July RBC Meeting Review

Agenda Item 3

July Updates to the Savannah Modeling

- **Updated capacity and stage-storage curves for USACE Lakes**
  - Lake Hartwell: 17% decrease because of sedimentation
  - Lake Russell: 19% decrease because of sedimentation
  - Lake Thurmond: 4% decrease because of sedimentation
- **Updated Safe Yield of Reservoirs**

Reservoir	Current Use Scenario	P&R Scenario
Lake Hartwell	712 MGD	509 MGD
Lake Russell	1,115 MGD	619 MGD
Lake Thurmond	465 MGD	301 MGD

Based on Pioneers RWD's intake at 632.37 ft

Based on hydro operations at 470 ft

Lake Thurmond's minimum release requirements result in a lower safe yield than Lake Hartwell

- **Evaluated "Alternative 2" compared to current operating rules**
- **Re-evaluated synthetic drought conditions**
- **Tested impact of drought plan triggers and responses**

Example Drought Plan Triggers

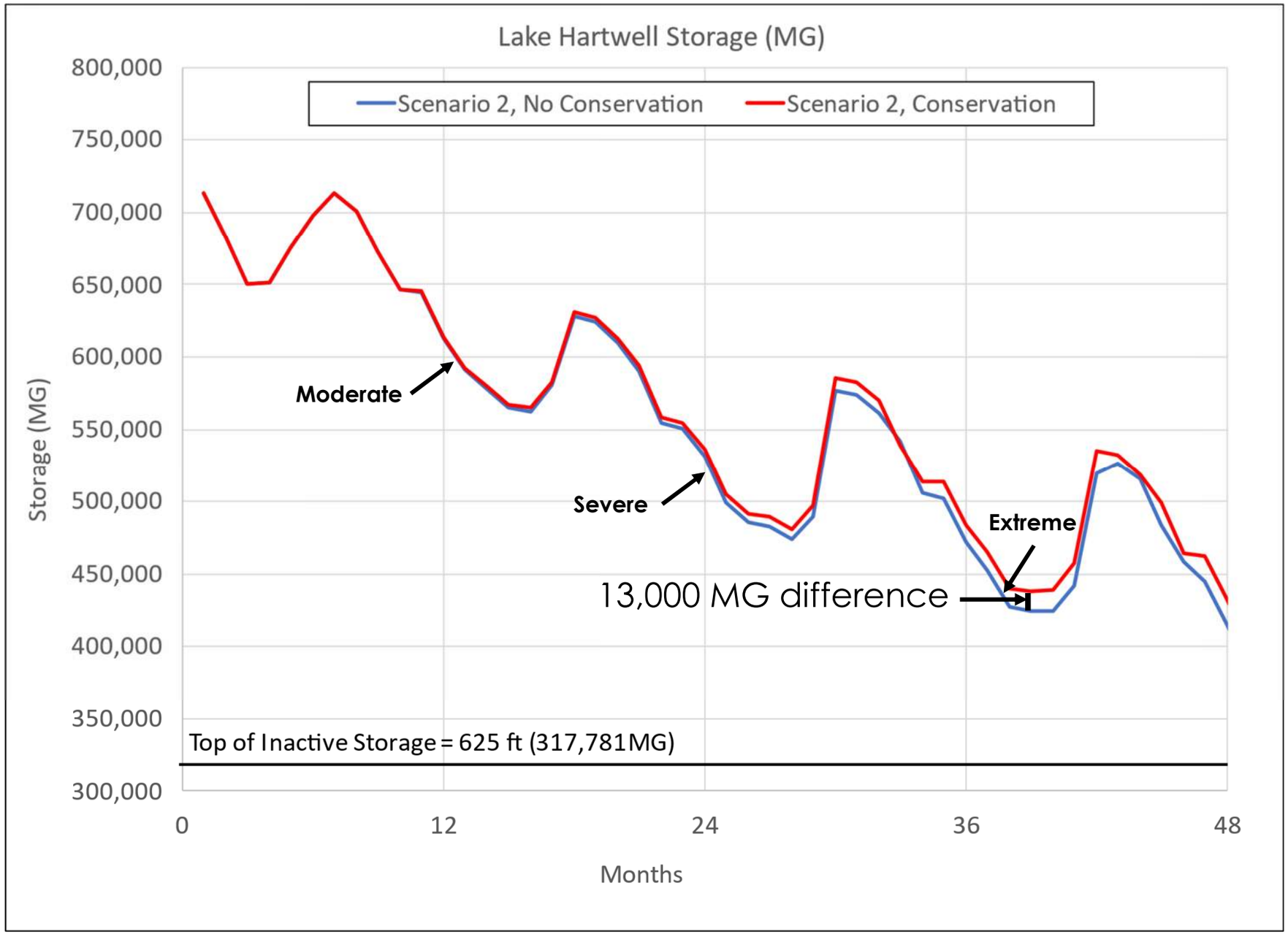
Water Supplier	Year	Water Source	Drought Indicator / Trigger Types
Abbeville Public Water System [2]	2003	Surface Water - **Lake Russell**	**Lake Russell is 4.5 feet, 7 feet, or 10 feet below full pool.** The upper water intake screen at Raw Water Pump Station is only partially submerged, the upper raw water intake is completely out of the water, or the lower raw water intake is only partially submerged. Average daily flow is greater than 4.5 MGD for 3, 10, or 14 consecutive days. Reservoir is completely full. There are 3 days or 1 day of supply remaining.
Anderson Regional Joint Water System (ARJWS)	2008	Surface Water - **Lake Hartwell**	**Reservoir at 652, 646, or 638 feet mean sea level (msl).** Average daily demands greater than 80%, 90%, or 95% of rated treatment capacity for 3 consecutive days. Equipment failure that impacts 10%, 15%, or 25% of plant capacity.
McCormick Commission of Public Works (CPW)	2003	Surface Water and Groundwater - **Strom Thurmond Reservoir**, 630-foot deep well	**Strom Thurmond Lake is 5, 10, or 15 feet below full pool.** Average daily flow is greater than 2.0 MGD for 3, 10, or 14 consecutive days. Reservoir is completely full. Two feet of water above all raw water intakes at Lake Thurmond, one raw water intake inlet above lake level, or two raw water intake inlets above lake level.
Seneca Light and Water [3]	2008	Surface Water - **Lake Keowee**	**Storage falls below 35 percentage of capacity.** Average daily use greater than 12 MGD for 2 consecutive days. Reservoir at 15 feet or 20 feet below full.

Not shown are Greenville Water's Drought Plan triggers. Greenville Water updated their Plan in 2024.

Example: ARJWS Drought Plan

Scenario	Frequency of Time ARJWS Drought Plan Demand Reductions are Triggered
Current Use*	0.7%
2070 High Demand*	1.7%
Permitted and Registered*	5.6%
First 4 years of **Drought Scenario 2** (Repeating 2008 Drought)	64.6%

** For the 1939-2021 hydrologic period of record*



Example: Lake Hartwell Storage

Drought Plan Rules

vs.

No Drought Plan Rules

First four years of Drought Scenario 2 (repeating 2008 drought)