

# Hydrological and Operations Modeling for the Phase II Update of the 2006 Bay-Delta Plan

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# Water Quality Control Planning

- Water Quality Control Plans
- The Bay-Delta Plan or the...
  - Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary
- Beneficial uses, objectives, program of implementation, and monitoring
- Updated periodically

# Phase II Update

- Focused on protection of fish and wildlife
- Potential new inflow requirements for Sacramento River mainstem, major tributaries and Delta eastside tributaries
  - Phase I separately addresses San Joaquin flows to Vernalis and southern Delta salinity
- Potential changes to Delta outflow requirements
- Potential new and modified interior Delta flow requirements
- Monitoring and special studies program
- Program of implementation

# Modeling Needs for Analysis of Alternative Regulatory Requirements

- Estimates of flow conditions
- Estimates of changes in water diversions to evaluate impacts on agricultural resources, water supplies, and groundwater
- Estimates of changes in reservoir storage to evaluate impacts on hydropower generation, recreation, fisheries, and water supply
- Inform other analyses or models, such as delta hydrodynamics, temperature, and economic.

# Modeling Considerations for Phase II

- Flexible tool that can be used by State Water Board staff and others
- Ability to simulate State and Central Valley Water Project (Project) reservoirs and Delta operations
- Ability to simulate non-Project reservoirs and operations
- Ability to simulate major upstream hydropower reservoirs and operations
- Ability to expand for use in future efforts
- Thorough documentation of model assumptions and inputs

# Previously Available Tools

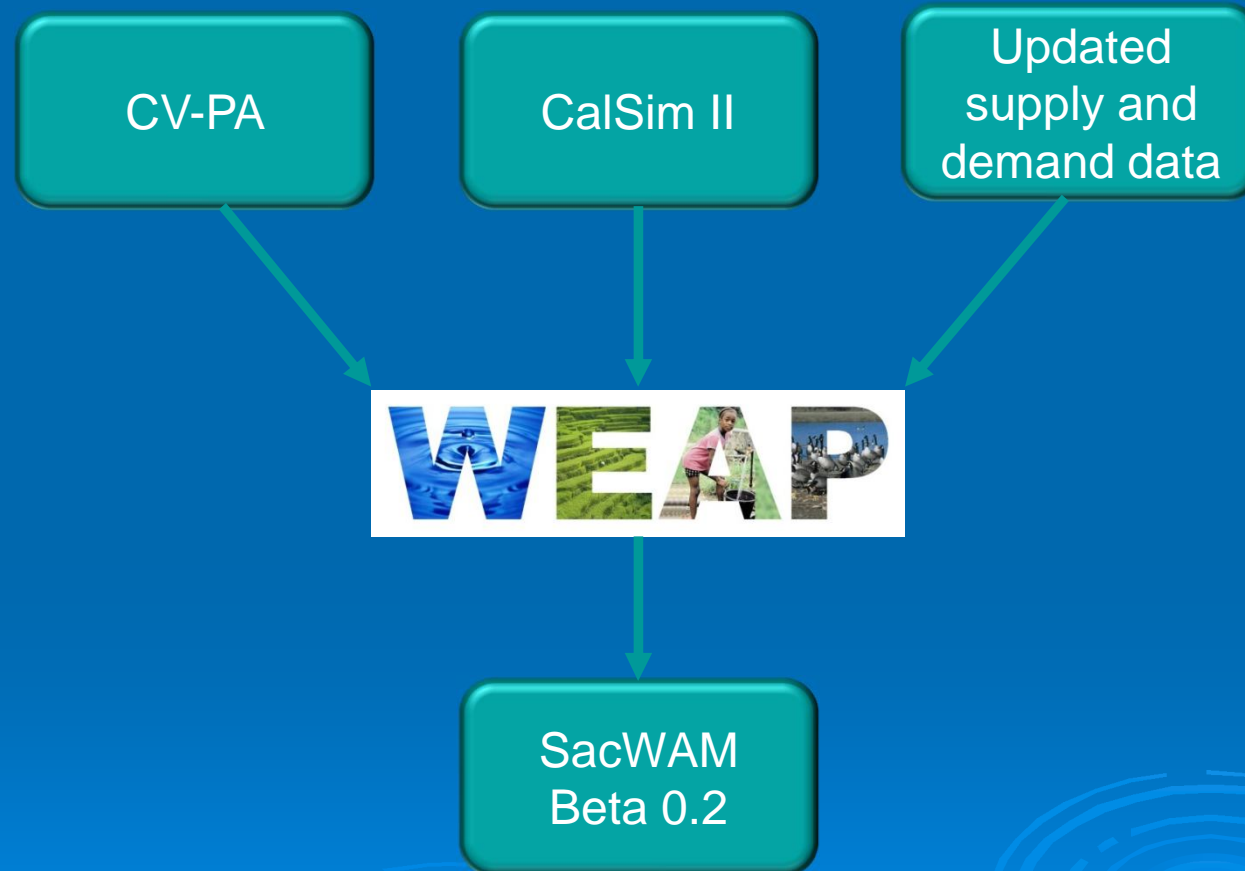
## ➤ CalSim II

- Detailed representation of Project operations
- Limited representation of non-Project tributaries
- Not user friendly
- Not well documented
- Not readily usable by State Water Board staff and others

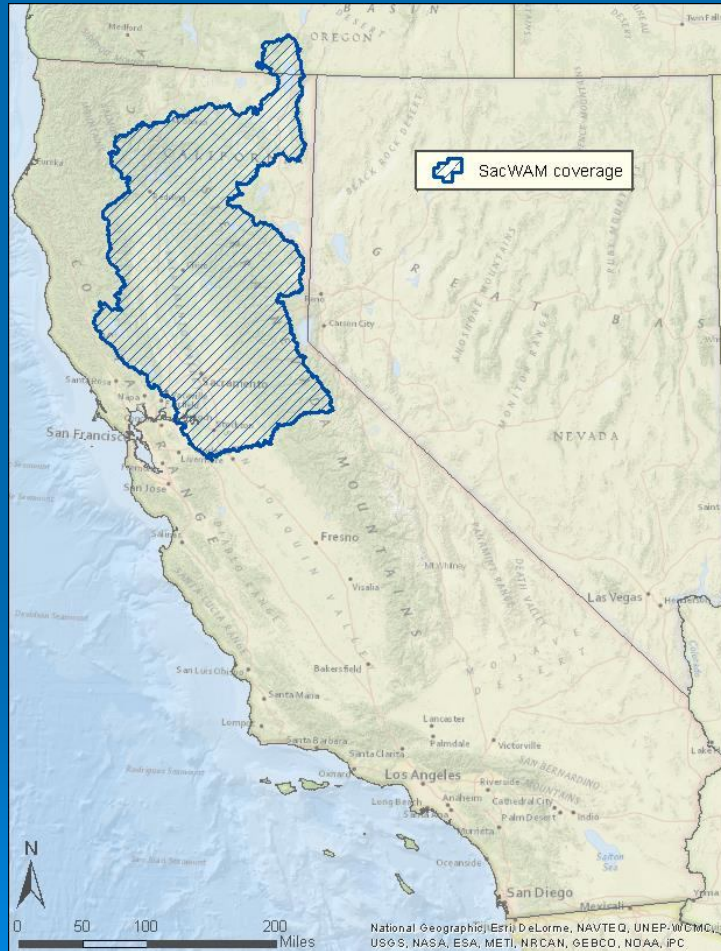
## ➤ Central Valley Planning Area Model (CVPA)

- Course representation of entire Sacramento Valley
- Representation of non-Project tributaries
- Representation of upstream reservoirs
- User friendly
- Lacks detail of Project operations

# Development of SacWAM



# SacWAM Coverage





# SacWAM Webpage

- [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/sacwam/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/sacwam/)

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# Phase II Modeling Future Work

- Delta Science Program peer review
- SacWAM 1.0
- Working Draft Scientific Basis Report- documenting science that supports potential changes to the Bay-Delta Plan
- Phase II Draft environmental document- will evaluate broad range of alternatives through a public process
- Model enhancements for future efforts