

Modeling Platforms Considered:

MODFLOW (USGS)

IWFM (DWR)

Model Applications:

C2Vsim-FG: California Central Valley Groundwater-Surface Water Simulation Model, DWR (2018-2019).

SVSim: Sacramento Valley Groundwater-Surface Water Simulation Model, DWR (2018-2019).

SacIWRM: Sacramento Area Integrated Water Resources Model, Sacramento Groundwater Authority (2011 – update in progress).

CVHM: Central Valley Hydrologic Model, USGS (2009).

Custom: Cosumnes Subbasin Groundwater-Surface Water Simulation Model, Cosumnes Subbasin GSA's (New).

Ranking Criteria for Cosumnes Subbasin Numerical Model:

1. Schedule (ready to implement for GSP development April 2020 or sooner).
2. Development cost to complete GSP within available budget.
3. Cost efficient for future maintenance, implementation and adaptive management efforts (“living model”).
4. Adequately represents Hydrogeological Conceptual Model:
 - Sufficiently detailed to understand surface water interactions with groundwater;
 - Layering represents subsurface stratigraphy;
 - The grid/mesh approximately follows physical and political boundaries; and,
 - Aquifer parameter values are consistent with field data, aquifer test results, and previous studies.
5. Output supports GSP development and implementation by providing (i) water budgets (historical, current, and future), (ii) Sustainable Management Criteria, and (iii) evaluations of proposed projects and management actions.
6. Ensures control by Cosumnes Subbasin GSAs.
7. Supports coordination with adjacent basins and regional water supply planning.