

**Water Balance Modeling for the
Comprehensive Review
And Update to the Bay - Delta Plan**

**Chris Shutes
FERC Projects Director
California Sportfishing Protection
Alliance**

5 Points on Water Balance Modeling

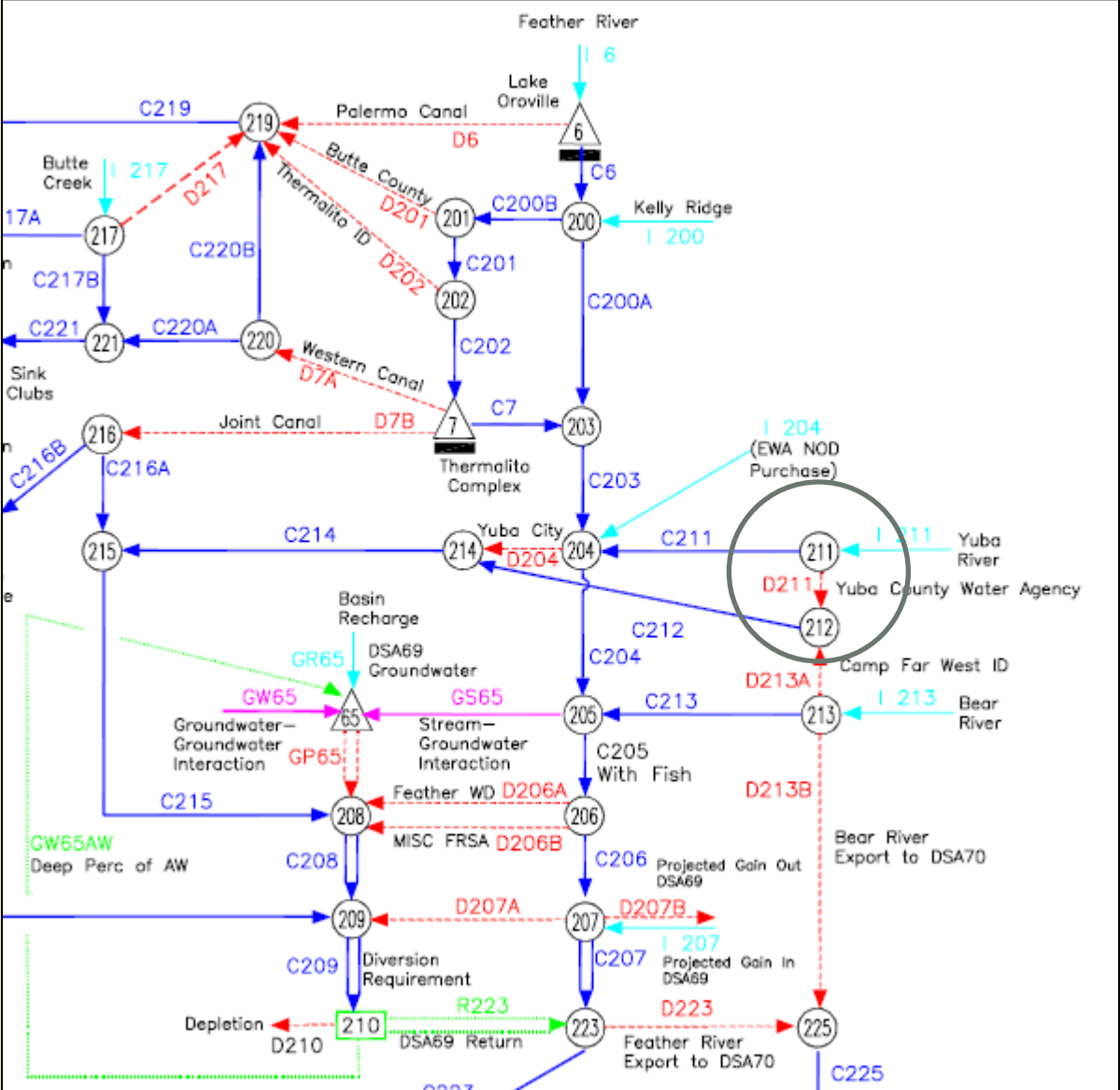
- 1. The Board needs independent modelers.
- 2. No single existing model is adequate.
- 3. The Board needs a model that is its servant.
- 4. Left unmodified, CalSim II will define policy and legal options in place of the Board.
- 5. Modeling rules, assumptions, inputs and outputs must be systematically developed and transparently disclosed.

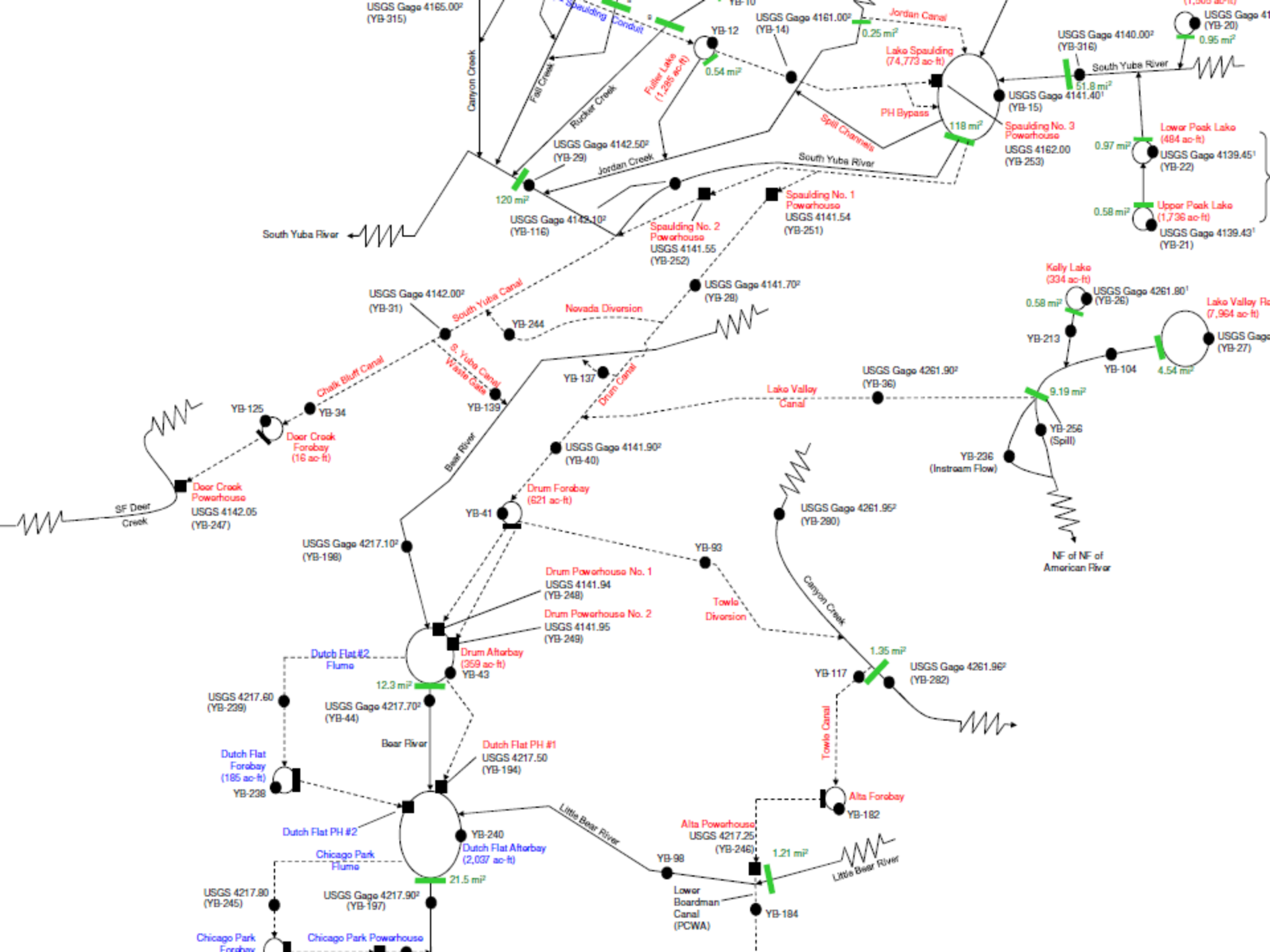
1. The Board needs independent modelers.

- A. Credibility
- B. Need to work iteratively
 - i. Active feedback and decision-making in model development and construction.
 - ii. Need to integrate legal, policy, and technical issues in a way that makes sense and that works.
 - iii. Unbiased (un-gamed) presentation of output.

2. No single existing water balance model is adequate.

- Timestep (Example: must capture daily variation in Delta inflow, e.g. during storms)
- Geographic scope (CalSim II does not model some rim dams and does not model upstream of rim dams)
- CalSim II is designed to manage CVP and SWP operations, not to balance uses.





3. The Board needs a model that is its servant. CalSim II cannot help with:

- A. If the Board requires x percent of unimpaired February through June Delta inflow as Delta outflow, what percent of unimpaired flow should be passed through rim dams? Upper watershed dams?
- B. How does this change during storms?
- C. What is the public interest in upstream storage in various reservoirs (water supply, hydro, etc)?

4. Left unmodified, CalSim II will define policy and legal options in place of the Board.

A water balance model has a series of rules that in many respects is similar to a system of priorities for water rights. If the Board “shops” among different CalSim II alternatives like different models of cars, it will run reservoirs dry or it will not protect instream resources. The Board needs to change the rules in CalSim II or else create a new model.

5. Modeling rules, assumptions, inputs and outputs must be systematically developed & transparently disclosed.

- To evaluate alternative operations substantively.
- To comply with CEQA
- To manage the message (“If Delta flow standards are adopted by the Board, Lake _____ will be drained in YY% of years.”)