

# Surface Water Availability Modeling UIF, Current Use, and P&R Scenario Results

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# Surface Water Scenarios

## Base Scenarios

- Current Surface Water Use Scenario
  - *Uses most recent 10-yr average withdrawals (as reported by month) in most cases*
- Permitted and Registered (P&R) Surface Water Use Scenario
  - *Uses current fully-permitted and registered amounts*
- Moderate Water Demand Projection Scenario
  - *Future water demand projection based on moderate growth and normal climate*
- High Water Demand Projection Scenario
  - *Future water demand projection based on high growth and hot/dry climate*

## Additional Scenarios

- Unimpaired Flow (UIF) Scenario
  - *Naturalized conditions (no surface water withdrawals, discharges, or reservoirs)*

# Upper Savannah River Basin - Summary of Average Annual Surface Water Demands by Scenario

*All values in million gallons per day*

Surface Water Use Sector	Current Use	Permitted and Registered (P&R)	Current Use as a Percent of P&R
Thermoelectric/Nuclear Power <sup>1</sup>	2,588.77	3,138.78	82%
Public Water Supply	58.79	284.17	21%
Industrial	7.95	53.05	15%
Golf Courses	0.82	9.79	8%
Agricultural	0.20	12.66	2%
Mining	0.20	0.95	21%
GA-Side Water Users	21.81	65.02	34%
<b>Total all Sectors*</b>	<b>2,679</b>	<b>3,564</b>	<b>75%</b>
<b>Total without Thermoelectric/Nuclear Power*</b>	<b>90</b>	<b>425</b>	<b>21%</b>

\* Rounded to nearest MGD

<sup>1</sup> Approximately 99% of the thermoelectric/nuclear power withdrawals are returned.

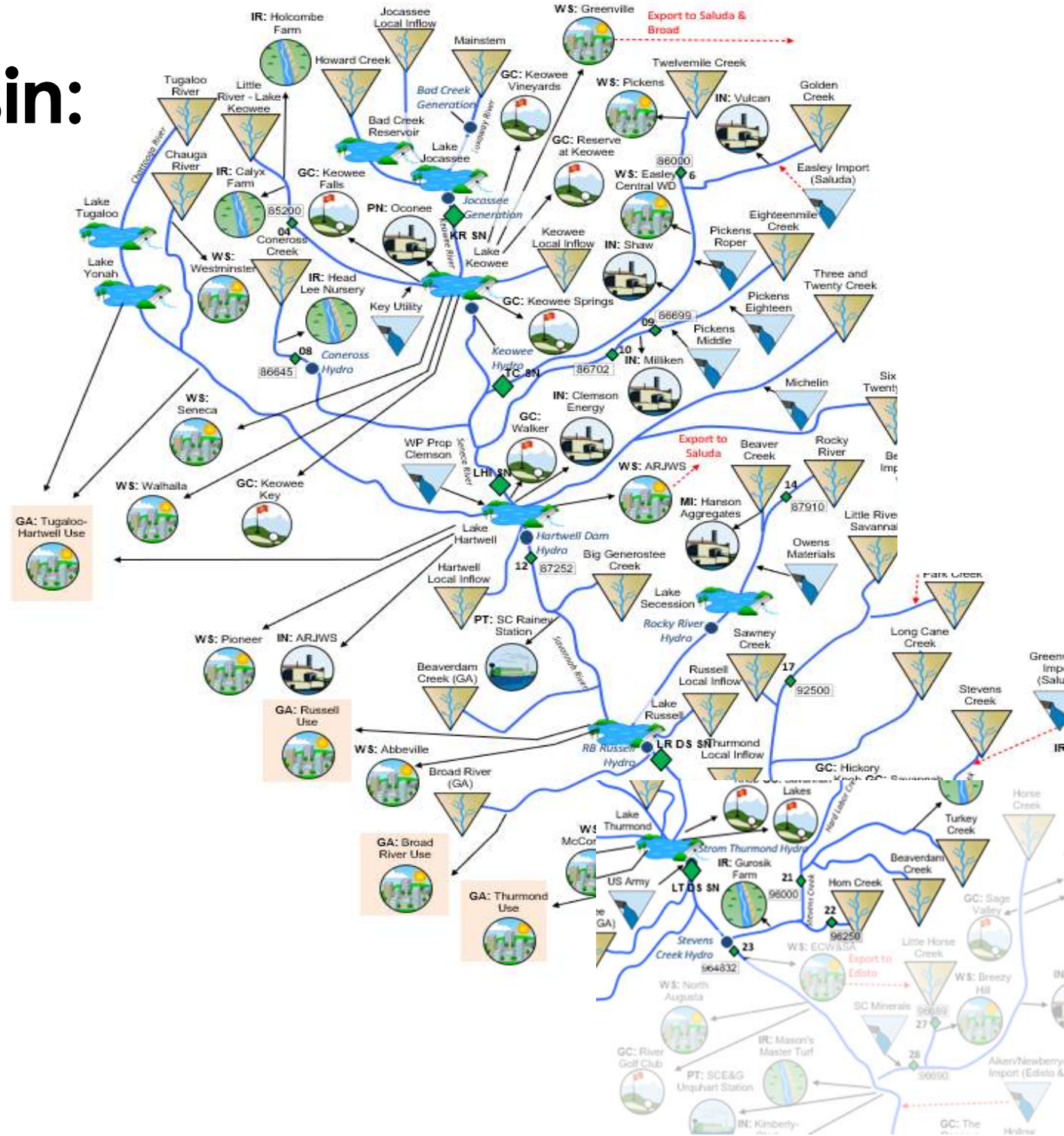
# Upper Savannah River Basin: Current Use Scenario

**1** Physical Shortage

Surface Water Shortage Table

Map ID	Water User	Max Shortage (MGD)	Frequency of Shortage

No Shortages

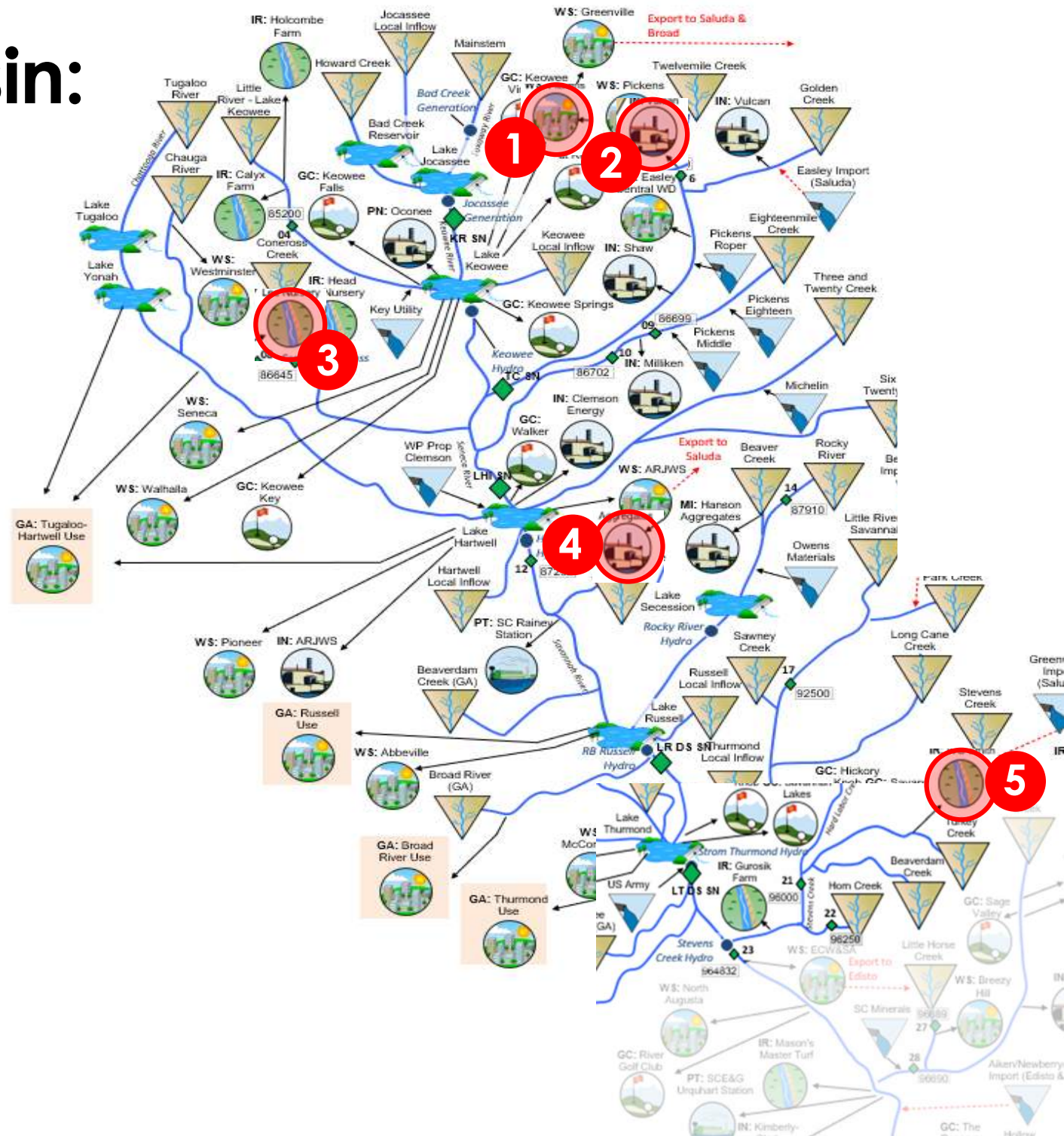


# Upper Savannah River Basin: Permitted & Registered Scenario

**1** Physical Shortage

Surface Water Shortage Table

Map ID	Water User	Max Shortage (MGD)	Frequency of Shortage
1	WS: Pickens	4.5	7%
2	IN: Vulcan	1.3	11%
3	IR: Head Lee Nursery	2.5	0.4%
4	MI: Hanson Aggregates	0.6	3%
5	IR: WG Smith	0.3	2%

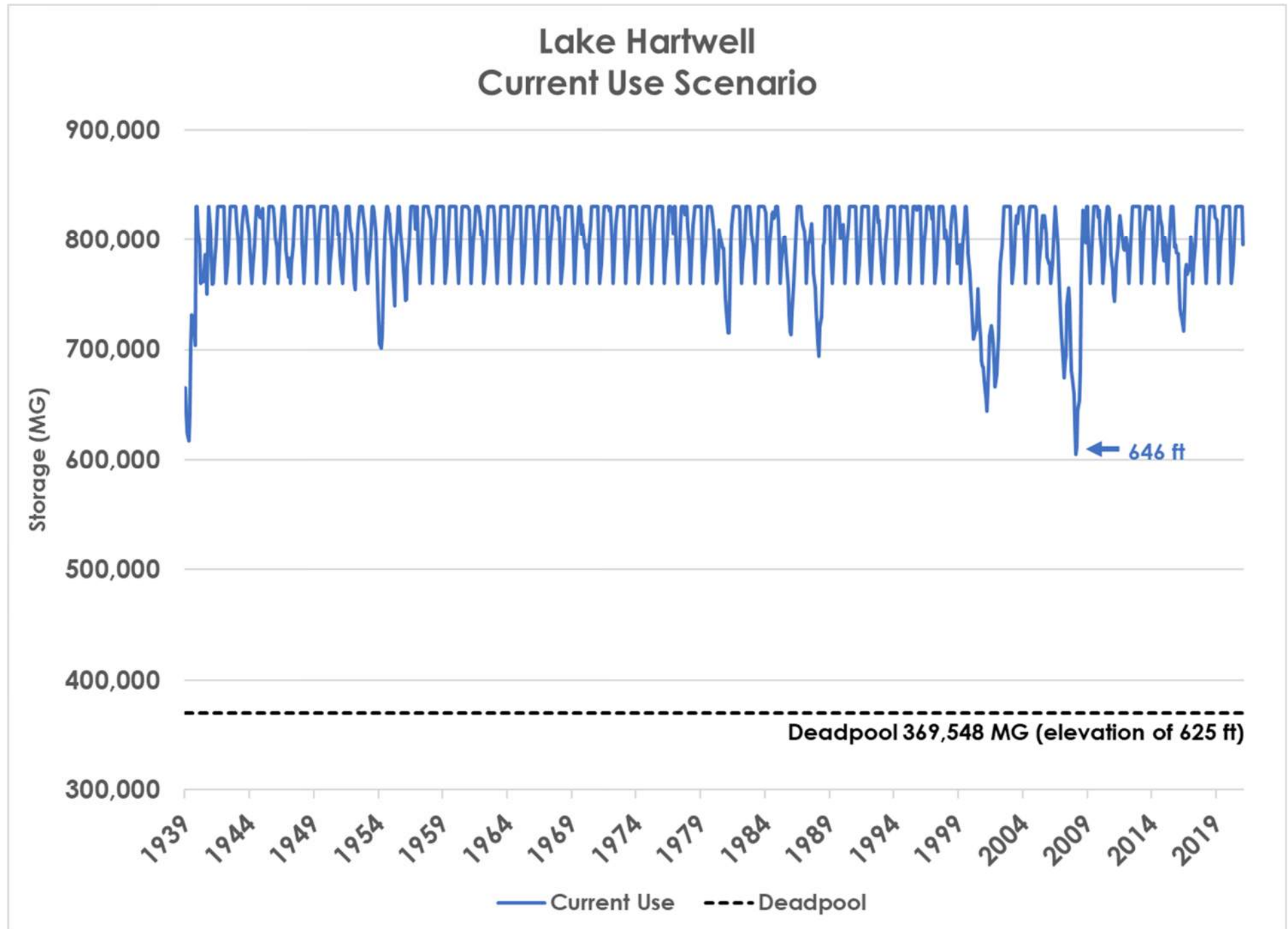


# Upper Savannah River Basin: Summary of Water Supply Shortages

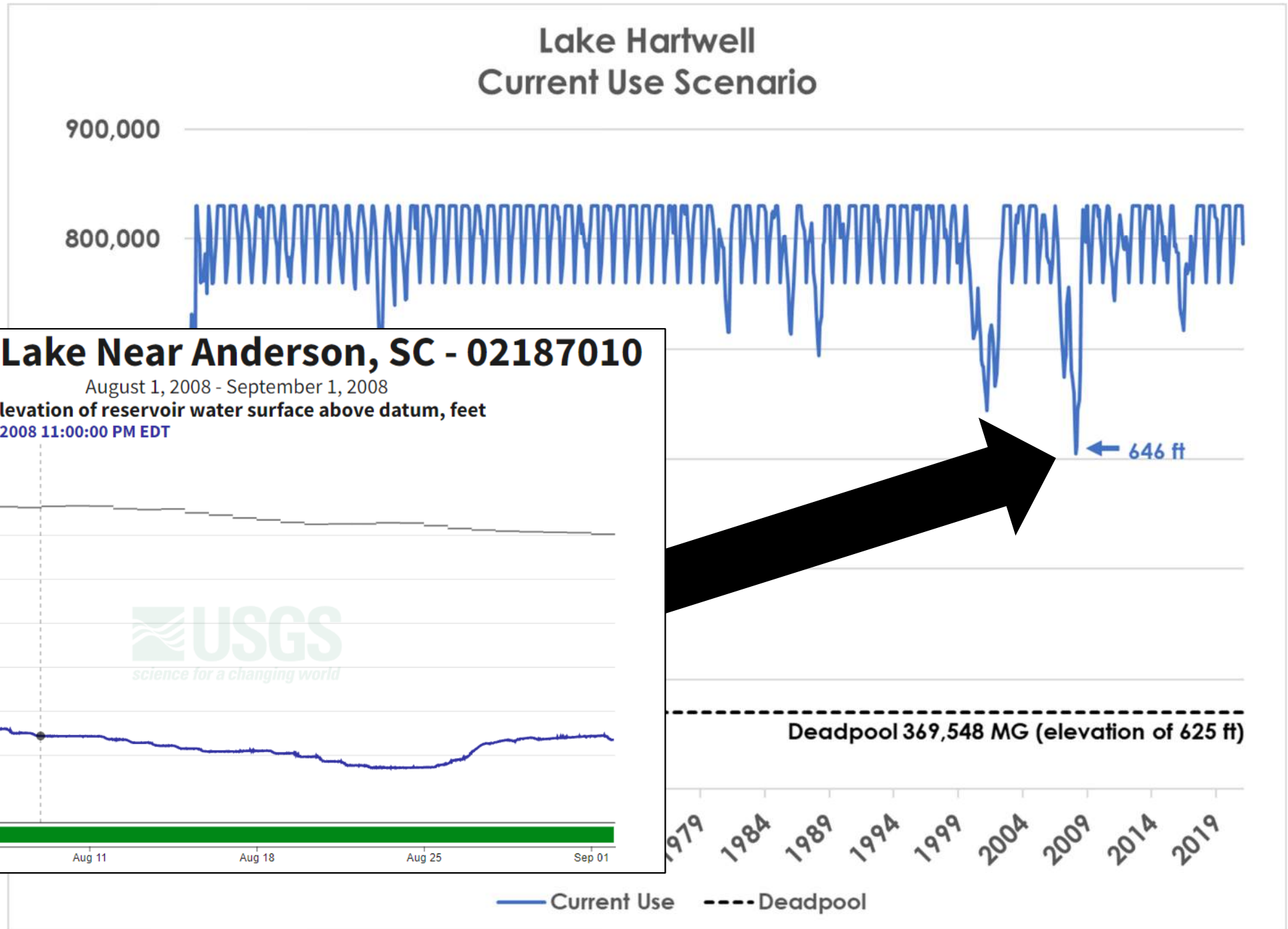
Supply Shortage Metric	Current Use	Permitted & Registered
Total basin annual mean shortage (MGD)	0.00	0.19
Maximum water user shortage (MGD)	0.0	4.5
Total basin annual mean shortage as a percentage of total water demand	0.0%	0.005%
Percentage of surface water users experiencing a shortage	0.0%	14.3%
Average frequency of shortage (%)	0.0%	0.7%

*This is Table 3 of the memo*

# Reservoir Storage Plots

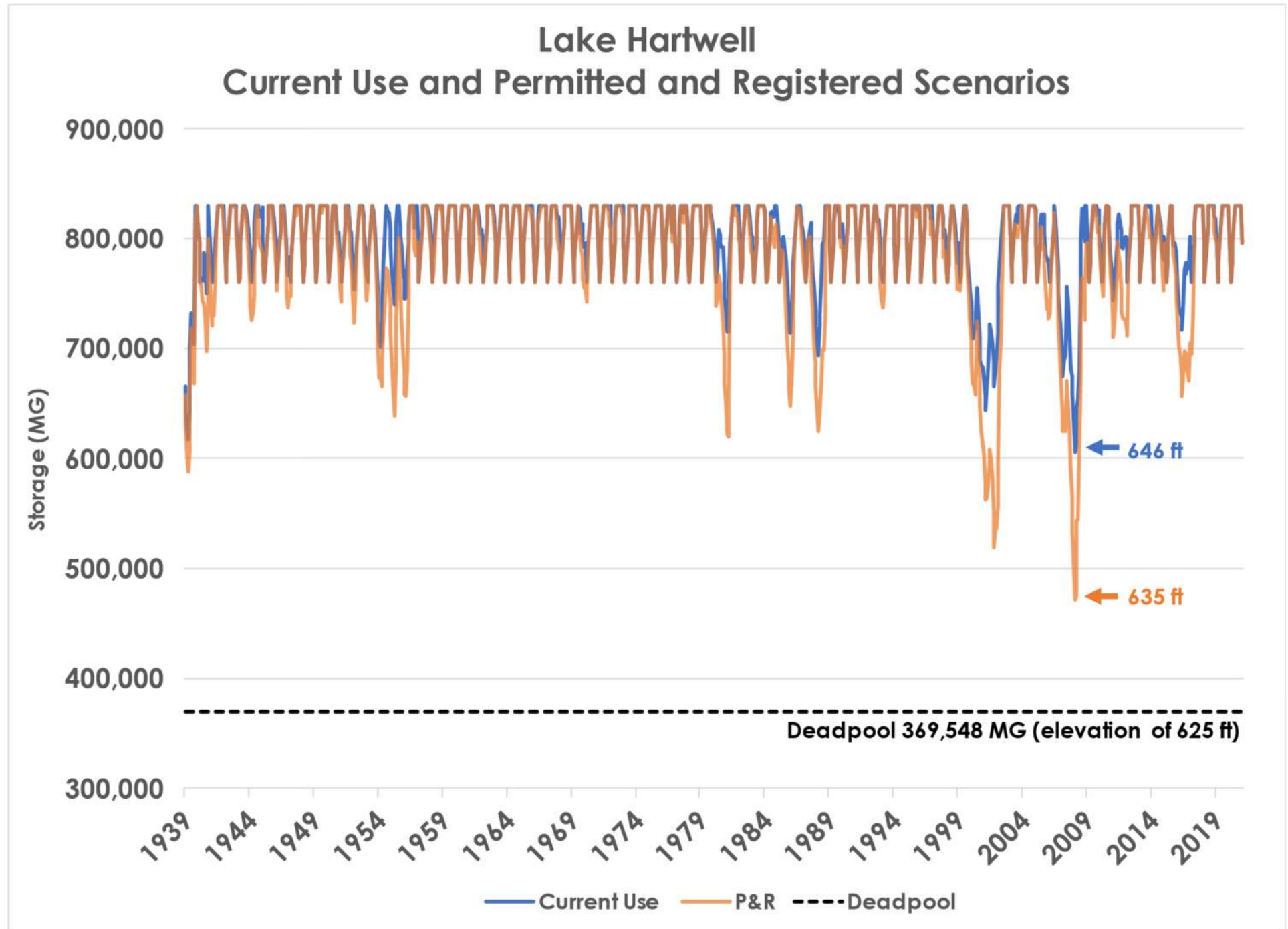


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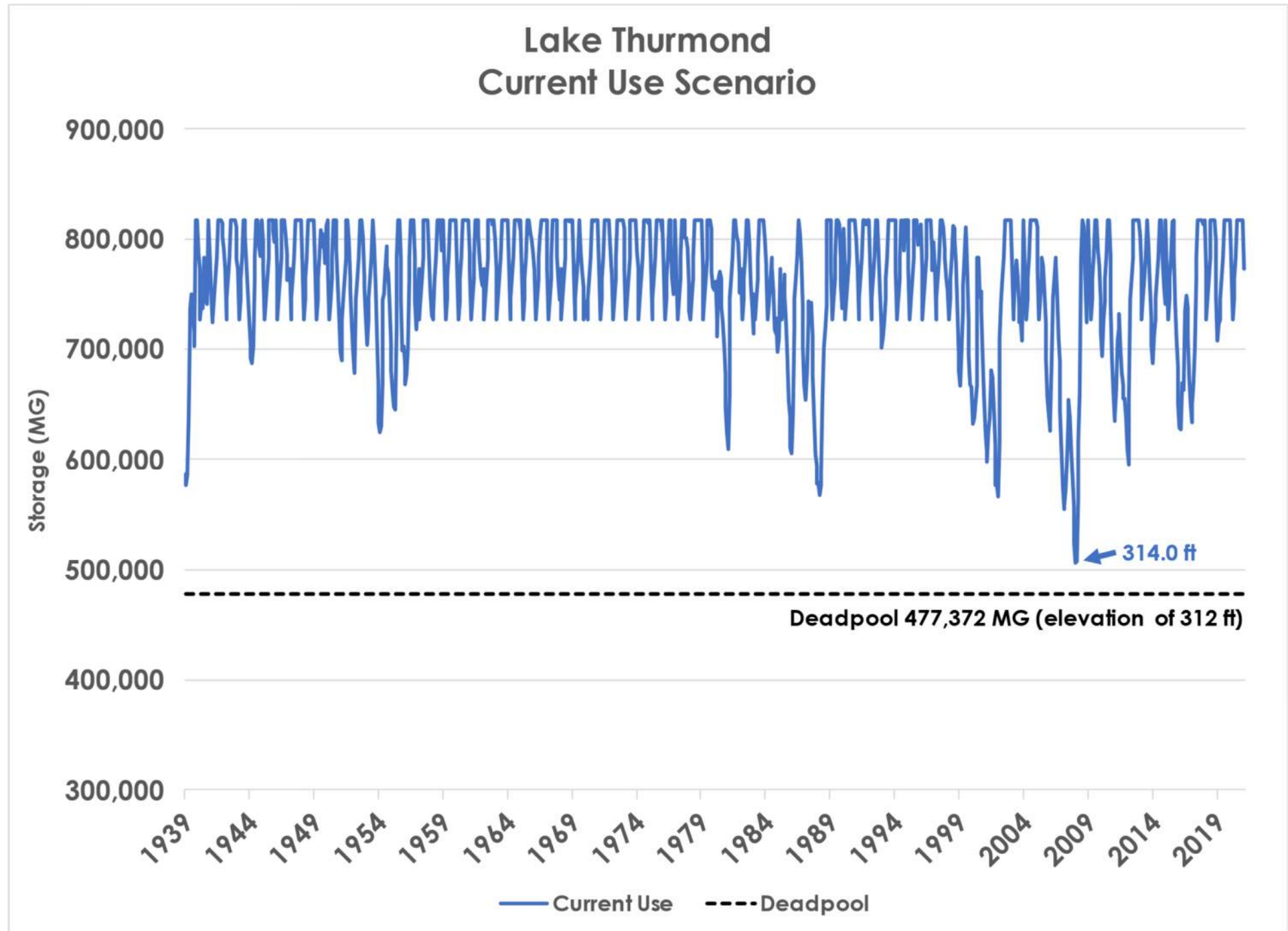




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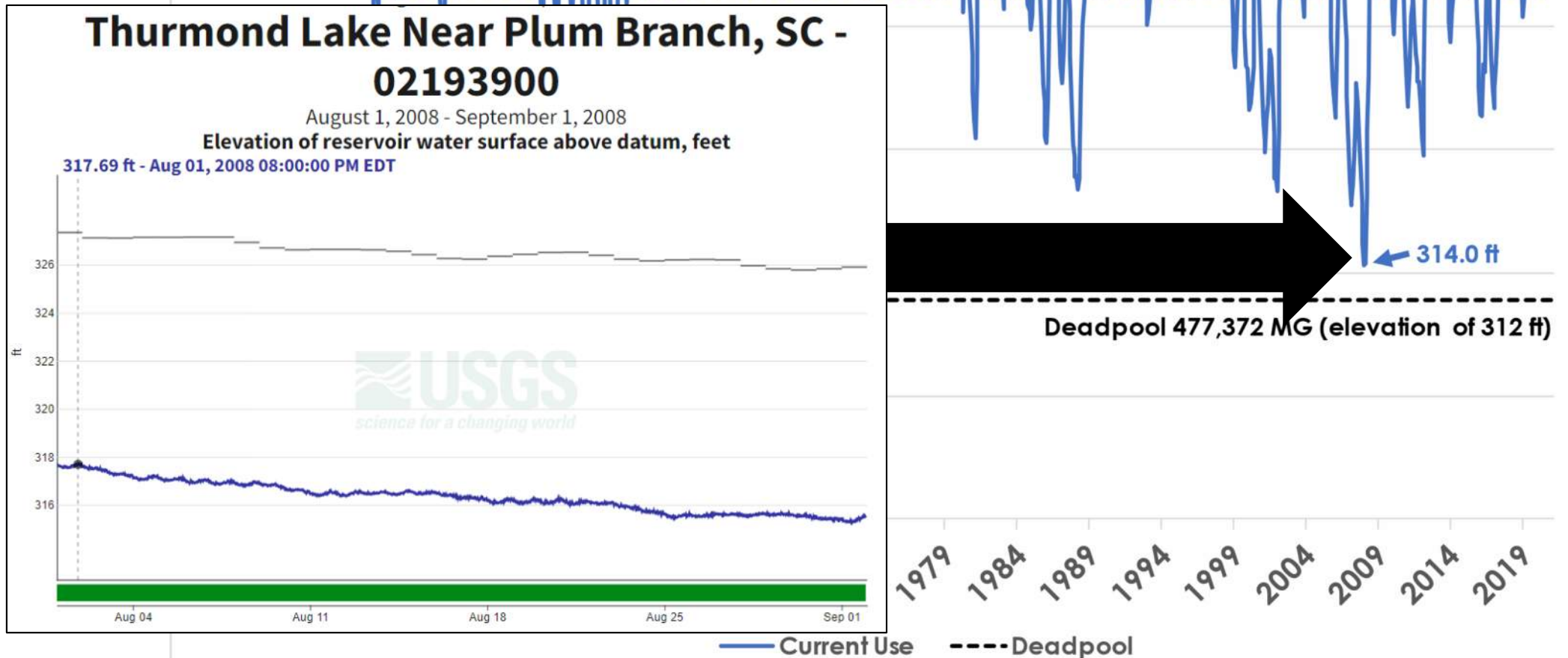


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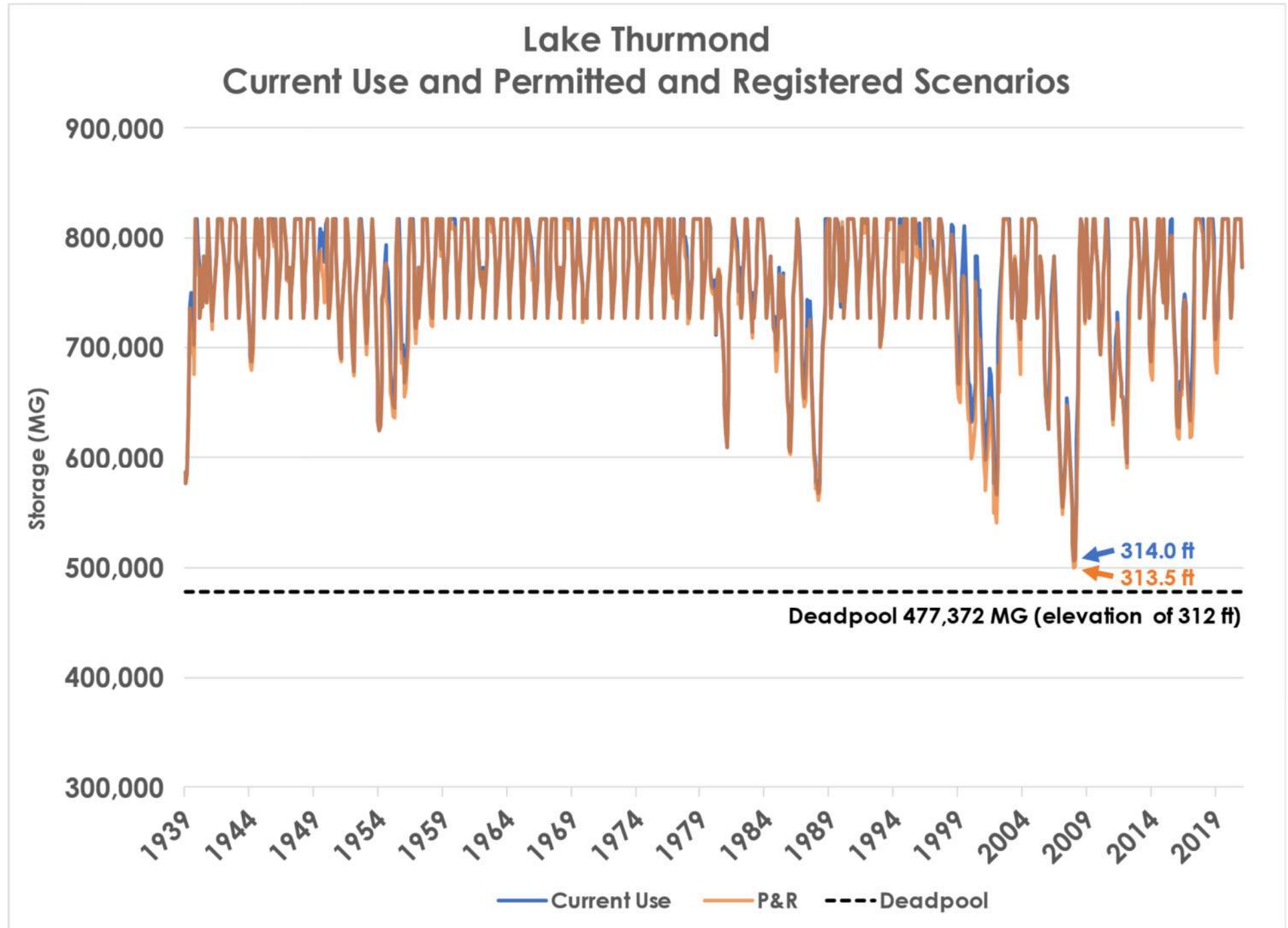


# Reservoir Storage Plots

## Lake Thurmond Current Use Scenario



# Reservoir Storage Plots



# Upper Savannah River Basin: Strategic Nodes

