

# Overview of BDCP Draft Project Near-Term and Early Long-Term Operations

*PRELIMINARY CALSIM II Modeling Results*

November 19, 2009

PRELIMINARY DRAFT—NOT FOR DISTRIBUTION

# Overview

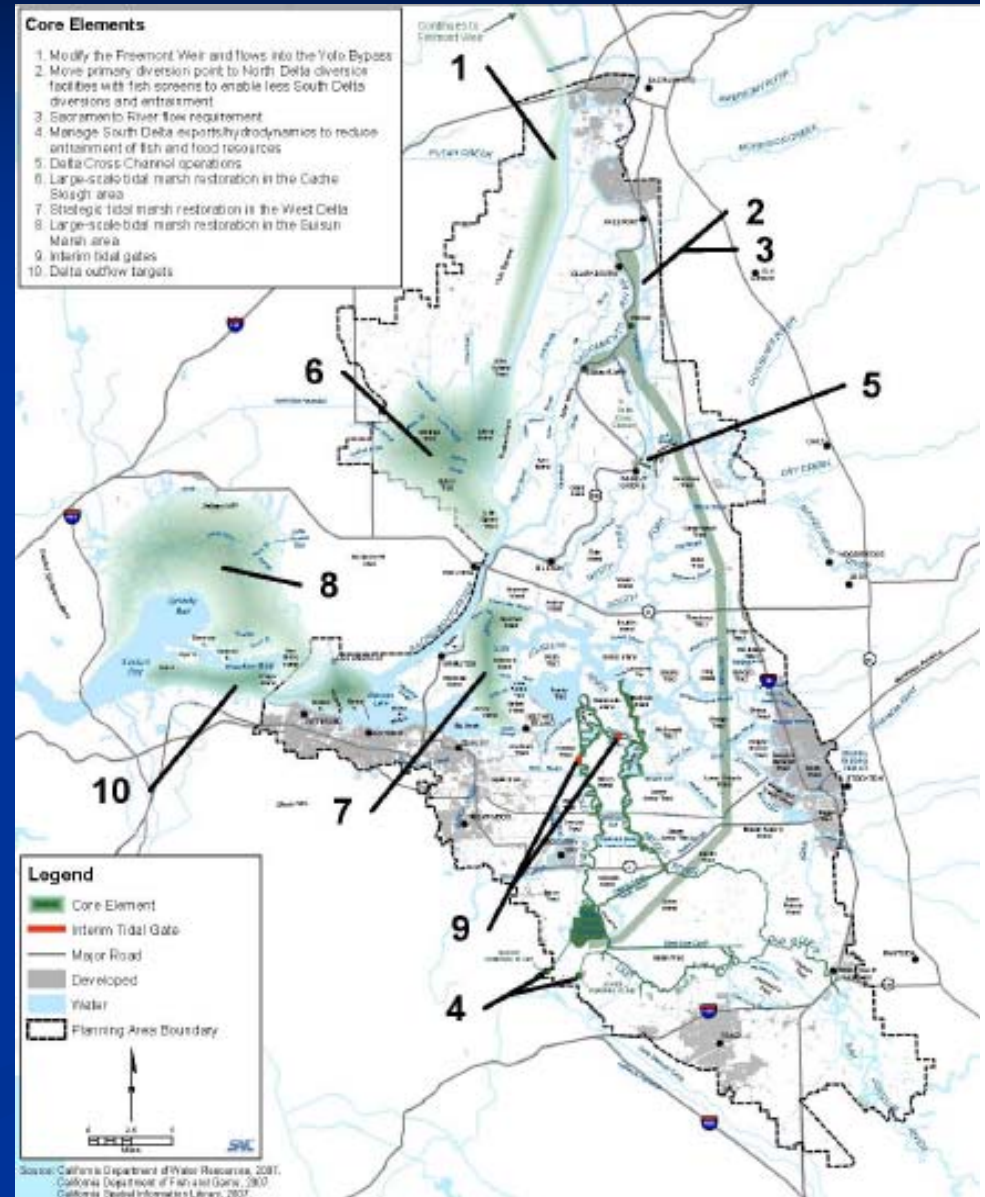
- BDCP Draft Project Long-Term water operations conservation measures developed in late July (Chapter 3)
- BDCP Draft Project Near-Term water operations consultant draft recommendation in September
- Draft Project includes
  - Physical habitat (tidal marsh, floodplain, riparian)
  - Water operations (dual convey, south delta restrictions, Fremont Weir, etc)
  - Other stressors
- Preliminary modeling performed to guide definition of Proposed Project and to evaluate effects

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# BDCP Core Elements of Draft Conservation

## Strategy

- Fremont Weir modifications for more frequent inundation
- North Delta diversion and associated bypass flows (two scenarios)
- Delta Cross Channel operations
- Old and Middle River flow restrictions
- Large-scale tidal marsh restoration in Cache Slough, Suisun Marsh, West Delta, East Delta, and South Delta



# Comparison of Draft Project Water Operations

## Near-Term

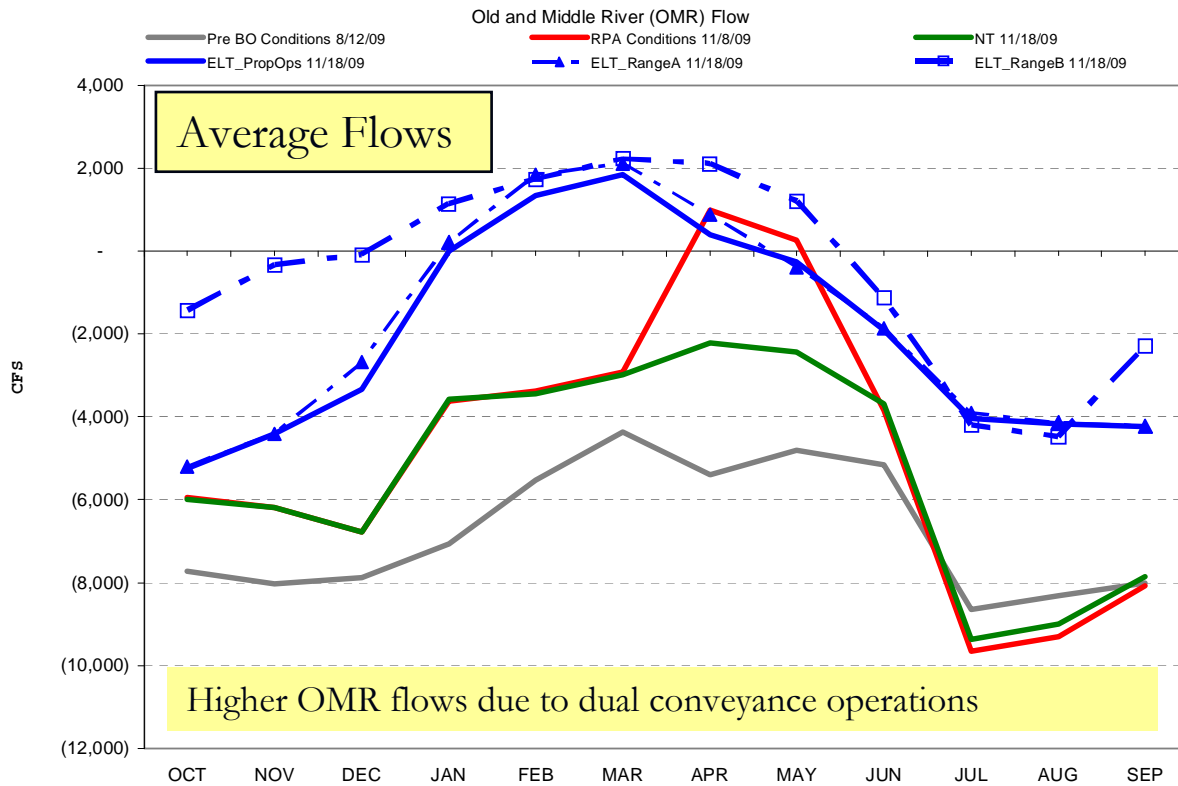
## Long-Term

- FWS Delta Smelt BO RPAs
  - OMR limits Dec-Jun (Actions 1, 2, and 3)
  - Fall X2 subject to reservoir inflows (Action 4)
  - Temporary Spring head of Old River barrier and Temporary Barrier Project (Action 5)
- NMFS Salmon BO RPAs
  - Upstream actions per 11/8/09 RPA implementation
  - DCC gates operations
  - NO SJR EI ratio
- Fremont Weir modifications
- San Joaquin behavioral barrier in-lieu of SJR EI ratio
- Preferential CVP Jones pumping during OMR controls
- 5-Month Average X2 operations

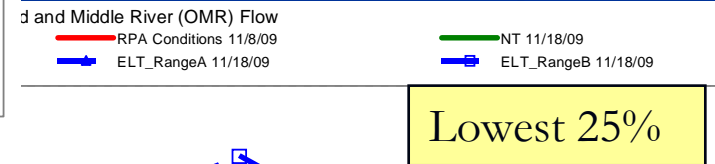
- Common Elements
  - Fremont Weir modifications
  - Dual conveyance
  - OMR limits
  - DCC gates per NMFS RPA
  - Temporary Barriers per FWS RPA
- Draft Proposed Operations
  - Mid-range ND diversion bypass flows
  - FWS Smelt OMR limits “most likely”
  - D-1641 outflow standards
- Draft Range A
  - Lower ND diversion bypass flows
  - FWS Smelt OMR limits “low bound”
  - Relaxed D-1641 outflow standards
- Draft Range B
  - Higher ND diversion bypass flows
  - SJR Export-Inflow ratio Oct-Jun
  - OMR limits Jul-Sep
  - Higher outflow requirements based on 8-River index

# Summary of Preliminary CALSIM II Results

- Studies are preliminary ...
  - Revised ANNs are being finalized
  - Some operational refinements are being considered
  - BO RPA models are still considered “draft”

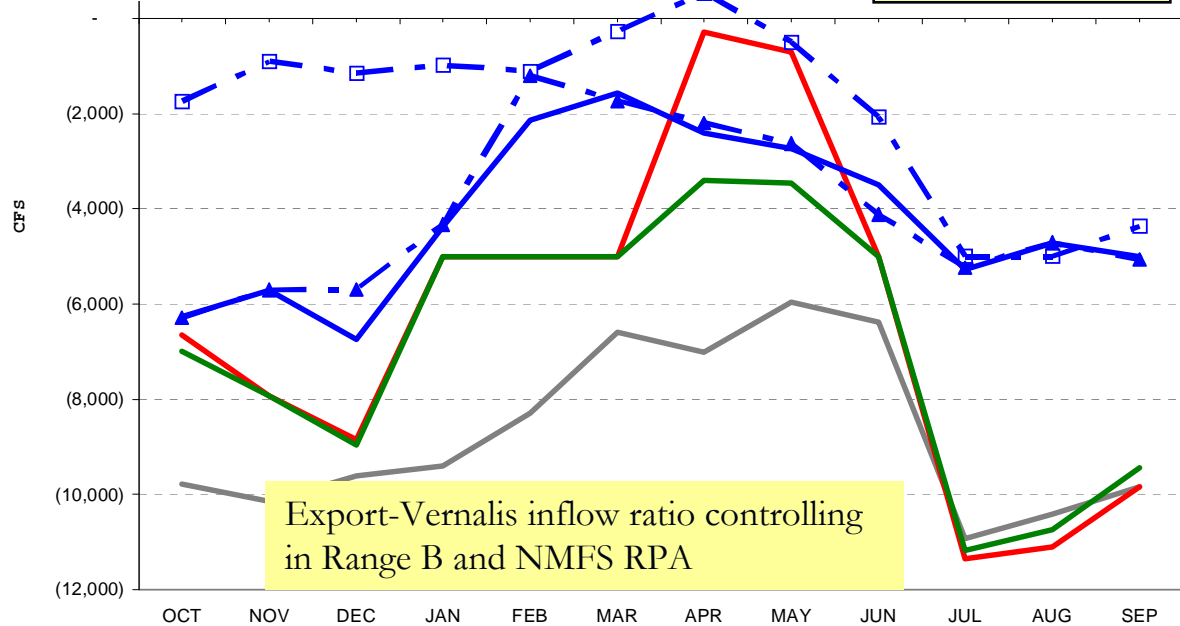


# Combined Old and Middle River (OMR) Flows

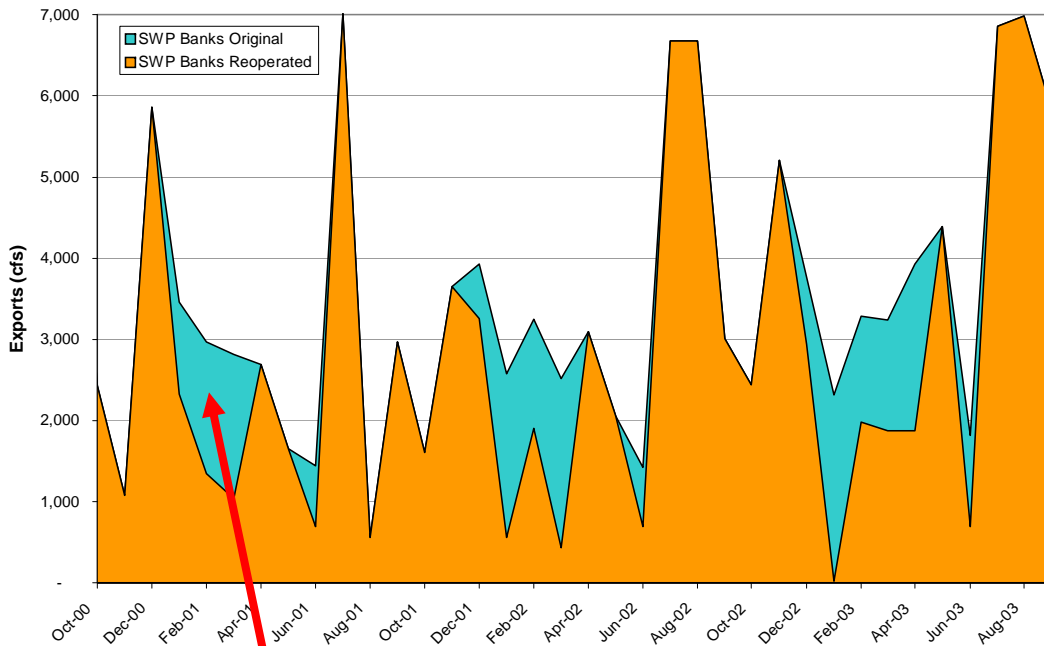


**Preliminary Results**

*RPA conditions represents current estimate of "most likely" operation under the BOs*

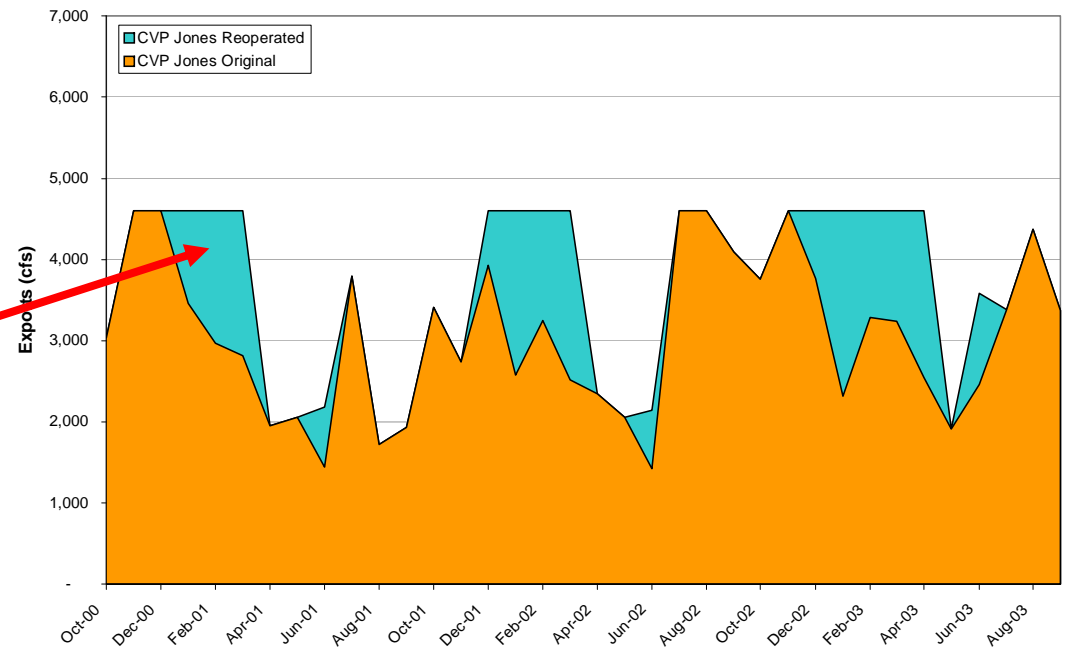


SWP Banks Exports and Re-Operation under OMR Controls

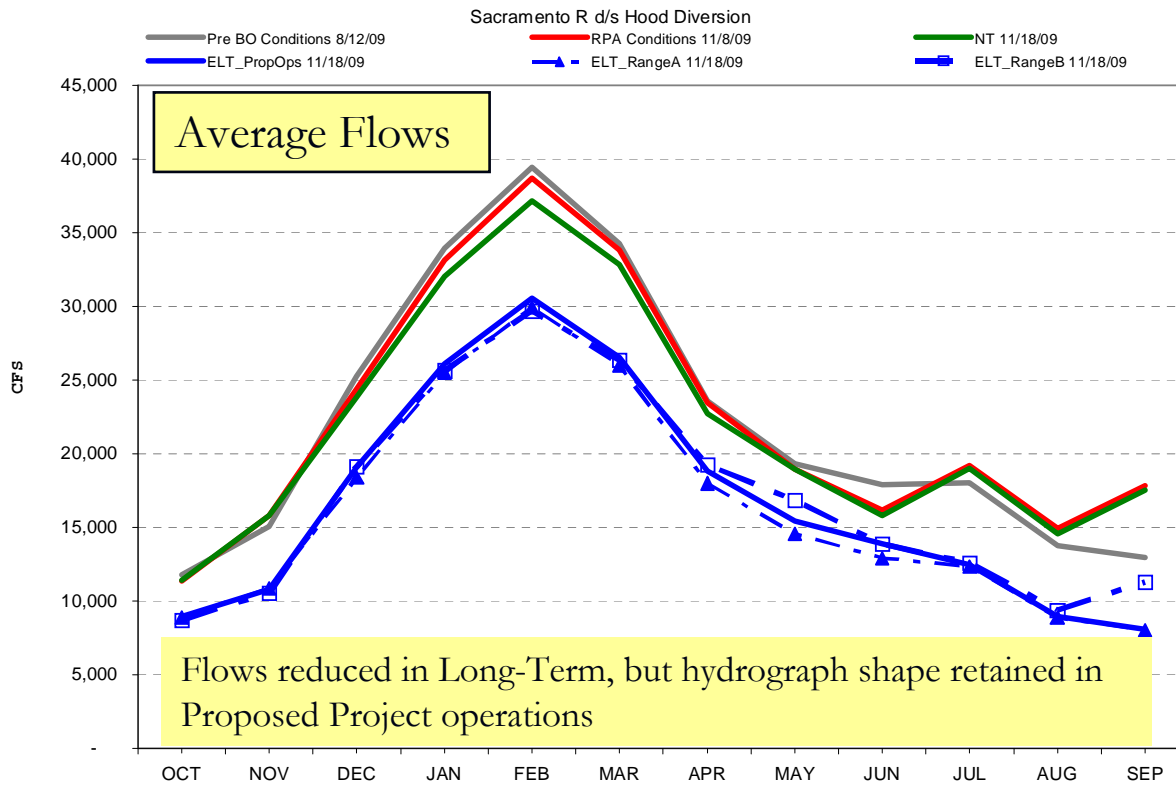


Near-Term:  
 Preferential  
 Operation at CVP  
 Jones Facility  
 under OMR  
 Control

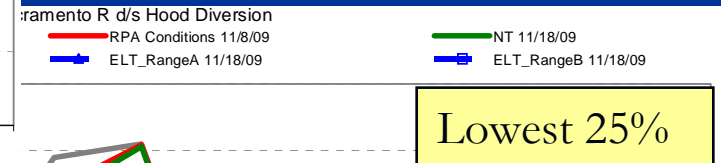
CVP Jones Exports and Re-Operation under OMR Controls



When OMR is limiting exports, transfer a portion of pumping from SWP Banks to CVP Jones

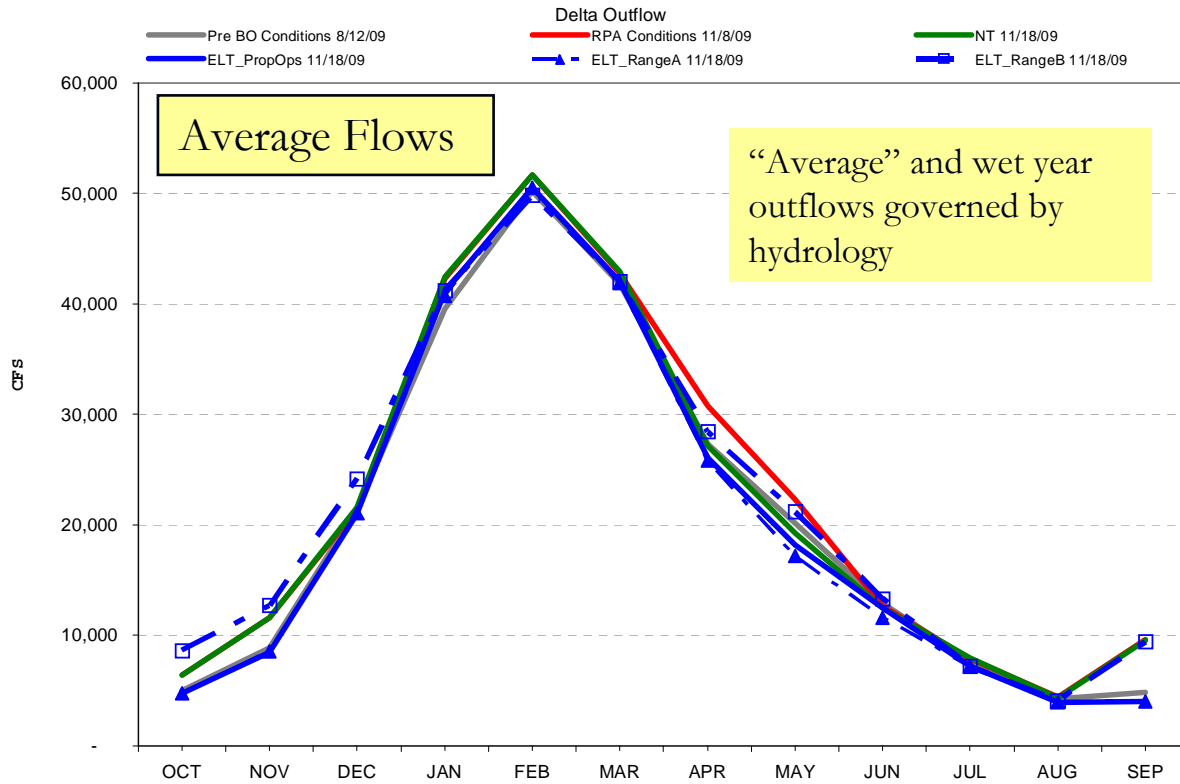


# Sacramento River Flows (downstream of diversion)

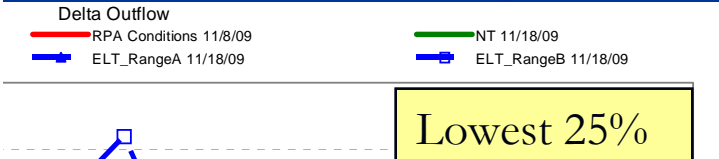


**Preliminary Results**

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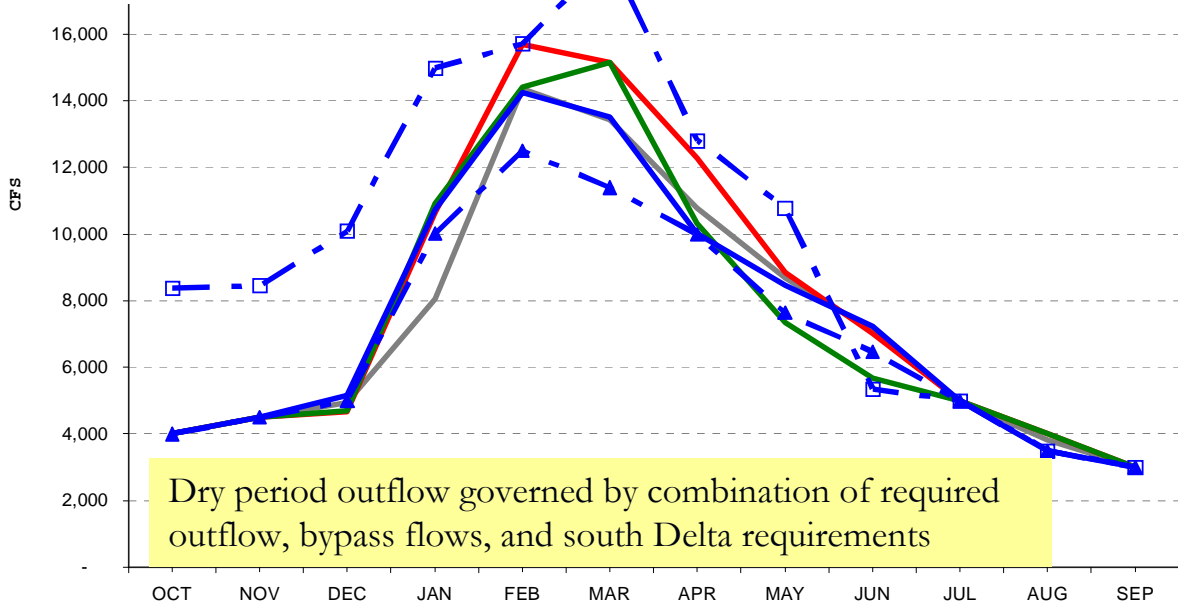


# Delta Outflow

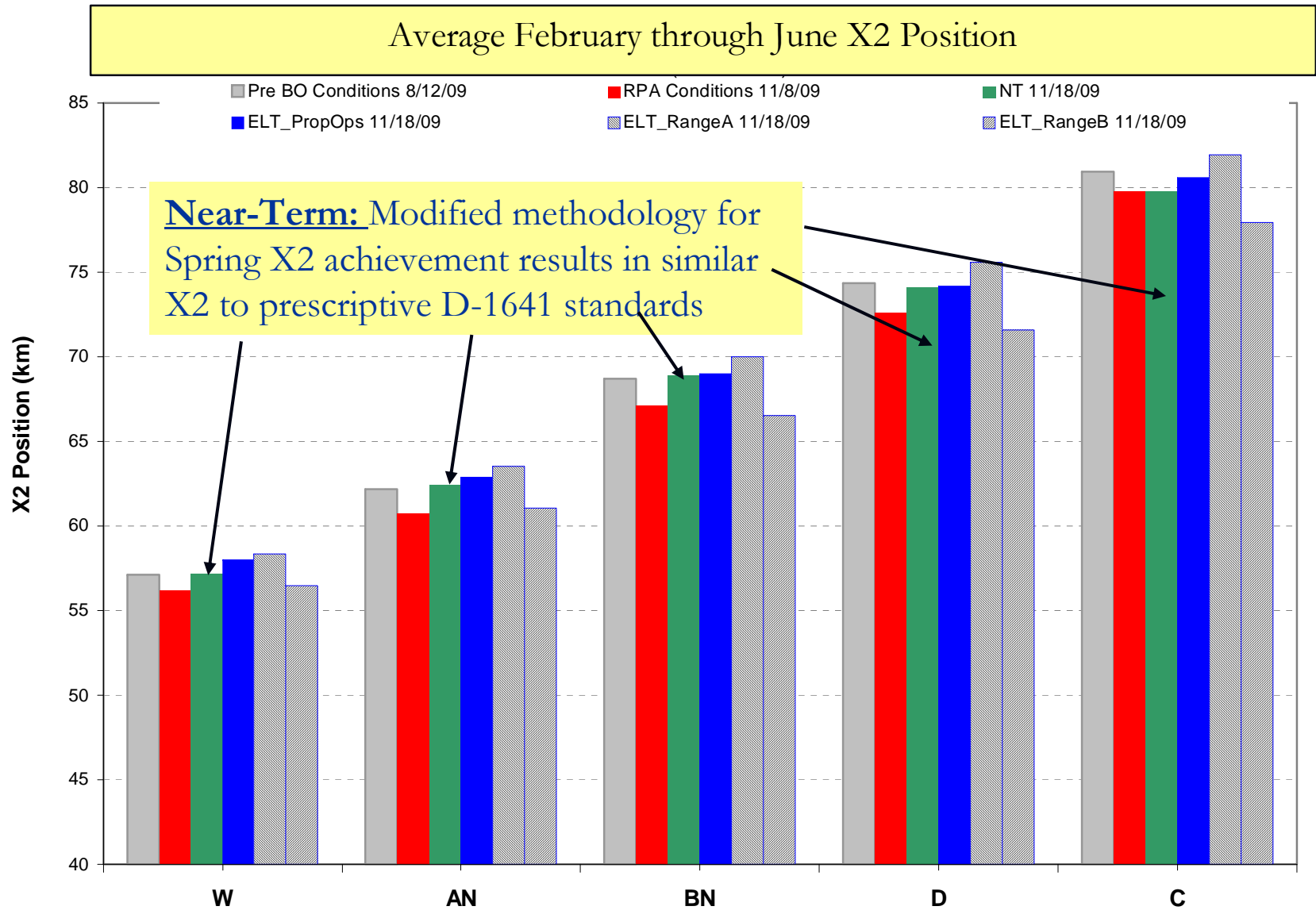


***Preliminary Results***

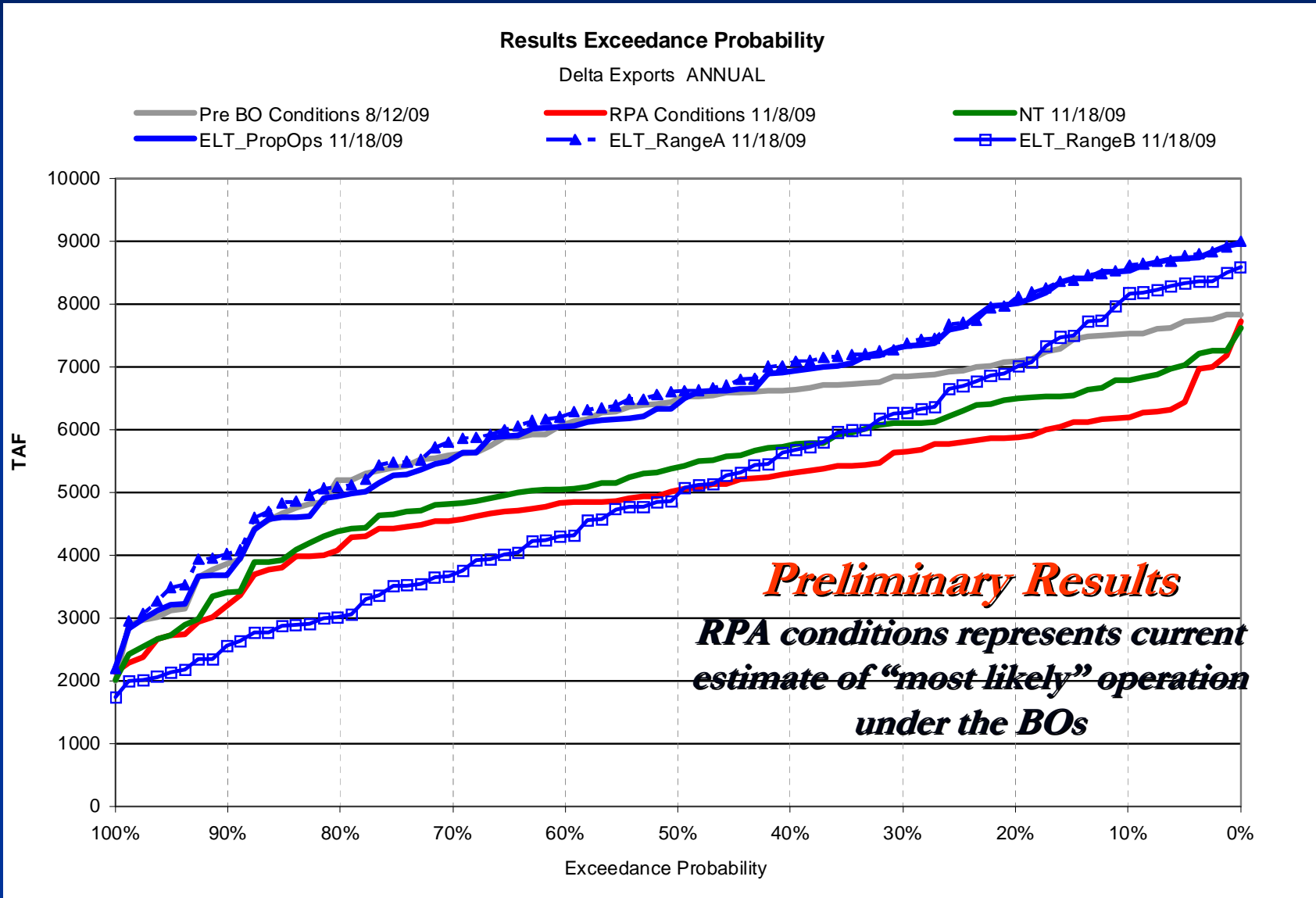
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# Spring X2 Position

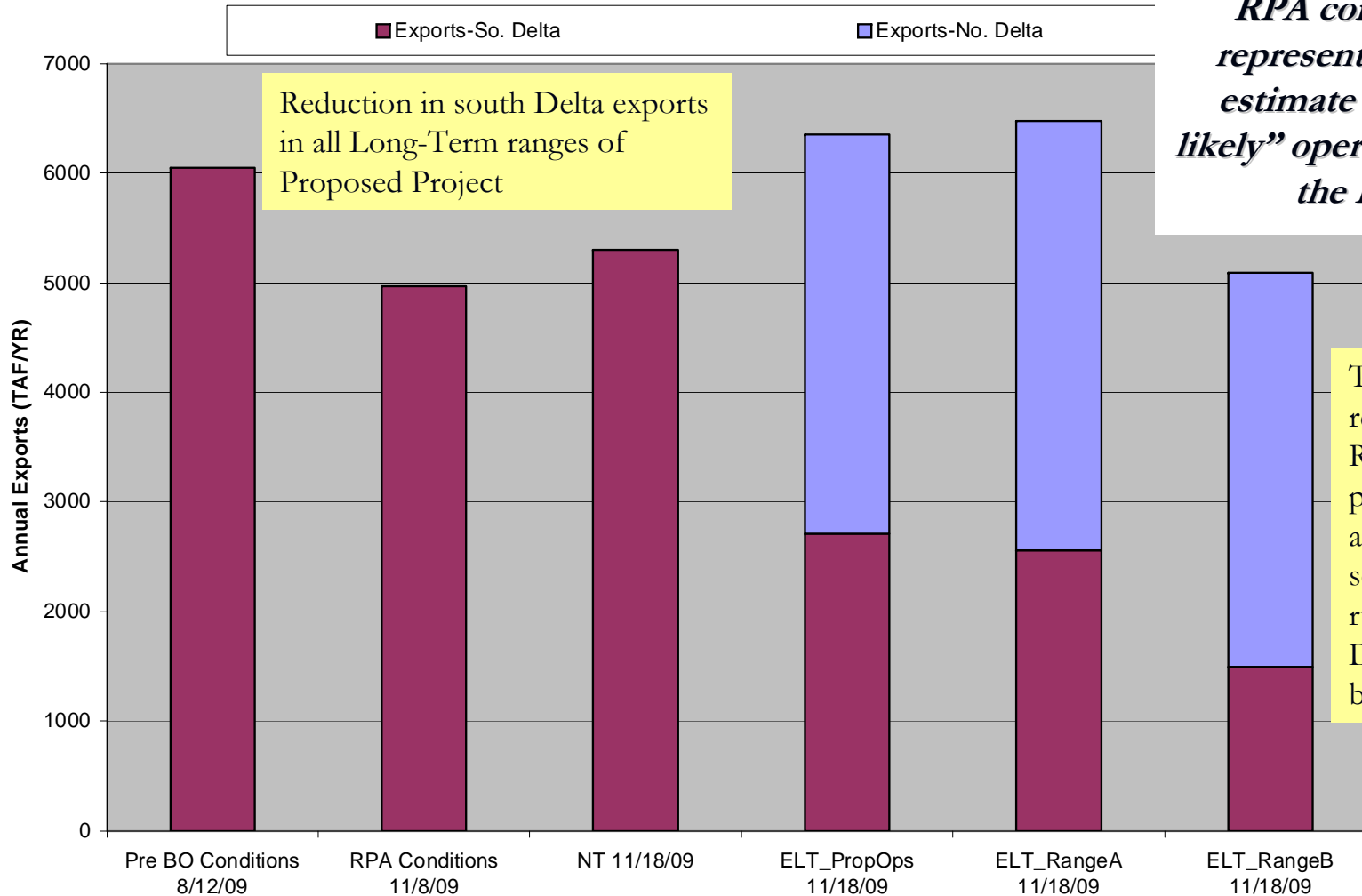


# SWP and CVP Delta Exports



# Distribution of SWP and CVP Exports

Long-Term Annual Distribution of SWP and CVP Delta Exports

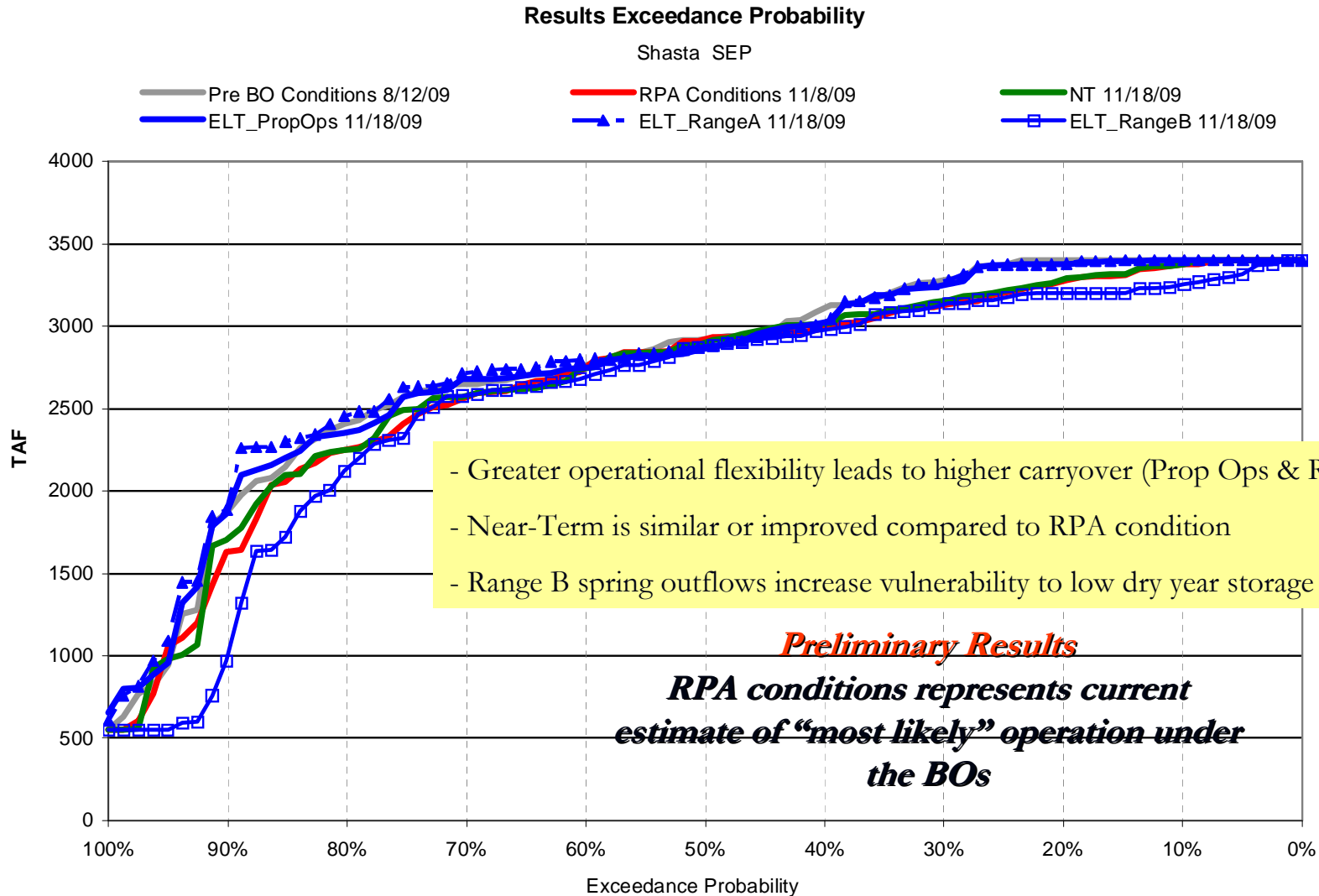


Reduction in south Delta exports in all Long-Term ranges of Proposed Project

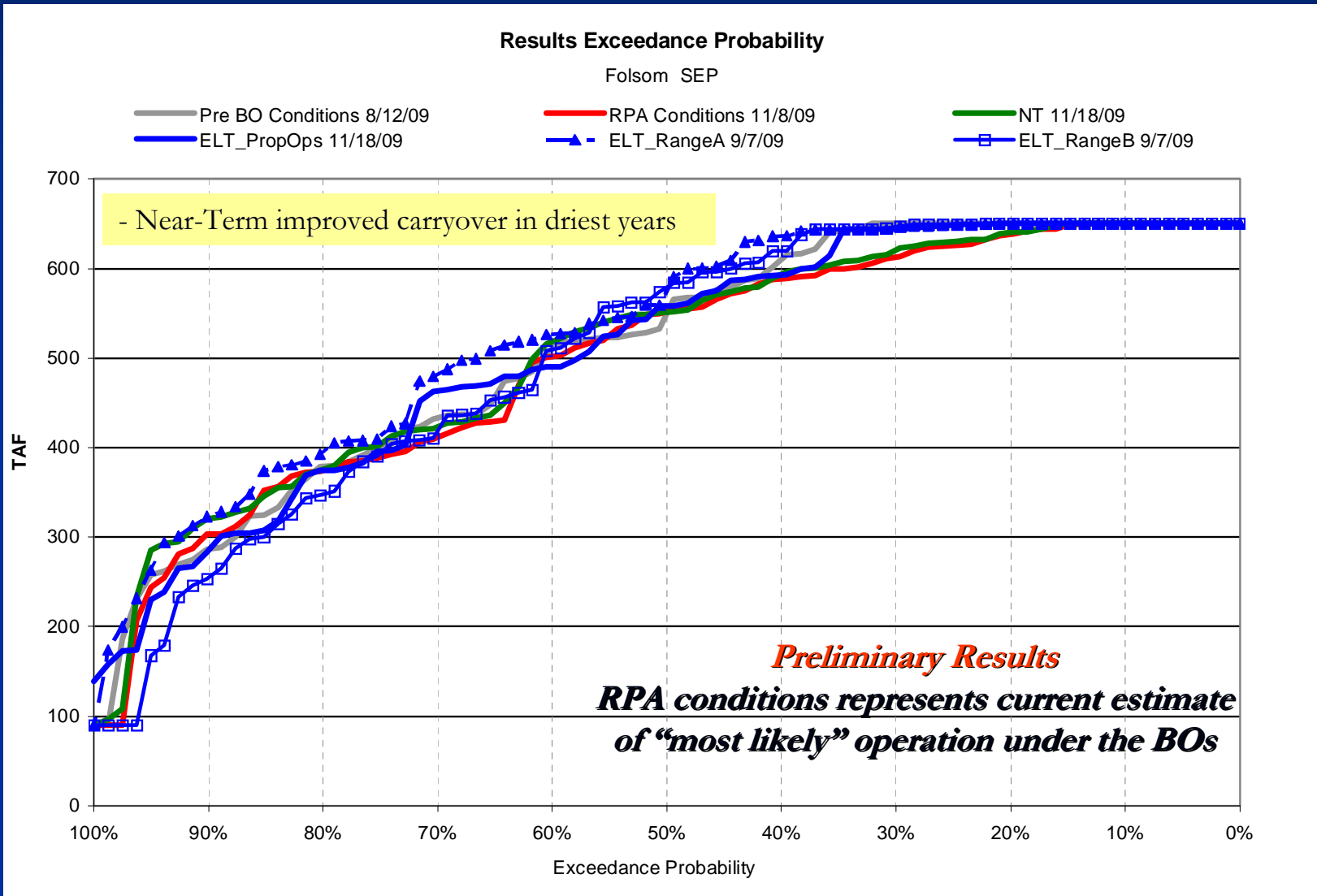
*Preliminary Results*  
*RPA conditions represents current estimate of “most likely” operation under the BOs*

Total export reduction in Range B is primarily associated with south Delta rules, not north Delta diversion bypass rules

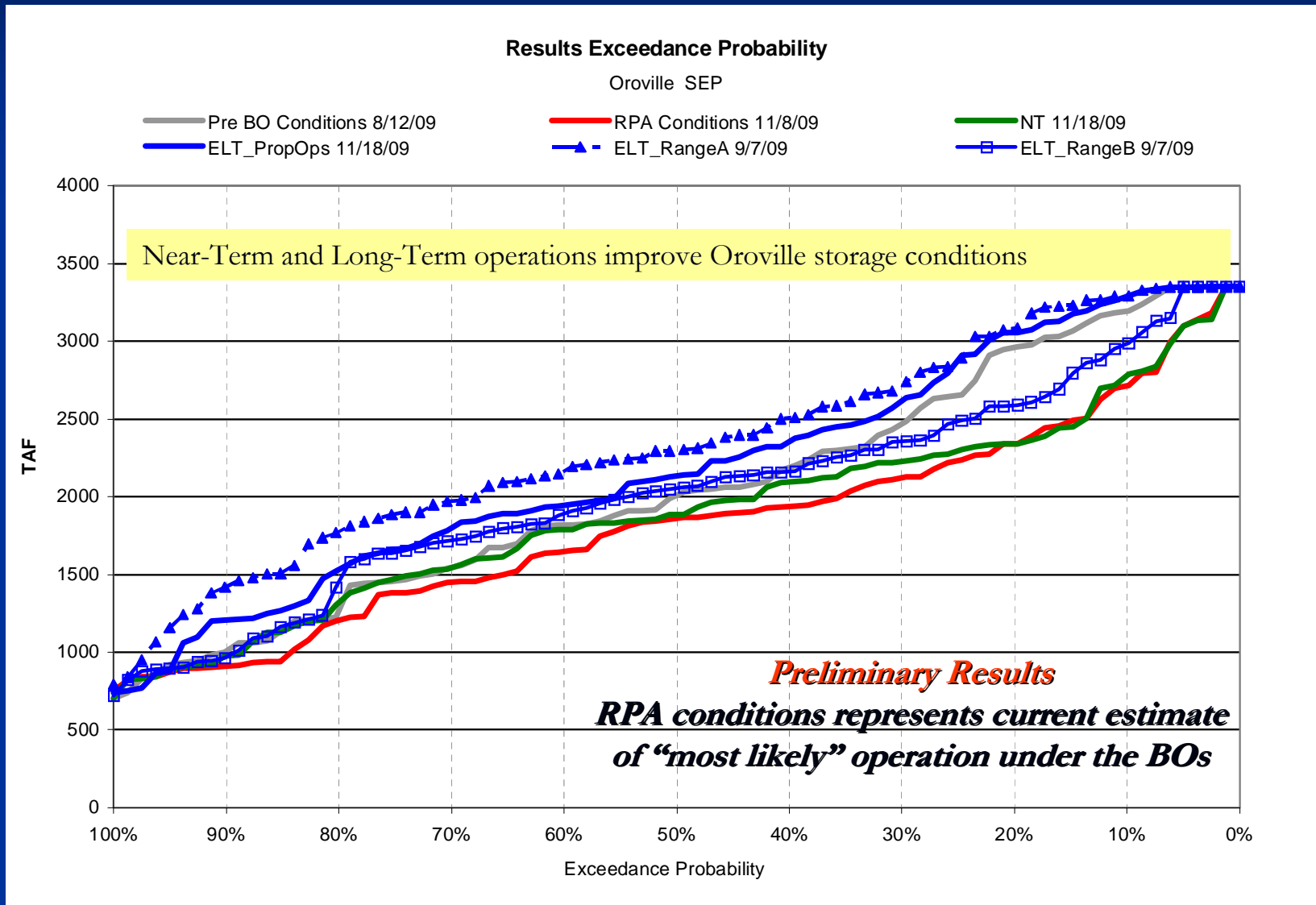
# Shasta Storage – End of September



# Folsom Storage – End of September



# Oroville Storage – End of September



# Physical Modeling Next Steps

- Technical review of systems operations modeling
- Completion of hydrodynamic, water quality, and particle-tracking modeling
- Continue climate change scenario development and incorporation of sea level rise
- Support BDCP Effects Analysis teams