

Southeastern Federal Power Alliance Meeting

Water Control Manual Modeling & Incremental Decay Concern

James E. Hathorn, Jr

Chief, Water Management

Mobile District

12 Apr 16

*Trusted Partners Delivering Value,
Today and Tomorrow*



U.S. ARMY



US Army Corps of Engineers
BUILDING STRONG





Purpose of Brief



BUILDING STRONG

- Discuss with customers the Mobile District development and selection of the ResSim Baseline model
- Address customer concern regarding current hydropower operation versus past hydropower operation. Customer sense an incremental decay in hydropower generation.



Topics



BUILDING STRONG

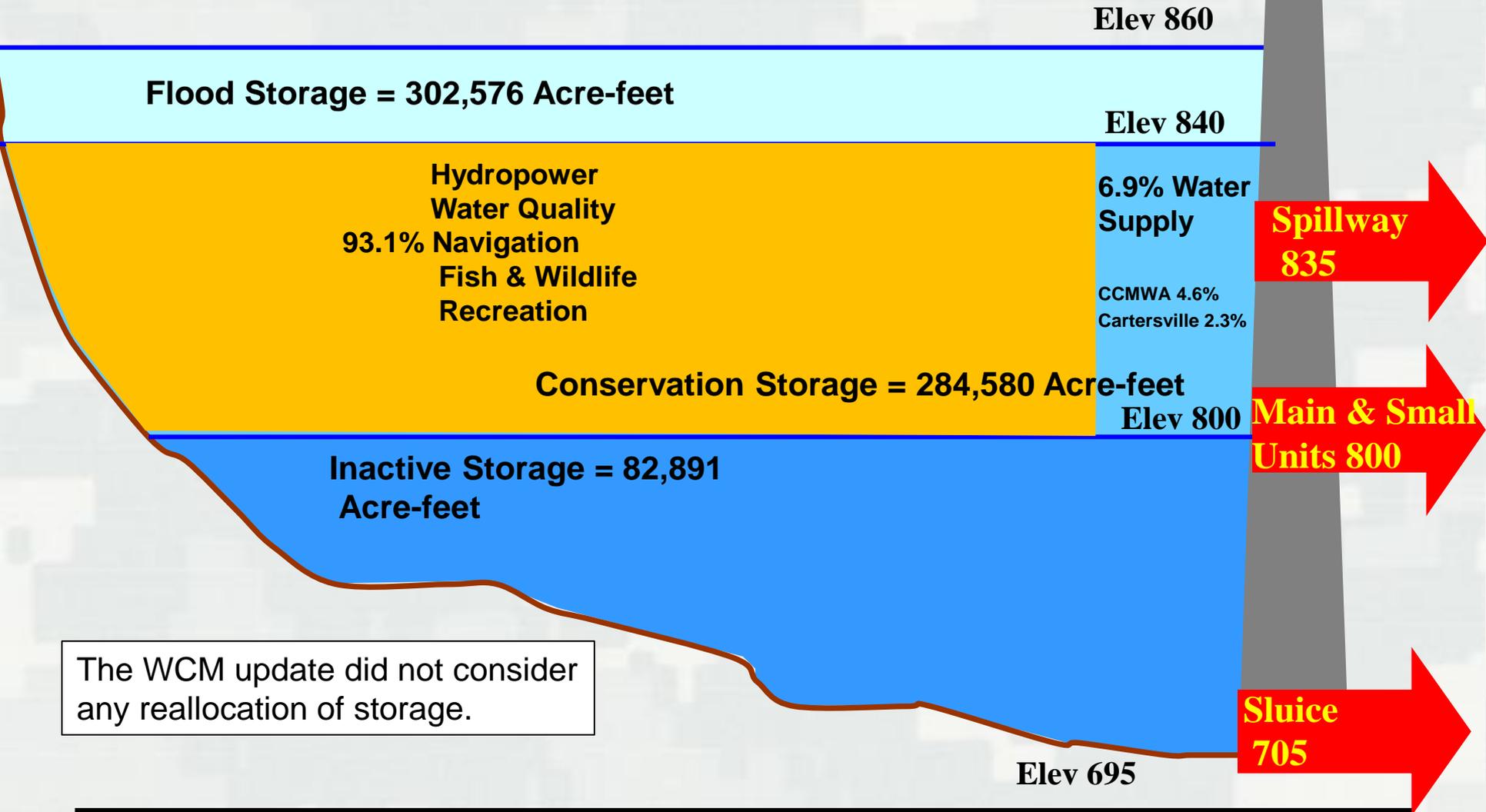
- Discuss development of USACE baseline ResSim Model(s)
 - ▶ Define period of baseline operation
 - ▶ Hydropower demand formulation
 - ▶ Alternative baseline presented by others
- Historic generation review
 - ▶ Trend analysis: inflow and generation
 - ▶ Historic water supply withdrawals



Allatoona Current Storage Allocation



BUILDING STRONG



The WCM update did not consider any reallocation of storage.

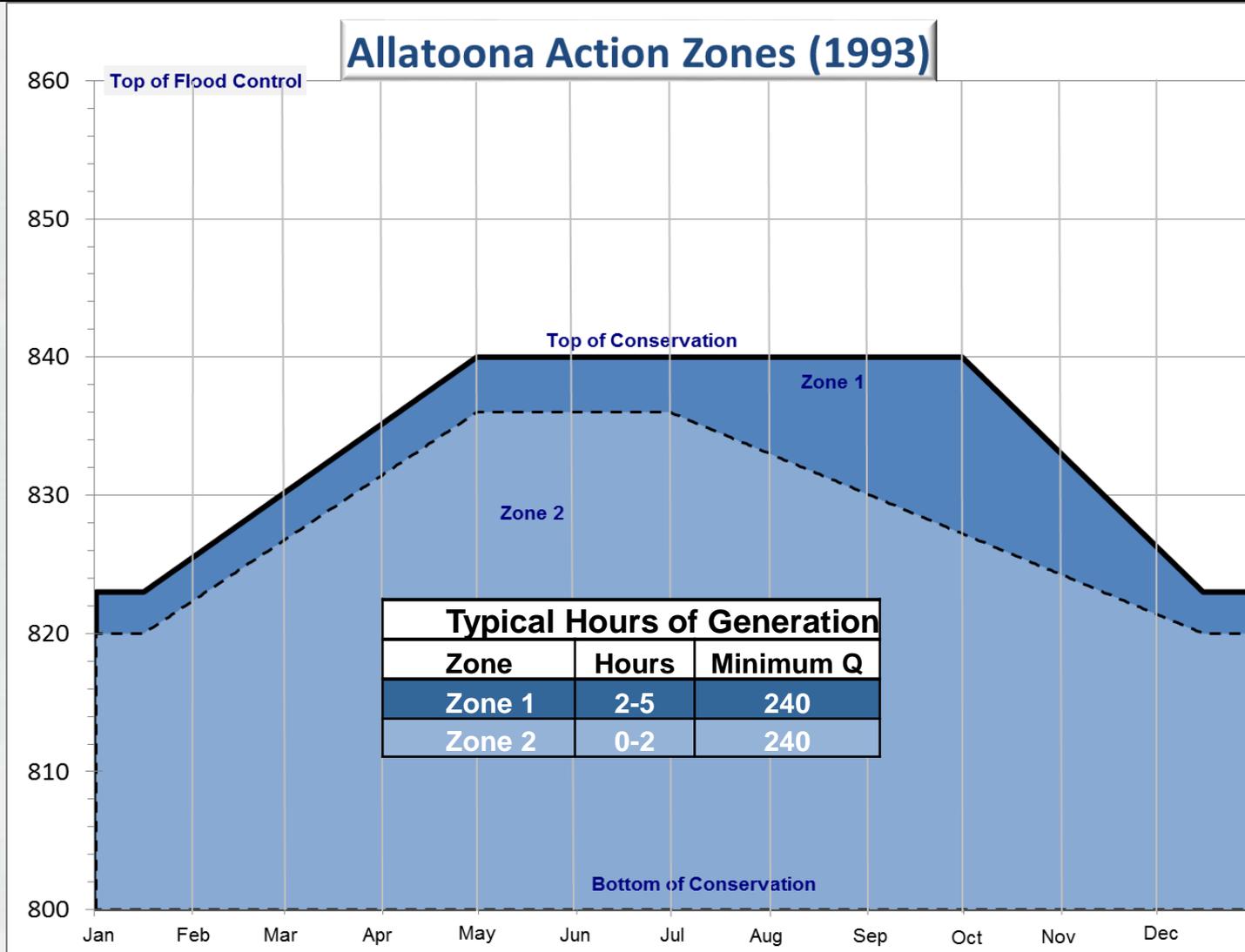


U.S. ARMY

Allatoona Baseline



GOING STRONG





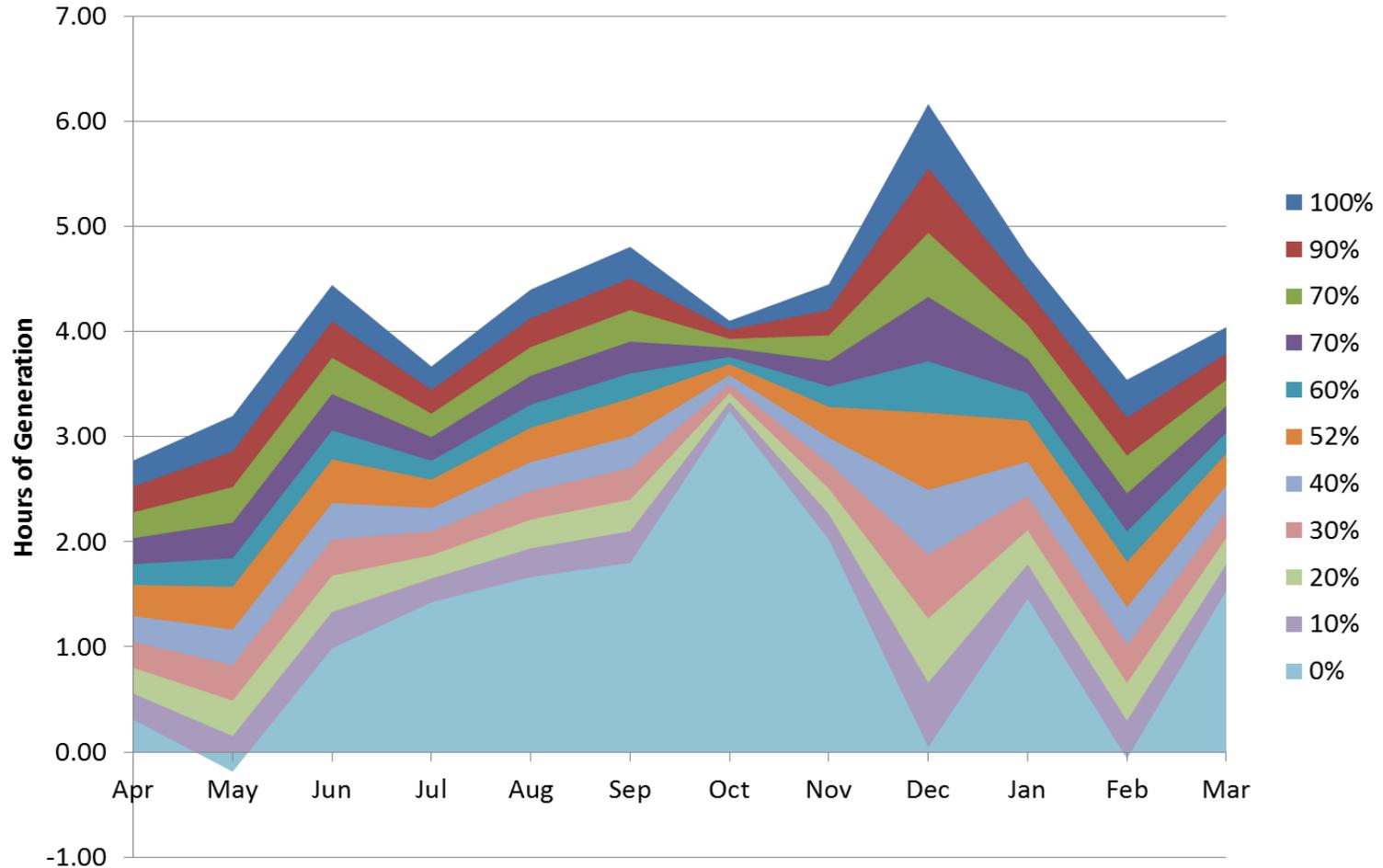
U.S. ARMY

Allatoona-Historic Generation 1985- 2007



STRONG

Hours of Generation Categorized by Percent of Zone 1

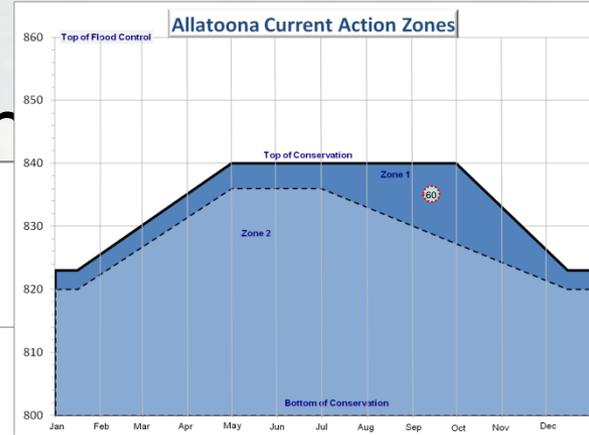




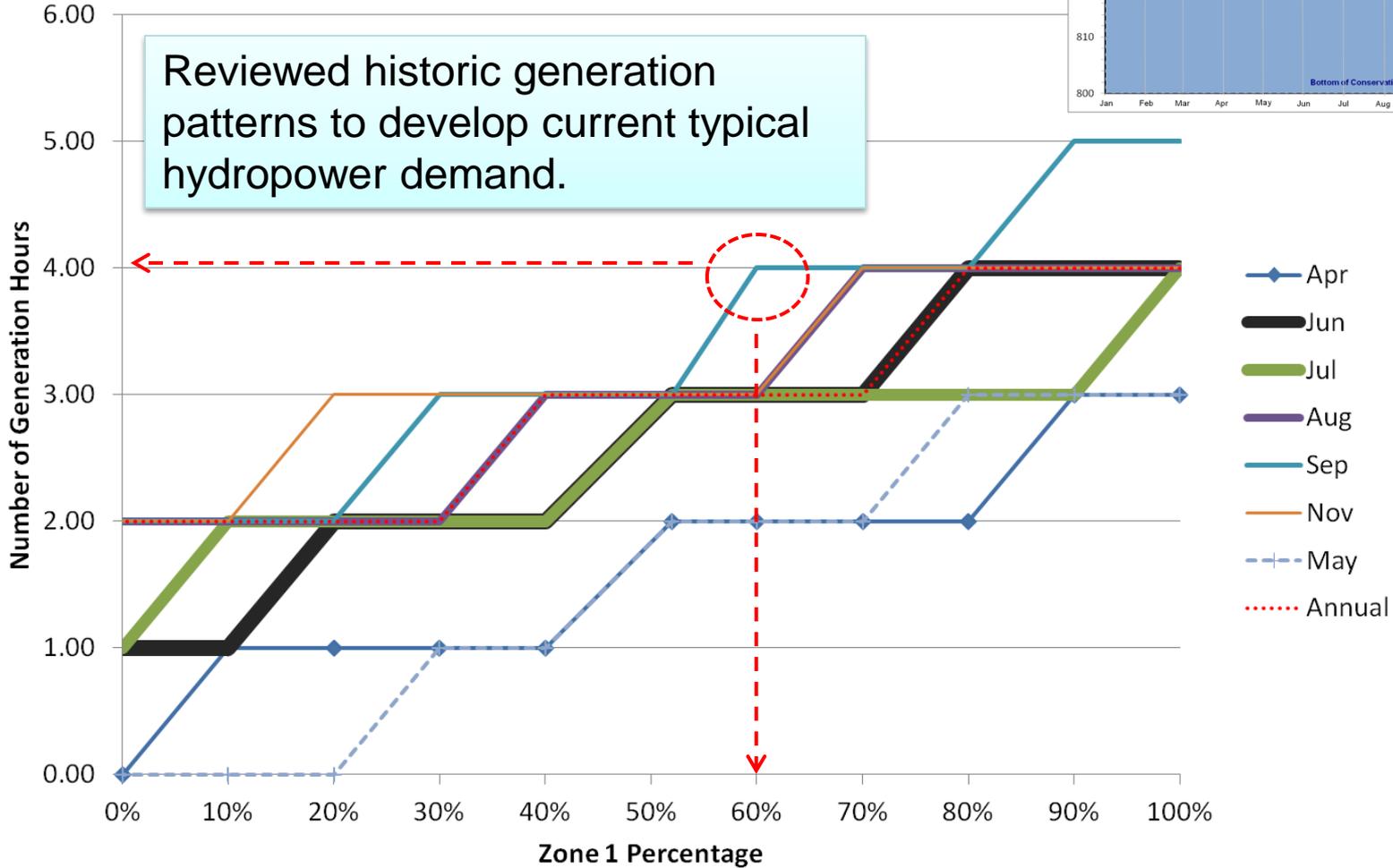
U.S.

Allatoona-Historic Generation

Estimate Monthly Power Guide Historic Data from 1985-2007



Reviewed historic generation patterns to develop current typical hydropower demand.





Alternative Baseline from Others



BUILDING STRONG

- Original 1951 Water Control Manual
 - ▶ Conservation pool 800-835, no seasonal variation
- March 1968, SAD approved revised guide curve
 - ▶ Varies from 840 to 823 to allow more flood storage in winter.
- 1993 SAD Approved Revised Manual
 - ▶ Approved on interim base until completion of ACT/ACF Comprehensive Study (MOA extended 4 times to 9/30/1998)



SeFPC ACT WCM Comment Letter

05Feb 2015



BUILDING STRONG

- “any new baseline must account for Federal Actions that have occurred since the last formal analysis. The method chosen by the Corps in the ACT DEIS to use the 2006 time period did not account for the incremental changes that have occurred since the last WCM revision. As an example, the 2006 baseline incorporates water supply withdrawals that have been increasing since the mid-1980’s. At some point these increasing withdrawals began to exceed the yield of the storage purchased by Cobb County- Marietta Water Authority to support their withdrawal needs.”



Council on Environmental Quality



BUILDING STRONG

- (CEQ) regulations for implementation of NEPA require consideration of the 'no action' alternative (NAA) (section 1502.14). In the Council on Environmental Quality's memorandum of March 23, 1981, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, Question No. 3 addresses the NAA. The response to Question No. 3 states, in part:
 - "The first situation might involve an action ... where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases, 'no action' is 'no change' from the current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the 'no action' alternative may be thought of in terms of continuing with the present course of action until that action is changed."
- Consequently, for purposes of the ACT WCM update process, the NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information.



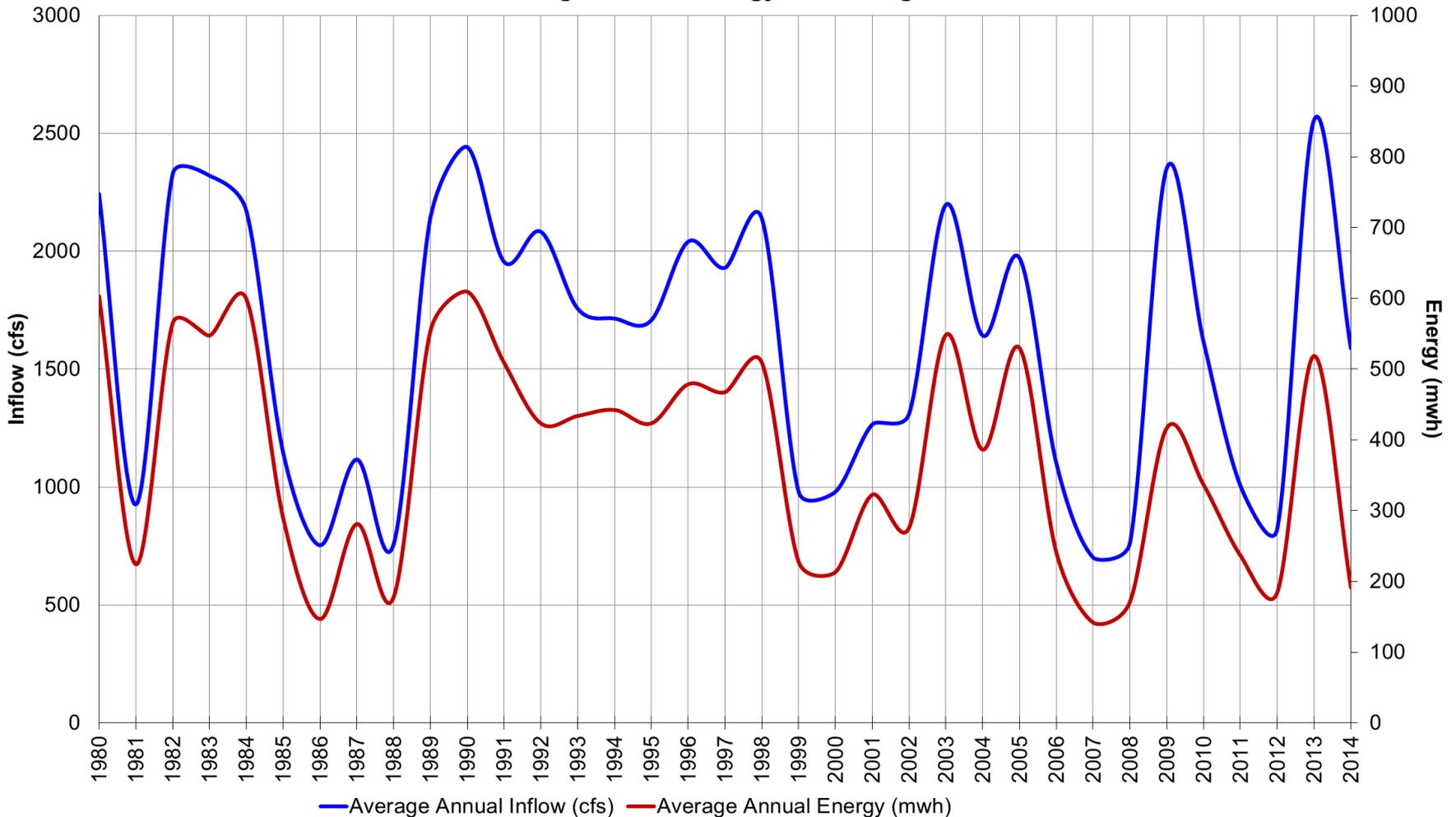
U.S. ARMY

Hydropower Varies with Inflow



BUILDING STRONG

Allatoona Dam and Lake
Average Annual Energy vs. Average Annual Inflow



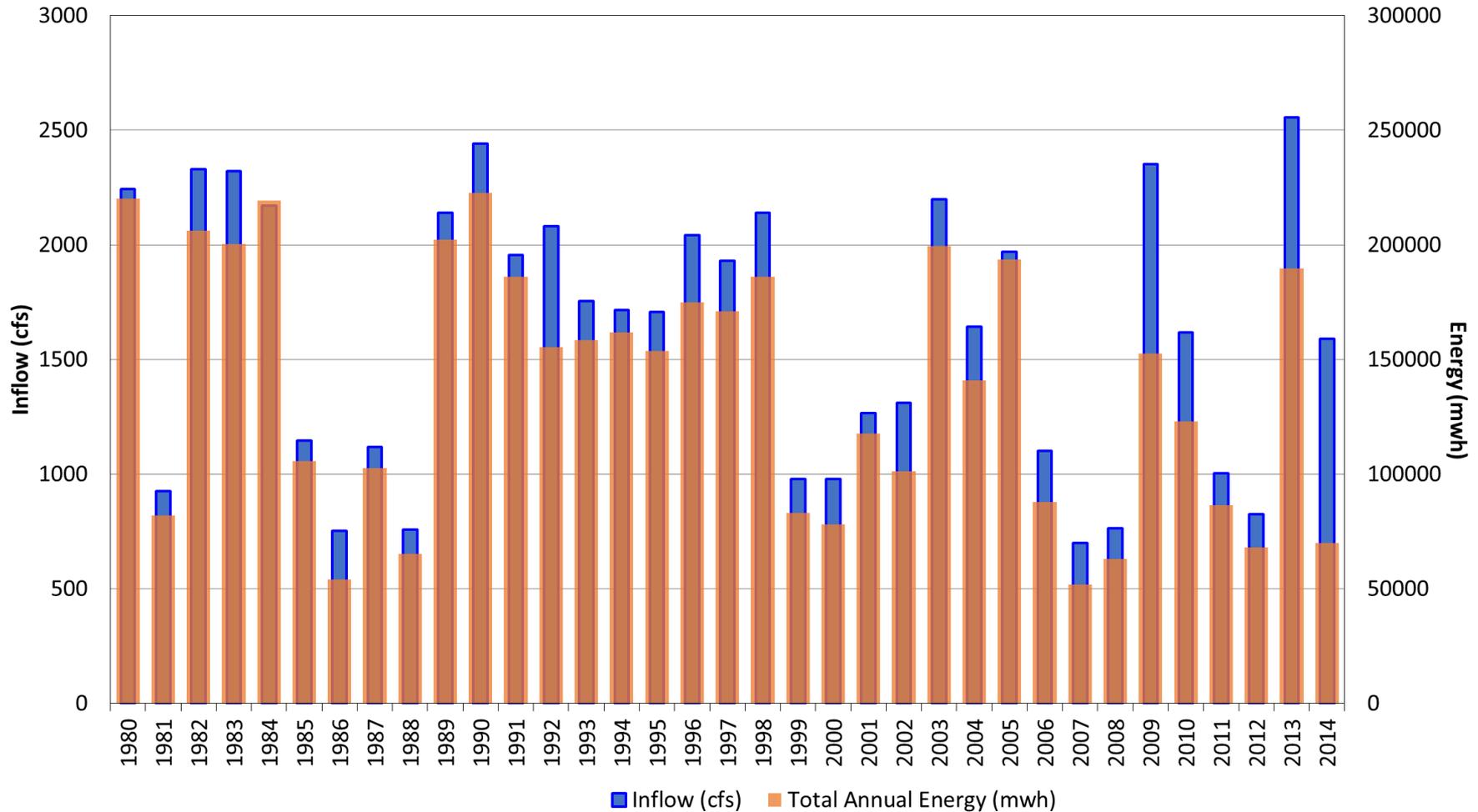


U.S. ARMY

Hydropower Varies with Inflow



Allatoona Dam and Lake
Total Annual Energy vs. Average Annual Inflow



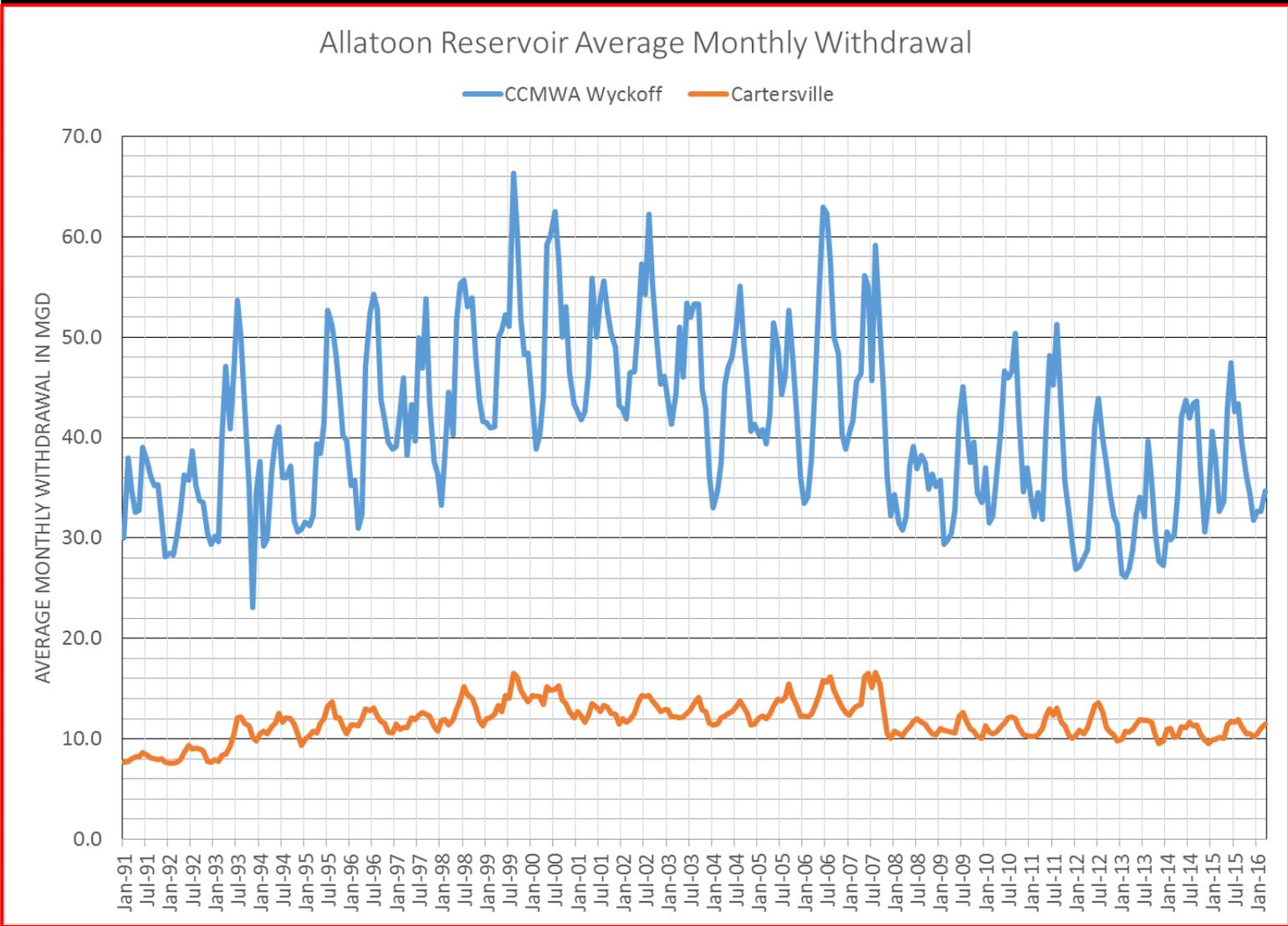


U.S. ARMY

Historic Allatoona Withdrawals



STRONG





Closing Remarks



BUILDING STRONG

- Hydropower generation function of available storage and varies with the inflow on annual basis
- Lake withdrawals vary seasonally and remain steady since 2007.
- Increased public attention may have lead to customer sense an incremental decay in hydropower generation