



— BUREAU OF —
RECLAMATION

CVP California Allocation Module (CAM) Development

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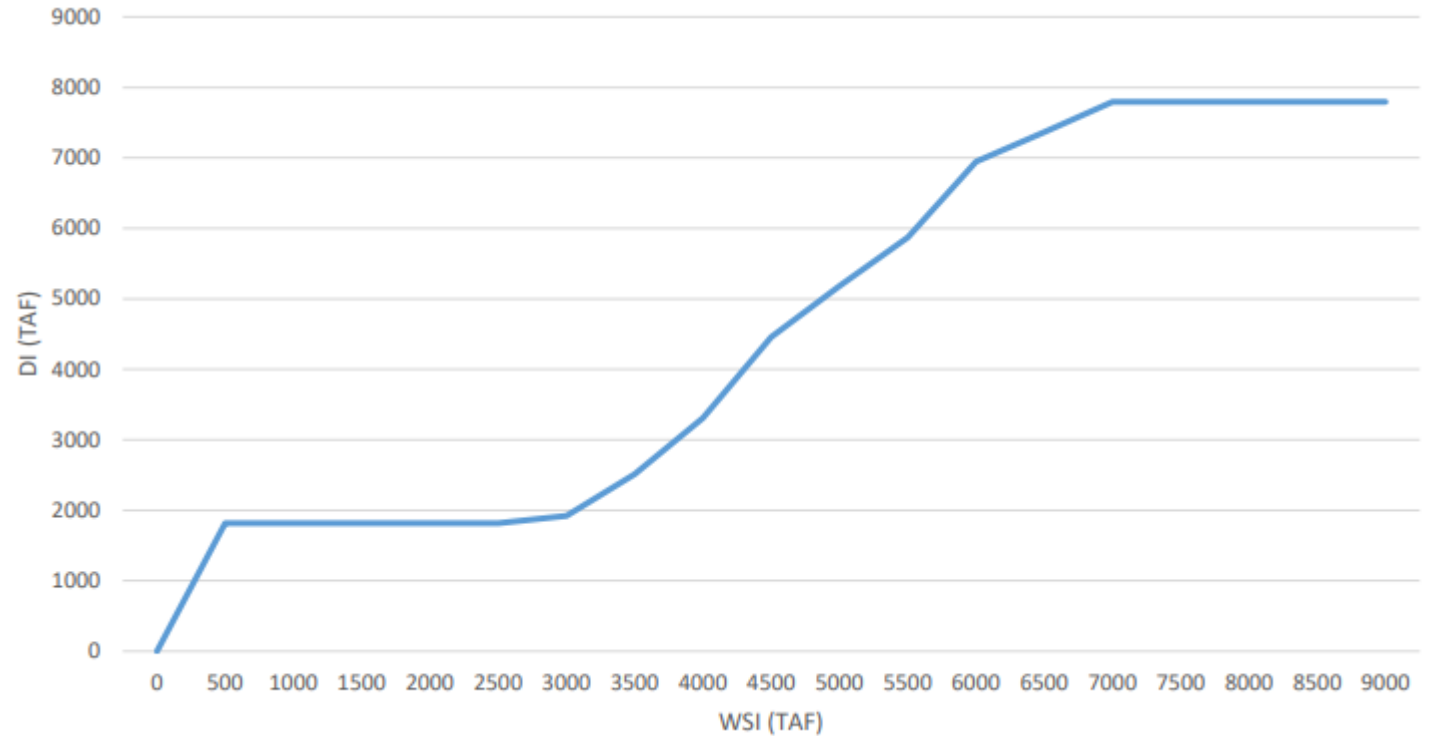
California Allocation Module (CAM) Background

- CAM is a standalone WRIMS model originally developed by the DWR SWP Operations Control Office (OCO) starting in 2003
- Past development has been entirely focused on allocations for the SWP
- Current development is looking to replace allocation procedures in CalSim3



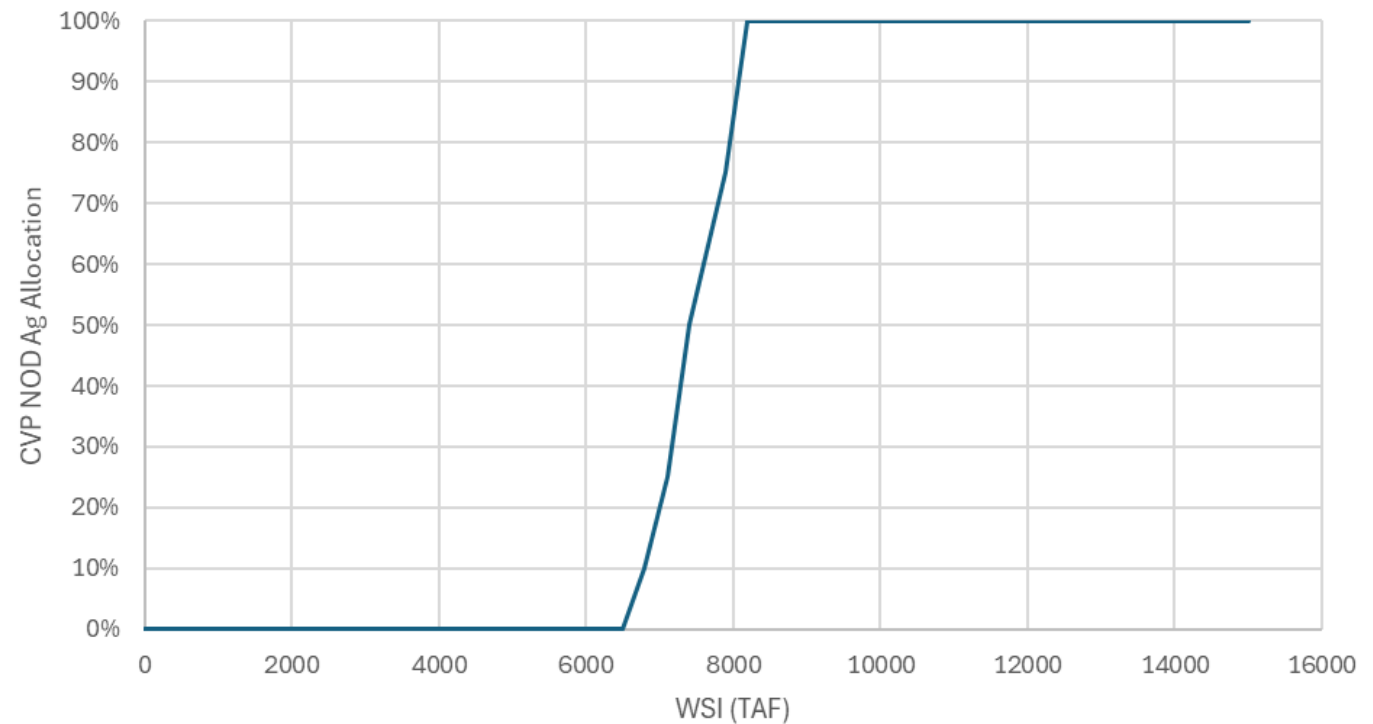
SWP Allocation in CalSim3

- Allocation determined from January - May
- Correlates Water Supply Index (WSI) to Delivery Index (DI)
- Requires a prep run which is an additional 5+ hour run



CVP Allocation in CalSim3

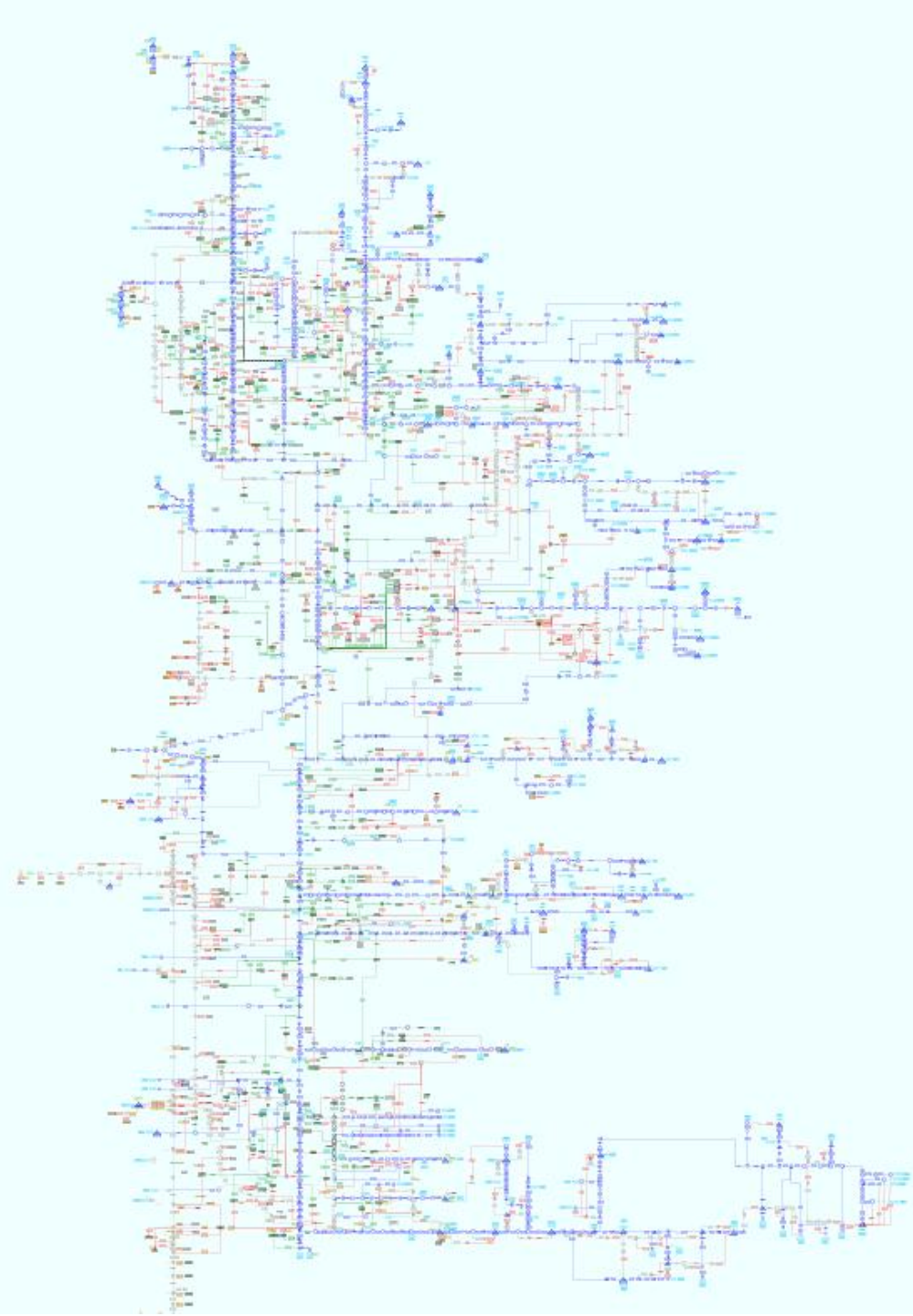
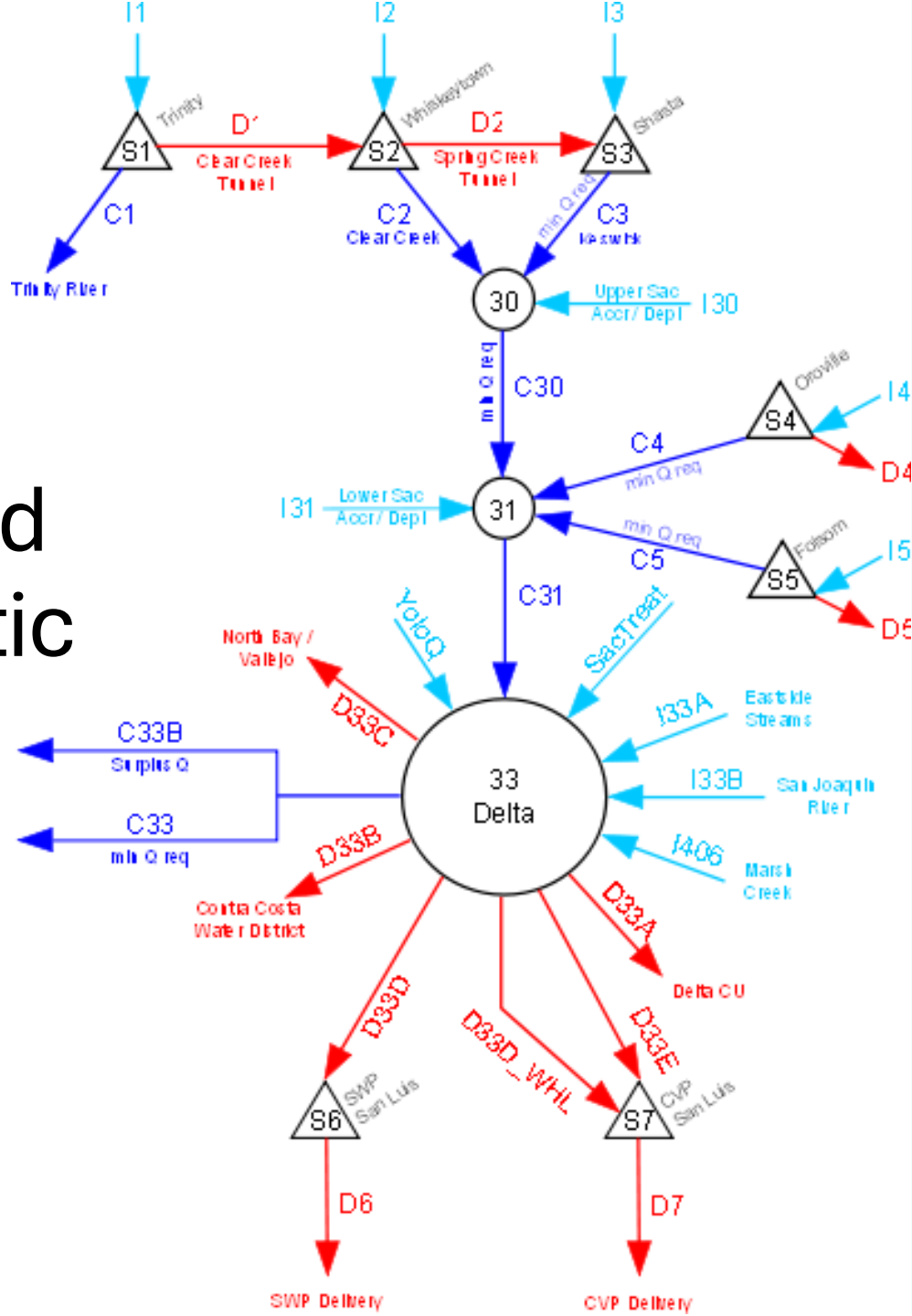
- Allocation determined from March - May
- Correlates Water Supply Index directly to North-of-Delta allocations
- Correlates Sac River Index to export capacity which informs South-of-Delta allocations



CAM

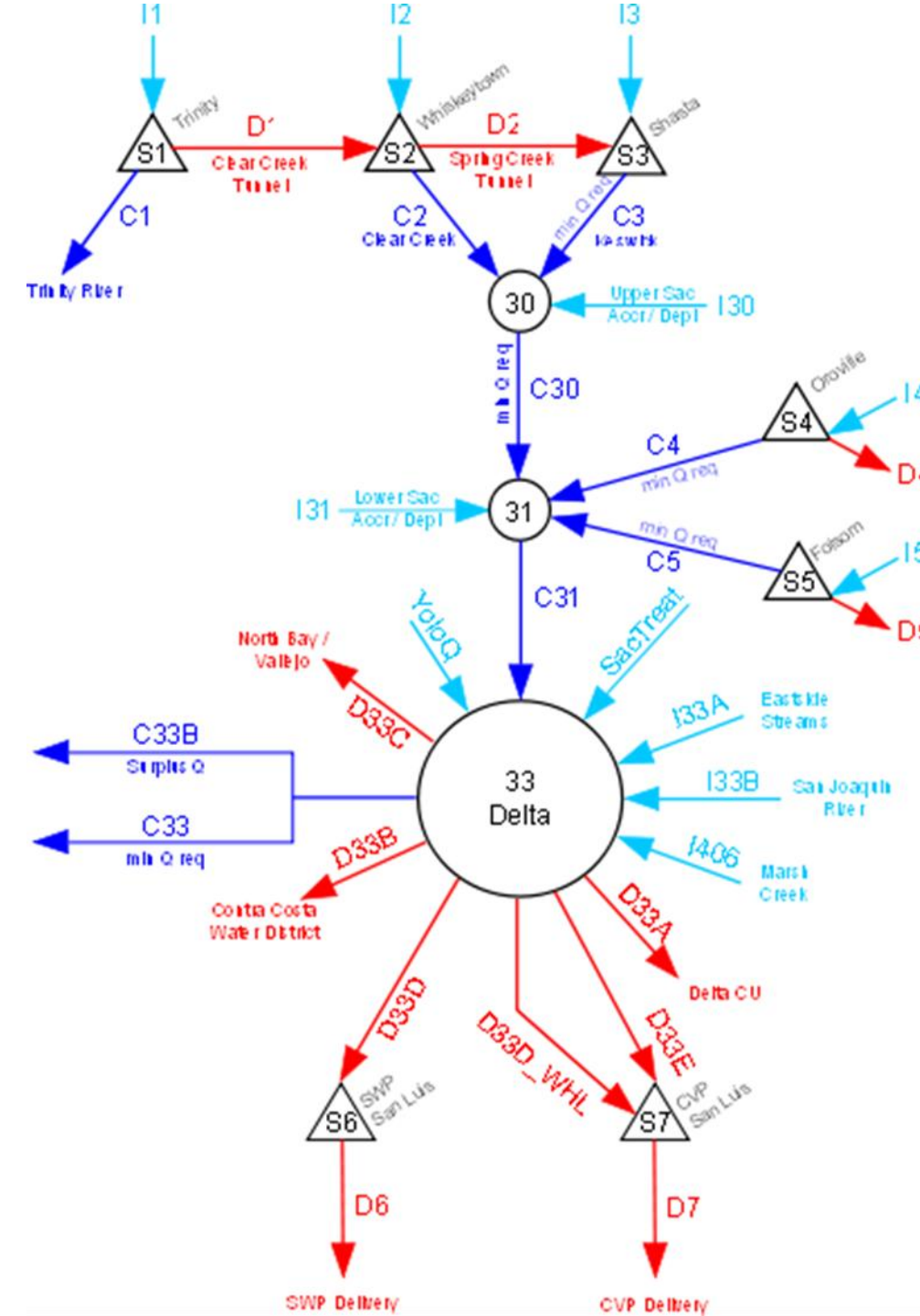
Process:

Simplified Schematic



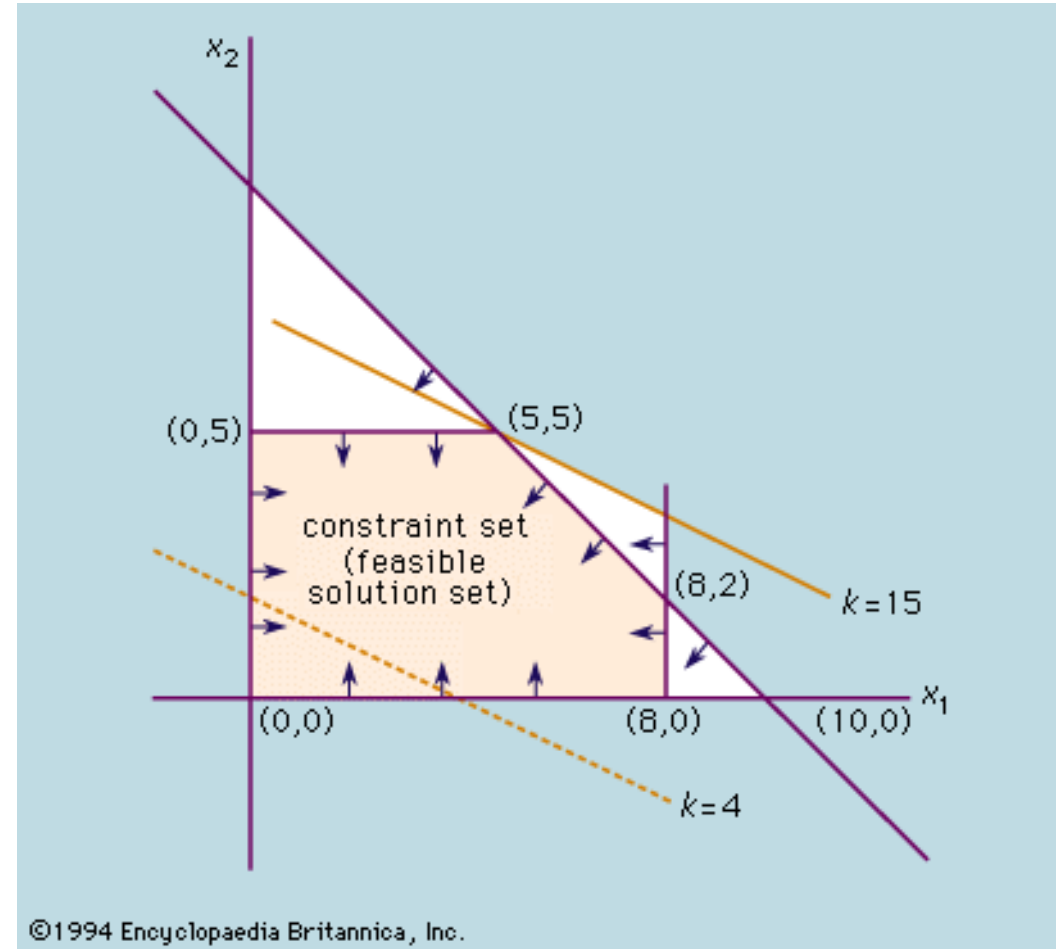
CAM Process: Simultaneous Solver

- Each component in the system has a variable for each future month
- Leverages WRIM's linear optimization
- Solves for maximized South-of-Delta allocations



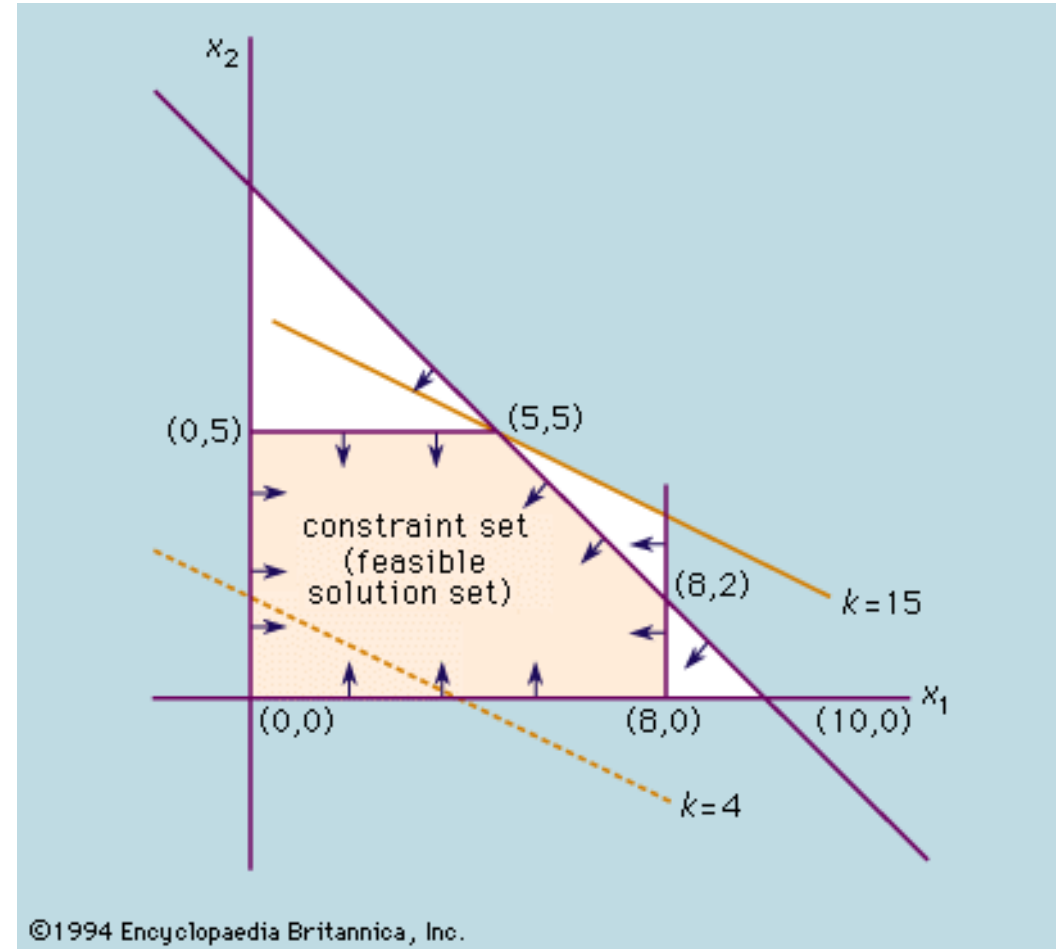
CAM Process: Constraints

- Most constraints are similar in kind to CalSim:
 - Mass-Balance
 - Regulatory Requirements
 - Export Limits
- End-of-September Carryover targets for each reservoir
- Constraints are simultaneously applied across all future months through September



CAM Process: Optimization

- After meeting all regulatory requirements are met and maintaining carryover targets
- South-of-Delta allocations are calculated from remaining water

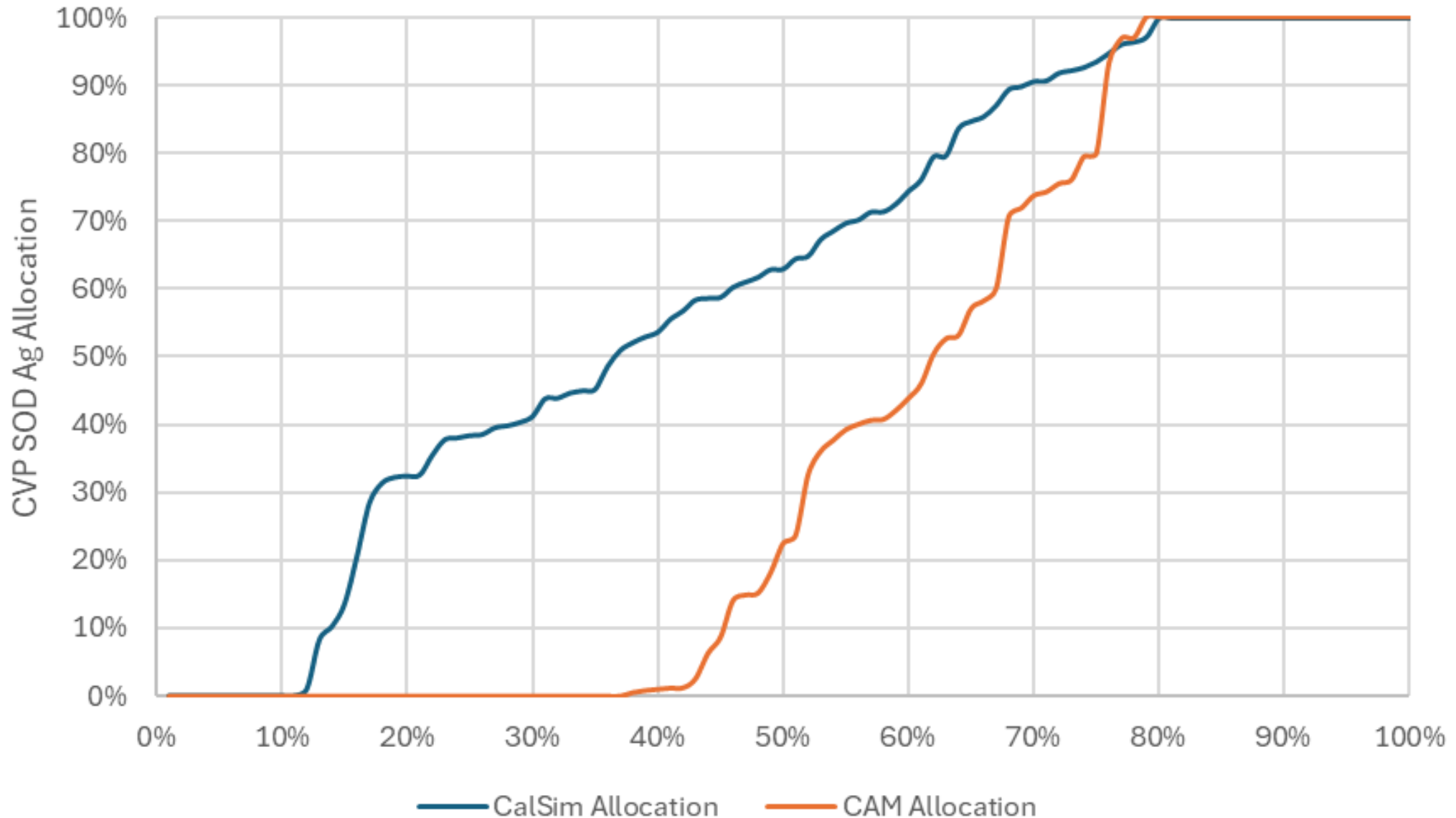


Benefits to Switching to CAM

- More similar to how allocations are decided in reality
- Doesn't require an additional prep run
- Removes variation based on subjective modeler input
- Aligns SWP and CVP allocation procedure in CalSim3



CalSim vs CAM South-of-Delta CVP Ag Allocation



2009 – 2021 South-of-Delta CVP Ag Allocation



Next Steps

- Improve representation of Trinity imports
- Improve representation of export limits
- Methodology to split Sacramento River accretion/depletion between above and below Wilkin's Slough
- Coordinate changes to CAM with DWR

