

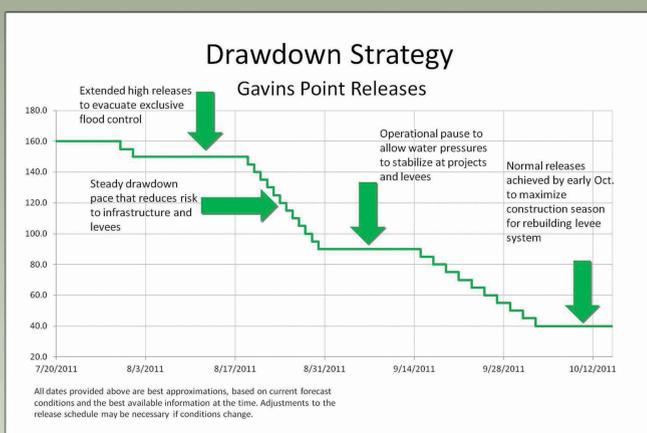
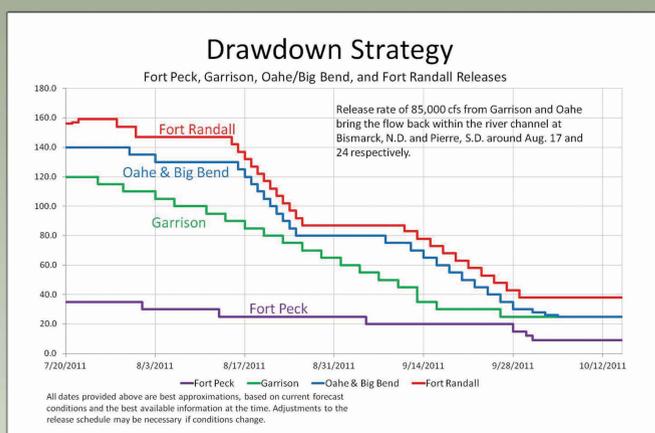


US Army Corps of Engineers  
**BUILDING STRONG**

# Missouri River Mainstem Reservoir System

## Fall 2011 and Beyond Moving Forward

### Drawdown Strategy



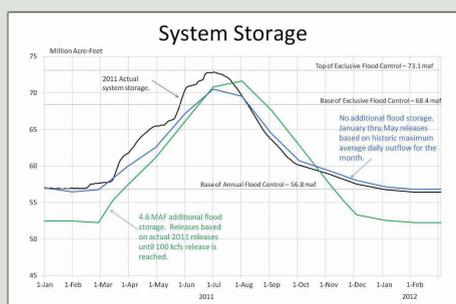
## Key Engineering Considerations

- Evacuate exclusive flood control zones of all reservoirs as soon as possible — gain back our flexibility.
- Ensure fall releases are low enough to facilitate damage assessment and repair of infrastructure and levees (<40,000 cfs).
- Ensure winter releases are low enough to permit winter construction and minimize the risk of ice jam flooding (<20,000 cfs).
- Ensure rates of change in releases and reservoir levels are acceptable.
- Consider releases that take water off critical infrastructure.
- Consider releases that avoid continued use of various project features such as spillways and outlet tunnels.
- Consider releases that allow temporary measures to be removed.

## Why Still 16.3 MAF for Flood Control Storage?

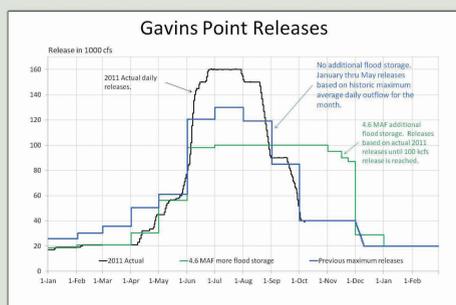
- Risk of levee failure with continued high releases
- Delay of flood recovery
- Low risk of repeat
- 16.3 MAF sufficient for 113 of 114 years

### What If?



### Historic maximum winter and spring releases for Gavins Point

- 16.3 MAF of flood storage available at the start of the runoff season
- January through May Gavins Point releases based on the historical maximum average daily for each month
- Peak release of 130,000 cfs from early June through late August and then following the actual 2011 comedown schedule
- Total system storage of 56.8 MAF at the end of February 2012



### 4.6 MAF of additional flood storage

- 20.9 MAF of flood storage available at the start of the runoff season
- Starting pool elevation for upper 3 reservoirs 5.7 feet below the flood control zone
- January through May Gavins Point releases based on actual 2011 releases
- Peak release of 100,000 cfs from early June through end of October. Slowly reduce flows to 20,000 cfs by mid-December
- Total system storage of 52.2 MAF at the end of February 2012

## 2011-2012 Annual Operating Plan

- 16.3 MAF of flood control storage
- No Gavins Point spring pulse
- Full navigation flow support
- No unbalancing of upper 3 reservoirs