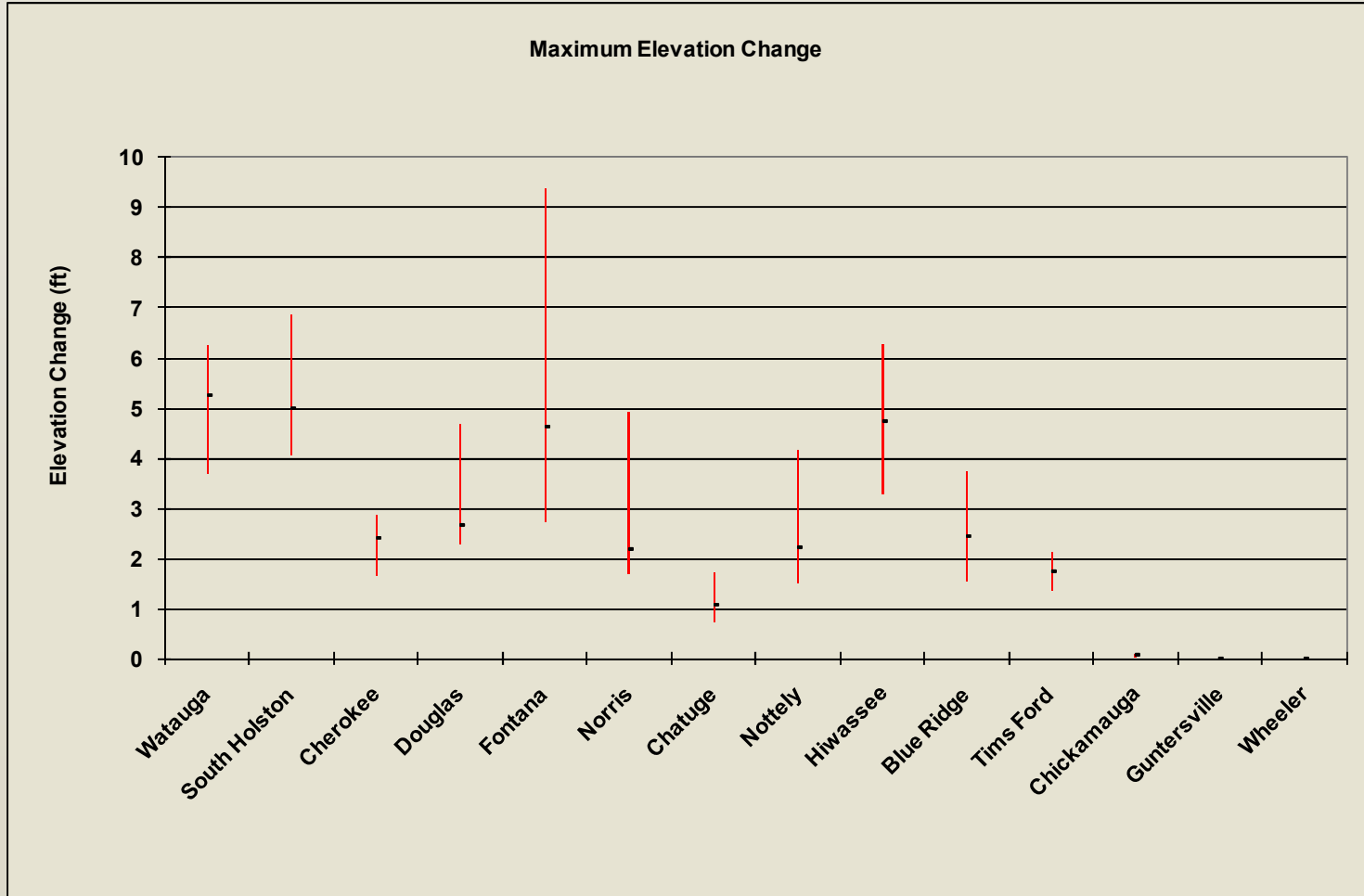
Eastern Tennessee Valley – Annual Runoff Variability





Water Use

ROS 2030 Water Demand



1 year in fifty
Extreme

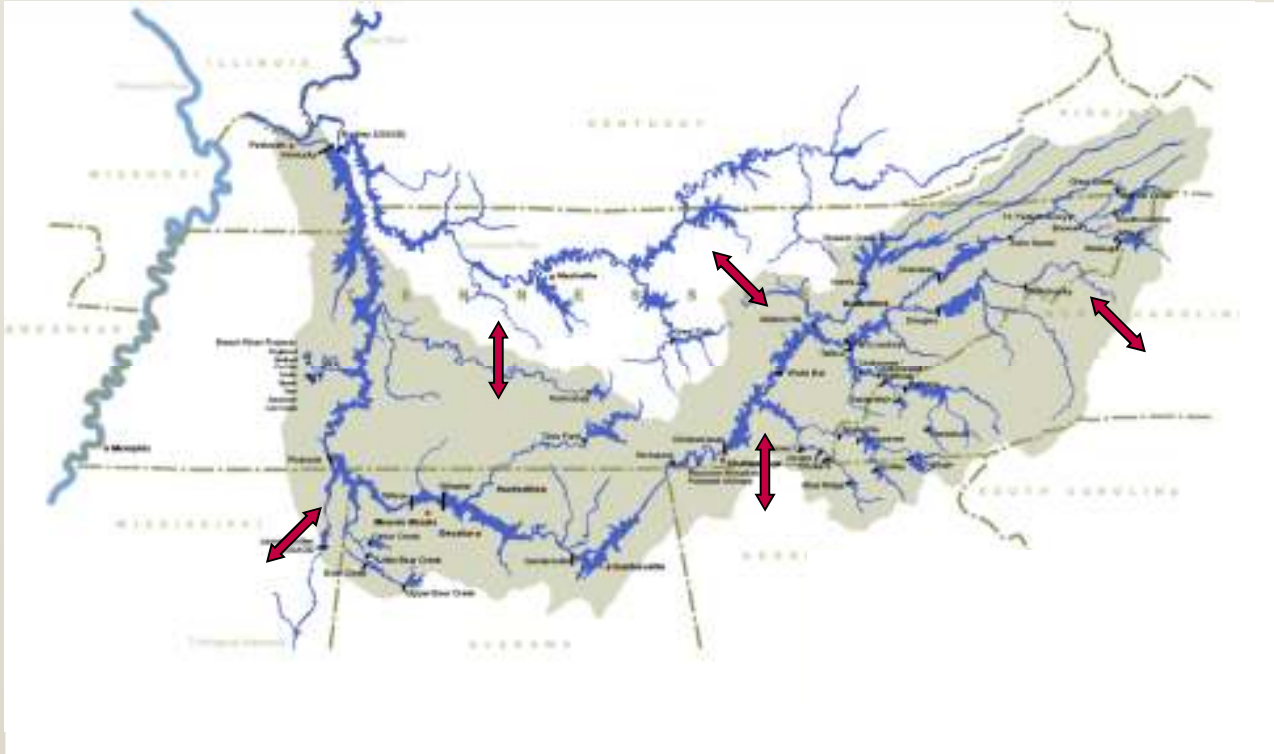
1 year in twenty
Severe

1 year in ten
Moderate



IBTs

Interbasin Transfers (IBTs)...

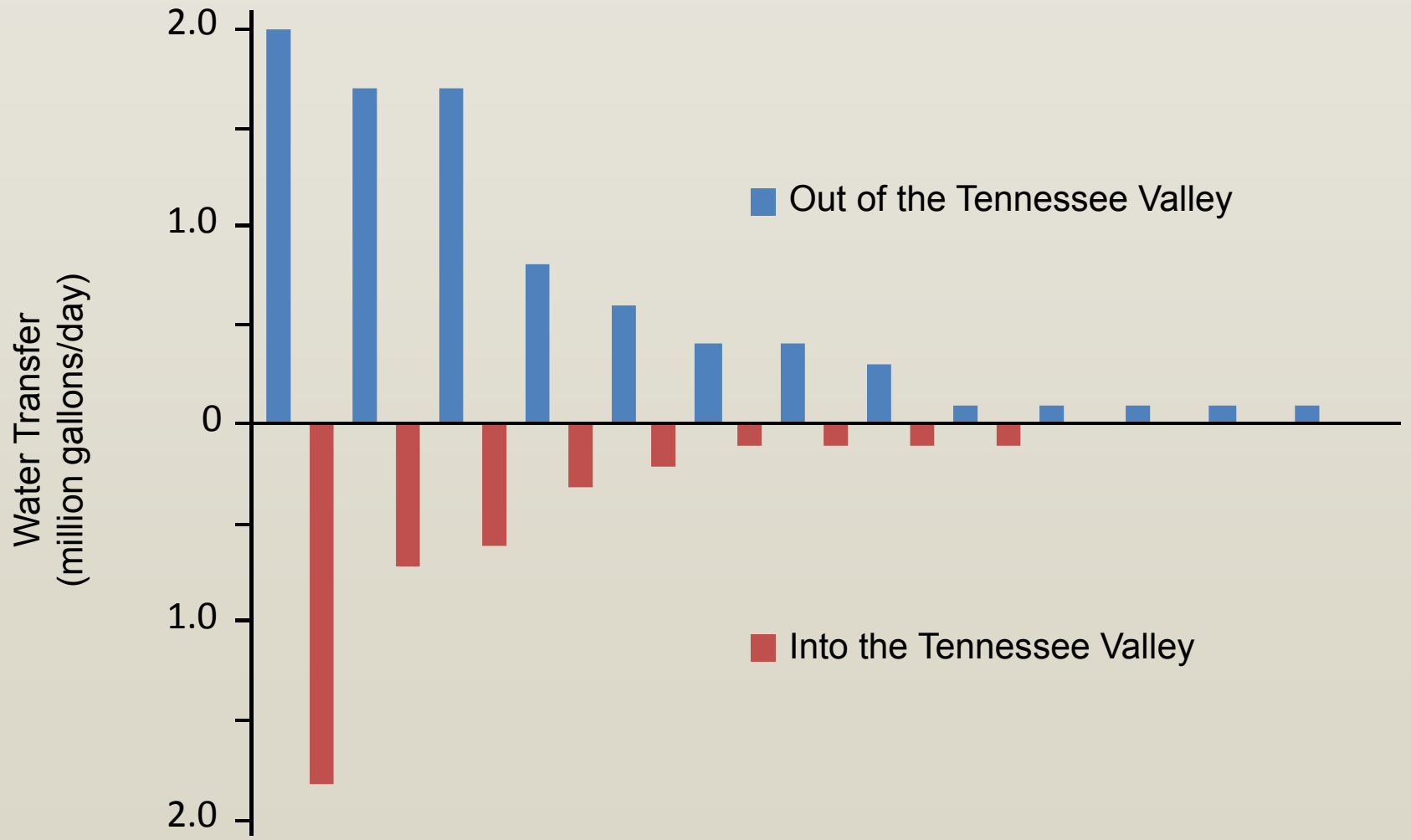


Occur when a quantity of water is transferred from one basin to another... and is no longer available to existing downstream users.



IBTs

Existing IBTs in the Tennessee Valley





IBTs

IBTs - Why the Concern?

- The ROS was based upon model runs which included no new IBTs.
- Water transferred is typically 100% lost from system.





Water Availability

An Abundance of Water???

“The Tennessee Valley Authority said it could easily spare 250 million gallons a day...”

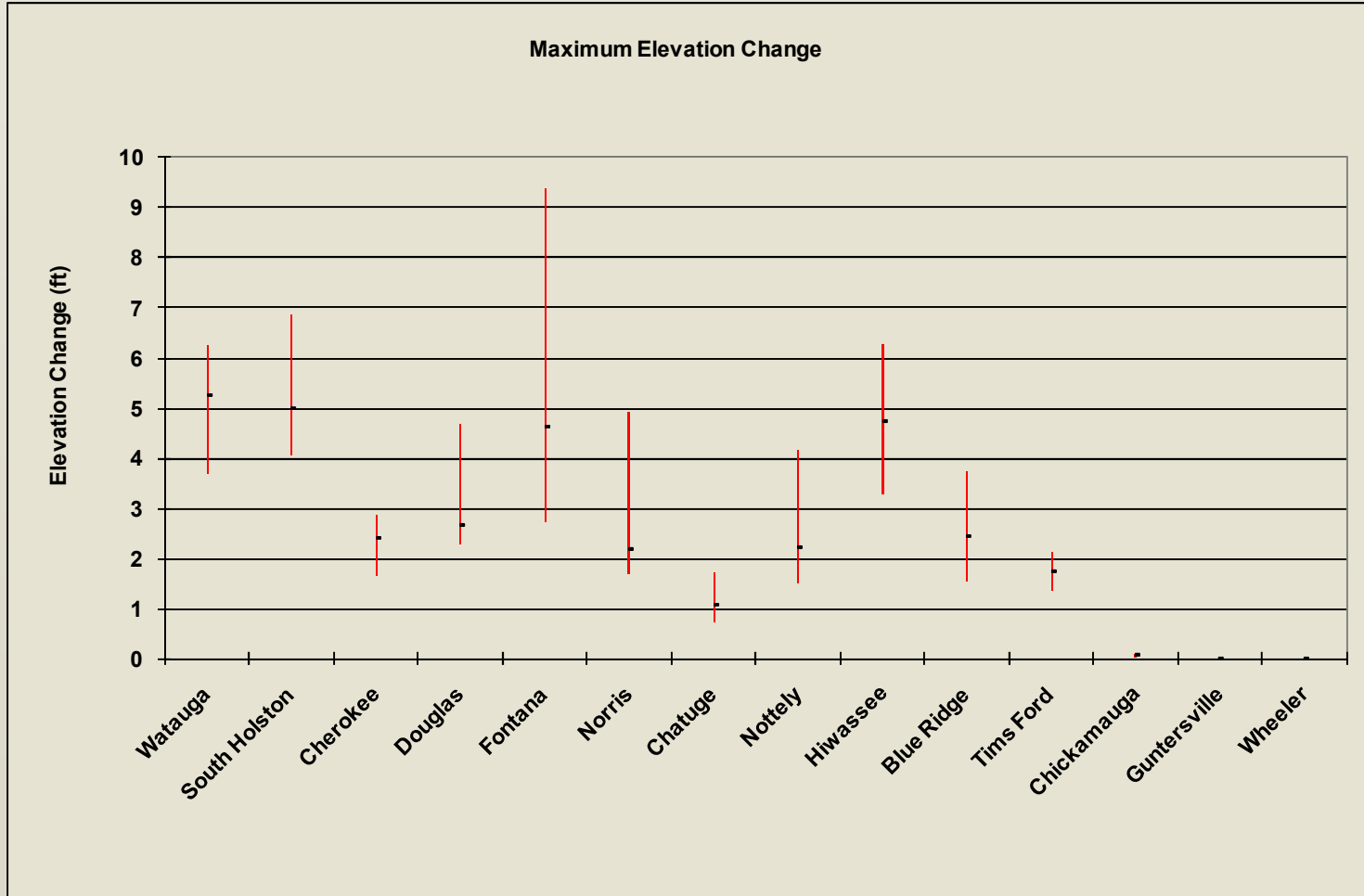
*...460 million
gallons a day
...1 billion gallons
a day*





Water Use

ROS 2030 Water Demand – No IBTs



1 year in fifty
Extreme

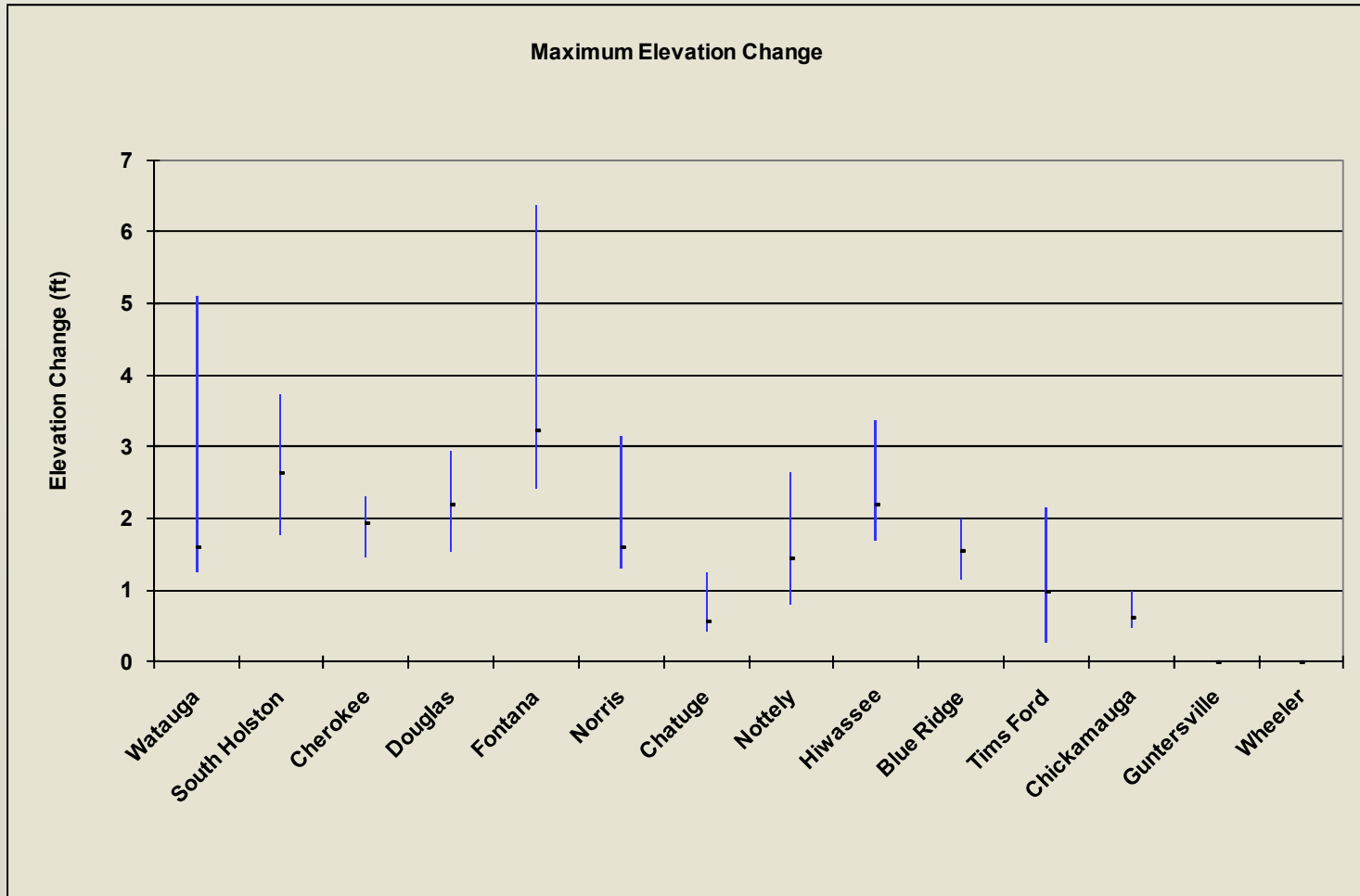
1 year in twenty
Severe

1 year in ten
Moderate



IBTs

ROS 2030 Water Demand – With IBTs



1 year in fifty
Extreme

1 year in twenty
Severe

1 year in ten
Moderate



IBT Permitting

TVA's Water Withdrawal Permitting - IBTs

- Before TVA will accept a Section 26a application involving an IBT, the state where the IBT originates must send a “Letter of No Objection.”
- All other Tennessee Valley states will be given the opportunity to comment on the proposed IBT.
- NEPA review.
- Any IBT > 1 million gallons/day requires approval by TVA's Board. Lower volumes require lower levels of approval within TVA.
- TVA will require reimbursement for lost hydropower benefits.



“When the well is dry,
we’ll know the true
worth of water.”

—Ben Franklin

TVA

