

Response to Petitioners' Rebuttal of MBK's California WaterFix Modeling

Exhibit SVWU - 303



Exhibit SVWU-303

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SVWU-303

Petitioners' General Criticisms

- Criticism of MBK modeling techniques
- Modeling discretionary actions by CVP/SWP operators
- Term 91

MBK Responses

- Use of foresight
- Annual Export Estimate adjustments used in CVP and SWP allocations
- Manual Export Estimate adjustments made in SWP allocations in MBK Alternative 4A
- Model consistency with SWP Oroville carryover “Policy”
- MBK operational rules for manual CVP allocations
- Reliance on Joint Point of Diversion (JPOD)
- San Luis Rulecurve and upstream reservoir operations
- Use of “generalized” model logic

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Foresight is Common in CalSim

Most allocations and standards are set using perfect knowledge of the water year

- All inflows and reservoir operations upstream from those included in CalSim
- Allocations to Sacramento River Settlement Contractors, Exchange contractors, and refuges
- Allocations to Feather River Settlement Contractors
- D-1641 – use of perfect foresight of water year type
 - Delta Salinity requirements
 - Rio Vista flow requirement
 - X2 requirement
 - Vernalis minimum flow requirement
- Future inflow to determine allocations and operations
 - San Joaquin River inflow to determine deliveries to the Friant Division
 - Fresno River inflow to determine deliveries to MID
 - Chowchilla River inflow to determine deliveries to CID
 - Merced River inflow to determine deliveries to MID
 - Tuolumne River inflow to determine deliveries to TID and MID
 - Stanislaus River inflow to determine deliveries to OID, SSJID
 - Calaveras River inflow to determine deliveries to SEWD
- Mokelumne River operation of EBMUD
- Delta and Sacramento and San Joaquin River basin accretion / depletions
- Many others

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CalSim - Petitioners' Export Estimates

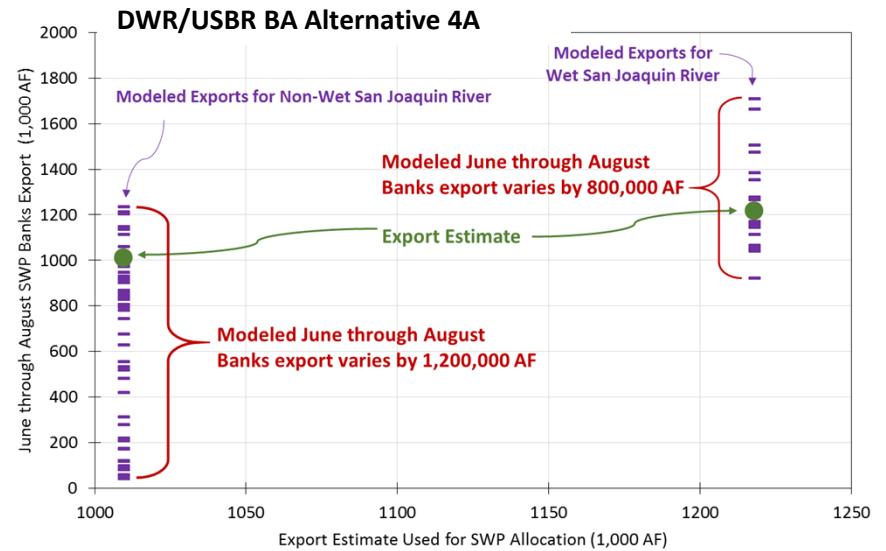
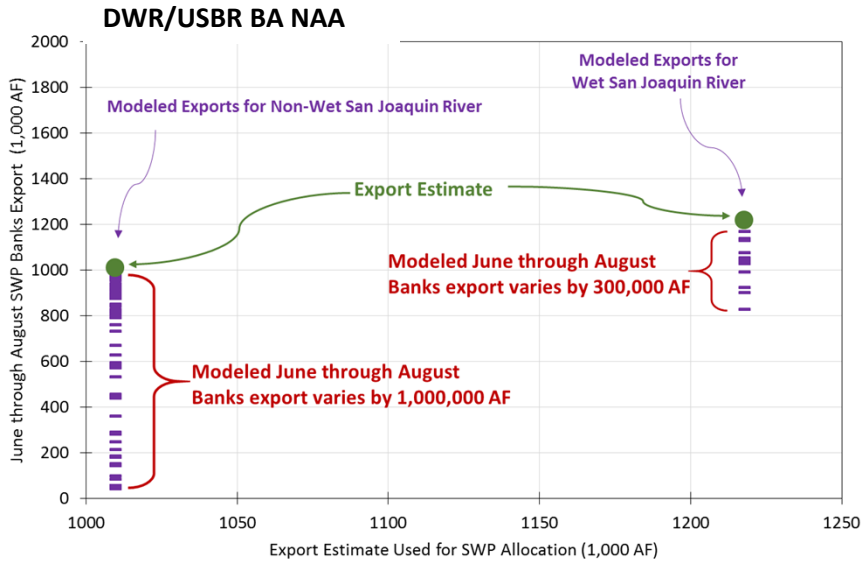


Figure 3 - June through August Modeled SWP Export Versus SWP Export Estimate

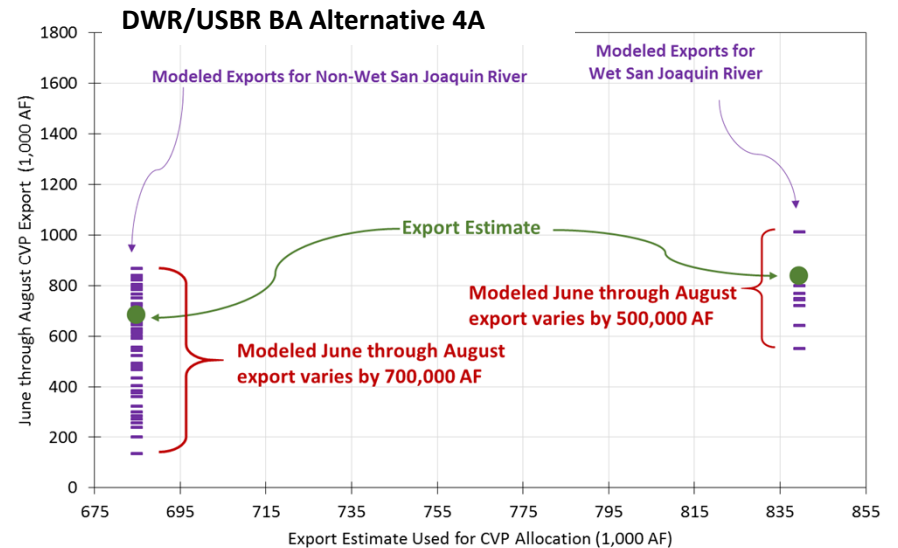
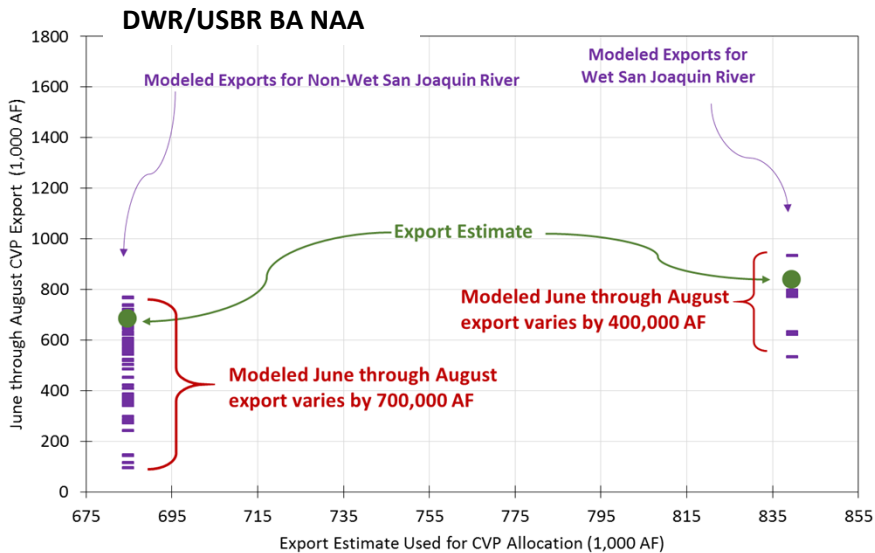
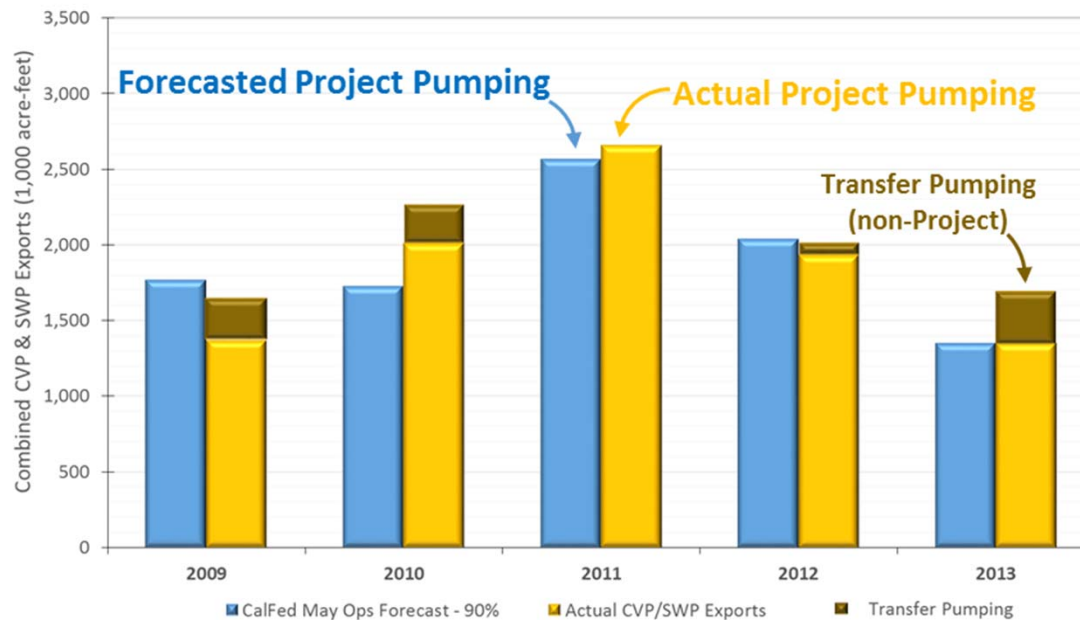


Figure 4 - June through August Modeled CVP Export Versus CVP Export Estimate

Historical Export Forecast (June – September)



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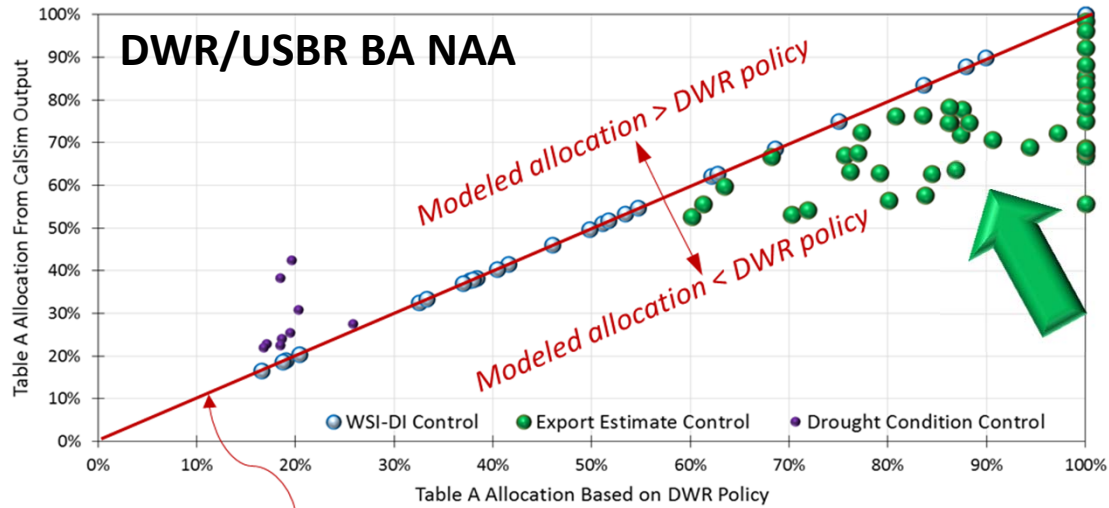
Manual Export Estimate Adjustments made in SWP Allocations in MBK Alternative 4A

- DWR criticized MBK for bypassing Export Estimate with “9999”
- MBK bypassed the Export Estimate during times when allocations are limited by available water supply and not conveyance capacity.
 - This is done to account for increased available export capacity provided by the California WaterFix

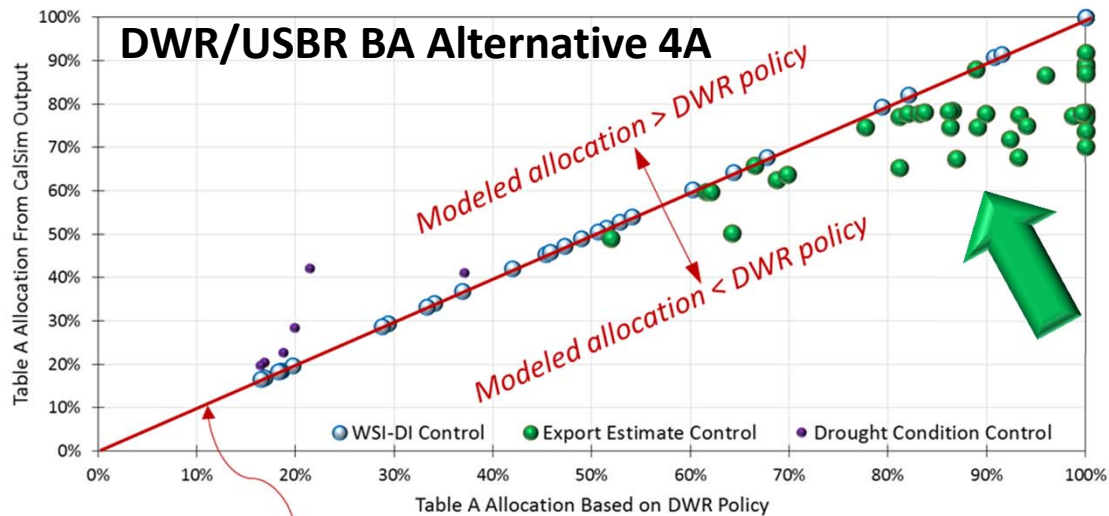
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Modeled Allocation Versus DWR “Policy / Guideline”

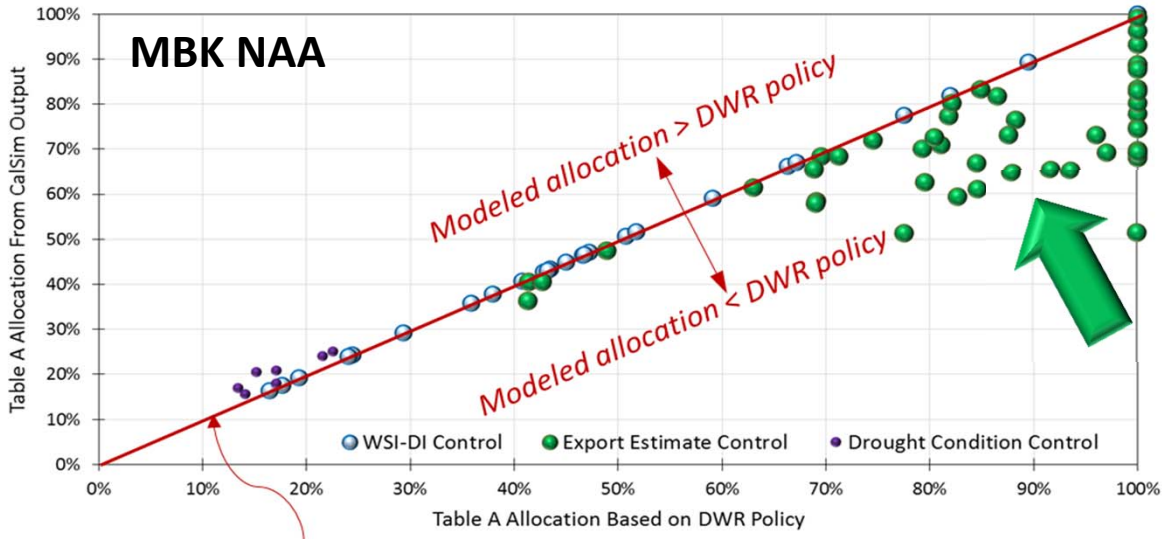


Points fall on this line when modeled allocation = DWR Policy



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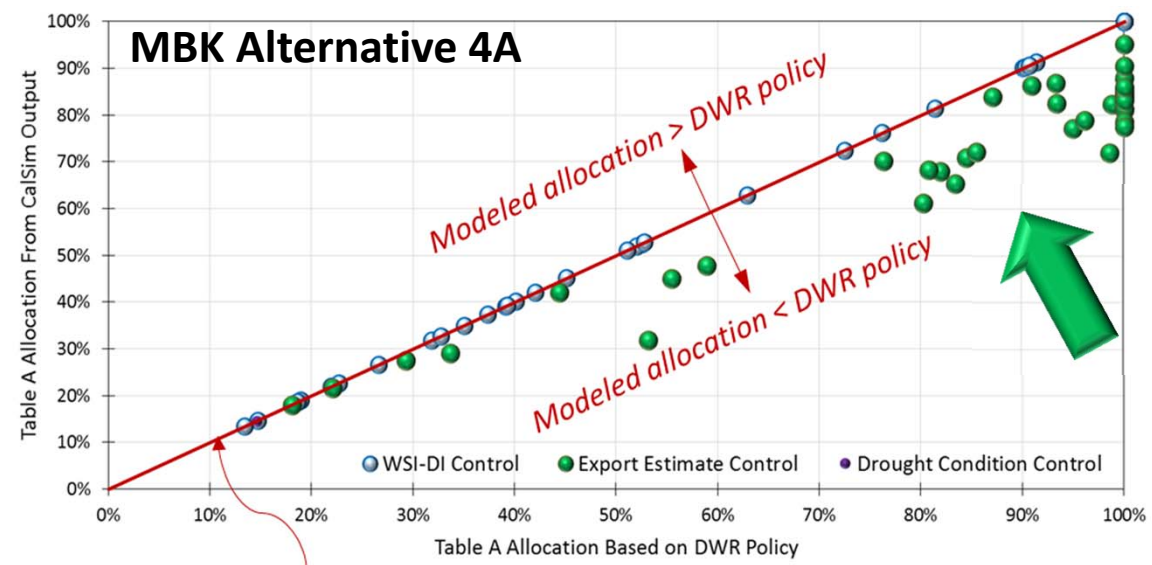
Modeled Allocation Versus DWR “Policy / Guideline”



Points fall on this line when modeled allocation = DWR Policy

MBK modeling does NOT violate DWR “Policy”

MBK is applying same DWR policy as Petitioner’s



Points fall on this line when modeled allocation = DWR Policy

Modeling can be more “aggressive” than modeled and still NOT violate DWR “Policy”

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MBK Operational Rules and Logic for MBK NAA and MBK Alternative 4A

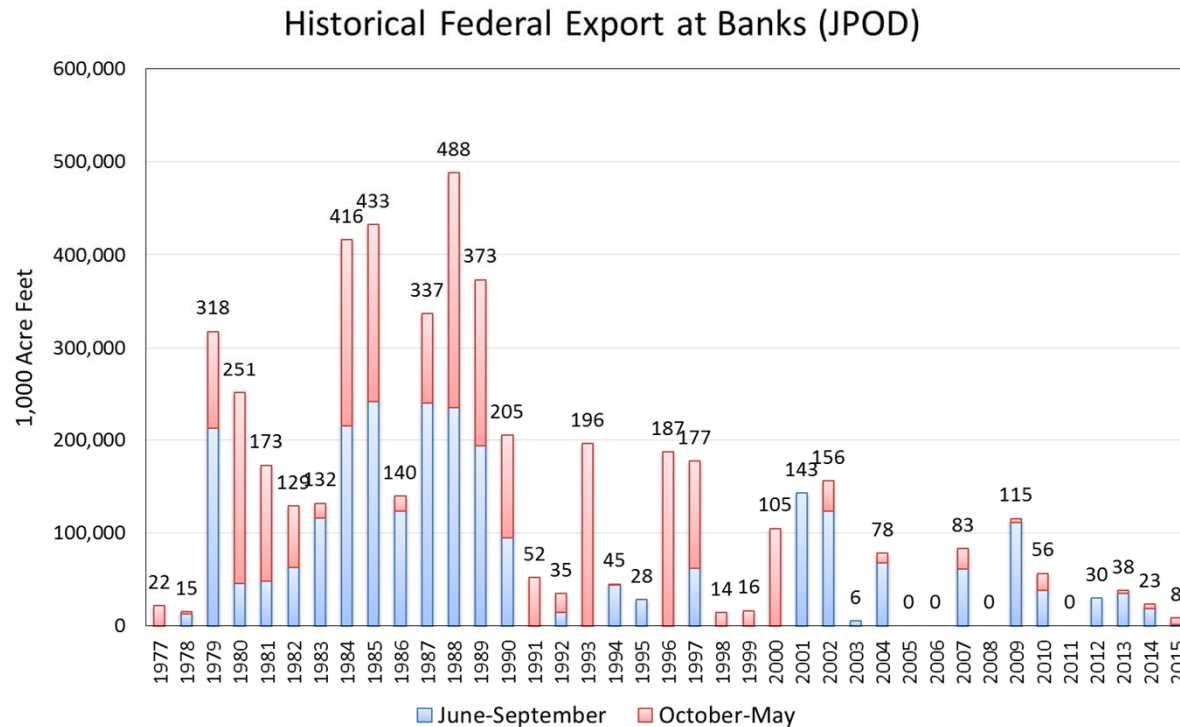
- Manual adjustments to CVP agricultural contract allocations based on:
 - Carryover storage threshold
 - Reservoir RPA levels and drought year protection levels
 - 2.4 MAF Shasta + 0.4 MAF Folsom + 0.2 MAF Buffer = 3 MAF
 - Available export capacity including JPOD
 - CVP policy to equalize allocations throughout the CVP service area

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MBK Modeling of Federal Pumping at Banks PP (JPOD)

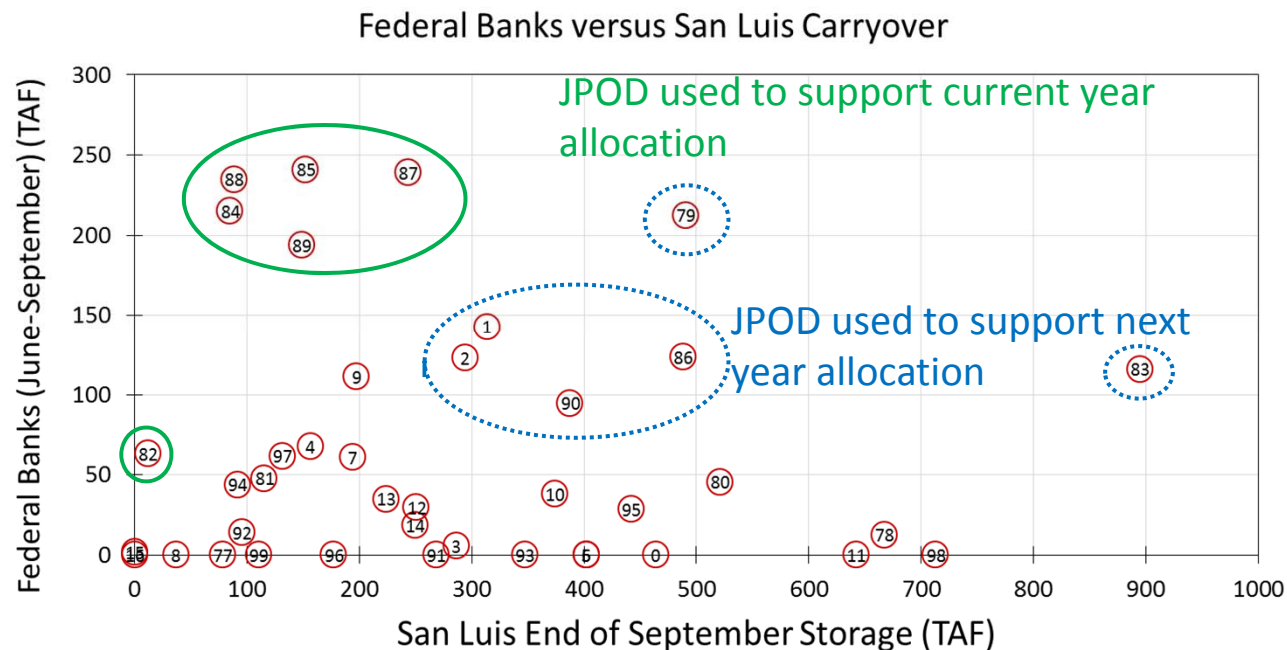
- Historical use of JPOD
- Use of JPOD in MBK modeling is reasonable



Source: USBR, Central Valley Project Operations, Delta Operations Reports

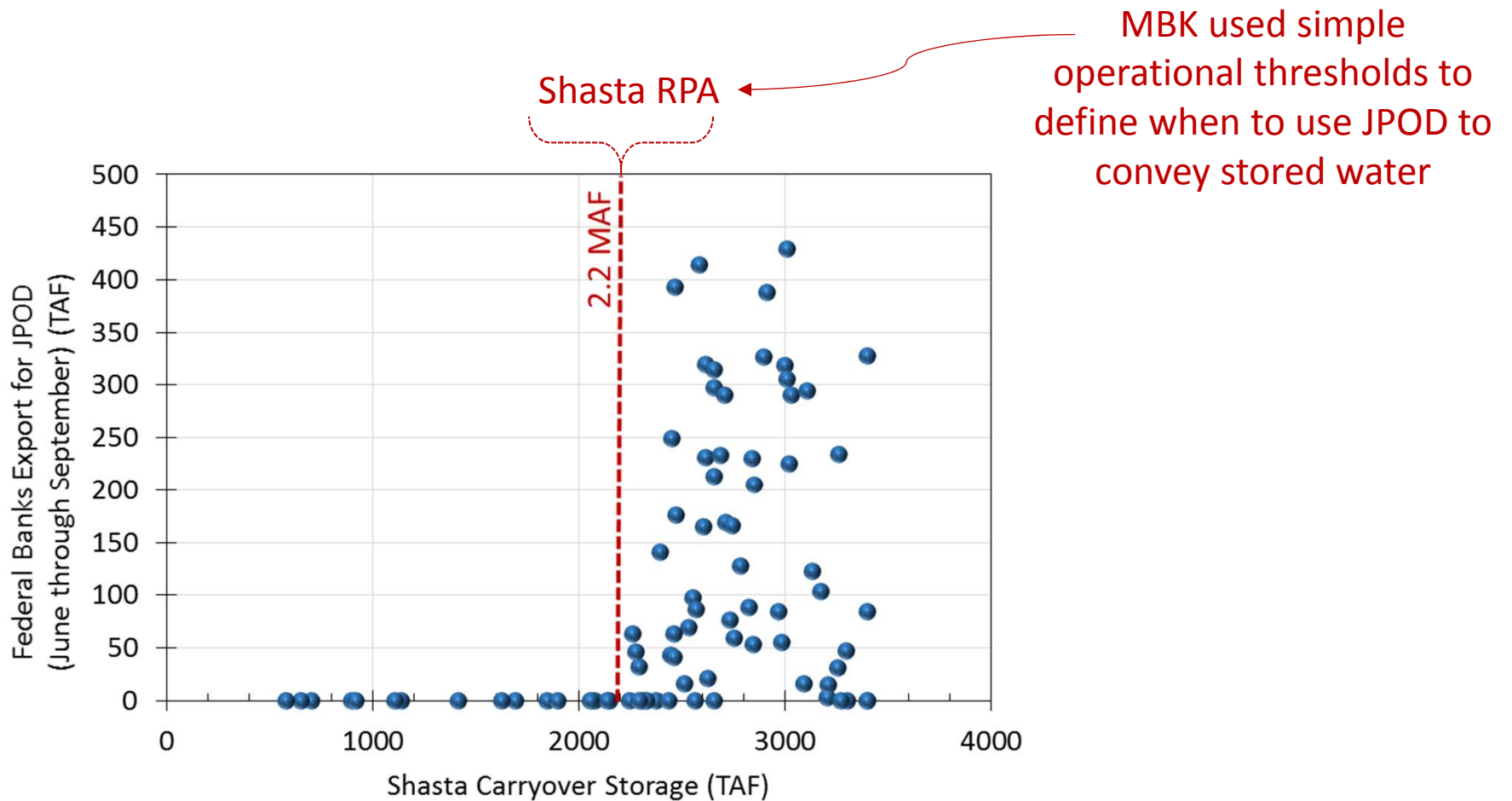
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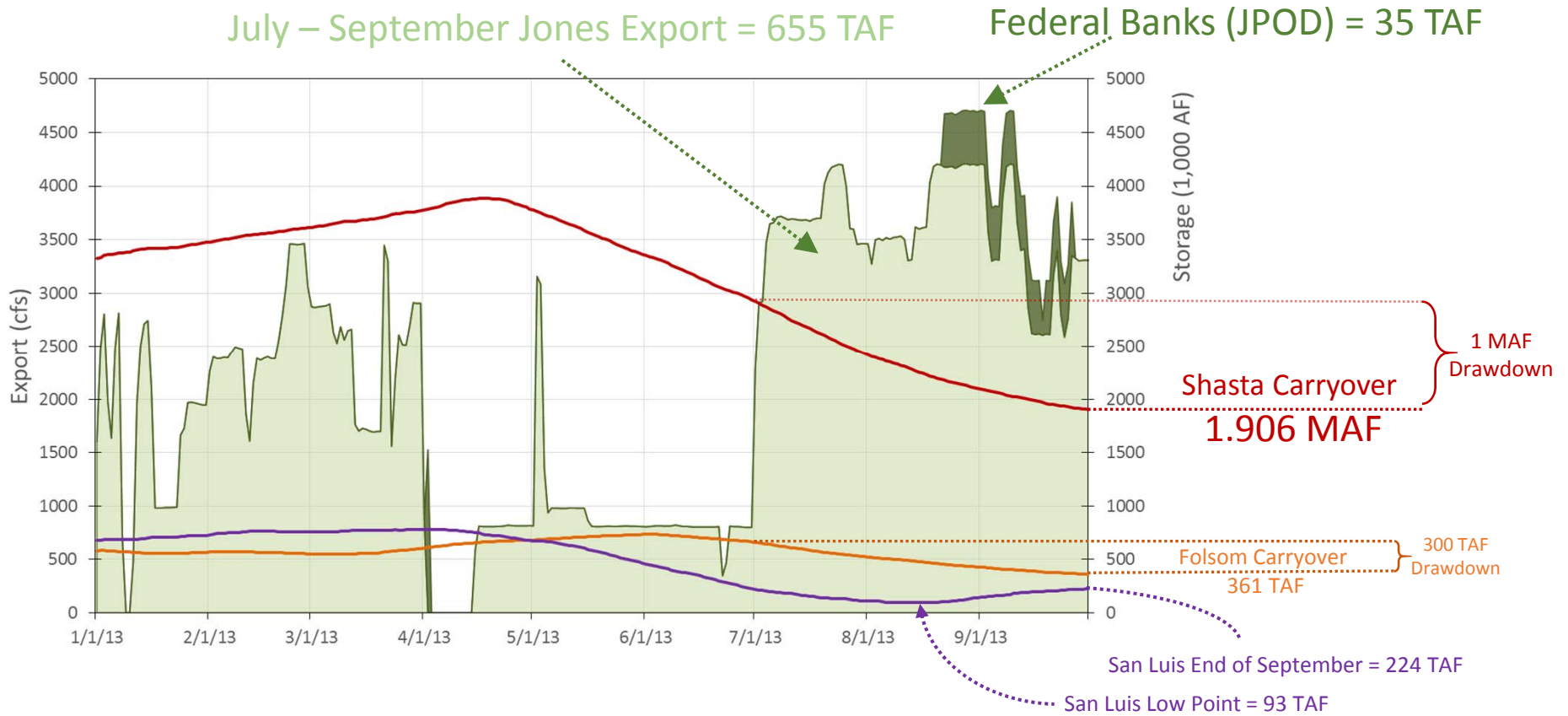


Modeling Use of JPOD versus CVP Storage

MBK Alternative 4A



2013 Historical CVP Operation



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San Luis Rule Curve

Criticism

- MBK modeling is wrong because it didn't change Rulecurve

Response

- The San Luis Reservoir rule curve is used to simulate discretionary operator decisions
- No term, condition, or legal requirement would prevent operations as depicted in MBK modeling

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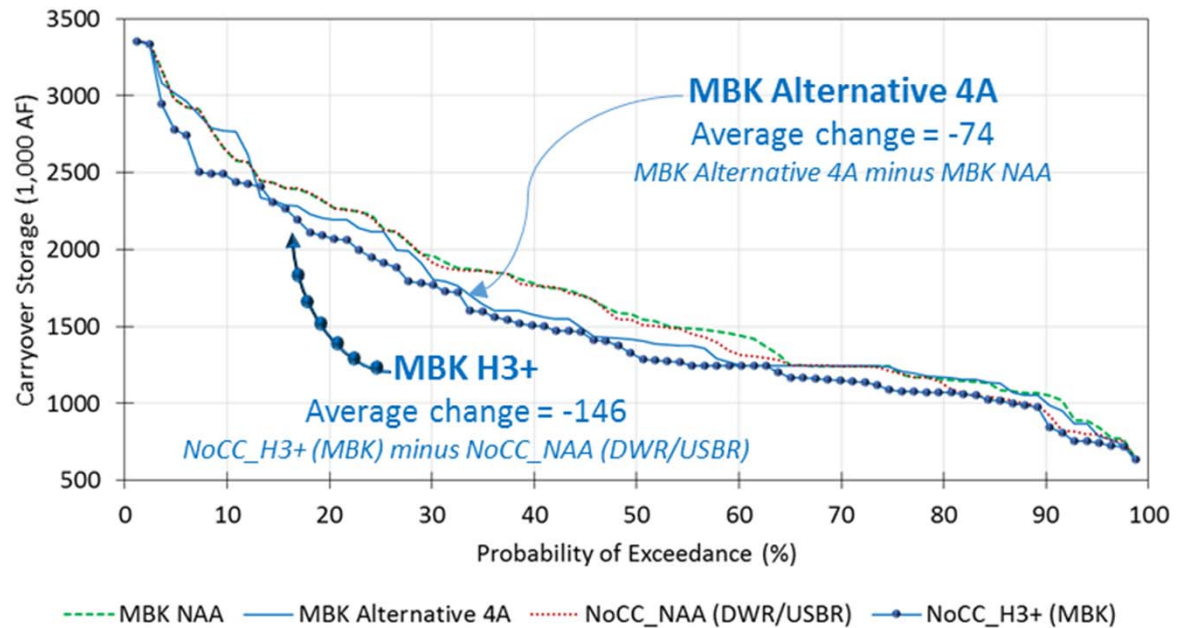
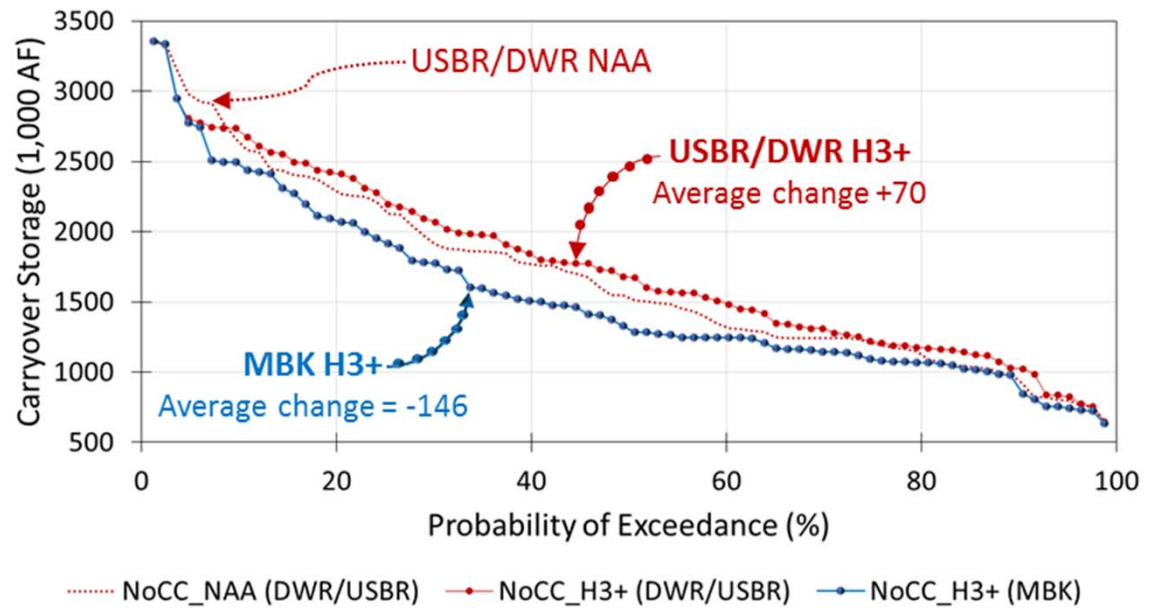
MBK Changes to DWR/USBR Preferred Alternative Model

1. MBK set SWP Rulecurve to No Action Alternative
2. MBK made modest modification to SWP Export Estimate

SWP Export Estimate (cfs)

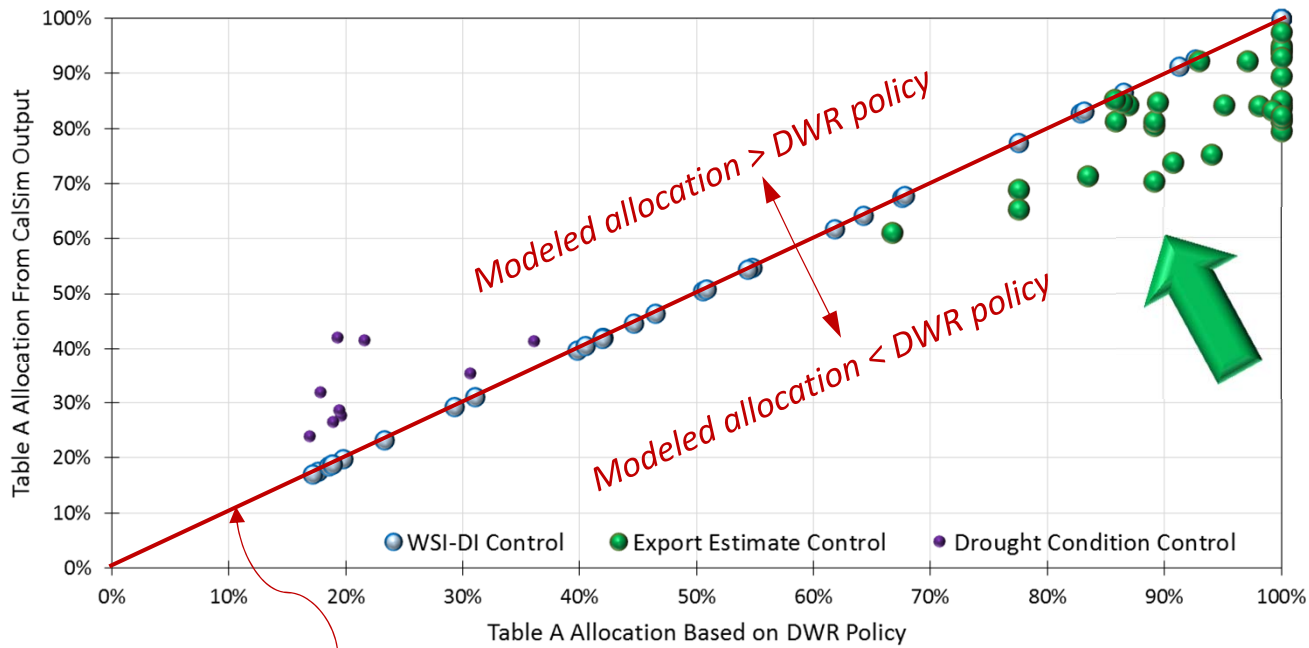
	DWR/USBR BA modeling NoCC_H3+(DWR/USBR)		MBK CWF modeling NoCC_H3+(MBK)	
	Non-Wet San Joaquin	Wet San Joaquin	Non-Wet San Joaquin	Wet San Joaquin
June	2500	6000	3500	6500
July	7000	NA	8000	NA
August	7000	NA	8000	NA

Result of Changing Export Estimate



Modeled Allocation Versus DWR “Policy / Guideline”

H3+ sensitivity



MBK modeling does NOT violate DWR “Policy”

Term 91

Criticism

- In DWR-78, Mr. Leahigh states: *“I do not expect the frequency of Term 91 curtailments to change with construction of the CWF facilities.”*

Response

- We disagree with his conclusion and reiterate that construction and operation of the CWF has the potential to increase the frequency of Term 91 curtailments.

Conclusions

1. MBK modeling applied consistent operational rules and logic to NAA and CWF scenarios
2. MBK modeling of discretionary actions adheres to SWP policy and CVP “philosophy”
3. There are no physical, legal, or regulatory conditions that would prevent Petitioners from operating CWF as modeled by MBK. Therefore, MBK modeling results are a valid depiction of potential CWF operations.